



COMMENT RESPONSE DOCUMENT PART 1 of 2

Environmental Protection Performance Standards at Oil and Gas Well Sites

Title 25. Environmental Protection
Part I. Department of Environmental Protection
Subpart C. Protection of Natural Resources
Article II. Land Resources
Chapters 78 and 78a. Oil and Gas Wells

43 Pa.B. 7377 (December 14, 2013)
Environmental Quality Board Regulation #7-484
Independent Regulatory Review Commission #3042

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INTRODUCTION:

On December 14, 2013, the Environmental Quality Board (EQB) published notice in the *Pennsylvania Bulletin* (43 Pa.B. 7377) announcing seven public hearings and a 60-day public comment period for a proposed rulemaking concerning revisions to 25 *Pa. Code* Chapter 78 (relating to Oil and Gas Wells).

The proposed rulemaking would amend Chapter 78 to adopt new requirements that ensure oil and gas operators employ effective measures that prevent pollution, while allowing flexibility for the optimal development of the natural resources. The amendments are designed to strengthen the environmental controls employed by the industry to ensure the protection of public health, safety, and the environment.

On February 1, 2014, the EQB published a notice in the *Pennsylvania Bulletin* (44 Pa.B. 648) announcing two additional public hearings and an extension of the public comment period by 30 days. In total, the EQB held nine public hearings over a 90-day public comment period accepting comments on the proposed rulemaking. During this comment period, 3,128 comments were received from 23,213 commentators.

During the pendency of this rulemaking process, the General Assembly also passed two acts directly relating to the subject matter of the proposed rulemaking. As a result of the passage of the act of July 10, 2014 (P. L. 1053, No. 126), all regulations promulgated under 58 Pa.C.S. (relating to oil and gas) were required to differentiate between conventional oil and gas wells and unconventional gas wells. The Department determined that the current rulemaking process would continue, but that the regulations would be completely bifurcated (separated into two distinct chapters) on final-form rulemaking. The act of October 22, 2014 (P. L. 2853, No. 173) requires monthly reporting of production by unconventional well operators to the Department of Environmental Protection (Department or DEP).

On April 4, 2015, the Department published notice in the *Pennsylvania Bulletin* (45 Pa.B. 1615) announcing an Advanced Notice of Final Rulemaking (ANFR) procedure. This allowed DEP to solicit additional comments on the draft-final rulemaking for 30 days. On April 18, 2015, DEP published notice in the *Pennsylvania Bulletin* (45 Pa.B. 1951) announcing three public hearings and extending the ANFR public comment period by 15 days. During this additional public comment period, 2,482 comments were received from 4,914 commentators.

In assembling this document, the Department has addressed all pertinent and relevant comments associated with this rulemaking. For the purposes of this document, comments of similar subject material have been grouped together and responded to accordingly.

Due to the volume of comments received, this document is separated into two parts. Part one contains all of the comments received during the initial public comment period from December 14, 2013 through March 14, 2014. Part two contains all of the comments received during the ANFR procedure, open from April 4, 2015 through May 19, 2015. Each part of the comment response document has its own Commentator List. Additionally, several large attachments were submitted and are included in Appendices to each of the parts of the Comment Response Document.

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§ 78.1 Definitions

1. Comment: There are a number of definitions and sections of text that refer the reader to other statutes or regulations. This causes the reader search elsewhere to find that other statute or regulation and review it before being able to understand what Chapter 78 requires. This is not user friendly and does not facilitate regulatory understanding and compliance. For example, it would be better to state, “As defined in 25 Pa. Code § XXX.X,” and repeat the definition or section. This should be done for the definitions of body of water, PCSM plan, process or processing, regulated substance, watercourse, water purveyor, and wetland. It should also be done for § 78.51(d)(2), § 78.57(f), § 78.65 (d)(l)(v), § 78.66 (a)(2), § 78.66 (c)(l), 78.68a(k), 78.69(b) and numerous other sections. (124, 861, 913, 861a, 913a, 124a)

Response: The Department acknowledges that the interrelation of environmental statutes and regulations can be complex, as befits the complexities of the activities regulated under those authorities. There are two problems with inclusion of the referenced language in Chapter 78. First, and most importantly, if the referenced language changes through statutory amendment or regulatory development, the language in Chapter 78 would not automatically change to match the new language. This would create two sets of regulations addressing the same subject in different ways. Simply referencing the other statute or regulation allows for these updates to occur automatically. Second, including the cross-referenced language would result in Chapter 78 being significantly larger than it is without including that language. The Department notes that all of the cross-referenced authorities are available for free on websites accessible to the public.

2. Comment: Definitions that are taken from another source or act should still be defined and not just the reference to the source, i.e.; body of water, process or processing, regulated substance, water purveyor, watercourse and wetland. This would allow for easier comprehension while reading the chapter.

Words whose definitions were not provided but should be: brine, flowback water, production waters, abandoned wells, orphaned wells, disposal wells, enhanced recovery wells and temporary storage. (1149, 1150)

Response: See responses to comments 1 (cross-references to other statutes or regulations), and 28 (“brine”). The term “temporary storage” is defined through its use in the regulation. The terms “abandoned wells” and “orphan wells” are defined through their use in the 2012 Oil and Gas Act. “Enhanced recovery wells” and “disposal wells” are defined through the United States Environmental Protection Agency’s underground injection control regulations. The terms “flowback” and “produced fluid” are defined in Appendix D of the Department’s “Oil and Gas Production and Waste Reporting Manual” which is available on the Department’s website on the “Oil and Gas Electronic Submission Guides” web page. The changes to the final-form rulemaking limited the use of these terms such that inclusion of the definitions in the regulation was unnecessary.

3. Comment: The EQB has proposed to add a number of new definitions to 25 Pa. Code Chapter 78 and to modify or delete certain definitions that are currently found in the regulations. These definitions in turn have a ripple effect as they are used in other sections of the regulations. (1173)

Response: The Department acknowledges the comment.

4. Comment: This rulemaking has been several years in the making. Beginning with policies from as

early as 2010 being codified, to Act 13 of 2012 provisions being adopted, and more recently created provisions addressing important issues; this rulemaking was not done in a vacuum. There have been many opportunities for industry groups to express and even lobby for provisions and yes, definitions. During the Tunkhannock hearing, an industry group testified of their displeasure with at least nine definitions. We are not new to the rulemaking process. We have learned that definitions are a very important part of any legislation, rulemaking, or statute. Therefore, we are very concerned about the advocacy of an industry group lobbying for so many definition changes for important items such as centralized impoundments, gathering pipeline, mine influenced water, temporary pipelines, and watercourse to name but a few. We plan to further detail our concerns with definition changes within our comprehensive written comment.

Changing any definition may weaken the backbone of this rulemaking, let alone nine definitions. We understand that DEP has taken a great deal of painstaking time to draft these definitions. We do not desire to see this rulemaking weakened in any way. Sites and facilities are located near our homes, schools and even local hospitals. We should not lose sight of that fact. We therefore recommend that in the spirit of not seeing these definitions revised to weakened or ambiguous language and thus weakening the framework of this entire rulemaking that any definition revisions be very carefully considered and should there be a tendency to modify, that that modification err on the side of more stringent rather than less.

Policies in place as early as 2010 and Act 13 of 2012 indicate how long we've been waiting for this regulation package to move forward. Our region needs these regulations; current practices are exactly what have created the need for them. We therefore ask that the Department to move forward with this rulemaking package as swiftly as reasonably Possible. We do not want any further delays that in fact will place our Northern Tier's public health and safety, environment or communities at any further unnecessary risk. (660)

Response: The Department acknowledges the comment and has revised the definition to be "well development pipelines" instead of "temporary pipelines".

5. Comment: The Department should define and clarify what is meant by terms related to "waste", and "water" and/or "freshwater" in the Proposed Rulemaking. Our review revealed various permutations of those terms used interchangeably, or without specific definitions. For example, the term "residual waste" should be defined in the regulations, even if by reference to another Chapter in the Pennsylvania Code. (997a)

Response: The definitions of the terms such as "waste" and "water" and/or "freshwater" identified by the commentator are readily understood. The Department has added a definition for the term "residual waste" in the final rulemaking. Referencing a term through a specific Chapter of the Pennsylvania Code eliminates confusion as to the definition and provides consistency in the meaning should the other regulation change.

Additionally, some terms are defined in by statute or in the existing regulations. For example, "unconventional formation" is currently defined in Act 13 as any geologic shale formation below the Elk Sandstone or its geologic equivalent from which natural gas cannot be produced at economic flow rates or in economic volumes except by vertical or horizontal well bores stimulated by hydraulic fracture treatments or by using multilateral well bores or other techniques to expose more of the formation to the well bore. "Casing seat" is currently defined in Chapter 78.

6. Comment: We object to the Department's efforts by policy and/or regulation to compel oil and gas

operators to utilize what is a voluntary process for all other entities. Act 2 procedures should not be required for spills at oil and gas well sites but should continue to be available for operators who choose to use them to obtain relief from liability. As the Department is aware, Act 2 does not provide soil statewide health cleanup standards for chlorides, which is likely to be the most common constituent in spills on well sites. The absence of such a standard, along with the requirement to utilize Act 2 procedures rather than simply using a background standard or developing a site specific standard, would impose excessive and unnecessary costs on oil and gas operators that are not justified by any clear environmental benefit. Remove the definition of “Act 2” and all references throughout Chapter 78 unless non-Act 2 alternatives are added. (1153)

Response: The Department has retained the definition of “Act 2” in the final rulemaking. Act 2 has both voluntary and involuntary aspects. The Land Recycling Program relies, in large measure, on voluntary, remediator-initiated cleanups that have been and will continue to be encouraged by the Department.

Act 2 establishes “cleanup standards” for persons who remediate contaminated soil and groundwater caused by regulated substances released into the environment as defined under various environmental laws. These standards apply when persons either voluntarily perform or are required to perform remediation of soils and groundwater.

Section 106(a) of Act 2 states that, “The environmental remediation standards established under this act shall be used whenever site remediation is voluntarily conducted or is required under” the referenced environmental laws, including the Clean Streams Law, the Solid Waste Management Act, and the Hazardous Sites Cleanup Act. Many substances that are spilled at sites regulated under the Oil and Gas Act are regulated as waste under the Solid Waste Management Act or as pollutants under the Clean Streams Law (see, for example, sections 3273 and 3273.1 of the 2012 Oil and Gas Act, 35 Pa.C.S. §§ 3273, 3273.1). If these wastes and pollutants are regulated substances as defined under Act 2 and have contaminated soils and groundwater, they must be addressed under Act 2.

Section 106(b) of Act 2 states; “Nothing in this act is intended to nor shall it be construed to amend, modify, repeal or otherwise alter any provision of any act cited in this section relating to civil and criminal penalties or enforcement actions and remedies available to the department or in any way to amend, modify, repeal or alter the authority of the department to take appropriate civil and criminal action under these statutes.” 35 P.S. § 6026.106(a). Thus, Act 2 contemplates that the Department may require (e.g., by issuance of a DEP Order) responsible persons to meet an Act 2 remediation standard. The Department has issued many such Orders since the adoption of Act 2.

7. **Comment: There are various other terms requiring definition in § 78.1. There is no definition of unconventional formation. This is a recipe for trouble. There are numerous references to “casing seat” — including substantive differences in the regulation of drill cuttings from below vs. above the casing seat. But there is no definition of “casing seat”. This should be included in § 78.1. (869a)**

Response: Unconventional formation is currently defined in the 2012 Oil and Gas Act as any “geologic shale formation below the Elk Sandstone or its geologic equivalent from which natural gas cannot be produced at economic flow rates or in economic volumes except by vertical or horizontal well bores stimulated by hydraulic fracture treatments or by using multilateral well bores or other techniques to expose more of the formation to the well bore.” “Casing seat” is currently defined in Chapter 78.

8. Comment: The Department should provide a definition for “Temporary Storage” as used in the Proposed Rulemaking. (997a)

Response: The term is defined through its use in the regulation.

9. Comment: The Department should define the term “responsible party” as used in Section 78.66 (relating to reporting and remediating releases). At the time of a spill, the “responsible” party may be uncertain or in dispute, which could inadvertently delay spill reporting and remediating. Consequently, a clearer designation of who is responsible for reporting and remediating to ensure prompt response is needed. (997a)

Response: The term is difficult to define with specificity because of the intensely fact-specific nature of determinations of liability. The Department notes that the term “responsible person” is defined in section 103 of the Hazardous Sites Cleanup Act (35 P.S. § 6020.103) and section 103 of the Land Recycling Act (35 P.S. § 6026.103), as well as substantively in 25 Pa.Code § 91.33. Further, the Department considers the permitted well operator to be a “person at the time in charge of the substance or owning or in possession of the premises, facility, vehicle or vessel from or on which the substance is discharged or placed” for the purpose of spills or releases occurring at permitted well sites.

10. Comment: Provide the substance around which a rulemaking is created. Therefore, we recommend at a minimum the adoption of definitions as proposed. (1035)

Response: The Department acknowledges the comment.

11. Comment: The Department should provide a definition for “hydraulic fracturing” that includes all fracturing and well stimulation activities. This more inclusive definition is clearly contemplated in Act 13 (see definition of “Unconventional formation” in 58 Pa.C.S. § 3203, which includes the phrase “or other techniques to expose more of the formation to the well bore”). In the alternative, the Department could provide a broad definition for “Fracturing” and use that term throughout the Rulemaking. We recognize that the Department may have a more limited definition for any rulemaking pursuant to 58 Pa.C.S. § 3222.1. (997a)

Response: The Department disagrees that a definition for hydraulic fracturing is necessary, as the term indicates the process with specificity. Further, it would be inappropriate to include all well stimulation activities in a definition for hydraulic fracturing, as certain stimulation activities do not include the physical breaking apart of the reservoir rock through the injection of water at high pressure.

12. Comment: The Department should define the term “additive” to mean “any substance or combination of substances found in a hydraulic fracturing fluid, including a proppant that is added to a base fluid in the context of hydraulic fracturing treatment, whether or not the function of any such substance or combination of substances is to create fractures in the formation.” This definition is consistent with the definition adopted by the vast majority of states that have addressed the issue. (997a)

Response: The Department disagrees with the proposed definition for additive - additives may include substances added to hydraulic fracturing fluid, drilling fluids, or cement blends. Because of this, the Department believes the context is more important for understanding the intended meaning of the term. Finally, the term is already defined in section 3203 of the 2012 Oil and Gas Act as a “hydraulic fracturing chemical.”

13. Comment: Opportunity to Streamline Inconsistent Definitions and Scope of Impacted Oil and Gas Processes. Throughout the Rule, various provisions, including definitions, of the proposed Rule use the term “oil and gas activities” as a subject for triggering regulatory requirements: however, this term is not expressly defined in Chapter 78 or Act 13. In our view, the applicability specified for “oil and gas activities” and “oil and gas operations” needs further clarification. In Section 78.1 of Rule, outlining express definitions, “approximate original conditions,” “centralized impoundment” and “pit” use the term “oil and gas activities”- yet this term is not defined. It would be helpful if this term was clearly defined, or, if it is meant to be the same as “oil and gas operations,” which is expressly defined in the Rule, one term should be selected and used in each instance. Without such clarification, using these definitions in an effective and responsible manner is difficult. See the comment on “oil and gas operations” in the following section of our General Comments. (1085, 1147)

Response: The Department has made revisions in the final-form rulemaking to replace “oil and gas activities” with the defined term “oil and gas operations”.

14. Comment: The clarity of the regulation could be improved if the following words or terms are defined: Additive; brine; discrete area; freshwater; hydraulic fracturing; leak protection system; occupied dwelling; pipeline infrastructure; **residual waste**; responsible party; seasonal high water, **Regulated substances, water source, Water of this Commonwealth, groundwater table; temporary storage**; and **waste**. We ask EQB to consider defining the words or terms above to assist the regulated community with compliance. (1099, 1142)

Response: The Department acknowledges the comment but disagrees that these definitions need to be added to the final-form rulemaking to achieve clarity. Individual responses are provided below:

-The term “additive” is defined in the 2012 Oil and Gas Act. See response to comment 12.

“brine” see response to comment 28.

“discrete area” see response to comment 280.

“freshwater” see response to comment 53.

“hydraulic fracturing” the meaning of this term is commonly known and understood. The Department does not believe it is necessary or appropriate to define it in regulation.

“leak protection system” all instances of the term “leak detection system” have been removed from the rule, therefore there is no need to define the term in the rule.

“occupied dwelling” See response to comment 34. The term “occupied dwelling” is no longer used in the regulations.

pipeline infrastructure; the term “pipeline infrastructure” is not used in the rule, therefore there is no need to define the term in the rule.

“residual waste” a definition has been added to the final rule. *Residual waste – the term as defined in § 287.1 (relating to definitions)*

“responsible party” See response to comment 9.

“seasonal high water” the term “seasonal high water” is not used in the rule, therefore there is no need to define the term in the rule. To the extent that the commenter is referring to seasonal high groundwater table, there is a definition provided in the rule which has been in effect since the rule was initially promulgated in 1989.

“regulated substances” a definition for “regulated substances” was provided in the rule when proposed and has been retained in the final rule.

“water source” a definition for the term “water source” was provided when the rule was initially proposed. This definition has been retained in Chapter 78a but was removed from Chapter 78 because it is not used in Chapter 78.

“waters of the Commonwealth” a definition for “waters of the Commonwealth” has been added to the final rule. Waters of the Commonwealth - the term as defined by the Clean Streams Law (35 P.S. §691.1)

“waste” This term is defined in § 287.1, therefore there is no need to define this term in Chapter 78.

Waste—

(i) Discarded material which is recycled or abandoned. A waste is abandoned by being disposed of, burned or incinerated or accumulated, stored or processed before or in lieu of being abandoned by being disposed of, burned or incinerated. A discarded material includes contaminated soil, contaminated water, contaminated dredge material, spent material or by-product recycled in accordance with subparagraph (iii), processed or disposed.

(ii) Materials that are not waste when recycled include materials when they can be shown to be recycled by being:

(A) Used or reused as ingredients in an industrial process to make a product or employed in a particular function or application as an effective substitute for a commercial product, provided the materials are not being reclaimed. This includes materials from the slaughter and preparation of animals that are used as raw materials in the production or manufacture of products. Steel slag is not waste if used onsite as a waste processing liming agent in acid neutralization or onsite in place of aggregate. Sizing, shaping or sorting of the material will not be considered processing for the purpose of this subclause of the definition.

(B) Coproducts.

(C) Returned to the original process from which they are generated, without first being reclaimed or land disposed. The material shall be returned as a substitute for feedstock materials. When the original process to which the material is returned is a secondary process, the materials shall be managed so that there is no placement on the land and the secondary process takes place onsite.

(iii) The following materials are wastes, even if the recycling involves use, reuse or return to the original process (as described as follows):

(A) Except for coproducts, materials used in a manner constituting disposal, or used to produce products that are applied to the land.

(B) Except for coproducts, materials burned for energy recovery, used to produce fuel or contained in fuel.

(C) Materials accumulated speculatively.

(iv) Discarded or recycled material may not be waste if a determination is made by the Department in accordance with § 287.7.

(v) In enforcement actions implementing the act, a person who claims that the material is not a waste in accordance with subparagraph (ii) shall demonstrate that there is a known market or disposition for the material, and that the terms of the exclusion have been met. In doing so, appropriate documentation shall be provided (such as contracts showing that a second person uses the material as an ingredient in a production process) to demonstrate that the material is not a waste. In addition, owners or operators of facilities claiming that they actually are recycling materials shall show that they have the necessary equipment to do so.

“regional groundwater table” a definition for “regional groundwater table” was provided in the rule when proposed and has been retained in the final rule.

“temporary storage” is defined in the substance of sections 78.56 and 78a.56 and 78.65 and 78a.65 (that is, nine months after the completion of drilling or the expiration of the final permit on the well site).

15. Comment: Approximate original conditions — we ask that consideration be given to better defining “approximate original conditions”. Is the intent to restore the site to conditions that existed immediately prior to oil and gas activities? Also, there should be significant latitude built into this requirement to allow input from and negotiation with the Lessor and/or surface owner. In addition land use is outside of the DEP’s jurisdiction to regulate and is largely an issue to be resolved between the Lessor and the Operator. (124a, 952)

Response: The definition is appropriate. The Department interprets the definition to apply to conditions immediately prior to commencement of oil and gas operations. The restoration requirements in § 78.65 or § 78a.65 allow for landowner input when conducting restoration. These sections also further clarify the restorations requirements.

16. Comment: Approximate original conditions – Commentator objects to any requirement to return land to “approximate original conditions” unless such a commitment has been made in the approved site restoration plans or private agreements with landowners. No such obligation is created under any relevant statute and is without environmental justification. The use of the surface by those who hold the dominant mineral estate is constrained under Pennsylvania property law to a demonstration of “due regard” for the surface, which is unlikely to require restoration to the standards created in the definition above. The Department has failed to provide any environmental justification for this requirement.

Act 13 provides that portions of well sites not occupied by production facilities or equipment should be returned to approximate original “contours” during an extension of the site restoration period. This language, which is more limited than the term “approximate original conditions”, does not

authorize the Department to create the unreasonable obligations described in the definition above. Remove this term throughout the rule. (1135, 1153)

Response: It is unreasonable to interpret the restoration requirements in the 2012 Oil and Gas Act to require restoration of the well site to a different standard depending upon whether or not a restoration extension has been granted. The Department believes that the restoration requirements are appropriate. The restoration requirements in §§ 78.65 and 78a.65 allow for landowner input when conducting restoration. See response to comment 377.

17. Comment: We appreciate the inclusion of definitions for a number of terms associated with unconventional gas development. We believe there are a few additional terms that should be defined, as well as a few terms that we hope will be clarified. Clearly defined terms is the first step in creating a shared understanding among stakeholders and specifically, will help us understand what is being proposed as development proceeds and how this might affect National Park System units and affiliated areas. We offer the following additions and/or clarifications to the existing list of terms:

Approximate Original Conditions: This definition is relatively clear until the last two words: “extent practicable”. This term is not defined. Who will determine whether “to the extent practicable” has been met? What criteria will be used? Cost to the operator? Environmental aspects? Will there be recourse should there be disagreements between the operator and the landowner or impacted neighbors? We are concerned that efforts to restore approximate original conditions after natural gas operations on adjacent lands could be insufficient due to an undefined “extent practicable” clause, resulting in impacts to National Park System resources and values. (1062, 1133)

Response: The term is specific enough while retaining flexibility for Department inspectors to require appropriate steps to be taken to adequately restore well sites as needed to protect the waters of the Commonwealth. The qualifier “to the extent practicable” in the definition of “approximate original contours” does not modify to the environmental protections in this section, but rather makes clear that the obligation is not an identical replication of pre-development site conditions.

18. Comment: Approximate Original Conditions. The definition uses the term “original land uses”; however, the term is ambiguous in our view: Does it mean the most recent land use or the first use of the land ever? We ask that the Board further clarify its intent for this definition. (1085)

Response: The definition is appropriate. The Department interprets the definition to apply to conditions immediately prior to commencement of oil and gas operations. The term does not require restoration to exact preconstruction conditions or to the first land use ever.

19. Comment: Approximate original conditions should go beyond general surface configuration, land use, and complementary drainage patterns. Re-vegetation must be specified with reference to native species, size of trees, and similar factors to prevent degradation to sensitive environments and water resources. This is true not only for the well pads but also for the pipelines – many of which are unregulated in Class 1 areas. Eliminate language such as “to the extent practicable” with clearer parameters including cost, feasibility, and long-term value. Criteria need to be established and reviewed with objectivity to reduce environmental risks and the negative impact of cumulative development. (1098)

Response: Restoration to approximate original conditions, capable of supporting original uses to the extent practicable is the best practice to achieve site restoration within reasonable operational parameters. It is not necessary to include technical performance standards

including requirements for type and density of perennial vegetation, soil characteristics and drainage patterns in this section because those issues are already appropriately addressed by the proposed requirements. Projects meeting the proposed requirements will satisfy the statutory restoration requirements and include performance requirements that will protect waters of the Commonwealth.

20. Comment: Borrow pits that are earth disturbances for construction purposes should be clarified to specify “facilities that are related to oil and gas development.” It needs to be clear if “facilities” include compressor stations, pipelines, export terminals, storage tanks and/or processing facilities. (1098)

Response: The definition is appropriate. The applicability of the borrow pit provisions are explained in §78.67.

21. Comment: Approximate original conditions – This definition concludes with the phrase, “. . . to the extent practicable.” This phrase is vague and should be deleted or further clarified. (1099)

Response: See response to comment 17.

22. Comment: Approximate original conditions - Reclamation of the land affected to preconstruction contours so that it closely resembles the general surface configuration of the land prior to construction activities and blends into and complements the drainage pattern of the surrounding terrain, and can support the land uses that existed prior to oil and gas activities to the extent practicable. Our comment: Act 13 does not define or require well sites to be restored to approximate original “conditions.” The only place where the term is proposed by EQB to be used is in Section 78.66, where we propose revisions to clarify that the term is not necessary or appropriate. Suggest language deleting the defined term. (1174)

Response: The restoration requirements are consistent with the restoration requirements described in section 3216(g) of the 2012 Oil and Gas Act. The mere fact of granting of a restoration extension does not change the post-drilling restoration requirements for a well site. The Department interprets section 3216 to require consistent restoration of well sites regardless of whether or not the restoration is occurring after an extension has been granted. This includes making portions of the site “capable of supporting the uses that existed prior to drilling the well,” which the Department interprets as “approximate original conditions” in the regulation. See response to comment 16.

This term is also used in the well development impoundment sections, §§ 78.59b and 78a.59b; the centralized impoundment sections, §§ 78.59c and 78a.59c; restoration sections, §§ 78.65 and 78a.65; and the borrow pit sections, §§ 78.67 and 78a.67.

23. Comment: Act 13 does not define or require well sites to be restored to approximate original “conditions.” The only place where the term is proposed by EQB to be used is in Section 78.66, where MSC’s proposed revisions clarify that the term is not necessary or appropriate. Commentator suggests deleting the defined term. (1137)

Response: See response to comment 16 and 22.

24. Comment: Act 13 does not define or require well sites to be restored to approximate original “conditions.” We suggest deletion of the defined term. We recognize that well sites need to be reclaimed with vegetation and effectively managed per post construction stormwater management

practices. We understand the intent is to reduce the pad foot print but achieving original contour is not practical and often unwanted by the landowner. (1103)

Response: See response to comment 16 and 22.

25. Comment: Approximate original conditions – While some may argue that land use is outside of DEP’s jurisdiction to regulate, and is largely an issue to be resolved between the lessor and the operator, we do not agree. Marcellus Shale is not a typical landowner land use issue. We want to see this definition in place as it provides protection for our Region’s rural and agricultural and forested integrity. Land use issues are not solely landowner issues as the flavor of land use directly relates to the integrity of our regional community. The Region hosts approximately 43% of the total unconventional wells within the Commonwealth. Reducing reclamation to standards other than preconstruction contours may greatly unravel the beautiful fabric of our Region’s aesthetic value. When industry negotiates agreements to do otherwise, we only need to reflect back in recent history to unscrupulous land men who did their bidding and more than a few landowners regret making decisions they had made during that time. Lease agreements and regulations protect landowners when they lack information or knowledge concerning land use issues. We strongly recommend the Department adopt this definition at a minimum in the scope and spirit in which it is written. (660a)

Response: The Department acknowledges the comment.

26. Comment: Body of water: This definition is a cross-reference to § 105.I (relating to definitions) of the Department’s regulations. Chapter 105 pertains to dam safety and waterway management. Why is this definition appropriate for the regulation of the oil and gas industry? (1099)

Response: The oil and gas industry is subject to the requirements of Chapter 105 due to impacts to water bodies on a regular basis.

27. Comment: Given this definition all site development activities would classify as borrow pits since they involve earth disturbance activity. The definition would add additional permitting and bonding obligations under other applicable laws as referenced in the proposed Section 78.67. Borrow Pits. Commentators suggest amending the language:

Borrow pit -An area of earth disturbance activity where rock, stone, gravel, sand, soil or similar material is excavated to be used for the construction of well sites, access roads or facilities that are related to oil and gas operations. This definition does not include earth disturbance at well sites or otherwise permitted by the Department under the Oil and Gas Act. (1071, 1085, 1103, 1137, 1147, 1153, 1174).

Response: The definition of the term “borrow pit” as used in Chapters 78 and 78a is readily understood.

28. Comment: Brine: the term brine does not appear in the proposed § 78.1, nor does it appear to be defined anywhere in the current version of CH 78. Although definitions are hinted at in numerous sections none is clearly provided. We believe it would be helpful to clearly define this term given its extensive use throughout CH 78, and to ensure that the use of brine as described in these regulations meets the intended goal to ensure that particular chemicals and substances used in hydraulic fracture stimulation do not end up in the waters of the Commonwealth. Given the use of brine for multiple purposes (e.g. dust suppression, road stabilization, pre-treatment of roads, etc.) and the numerous state and local roads present within and near NPS units such as the Upper Delaware Scenic and Recreational River (UPDE), we believe the use of brine absent a definition as to its contents could

potentially impact NPS resources and affect our ability to adequately design monitoring to determine if or when brine is reaching the waters of the Commonwealth. (1062, 1133)

Response: The definition of the term “brine” is the common English definition.

29. Comment: I would also like to see definitions of: Brine (since this is beyond just salt or salt water, I would like to have a clear articulation of the chemical composition of what the document is referring to as brine). Since I am assuming that this will also apply to the other shale formations and not just the Marcellus, there should also be definitions of the other formations in the area, such as the Utica and Upper Devonian. (945)

Response: See response to comment 28. Including a clear articulation of the chemical composition of what is being referred to as brine is not necessary because the regulations provide chemical composition specifications where necessary.

30. Comment: Brine: The proposed version of 25 Pa. Code Chapter 78 uses the term “brine” in numerous places, including in newly defined terms “anti-icing,” “de-icing” and “pre-wetting.” However, the term itself is undefined. The use of the term in the proposed regulations indicates that “brine” consists of liquids that result from drilling, altering, completing, recompleting, operating, servicing or plugging a well rather than a liquid that is specifically manufactured or produced for use as an additive by service providers in well stimulation activities. To draw this distinction more clearly, we suggest that the following definition be added to the proposed regulations:

Brine - saline geological formation water resulting from, obtained from, or produced in connection with exploration, drilling, well stimulation, production of oil or gas, or plugging of a well. (1173)

Response: See responses to comment 28 and 29.

31. Comment: Buffer Zone – an area designated that is beyond the setback in which mitigations are required to enable both the operator and public to enjoy their respective activities. Buffer zones are created ideally to create a safety and comfort corridor which is beneficial to both operators and the public enjoying the same area on publicly owned lands. (660a)

Response: A buffer zone is synonymous with a setback.

32. Comment: Centralized impoundment – We applaud the Department’s recognition of air pollution that may endanger persons or property. While it is true, that the air program does indeed regulate some air regulations on oil and gas facilities, there are still some sources that are not effectively regulated with emission control technologies. Additionally, at the recent Appropriation’s Budget Hearings, it was noted that the expected fee increase will provide for an addition of field staff complement in the program, some of which will have air quality specialist expertise. This is really an excellent step forward by the Department which will enable the Marcellus Shale Play to reach that delicate balance where all may thrive. Therefore, we strongly recommend the Department adopt this definition at a minimum in the scope and spirit in which it is written. (660a)

Response: The Department acknowledges the comment.

33. Comment: Centralized impoundment – Centralized impoundments may be designed to hold fluids or semi-fluids from “oil and gas operations,” as defined in this Chapter.

Suggested Language: “Centralized impoundment-A facility that meets the following: (1) a natural topographic depression, manmade excavation or diked area formed primarily of earthen materials, (2) designed to hold fluids or semi-fluids associated with oil and gas operations, including wastewater, flowback and mine influenced water, the escape of which may result in air, water or land pollution or endanger persons or property, (3) constructed solely for the purpose of servicing multiple well sites.” (1137, 1174)

Response: The Department has changed the definition of centralized impoundment in the final regulatory language as a facility authorized by a dam permit for a centralized impoundment dam for oil and gas operations (DEP #8000-PM-OOGM0084).

34. Comment: Centralized impoundment – The EQB proposes to add a new definition for “centralized impoundment” that would allow the construction of large, centralized open pits for waste storage. The proposed definition acknowledges that the escape of waste from the impoundment “may result in air, water, or land pollution or endanger persons or property.”

We oppose the use of centralized impoundments. Centralized impoundments should be prohibited because they are inefficient, cause large-scale surface disturbance, pose a risk of surface and ground water contamination, and contribute to local air pollution. These concerns already have led some companies to transition away from the use of impoundments and pits and toward closed-loop systems. (See, e.g., ExxonMobil, 2010 Corporate Citizenship Report, http://cdn.exxonmobil.com/~media/Reports/Corporate%20Citizenship%20Report/2010/community_ccr_2010.pdf; Anadarko, Questions and Answers regarding fracture stimulation, <https://www.anadarko.com/sitecollectiondocuments/hydraulic%20fracturing/fracQA.pdf>) Wastewater, flowback, and other fluids generated or employed by oil and gas drilling should be contained in closed systems only.

Best practices support the elimination of surface impoundments altogether. Waste collected in tanks at the drill site and moved by pipeline or truck to be pumped into a larger open impoundment at a centralized location (away from the well site) results in additional unnecessary transportation and transfer steps that provide unnecessary opportunities for pollution releases.

Eliminating use of centralized surface impoundments prevents: large scale surface disturbance that requires multi-year rehabilitation (surface disturbance is less for temporary tanks than impoundments. Impoundments require surface soil excavation and multiyear rehabilitation. Temporary tanks used at the drill site use existing gravel space already in place for drilling operations rather than impacting new and additional surface terrain away from the drill site); the potential for structural failure and significant pollutant release for centralized impoundments constructed with embankments; the potential for leakage to occur through or around the liner, impacting soil and ground and surface water (a cause of many pollution events in Pennsylvania); hazardous air pollution emissions from evaporation and aeration processes; and, potential exposure of wildlife and domestic animals to the impoundment contents that could be harmful.

The use of large centralized impoundments requires large areas of surface excavation (cut) and embankment placement (fill). The proposed regulation does not include any upper limit on the size or depth of centralized impoundment.

The proposed regulation exempts centralized impoundments of hazard potential 4 and size Category C (up to 40 feet embankment or 1,000 acre-feet of storage) from the regulatory and permitting requirements of Chapter 105, Subchapter B, Dam Safety and Waterway Management. The proposed regulation would only require impoundments of 40 feet or greater in depth (Size Category A or B) or

hazard potential 1, 2, or 3 to comply with the requirements of Chapter 105. The implications of an impoundment failure or overtopping for a centralized impoundment have all of the same health, safety, and welfare concerns as any other impoundment, with the added concern that the contents of a centralized impoundment can include compounds that are hazardous to both human and ecological health. There was no safety or technical basis provided for the proposed exemption.

If flowback is recycled, it should be subject to strict waste management guidelines, permitting, and trucked or piped from tank-to-tank to another drill site or used at the same drill site in a different well.

A centralized surface impoundment photograph in Pennsylvania is shown below.



The most serious concern with the use of centralized surface impoundments for hydraulic fluid waste (“flowback”) is the amount of hazardous air pollution predicted for these centralized surface impoundments. In 2009, New York State Department of Environmental Conservation (NYSDEC) estimated that each centralized impoundment would be a major source of hazardous air pollution, emitting more than 32.5 tons of air toxins per year, and it was unclear if NYSDEC’s estimate was even a worst-case estimate:

Based on an assumed installation of ten wells per well site in a given year, an annual methanol air emission [estimate] of 32.5 tons (i.e., “major” quantity of HAP) is theoretically possible at a central impoundment⁴ [emphasis added].

The US Environmental Protection Agency (USEPA) classifies a major source of hazardous air pollution as a source that emits more than 25 tons per year. These centralized impoundments have been sited close to residential homes and community facilities in Pennsylvania, increasing the amount of hazardous air pollution exposure to nearby humans and animals, including increased exposure to benzene, a known human carcinogen.

The proposed definition for “centralized impoundment” (§ 78.1) states that air pollution “may” occur; this is incorrect, air pollution will occur. The amount and type of pollution will depend on the amount and type of waste stored in this open air pit.

We recommend that the proposed definition for “centralized impoundment” be revised and that centralized impoundments be prohibited. Closed-loop tank systems should be required to store and transport waste to prevent the release of substantial amounts of air pollution, particularly hazardous air pollutants to the atmosphere.

We recommend the following changes:

Centralized impoundment—A facility, prohibited under § 78.59c, that is:

- (i) A natural topographic depression, manmade excavation or diked area formed primarily of earthen materials, the construction of which causes large-scale surface disturbance.
- (ii) Designed to hold contaminated fluids or semifluids associated with oil and gas activities, including wastewater, flowback and mine influenced water, emissions from or the escape of which will result in air pollution, will pose a risk of water or land pollution, and may endanger persons or property.
- (iii) Constructed solely for the purpose of servicing multiple well sites. (1143)

Response: Due to changes disallowing the construction of new centralized impoundments without a residual waste permit and requiring the closure of existing centralized impoundments, the Department has changed the definition of centralized impoundments in the final-form regulation to be “A facility authorized by a Dam Permit for a Centralized Impoundment Dam for Oil and Gas Operations (DEP #8000-PM-OOGM0084).”

35. Comment: Centralized impoundment requires clarification. Must such a facility include all or one of the following three descriptors listed since there is no and or within the items? Certainly regulation surrounding each should be distinct as a depression or diked area formed primarily of earthen materials for fluids is different from semi-fluids and wastewater, flowback and mine influenced waters are very different by definition. Mine influenced water could be acid mine drainage that is considered hazardous as opposed to wastes from oil and gas industries that are not defined or regulated in the same way. This should be clarified to avoid problematic interpretation. (1098)

Response: See response to comment 34.

36. Comment: Centralized impoundment, number (2) - This definition talks about “... the escape of which may result in air, water or land pollution ...” It is interesting to note that the oil and gas program regulations contain air pollution controls. This should be carefully considered, especially in light of recently promulgated federal air rules found at 40 CFR Part 60 Subpart 0000 which will be implemented by the air quality program.

In addition, it is suggested that language be added to clarify that this definition does not include secondary containment or impoundments at well sites. The language should also clarify that a “centralized impoundment” does not include freshwater impoundments. (124a)

Response: See response to comment 34.

37. Comment: Centralized Impoundment – Language should be added to clarify that this definition does not include secondary containment or impoundments at well sites. Exclude pits, impoundments, tanks restored on a well site that are restored within applicable restoration period for the well site. (1057)

Response: See response to comment 34

38. Comment: Centralized Impoundment – Commentator proposes that the definition expressly exclude freshwater from its scope for the sake of clarity. Further, because the Department’s air quality program, not the oil and gas program, is implementing the recently promulgated federal air regulations found at 40 C.F.R. Part 60, Subpart 0000, any references to air pollution should be deleted from the proposed definitional language as the reference could create confusion. To accommodate these recommendations, Talisman recommends that subsection (ii) be amended to state: “designed to hold fluids or semi-fluids associated with oil and gas operations, including wastewater flowback and mine influenced water, but not freshwater, the escape of which may result in water or land pollution.”(1085)

Response: See response to comment 34.

39. Comment: Centralized Impoundment – Commentator suggests that this definition and any related provisions be separated into a separate subchapter of the regulation for unconventional operations. There is no need in the general rule for this concept. (1135)

Response: The Department disagrees and has included the definition in both Chapters 78 and 78a. See response to comment 34. Centralized impoundments are not limited to servicing unconventional wells, although that is their typical use.

40. Comment: Centralized impoundment – Impoundments that contain freshwater, other fluids, and residual waste are extensively regulated in Pennsylvania by, inter alia, the Solid Waste Management Act and the Dam Safety and Encroachments Act. The proposed Chapter 78 standards are more stringent than existing state law. The Department has not justified a basis to impose more stringent standards than currently exist, and does not impose specific, more stringent standards on other industries. Delete this definition and section 78.59c. (1153)

Response: The Department has eliminated the authorization of centralized impoundments under Chapter 78. See response to comment 34.

41. Comment: Condensate should be delineated beyond the industry standard by including a comprehensive, continually up-dated lists of substances so classified. This is particularly important in dealing with environmental protection, leaks, and public health risks. (1098)

Response: The Department believes that the American Petroleum Institute definition of condensate, as included in 78.1 of the Rulemaking is appropriate.

42. Comment: Containment systems are critical and should be defined in such a way as to provide the public with assurance that they will, in fact, hold spilled substances to the ground surface or off the well site. Lists should be provided based on what substances the system is designed to contain. Please define “Other Materials” such as the substance “synthetic liners are made of and what type of coating will be used. (1098)

Response: Section 78.64(a) addresses concerns regarding containment systems and the

Department added definitions for “primary containment” and ‘secondary containment” in the final rulemaking.

43. Comment: Based on Act 13, the proposed regulation defines a “Conventional well – A bore hole drilled or being drilled for the purpose of or to be used for the production of oil or gas from a conventional formation” and “Conventional formation – A formation that is not an unconventional formation.” However, an “unconventional formation” is not defined and should be. (636a)

Response: The Department does not agree that a definition is required for conventional wells. Unconventional formations are already defined in Act 13. For the definition of unconventional formation, please see response to comment 7.

44. Comment: Conventional and Unconventional Formation: As currently written, the definitions of conventional formation and unconventional formation may result in wells which are, by strict application of the definition, conventional, while containing critical elements of unconventional formations. This is important because the regulations ban the use of certain materials from unconventional formations, yet the definition creates a loophole which would allow the use of the very materials which these proposed regulations ban. It is especially important that there is no loophole and that these two types of formations are clearly defined and distinct from one another as they inform the types of materials that can be buried in pits, applied to the land and spread on roads in the Commonwealth, all of which may affect National Park System units and affiliated areas. These activities have the potential for adversely impacting the waters of the Commonwealth should certain materials generated from natural gas development be used.

The definition of conventional as “a formation that is not an unconventional formation” is a circular definition that hinges on the definition of “unconventional formation.” Our recommendation lies in changing this definition. Most of the current definition serves to differentiate unconventional from conventional formations. The phrase “existing below the base of the Elk Sandstone or its geologic equivalent stratigraphic interval” is the element which we recommend be clarified or dropped for the reasons we discuss below.

One of the critical elements in the definition of unconventional formation appears to be the use of stimulation “by hydraulic fracture treatments or by using multilateral well bores or other techniques to expose more of the formation to the well bore” regardless of whether such techniques are applied to a vertical or horizontal well bore. Also critical is the lack of economic flow rates or economic volumes necessitating hydraulic fracture stimulation or other techniques. The use of hydraulic fracturing is the critical element in the definition.

The percentage of all natural gas wells that are hydraulically fractured is important in this case. The Congressional Research Service states that “hydraulic fracturing is a technique developed initially to stimulate oil production from wells in declining oil reservoirs. With technological advances, hydraulic fracturing is now widely used to initiate oil and gas production from unconventional (low-permeability) oil and gas formations in which the hydrocarbon was previously inaccessible. This process now is used in more than 90% of new oil and gas wells.”

When this geologic location is included, however, it creates a class of wells that do not exist “below the base of the Elk Sandstone or its geologic equivalent stratigraphic interval”, but to which hydraulic fracturing has been applied, with all the attendant chemical concentrations, presence of naturally occurring radioactive material (NORM), etc. common to the technique. It is the use of material from these wells that the regulations ban. Yet the current definition would define these

wells as conventional and allow the use of materials from them simply because their stratigraphic interval was not “below the base of the Elk Sandstone or its geologic equivalent.” This appears to be the opposite of what the Commonwealth intends in the proposed regulations. It could result in adverse impacts to the waters of the Commonwealth should materials from these wells be spread on roads, applied to the land or buried in pits. We recommend dropping the locational element from the unconventional formation definition or clarifying why its inclusion will not result in the potential problems identified. (1062, 1133)

Response: The Department does not agree that the current statutory definition of unconventional formation lessens existing environmental protection standards.

45. Comment: I would like to add the technical definition of a Conventional Well that is most compatible with the Pennsylvania Grade Crude Oil Coalition: A bore hole drilled or being drilled for the purpose of or to be used for the production of oil and gas from a conventional formation. Conventional wells are, irrespective of technology or design: (1) any wells drilled to produce oil; (2) wells drilled to produce natural gas from formations other than shale formations; (3) wells drilled to produce natural gas from shale formations located above the base of the Elk Group or its stratigraphic equivalent; and (4) wells drilled to produce natural gas from shale formations located below the base of the Elk Group where natural gas can be produced at economic flow rates or in economic volumes without the use of vertical or non-vertical well bored stimulated by hydraulic fracture treatments or by using multilateral well bores or other techniques to expose more of the formation to the well bore; and (5) irrespective of formation, wells drilled for collateral purposes, such as monitoring, geologic logging, secondary, and tertiary recovery or disposal injection. (1120)

Response: A definition for “conventional well” was added to Chapter 78 on June 14, 2014 (44 Pa.B. 3517) as part of the permit fee rulemaking. Because of the timing of the two regulation packages, this change could not be reflected in this proposed rulemaking.

46. Comment: Conventional formation should not be defined relative to what it is not included. Specificity is required. (1098)

Response: For matters related to establishing the definition of a conventional well, please see response to comment 45.

47. Comment: Conventional wells, with reference to the Conventional formation, definition is problematic. Clarification is needed in the instances where conventional wells become unconventional wells. (1098)

Response: For matters related to establishing the definition of a conventional well, please see response to comment 45.

48. Comment: Conventional Well. As what constitutes conventional versus unconventional can vary at any particular time based on resource characteristics, available exploration and production technologies, the economic environment, and the scale, frequency, and duration of production, We suggest the Board base the qualifying language of this definition on what technologies the Board currently believes constitute conventional production, rather than cross referencing to the definition of “conventional formation.”(1085)

Response: For matters related to establishing the definition of a conventional well, please see response to comment 45.

49. Comment: However, in DEP’s proposed rulemaking for Oil and Gas Well Fee Amendments, industry comments were submitted to change the “conventional well” definition in order to address some of the ambiguity concerns such as that a well shall not be determined due to technology because technology changes over time. (636a)

Response: For matters related to establishing the definition of a conventional well, please see response to comment 45.

50. Comment: The rules as drafted do not adequately distinguish between conventional and unconventional wells. The way originally drafted the additional administrative and operational changes would apply across the board regardless of the nature or type of wells being developed or the scope or size of the business in operation.

Suggested amendatory language:

Conventional well—A bore hole drilled or being drilled for the purpose of or to be used for the production of oil or gas from a conventional formation. Conventional wells are, irrespective of technology or design: (1) any wells drilled to produce oil; (2) wells drilled to produce natural gas from formations other than shale formations; (3) wells drilled to produce natural gas from shale formations located above the base of the Elk Group or its stratigraphic equivalent; and (4) wells drilled to produce natural gas from shale formations located below the base of the Elk Group where natural gas can be produced at economic flow rates or in economic volumes without the use of vertical or nonvertical well bores stimulated by hydraulic fracture treatments or by using multilateral well bores or other techniques to expose more of the formation to the well bore; and (5) irrespective of formation, wells drilled for collateral purposes, such as monitoring, geologic logging, secondary and tertiary recovery or disposal injection. (1153)

Response: For matters related to establishing the definition of a conventional well, please see response to comment 45.

51. Comment: Discrete Area: This term is undefined in the regulations, but used in § 78.15(f)(4) to set limits for the applicant on the information they are required to submit about public resources (including NPS resources) and efforts to avoid or mitigate impacts to those resources. The NPS seeks clarification of the meaning of the term. We provide more detail on our concerns in our comments on § 78.15(f)(4) below. (133, 1062)

Response: The Department does not agree that this term requires definition.

52. Comment: Freeboard seems convoluted. We believe it is simply the shortest distance between the top of the contained liquid and the open, secure container that is holding it. (1098)

Response: The definition accurately describes the term.

53. Comment: Define “freshwater” which in its current undefined state allows driller to mix contaminated water with uncontaminated to avoid regulations on the disposal of contaminated substances and protect our fresh water source. (16, 102)

Response: The Department has revised the definition to be “well development impoundments” instead of “freshwater impoundments.” While the term “freshwater” is not defined, the term “well development impoundment” is defined by the materials that may be stored within the impoundment which includes surface water, fresh groundwater and other Department

approved sources which the Department must review and approve based on a variety of factors including the quality of the water and the risks of storage of the water.

54. Comment: Define “freshwater” that is used in oil & gas operations. Water leftover from fracking and contaminated fluids being recycled for fracking (such as from mining or sewage) is often mixed with clean water for additional operations. The lack of a clear definition allows operators to avoid regulations on the use and disposal of polluted substances. (17, 18, 79, 160, 161, 168, 169, 195, 475, 564, 565, 566, 808, 843, 865, 884, 947, 492a, 1000, 1039, 1058, 4582 – 4584)

Response: See response to comment 53.

55. Comment: There should be changes and additions to the definitions used in this chapter. Specifically, there should be a definition of “fresh water” such that it is distinguished from fluids that are “other Department approved sources,” such as mine water, that have been recycled and diluted with clean water (78.l(a)). (1089, 1229)

Response: See response to comment 53.

56. Comment: The Department does not define the term “freshwater.” If it does not intend to define the term, the Department should provide an explanation in the preamble to the final regulations on why a definition is not warranted. (852a)

Response: See response to comment 53.

57. Comment: I call on DEP to clearly define “freshwater” as used in oil and gas operations. The definition should be clarified that it comprises uncontaminated sources that are part of the natural hydrologic cycle including underground sources of drinking water protected under that Safe Drinking Water Act. Water leftover from fracking and contaminated fluids being recycled for fracking (such as from mining or sewage) is often mixed with clean water for additional operations. The lack of a clear definition allows operators to avoid regulations on the use and disposal of polluted substances. (402, 853a, 1102)

Response: See response to comment 53.

58. Comment: The term ‘freshwater’ is confusing and needs to be better defined and classified. (104, 901, 939, 1148)

Response: See response to comment 53.

59. Comment: Also, although there is a definition of freshwater impoundment, there is no definition of freshwater. Is water reclaimed from acid mine drainage “fresh water”? (869)

Response: See response to comment 53.

60. Comment: I would also like to see definitions of: Freshwater (since this is not truly unadulterated water as might be assumed by the term itself). I would like to know what substances are and are not acceptable to be included in freshwater. (945)

Response: See response to comment 53.

61. Comment: The term “fresh water” should no longer be used to define both uncontaminated

previously unused water and wastewater left over from fracking that is then recycled to be reused. (912, 926)

Response: See response to comment 53.

62. Comment: The term “fresh water” is confusing to the public and ambiguous for operators. The so called “fresh water” (i.e. water fresh to a well pad) comes from a wide range of sources each with different, often undocumented contaminants.

For example, this “fresh water” can be any of the following:

- Produced water from a prior well fracking that is intended to be recycled into a future well; therefore, this water will have chemicals from the previously fracked shale deposits (e.g., salts, heavy metals, organic compounds and radionucleotides) as well as chemicals introduced by the prior tracking company (e.g., acids and preservatives} .
- Surface or ground water impacted by another industry, e.g., mercury in rivers downstream from coal burning power plants
- Surface or ground water where acid deposition has dissolved naturally occurring metals, such as aluminum. (938, 938a)

Response: See response to comment 53.

63. Comment: There is no definition of the term ‘freshwater’ in § 78.1. Although there is a definition of ‘freshwater impoundment’, there is no definition of freshwater. Is water reclaimed from acid mine drainage “fresh water”? § 78.59b(g) states: “Prior to storing mine influenced water in a freshwater impoundment, the operator shall develop a mine influenced water storage plan and submit it to the Department for approval.” This implies directly that the Environmental Quality Board intends that we should allow the term freshwater to include “mine influenced water”. This is certainly not what the public knows as the meaning of “freshwater”. The common sense meaning of “freshwater” is: potable water. What is the standard to which “mine influenced water” must be treated to be considered “freshwater”? What about “mine influenced water” from a mine which has been subject to illegal dumping of produced water from an unconventional gas well? There are numerous anecdotes of such dumping, as well as scientifically based reports of signature chemicals associated with unconventional natural gas production but not associated with mine drainage (e.g. bromides) in “mine influenced water”. Is it the intent of the Environmental Quality Board that we consider such waters “freshwater”? (869a)

Response: See response to comment 53.

64. Comment: Freshwater. The regulations should contain a definition of the term “freshwater,” being that it is a term of art used in several parts of Chapter 78. (852a)

Response: See response to comment 53.

65. Comment: The EQB proposes to add a new definition for “freshwater impoundment” at § 78.1. There is no definition for “freshwater” at § 78.1. We support the inclusion of a new definition for a freshwater impoundment. However, it is important to ensure that any “freshwater impoundment” is allowed to actually store only “uncontaminated freshwater” from the Earth’s surface and “uncontaminated fresh groundwater.” The proposed regulation would allow a freshwater impoundment to hold “surface water,” “groundwater” and “other Department approved substances.”

The term “fresh groundwater” is defined at § 78.1 as:

Water in that portion of the generally recognized hydrologic cycle which occupies the pore spaces and fractures of saturated subsurface materials.

We recommend the definition of “fresh groundwater” be modified to clarify that the water must be uncontaminated and include waters protected under the Safe Drinking Water Act (SDWA) as underground sources of drinking water (USDWs). With respect to the definition of “fresh groundwater,” we recommend the following changes:

Fresh groundwater—Uncontaminated water in that portion of the generally recognized hydrologic cycle which occupies the pore spaces and fractures of saturated subsurface materials and all underground sources of drinking water, as defined in 40 CFR §§ 144.3, 146.4, including all primary and principal aquifers.

We recommend a definition of “fresh surface water” be added as follows:

Fresh surface water—Uncontaminated water in that portion of the generally recognized hydrologic cycle which occupies the surface of the Earth.

A definition for “freshwater” should be added as follows:

Freshwater—fresh surface water or fresh groundwater or both.

It is not clear what “other Department approved sources” might be allowed to be stored in the freshwater impoundment.

We recommend that the clause “other Department approved sources” be deleted unless the EQB can provide clarity on what other “sources” it would allow and explain how it would be safe to store these “other approved sources” with freshwater without contaminating the freshwater. The EQB should provide the name, composition, concentration, and maximum volume of each “other approved source” that would be allowed. The EQB should provide information on the toxicity, biodegradability, and bioaccumulation potential of each “source.” All “sources” that do not meet the definition of “freshwater” (recommended above), that the PADEP currently allows to be stored in open impoundments, should be included in this inventory.

The inclusion of “synthetic liner materials” in the definition of freshwater impoundment is an indication that the material planned for storage in the impoundment could pose a contamination hazard to surface or groundwater if released. Impoundments intended to hold only freshwater that poses no threat to human health are often cost-effectively lined with materials such as clay (bentonite) liners.

The proposed definition for freshwater impoundment states that a freshwater impoundment is a facility that is “not regulated under § 105.3 (relating to scope).” It is unclear what is intended by this clause. Chapter 105.3(a)(2) includes in its scope:

Dams used for the storage of water not located on a watercourse and which have no contributory drainage where the greatest depth of water measured at upstream toe of the dam at maximum storage elevation exceeds 15 feet and the impounding capacity at maximum storage elevation exceeds 50 acre-feet.

This definition would include freshwater impoundments for Oil and Gas Operations that meet the depth and size criteria. Because there is no size limit proposed, there could be freshwater impoundments that exceed the 15 feet and 50 acre-feet threshold. We recommend these freshwater impoundments meet the Chapter 105 requirements or freshwater impoundments be limited to a size below this threshold.

We recommend the definition for “freshwater impoundment” be revised to read:

Freshwater impoundment—A facility that:

- (i) Meets the Chapter 105 requirements if regulated under § 105.3 (relating to scope).
- (ii) Is a natural topographic depression, manmade excavation or diked area formed primarily of earthen materials and lined with synthetic materials.
- (iii) Designed to hold freshwater.
- (iv) Constructed for the purpose of servicing multiple well sites. (1143)

Response: The Department has revised the definition to be “well development impoundments” instead of “freshwater impoundments”. Impoundments that are regulated under § 105.3 are not included in the definition of well development impoundment and must be constructed in accordance to the Chapter 105 requirements. See response to comment 53 regarding the definition of freshwater.

66. Comment: Our streams and groundwater should be secure from pollution caused by the storage of wastes and fluids associated with oil and gas production operations. The definitions of “pit” and “freshwater impoundment” raise questions about that objective because they continue to incorporate the concept of “natural topographic depressions” within the definitions. We should not even suggest that Pennsylvania will allow fluids related to oil and gas operations to be managed in “natural depressions.” All facilities used to hold fluids that may contain potential water pollutants should be specifically engineered for the task. (22, 23, 26, 142, 192, 391, 637, 843, 946, 958, 1005)

Response: Natural topographic depressions can safely be used to construct a pit or impoundment.

67. Comment: Freshwater Impoundment - It is suggested that language be added to clarify that this definition does not include secondary containment or impoundments at well sites. Exclude pits, impoundments, tanks restored on a well site that are restored within applicable restoration period for the well site. Exclude pits, impoundments, tanks at a well site. (1057)

Response: The definition addresses the commentator’s concern because it includes a requirement that a centralized impoundment must be constructed for the purpose of servicing multiple well sites.

68. Comment: Freshwater Impoundment. The Board appropriately recognized the purpose and scope of a freshwater impoundment in the oil and gas development process. However, the definition states in subpart (iv) that such an impoundment is “constructed for the purpose of servicing multiple wells,” which creates unnecessary confusion as a freshwater impoundment can be constructed to service either a single well site or multiple well sites. We support deleting this phrase.(1085)

Response: The term is appropriately defined. See response to comment 53.

69. Comment: Freshwater impoundment should be limited to holding only surface water and groundwater that is, in fact, freshwater. Other liquids, such as acid mine drainage or mine influenced

water could become approved and held without adequate safeguards. It should be made clear that no acid mine drainage or other industrial wastewater has been added under this definition. (1098)

Response: See response to comment 53.

70. Comment: Freshwater impoundment – No new regulations targeting the use of freshwater impoundments by the oil and gas industry are necessary or appropriate. The definition and the subsections below should be stricken. (1135, 1153)

Response: The Department has revised the definition to be “well development impoundments” instead of “freshwater impoundments.” The scope and type of use of well development impoundments by the oil and gas industry is significantly different from the scope and type of use by other industries in such a manner that the Department has determined that the proposed regulations are appropriate.

71. Comment: Gathering pipeline—A pipeline that transports oil, liquid hydrocarbons or natural gas from individual wells to an intrastate or interstate transmission pipeline. The definition is too vague. What is an Intrastate Transmission Pipeline? What is an Interstate Transmission Pipeline? Is a pipeline taking gas from several well pads and delivering the gas to a small power plant a gathering line or an intrastate transmission Line? Is a pipeline taking gas from a well or several wells to a local industry a Gathering Line? This is important as different agencies review applications for and inspect construction of Gathering lines and for/of Transmission lines. (108)

Response: The Department has revised the definition in the final-form rulemaking to specify what is meant by the terms ‘intrastate transmission pipeline’ and ‘interstate transmission pipeline’.

72. Comment: To avoid inconsistencies between state and federal laws, we recommend the proposed definition language in Chapter 78. for “Gathering Pipeline” be struck and instead incorporate by reference the definition in 49 CFR 192.3 and the guidance around jurisdiction for gathering lines in 49 CFR 192.8. (1071)

Response: The Department disagrees, the Federal definition referenced by the commentator includes only natural gas or other gas and Chapter 78 applies to the production of oil, liquid hydrocarbons, and gas.

73. Comment: Pipeline infrastructure is listed as a subcategory of Oil and Gas Operations:

- (i) Oil and gas pipelines;
- (ii) Natural gas compressor stations; and
- (iii) Natural gas processing plants or facilities performing equivalent functions;

Recommendation: This subcategorizing is incomplete, misleading and a vague representation of pipelines associated with Oil and Gas Operations.

Although it is perhaps appropriate to include pipeline infrastructure as a subsection of Oil and Gas Operations, Pipeline Infrastructure should be a primary definition in Chapter 78, as was gathering lines. Inclusive and accurate definitions, purpose and function of pipeline infrastructure in oil and gas operations is needed for holistic assessment of cumulative impacts.

Recommendation: Chapter 78 could review its definition of a Gathering Pipeline as a pipeline that transports oil, liquid hydrocarbons or natural gas from individual wells to an intrastate or interstate transmission pipeline to a more inclusive definition as used by US DOT PHMSA: “Gathering pipelines transport gases and liquids from the commodity’s source - like rock formations located far below the drilling site - to a processing facility, refinery or a transmission line. In the past, most gathering lines were built in minimally populated areas, used smaller- diameter pipelines that operated at lower pressures, and appeared to pose a much lower risk than for other types of pipelines.” In Pennsylvania it should be noted that gathering lines in unregulated Class One areas may be sized 20-60” and operating at a 700-1300 psi, equivalent to transmission lines. (118)

Response: The Department has clarified the definition of oil and gas operations by specifying what types of pipelines are included. See response to comment 72. After the revisions both the definition of oil and gas operations and gathering pipelines are appropriate.

74. Comment: Gathering Pipeline – A gathering pipeline should be defined as a pipeline that transports oil, liquid hydrocarbons or natural gas from individual wells to the point of transfer of custody. (411)

Response: The definition is appropriate.

75. Comment: Gathering Pipeline. To the extent that the Board must use the term “gathering pipelines” throughout the Rule, its definition should be replaced and, therefore, made consistent with the PHMSA definition to ensure alignment with the Department with other regulating agencies at the federal and state levels. “Gathering line” is defined by PHMSA in 49 C.F.R. § 192.3 as “a pipeline that transports gas from a current production facility to a transmission line or main.” Pipeline terms get used interchangeably in common conversation, creating confusion and ambiguity. Thus, it is important to clearly and uniformly define the various types of pipelines in the regulations. See comment addressing § 78.68 of the Rule where Department does not have the authority to regulate some issues related to gathering pipelines. (1085, 1071, 1103, 1164, 1174, 1155)

Response: See response to comment 72.

76. Comment: Gathering pipelines – The current scope of Chapter 78 is limited to oil and gas wells. It does not apply to pipelines. See 25 Pa. Code § 78.2. Act 13 does not require the Department to regulate gathering pipelines; Section 3218.5 of Act 13 merely requires owners and operators of gathering lines to comply with certain requirements of Pennsylvania’s One-Call law. Further, the proposed definition of a “gathering” pipeline is at odds and inconsistent with that term as defined under applicable state and federal law: Act 127, PA One Call law and the federal pipeline safety laws and regulations. Pipeline activities that create any earth disturbance or require stream crossings, for this industry and all others, are sufficiently regulated in accordance with 25 Pa. Code Chapters 102 and 105. There is no need for the Department to create a new term that will create confusion and impose additional burdens on oil and gas operators that are unique to this industry and unjustified by any clear additional environmental benefit. The Department has no authority to regulate the safety of gathering lines, which is exercised exclusively by other state (PUC) and federal agencies (primarily PHMSA). The proposed definition is inconsistent with the definitions in Act 127, the federal pipeline safety laws and regulations, the PA One Call law and Act 13. Delete this definition and section 78.68, and remove all references to pipelines throughout Chapter 78. (1153)

Response: See response to comment 72 regarding the definition of gathering pipeline. The regulations regarding pipelines in Chapter 78a are appropriate due to the scope and nature of oil and gas pipeline construction that is occurring in Pennsylvania.

77. Comment: Gathering pipelines may also take natural gas to processing facilities. The starting point of gathering lines should also be specified as well as their termination. It should be clear where a production line ends and a gathering line begins. (1098)

Response: The term is clearly defined and includes the starting and ending points for gathering pipelines. Gathering lines begin at each individual well and end at a transmission pipeline.

78. Comment: Gathering pipeline – Since the federal government and the Pennsylvania Public Utility Commission have jurisdiction over pipelines, we ask EQB to ensure this definition does not conflict with any definitions from those regulatory agencies. (1099)

Response: See response to comment 72.

79. Comment: Gathering pipeline. To avoid confusion and conflict, the commentator suggests that the regulation should use the Federal definition for gathering pipeline contained in 49 CFR, Part 192, which is consistent with how the term is defined in Act 13, Section 3218.5. Commentator also suggests the following amendatory language: “Gathering Pipelines - A pipeline that transports gas from a current production facility to a transmission line or main.” (1137, 1147)

Response: See response to comment 72.

80. Comment: Gathering Pipeline - As an advocacy organization, C.O.G.E.N.T. advocates on many unconventional shale gas issues in addition to environmental protection performance standards, one being pipeline safety. Thus, we are well familiar with and aware of many issues related to gathering lines. The very first draft of this rulemaking [1/22/2013] defined Gathering Pipelines – A pipeline that transports oil, liquid hydrocarbons or natural gas from individual wells to an intrastate or interstate transmission pipeline. The term includes pumps, headers, separators, emulsion treaters, tanks, regulators, compressors, dehydrators, valves and associated equipment. Subsequent to that draft, industry comments provided that by the 2nd draft, the definition substantially changed. Gathering Pipeline – A pipeline that transports oil, liquid hydrocarbons or natural gas from individual wells to an intrastate or interstate transmission pipeline. This is the same definition that is in the rulemaking that we are now commenting on.

At the Tunkhannock hearing, it was noted by the industry group that the gathering pipeline definition is not consistent with the DOT definition. We are well aware of that fact. We also are well aware that the DOT PHMSA – CFR definition is not a definition created by the regulator, but rather, it is the 1st edition, issued April 2000 of American Petroleum Institute Recommended Practice 80 which has been incorporated in total by reference. However, some limitations to the RP are defined in CFR Title 49 § 192.8. Now, as a pipeline safety advocate, I can tell you there are important issues related to incorporating recommended practices into any regulation. First, there is the issue of transparency. It is very difficult for the average citizen to even know what a recommended practice is, let alone know where to find it and whether they are reading the most current version. Secondly, they are recommended practices, not standards, so there is wiggle room in them. There is no reason to conform to a DOT definition or RP80 for that matter as we are not dealing with pipeline safety regulations here, with the exception of 78.68(h) which pertains to corrosion control as adopted in Act 13 of 2012. All other provisions deal with environmental issues related to soil, water protections, and HDD. The spirit of regulating gathering line pipeline safety has not presently designated DEP with that authority. If you were to ask any pipeline safety advocate and even some in industry, they would tell you that RP80 is convoluted and ambiguous. Thirdly, we

are very concerned that by adopting/referencing any API RP into this or any other rulemaking that we are treading on dangerous ground in setting such a precedent. Any pipeline safety advocate can aptly advise of the problems encountered when regulations refer to a recommended practice rather than explicitly state the regulation in full detail. Therefore, we strongly recommend that this definition is not revised to comply with API's RP80 or the Department of Transportation definition, but rather stands as is written. (660a)

Response: The Department acknowledges the comment.

81. Comment: Gathering pipelines – This definition of a “gathering” pipeline is at odds and inconsistent with that term as defined under applicable state and federal law. Pipeline activities that create any earth disturbance or require stream crossings, for this industry and all others, are sufficiently regulated in accordance with 25 Pa. Code Chapter 102 and 105. There is no need for the Department to create a new term that will create confusion and impose burdens on oil and gas operators that are unique to this industry and unjustified by any clear environmental benefit. In addition, the Department has no authority to regulate the safety of gathering lines, which is exercised exclusively by other state and federal agencies. Remove the term throughout the rule. These new sections should all be stricken from any rule that applies to conventional operations. (1135)

Response: See response to comment 72 regarding the definition of gathering pipeline. The rulemaking provisions regarding pipelines are appropriate due to the scope and nature of oil and gas pipeline construction that is occurring in Pennsylvania.

82. Comment: Inactive well – The regulations at § 78.1 do not include a proposed definition for “inactive well status.” We recommend that the definition used in Texas Administrative Code § 3.15(a)(6) be used to clarify what constitutes an inactive well:

Inactive well – An unplugged well that has been spudded or has been equipped with cemented casing and that has had no reported production, disposal, injection, or other permitted activity for a period of greater than 12 months. (1143)

Response: The Department has added a definition for the term inactive well to the final-form rulemaking which is consistent with 2012 Oil and Gas Act requirements.

83. Comment: Leak Detection System: is undefined in both the current and proposed regulations. Given the importance of these regulations in protecting the waters of the Commonwealth, we believe it should be defined. (1062, 1133)

Response: The Department disagrees that it is necessary to define this term. The Department will provide guidance on how to construct a leak detection system in permit documents related to the centralized tank storage permit proposed in §§ 78.57a and 78a.57a.

84. Comment: Mine influenced water - Mine influenced water does not always have to be a pollutant or a threat of pollution to waters of the Commonwealth. An example is a limestone mine pool that contains water that meets or exceeds drinking water standards. (411)

Response: The Department acknowledges the comment.

85. Comment: Mine influenced water - It is suggested that the second sentence be deleted. The first sentence captures any relevant discharges to surface waters from mining activities. The term “mine influenced water” should not also include the entire surface water body into which those discharges

occur, as the second sentence implies. (124a)

Response: The definition is appropriate.

86. Comment: Mine influenced water (MIW) – We recommend the definition be adopted at a minimum as it is written. MIW is a new concept into water sources used for hydraulic fracturing. The Department needs to be as detailed as possible with this definition and involved in the implementation of MIW usage. Creating a good definition as is indicated here will flow forward into good and reasonable regulation and compliance. (660a)

Response: The Department acknowledges the comment.

87. Comment: Mine influenced water – “...the term may also include surface waters that have been impaired by pollutional mine drainage as determined by the Department”. It is suggested that this sentence is deleted since the language is redundant of the first clause which already includes surface discharges. (1057)

Response: The language is appropriate to describe all potential sources of mine influenced water.

88. Comment: Mine influenced water - The proposed definition appears to include all waters impaired by mine drainage. Given this breadth, the definition would include many surface waters throughout the Commonwealth, including sections of major rivers, such as the Allegheny, Monongahela, Youghiogheny and West Branch of the Susquehanna, some of which are widely used for public water supplies. The definition seems overly broad. Storage and use of such a broad universe of waters should not be subject to the special approval requirements of section 78.59b(g). To allow for the beneficial reuse of waters impacted by acid mine drainage, we recommend narrowing the definition to state: “Water contained in a mine pool or a surface discharge of water caused by mining activities that pollutes, or may create a threat of pollution to, waters of the Commonwealth.”(1085)

Response: See response to comment 87.

89. Comment: Mine influenced water: The second sentence of this definition states, “The term may also include surface waters that have been impaired by pollution mine drainage as determined by the Department.” This sentence is not regulatory because it does not establish a binding norm. It is unclear under what circumstances this sentence would apply, what criteria the Department will use to determine impairments, and how the regulated community is advised that surface waters have been impaired by pollutional mine drainage. We recommend that the sentence either be amended or deleted. (1099)

Response: The Department must review and approve water sources based on a variety of factors including the quality of the water and the risks of storage of the water.

90. Comment: Mine influenced water - This definition is too broad and could potentially include a majority of the surface waters in the coal fields of the Commonwealth. “Mine influenced water” does not necessarily pose a threat to the waters of the state. In this definition, the determination of “impaired” is not linked to the requirements for impairment designation in Section 303(d) of the Clean Water Act, 33 U.S.C. § 1333(d). Given the breadth of the DEP’s list of waters impaired by mine drainage this definition would include many surface waters throughout the Commonwealth, including sections of the major rivers such as Allegheny, Monongahela, Youghiogheny and Susquehanna, some of which are widely used for public water supplies. This definition is overly

broad. Storage and use of such a vaguely defined and broad inventory of waters, which are routinely used for numerous other purposes by municipalities and industries beyond the oil and gas industry, should not be subject to the special approval requirements of section 78.59b(g). The second sentence of this proposed definition should be deleted. (1103, 1135, 1137, 1147, 1153, 1174)

Response: See response to comment 87

91. Comment: Mine influenced water should not include waters influenced by oil and gas operations. It should be limited to what is commonly considered mine as for ore, coal, etc. (1098)

Response: See response to comment 87.

92. Comment: Natural Gas Processing Plants: this term is not defined so we are seeking clarification. Does this term include natural gas fractionation (“cracker” plants) and liquefied natural gas (LNG) liquefaction and purification facilities (LNG trains)? These large scale facilities are either being built, proposed or likely to be built in the Commonwealth. Is the term “natural gas processing plant” meant to be used broadly to include these kinds of facilities or is it meant to be narrower in scope? (1062, 1133)

Response: The term is intended to be narrower in scope than what is suggested in the comment. The facilities included in oil and gas operations are those directly connected to the well site or immediately adjacent, and not remote facilities such as natural gas fractionation and liquefied natural gas liquefaction and purification facilities.

93. Comment: The definition of “oil and gas operations” has been expanded from the definition that is used in Chapter 33 of the act. Subpart 5 is not part of the statutory definition and is not needed. (415, 1164)

Response: The definition of oil and gas operations provides needed clarity for implementation of the act and for coordination with other applicable regulatory requirements. Subpart 5 is necessary for coordination of this Chapter with the requirements in Chapter 102, which are applicable to these activities.

94. Comment: Oil and Gas Operations – A comment has been submitted that there are not earth disturbance activities associated with oil and gas exploration, production, processing or treatment operations or transmission facilities. Due to the fact that when an incident occurs, such as at the YARASAVAGE site, during hydraulic fracturing, earth disturbance did in fact occur as the operator quickly and out of necessity needed to construct containment areas to attempt to control the flow of over 200,000 gallons of fluids. Therefore, we recommend that this definition be adopted as written at a minimum. (660a)

Response: The Department acknowledges the comment.

95. Comment: Oil and Gas Operations – The terms “oil and gas activities” and “oil and gas operations” are used throughout the draft interchangeably. It is suggested to use one term/phrase throughout the regulation to remain consistent. (952)

Response: The Department agrees and has removed all references to the term “oil and gas activities”.

96. The term of Oil and Gas Operations should be used consistently throughout the regulations rather

than oil and gas activities; to be sure all the activities included in the definition for operations are covered. (1089, 1229)

Response: See response to comment 95.

97. Comment: Oil and Gas Operations – It is noted that this definition differs slightly from the same definition in the Oil and Gas Act. It is suggested that the definition be kept consistent with the statutory term rather than create confusion on what that term means when it is used by the Department. (1057)

Response: See response to comment 93.

98. Comment: Oil and Gas Operations - The term includes the following: (1) well location assessment, seismic operations, well site preparation, construction, drilling, hydraulic fracturing, completion, production, operation, alteration, plugging and site restoration associated with an oil or gas well:

The Department should clarify which activities the Department considers as part of “well location assessment.” In addition, while this definition is provided, the similar phrase “oil and gas activities” is also used in numerous sections creating confusion as to whether different meanings are intended. Clarify the use of the phrases “oil and gas operations” and “oil and gas activities.” (1071)

Response: The Department has deleted the term “well location assessment” from the definition which addresses the commentator’s concerns. See response to comment 95.

99. Comment: Oil and gas operations, as listed, should be referenced in such definitions as previously cited burrow pits. (1098)

Response: See response to comment 95.

100. Comment: Oil and Gas Operations: This definition deviates from the same definition found in Section 3301 of Act 13. What is the reason for the differences? We also note that the term “oil and gas activities” is used throughout the regulation. Do these two terms mean the same thing? If so, we recommend that the defined term be used consistently throughout the regulation. If not, we recommend that “oil and gas activities” also be defined. (1099)

Response: See responses to comments 93 and 95.

101. Comment: Although the definition of “Oil and Gas Operations” is provided, the proposed regulations also use the phrase “oil and gas activities” in numerous subsections. This creates confusion as to whether different meanings are intended. Commentator requests that the Department pay particular attention to the commentator’s specific notes and suggested amendatory language in this comment letter regarding the Department’s use of the phrases “oil and gas operations” and “oil and gas activities” throughout its Proposal. Also, this definition does not match the definition used in Act 13, Section 3301. Subpart (5) is not part of the statutory definition and, in view of 78.53 below, may not be needed in the definition. (1103, 1137, 1174)

Response: See response to comment 95.

102. Comment: Oil and Gas Operations – This proposed definition of oil and gas operations significantly expands the current scope of Chapter 78. It proposes to regulate seismic operations, water withdrawals, and pipelines, among other activities that are currently beyond the scope of Chapter 78.

See §78.2. Act 13 does not require the Department to expand the scope of Chapter 78. The Act 13 definition of “Oil and Gas Operations” appears in Chapter 33 (section 3301), which is the chapter governing local ordinances relating to the oil and gas industry. There is no such definition in Chapter 32, which establishes technical standards for drilling, altering, operating, and plugging oil and gas wells. The General Assembly thus provided a definition of “oil and gas operations” to be used for determining “where” drilling may occur (Chapter 33) but not for regulating “how” drilling will occur (Chapter 32). The Pennsylvania Supreme Court’s decisions in *Range Resources v. Salem Township*, 964 A. 2d 869 (Pa. 2009) and *Huntley & Huntley v. Borough of Oakmont*, 964 A. 2d 855 (Pa. 2009) confirm and uphold this distinction.

There is no reason, and DEP has not suggested any, that these regulations should enlarge the current scope of Chapter 78. In addition, DEP has used the term “oil and gas activities” throughout Chapter 78, which raises questions about the significance of the varied usages. The key to regulatory success is in its consistency and clarity, which is yet to be attained here. Delete this proposed definition. (1153)

Response: See responses to comments 93 and 95.

- 103.** Comment: Oil and Gas Operations – Commentator objects to the effort to expand the scope of Chapter 78 Subchapter C to activities and operations other than the operation and plugging of oil and gas wells. This definition should be stricken and the scope Section 78.2 below should be retained unless otherwise provided in a new subchapter for unconventional operations. (1135)

Response: See response to comment 93.

- 104.** Comment: Occupied Dwelling: This term is used in § 78.59c(c)(4) on centralized impoundments and is a critical element in determining the required setback location for construction of an impoundment. As we explain further in our comments on this section below, providing a definition in § 78.1 would provide needed clarification in understanding potential impacts to NPS resources. (1062, 1133)

Response: See response to comment 34. The term “occupied dwelling” is no longer used in the regulations.

- 105.** Comment: The regulation should include “Pipeline and Pipeline Infrastructure” in the section: Definitions.

- 1) Pipeline categories, definitions and prescriptive regulatory language should be reviewed
- 2) Review Chapter 78 Definitions for accuracy and inadequacies (118)

Response: The Department acknowledges the comment.

- 106.** Comment: Pit – The EQB proposes to add a new definition for “pit” that would allow the storage and ultimate burial of drilling mud and drill cuttings at the well site. We oppose the use of pits for long-term storage and the burial of solid waste and other substances at well sites. We also oppose the issuance of waivers to operators for the burial of waste onsite using any “alternate methods” other than those in regulation. Pits can leak and fail, and cause a substantially larger surface impact than temporary tank use. It is inefficient from a logistics and energy use standpoint to construct a reserve pit for the temporary storage of drilling muds and cuttings, and then remove this pit later.

In 2013, the State Review of Oil and Natural Gas Environmental Regulations (STRONGER) Board determined that Pennsylvania’s continued use of production pits poses significant environmental

problems. Finding III.4 of the STRONGER Report concluded: “ The review team finds that the PADEP’s experience with pits has shown that, although their use is decreasing, many liner failures still occur with pits and other types of waste are being dumped into pits.” (STRONGER, *Pennsylvania Follow-up State Review*, Finding III.4 (Sept. 2013), <http://strongerinc.org/sites/all/themes/stronger02/downloads/Final%20Report%20of%20Pennsylvania%20State%20Review%20Approved%20for%20Publication.pdf>.)

STRONGER recommended that the PADEP “consider adopting regulations or incentives for alternatives to pits used for unconventional wells in order to prevent the threat of pollution to the waters of the Commonwealth.” (Id., Recommendation III.4.)

Our 2014 review of the PADEP pit oversight and inspection practices found that dozens of well files at the PADEP regional offices did not include evidence that the PADEP inspectors are present at the time of pit burial to ensure that the PADEP’s criteria are met. The PADEP confirmed that it does not require operators to perform chemical analysis of waste prior to burial in every instance, nor does the agency keep track of the location or number of buried waste pits. We documented our concerns in an August 12, 2013 letter to the Susquehanna River Basin Commission (SRBC) requesting that they consider an investigation to determine whether Pennsylvania is complying with its obligations as a member jurisdiction to prohibit, control, and abate pollution of the Basin, followed by a January 15, 2014 on the same topic.

Drilling muds and cuttings should not be buried on site due to the risk of surface water and groundwater contamination from leaks that may occur as the pit ages and liners fail over time. Drilling muds and cuttings, gels, cement, and hydraulic fracturing flowback can contain Naturally Occurring Radioactive Material (NORM), Technologically Enhanced Naturally Occurring Radioactive Material (TENORM), mercury, other heavy metals and other harmful chemical additives.

A 2011 Groundwater Protection Council Report found that the leading cause of historical groundwater contamination in Ohio from oil and gas operations was from pit leakage.

During the 25 year study period (1983-2007), Ohio documented 185 groundwater contamination incidents caused by historic or regulated oilfield activities. Of those, 144 groundwater contamination incidents were caused by regulated activities, and 41 incidents resulted from orphaned well leakage. Seventy-six of the incidents caused by regulated activities (52.7 percent) occurred during the first five years of the study (1983-1987). When viewed in five year increments, the number of incidents caused by regulated activities declined significantly (90.1 percent) during the study period. Seventy-eight percent (113) of all documented regulated activity incidents were caused by drilling or production phase activities. Improper construction or maintenance of reserve pits was the primary source of groundwater contamination, which accounted for 43.8 percent of all regulated activity incidents (63) in Ohio.

During the 16 year study period (1993-2008), Texas documented 211 groundwater contamination incidents. More than 35 percent of these incidents (75) resulted from waste management and disposal activities ... [emphasis added]. (Groundwater Protection Council, *Groundwater Investigations, and their Role in Advancing Regulatory Reforms. A Two-State Review: Ohio and Texas* (2011)).

It is substantially more efficient to use a closed-loop tank system to collect the drill muds and cuttings and to transport the collected muds and cuttings directly to a waste handling facility permitted to handle contaminated waste.

In 2008, New Mexico instituted a “pit rule,” that banned reserve pits. While some claimed the pit rule would decrease drilling rates, the number of rigs operating in New Mexico increased slightly after the rule was enacted in June 2008. As drilling rig counts dropped across the country in 2009, New Mexico’s rig count only dropped 55% when Texas (who allows pits) dropped more than 62%. (M. Soraghan, N.M. Is Loosening Drilling Rules, Bucking Trends and Riling Ranchers, *Energy Wire*, Nov. 15, 2012.) By 2011, as the economy started to rebound, both Texas and New Mexico rebounded to pre-2008 drilling rig counts. Yet, despite reports of costs savings from individual operators in New Mexico using closed-loop drilling systems, industry worked to overturn the pit rule in 2013. A permit is now required in New Mexico for a pit, and is subject to regulatory requirements at Title 19, Chapter 15, Part 17.

<u>Cost comparison items</u>	<u>Low</u>	<u>High</u>
Pad construction, liner	\$5,000	\$12,000
Water delivery, cost	\$5,000	\$5,000
Trucking recycled fluid	\$4,000	\$4,000
Solids control equipment rental	\$100,000	\$127,000
Surface handling equipment rental	\$18,000	\$26,000
Mud costs	\$40,000	\$40,000
Re-use solids costs	\$14,000	
Haul and dispose solids		\$50,000
Pad closure, restoration	\$3,000	\$3,000
<u>Total Cost</u>	<u>\$189,000</u>	<u>\$267,000</u>

In 2006, Cimarex Energy Co. and M-I SWACO (a drilling contractor) published a paper documenting the equipment required and the cost savings associated with drilling without pits in New Mexico. (D. Rogers, et al., New Innovative Process Allows Drilling without Pits in New Mexico (2006) (Annual International Petroleum Environmental Conference) The authors concluded that, while additional equipment is needed on the surface to implement closed-loop drilling operations, cost savings can be achieved by eliminating the pit construction and burial costs.

Pitless drilling also provides the added advantage of maintaining low levels of low-gravity solids that can decrease drilling time and reduce non-productive time associated with stuck pipe and loss of circulation and by reducing long-term liability from onsite waste burial and potential pit leakage.

When the pit is eliminated, the costs associated with the pit are eliminated. Mud and mud additive costs and water usage costs are decreased, since fluid usage volume is reduced. However, equipment rental costs are increased for surface handling facilities.

The 2006, Cimarex and M-I SWACO paper showed a cost comparison of drilling with a pit that ranged from \$210,500 to \$447,000 for wells in New Mexico drilled in 2006, as shown in the table to the right.

When the pit was eliminated, costs dropped to \$189,000 to \$267,000 for a cost savings of \$21,500 to \$180,000 per well, as shown in the table here.

The authors concluded: “the results of this analysis indicate that eliminating the pit in New Mexico is cost-effective and does not add significant cost to the overall operation. When solids cannot be buried on-site and must be hauled to commercial disposal, eliminating the pit actually saves money.” (*Id.* at 5).

<u>Cost comparison items</u>	<u>Low</u>	<u>High</u>
Reserve pit construction, liner	\$31,000	\$54,000
Water delivery, transport and cost	\$13,500	\$18,000
Water haul off, disposal	\$42,000	\$47,000
Mud costs	\$74,000	\$74,000
Pit closure activities	\$50,000	\$104,000
Extra rig time, NPT		\$150,000
<u>Total Cost</u>	<u>\$210,500</u>	<u>\$447,000</u>

Furthermore, the use of closed-loop, “pit-less” drilling systems is endorsed by the U.S. Bureau of Land Management (BLM) in its 2006 Gold Book of best management practices for drilling on federal lands because such systems prevent soil and water contamination and conserves water.¹² Those systems also were determined to be environmentally preferable in 2011.

Use of enclosed tanks and closed loop or semi-closed loop systems is environmentally preferable to the use of open pits and is to be encouraged by the BLM. Open production pits are to be strongly discouraged. Closed tanks and systems minimize waste, entry by wildlife, fugitive emissions that affect air quality, and reduce the risk of soil and groundwater contamination. In addition, the use of tanks instead of pits expedites the ability to complete interim reclamation. Costs may be reduced with the use of tanks, particularly when the pit requires solidification or netting [emphasis added]. (USDOJ, BLM, Management of Oil and Gas Exploration and Production Pits (Nov. 15, 2011).

Earthworks examined alternatives to pits and documented five cases where operators reported cost savings by using pit-less drilling options. (Earthworks, Alternatives to Pits, http://www.earthworksaction.org/issues/detail/alternatives_to_pits#.UvLOWsKYapo (last visited Mar. 1, 2014).

Other drilling contractors report that pit-less drilling results in less surface damage:

If the surface land is used for growing row crops or other crops for which level ground is important, subsequent subsidence of a reclaimed pit may be a burden to the surface owner. Moreover, many farmers claim to experience a long-term loss of production from the land on which a pit was constructed. (Lance Astrella, Closed Loop Drilling Systems Can Eliminate Reserve Pit Costs, Oil & Gas Journal (May 27, 1996).

The Colorado Division of Wildlife’s list of actions to minimize adverse impacts to wildlife resources includes maximizing the state-of-the-art drilling technology including use of closed-loop “pit-less” drilling technology. (Colo. Div. of Wildlife, Actions to Minimize Adverse Impacts to Wildlife Resources (Oct. 27, 2008)).

We recommend the definition for “pit” be revised to read:

Pit—A facility, prohibited under §§ 78.56, 78.61, and 78.62, that is:

- (i) A natural topographic depression, manmade excavation or diked area formed primarily of earthen materials, which services a single well site and is
- (ii) Designed to hold drill cuttings or contaminated fluids, semifluids or solids associated with oil and gas activities, including, but not limited to, wastewater, flowback, mine influenced water, and drilling mud, emissions from or the escape of which will result in air pollution, will pose a risk of water or land pollution, and may or endanger persons or property. (1143)

Response: The Department disagrees that the changes proposed to the definition are needed. The Department has revised §§ 78a.56, 78a.61 and 78a.62 to disallow the use of pits for temporary containment for an unconventional well and to require a permit for the disposal of contaminated drill cuttings or drill cuttings from below the surface casing seat on an unconventional well site.

107. Comment: Pit – Small conventional operators utilize small pits on short temporary basis that should not be subject to the numerous obligations and standards created in the proposed revisions, which mention pits more than 50 times. The costs of such obligations significantly outweigh any environmental benefit. Exemptions should be created throughout this rulemaking for pits with a footprint less than 1/5 of an acre. See relevant sections below for such exemptions. (1135, 1153)

Response: Pits containing regulated substances must be constructed properly to ensure protection of public health and safety and the environment.

108. Comment: Pit - It is suggested that language be added to clarify that this definition does not include secondary containment or impoundments at well sites. (124a, 1057)

Response: The Department disagrees that the changes suggested by the commentators are needed. The regulations adequately address and differentiate between pits, impoundments, and secondary containment.

109. Comment: Pit –It is our recommendation to remove the term “Oil and Gas Activities” from the definition for “Pit” as this term is not defined in Chapter 78 nor its enabling statute. We suggest removing the term “fresh water” from the definition. We recommend rewriting the definition to state: “A natural topographic depression, manmade excavation or diked area formed primarily of earthen materials designed to hold fluids, semi-fluids or solids associated with activities at oil and gas well sites, including, but not limited to, wastewater, flowback, mine influenced water, drilling mud and drill cuttings, on the well site.” (1085)

Response: See response to comment 95 regarding the use of the term “oil and gas activities”. The Department has revised the definition to state that a pit is a natural topographic depression, manmade excavation or diked area formed primarily of earthen materials designed to hold fluids, semifluids, or solids.

110. Comment: Pit –To avoid any confusion, we propose that the Department use the phrase “activities at oil and gas well sites” in lieu of the Chapter 102 defined term “oil and gas activities” in this definition. Suggested Language: Pit-A natural topographic depression, manmade excavation or diked area formed primarily of earthen materials designed to hold fluids, semi-fluids or solids associated with activities at oil and gas well sites, including but not limited to fresh water, wastewater, flowback, mine influenced water, drilling mud and drill cuttings, that services a single well site. (1137, 1174)

Response: See response to comment 95 regarding the use of the term “oil and gas activities”.

111. Comment: Pre-wetting needs clarification as to the use of the brine for antiskid purposes. In what circumstances would it be used –around sharp turns, only under certain weather conditions, or other condition? This could result in an unlimited “beneficial” use of a solution that puts the environment and our water resources at risk. (1098)

Response: The requirements for pre-wetting are described in §78.70a.

112. Comment: Process or processing: This definition is a cross-reference to the definition found in Section 103 of the SWMA (35 P.S. § 6018.103). Why is this definition appropriate for the regulation of the oil and gas industry? (1099)

Response: The proposed regulation allows for temporary onsite processing in §§ 78.58 and 78a.58.

113. Comment: Process or processing: This definition causes confusion because the Solid Waste Management Act generally requires a permit for residual waste processing activities. The term “processing” can also refer to natural gas processing which is not considered in this definition. (1103)

Response: The Department has made clarifications to the instances in the regulation where the term processing is used and does not refer to residual waste processing.

114. Comment: Process or Processing must go beyond the meaning provided in the Solid Waste Management Act given the presence of heavy metals, biocides, radioactive substances, and other known and unknown toxins. In spite of existing regulatory exceptions, substances processed should be considered and treated as hazardous. (1098)

Response: The definition provided in the Solid Waste Management Act is appropriate for oil and gas wastes.

115. Comment: Process or processing – The term “processing” cannot have this meaning in a rule that considers both residual waste processing and natural gas processing. See the definition of “Oil and Gas Operations” above. EQB should revise the definition to restrict it to the term as used in Section 78.58. (1135)

Response: See response to comment 113.

116. Comment: Process or processing – DEP should remove the definition and use the term ‘processing’ in the ordinary, plain meaning sense of the word, or revise the definition above to restrict it to the term as used in Section 78.58. (1153)

Response: See response to comment 113.

117. Comment: PPC plan should be defined in accordance with a statutory or regulatory reference. Commentator is concerned about the unnecessary burden created for small operators who conduct operations at multiple well sites in close proximity where the PPC plan would be the same for all such operations. If the Department’s concern is that PPC plans tend to become outdated with changing personnel or methods, that concern can be addressed by requiring PPC plans to be updated with any change in the relevant information. See Section 78.55 for suggested edits. (1135)

Response: Subsection 78.55(e) requires the well operator to revise the PPC plan prior to implementing changes in the PPC plan.

118. Comment: PPC plan – Change the definition to read: “A written preparedness, prevention and contingency plan prepared in accordance with 25 Pa. Code 91.34, 102.5(l), or developed in conformance with the *Guidelines for the Development and Implementation of Environmental*

Emergency Response Plans, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 400-2200-001, as amended and updated.” (1153)

Response: The intent of the definition is to define the acronym. The requirements for a PPC plan are described in § 78.55 and 78a.55.

119. Comment – Public water supply – We recommend that this definition be revised as follows:
Public water supply—[A water system that is subject to the Pennsylvania Safe Drinking Water Act (35 P.S. §§ 721.1—721.17).] A source of water used by a water purveyor or for a public water system, as defined in 35 P.S. § 721.3. (1143)

Response: The Department has revised the definition to be “a source of water used by a water purveyor”.

120. Comment: Regional groundwater table – The seasonal high water table should be included as part of the regional groundwater table definition. In Pennsylvania, the unconfined aquifer can fluctuate significantly and this fluctuation is often represented by the seasonal high water table. The seasonal high water table is hydrologically linked to nearby wetlands, springs, and stream systems. Due to the seasonal high water table connectivity to both surface and groundwater, and potential for contamination, Chapter 73 precludes the use of on-site wastewater systems in areas where the seasonal high water table is within 20 inches of the ground surface.

The proposed regulations should recognize the seasonal high water table as a component of the regional groundwater table. Therefore, we recommend the definition for “regional groundwater table” be revised to read:

Regional groundwater table—

- (i) The fluctuating upper water level surface of an unconfined or confined aquifer where the hydrostatic pressure is equal to the ambient atmospheric pressure.
- (ii) The term does not include the perched water table. (1143)

Response: The definitions were written specifically for Chapters 78 and 78a and are appropriate for their use in those Chapters.

121. Comment: There are two definitions which are either incorrect or unclear as proposed.

Regional groundwater table – the definition proposed is incorrect in almost every manner. The proposed definition states that the regional water table is “the fluctuating upper surface” of the groundwater zone, but it then goes on to state that the term does NOT include “the seasonal high water table.”

The only reason there is such a thing as a seasonal high water table at any location is because the water table elevation fluctuates. Accordingly, the definition is a self-contradictory misrepresentation of the very concept of a water table.

It is incorrect to define the potentiometric elevation of groundwater in a confined aquifer as a water table condition. By definition a water table aquifer is an unconfined aquifer (American Geological Institute, 1998 & 2006). The proposed incorrect definition could have resulted from the AGI definition of the term “water table” which states that the water table might be present and measurable within a confining bed, but the cross-referenced definition of the included term “confining bed” does not mean, a priori a confined aquifer.

Regional groundwater table – There is no water table in the context of a confined aquifer. The definition is confusing and could result in misinterpretation and erroneous conclusions, especially pertaining to shallow drinking water aquifer systems. Commentator proposes an alternative definition below.

a)The proposed definition of the water table is that at the depth of the water table “the hydrostatic pressure is equal to ambient atmospheric pressure.”

That definition is patently incorrect. Hydrostatic pressure is the internal water pressure which results at any depth from the weight of an overlying column of water; i.e., a column of water of some height will result in a unique hydrostatic pressure. It is not physically possible for there to even be a hydrostatic pressure at the upper surface of a column of water. The correct term in this instance is “pore water pressure” (AGI, 1998 & 2006) and not hydrostatic.

This entire definition must be changed for the simple reason that it is wholly contradictory to established definitions and to the common understanding and usage of the term throughout the groundwater sciences and engineering community. Inflection is concerned that an inconsistent definition will result in confusion and misconceptions in the general public regarding the natural condition of water resources which could create ambiguities in any public forum or legal action.

Commentator recommends the following definition as a replacement:

Regional groundwater table – The fluctuating upper water level surface of an unconfined aquifer at which the pore water pressure is at atmospheric pressure. The term does not include the upper surfaces of perched groundwater zones. (954)

Response: Response: See response to comment 120.

122. Comment: Regional Groundwater Table – Subpart (ii) of this proposed definition should read “seasonal high groundwater table,” as opposed to “seasonal high water table,” for the sake of consistency and clarity throughout the Rule. (1085)

Response: The Department agrees and has modified the definition.

123. Comment: Regional ground water table – The definition should be more specific in terms of seasonal, long-term and short-term fluctuations. (1098)

Response: Response: See response to comment 120.

124. Comment: Regulated substance – Because the term regulated substance is used ubiquitously throughout Chapter 78, it would be useful to expand the definition to provide further clarification that regulated substances are hazardous substances and contaminants that require safe handling, storage and disposal methods and equipment. In addition, the current scope of substances covered by the definition is too narrow.

We recommend the definition for “regulated substances” be revised to read:

Regulated substance—Any substance defined as a regulated substance in section 103 of Act 2 (35 P.S. § 6026.103), which includes hazardous substances and contaminants regulated under the Hazardous Sites Cleanup Act, 35 P.S. § 6020.101 et seq.; and pollutants and substances covered by:

The Clean Streams Law, 35 P.S. §§ 691.1 et seq.; the Air Pollution Control Act, 35 P.S. §§ 4001 et seq.; the Solid Waste Management Act, 35 P.S. §§ 6018.101 et seq.; the Infectious and Chemotherapeutic Waste Law, 35 P.S. §§ 6019.1 et seq.; the Storage Tank and Spill Prevention Act, 35 P.S. §§ 6021.101 et seq.; any waste regulated under the Pennsylvania Low-Level Radioactive Waste Disposal Act of 1988, 35 P.S. §§ 7131.101 et seq.; and any toxic substance or contaminant regulated under federal law, including but not limited to pollutants for which a total maximum daily load may be established under the Clean Water Act, 33 U.S.C. §§ 1251 et seq., and chemicals substances and mixtures for which reports must be submitted under section 8(e) of the Toxic Substances Control Act, 15 U.S.C. §§ 2601 et seq. (1143)

Response: See response to comment 1. A cross-reference to the statutory definition is adequate to address the commentator's concerns. The Department does not believe that the additional language will cover any additional substances not already covered by the expansive definition of "regulated substance" in Act 2.

125. Comment: The definition of Regulated Substance in § 78.1 is massively flawed and must be rewritten. The term 'Regulated Substance' has been introduced throughout this rulemaking as a fundamental "strategic" concept. Accordingly, its definition in § 78.1 must be subject to the closest scrutiny, as issues pertaining to this definition will, on adoption of this rulemaking, have a widespread effect throughout 25 PA Code Chapter 78. The issues pertaining to this definition are many and are profoundly serious. The loopholes in the current wording of the definition of "regulated substance" are so severe as to undermine the entire regulatory effect of 25 PA Code Chapter 78 as it concerns the entirety of toxic substance control, contamination, waste disposal, spill reporting and many other issues. While it is understandable that the Environmental Quality Board might see fit to reconcile 25 PA Code Chapter 78 with other parts of PA Code, e.g. those parts of the code implementing Act 2, a cynic could be forgiven for believing that the defects in the definition of "regulated substance" are an intentional effort at a wholesale weakening of Oil & Gas regulation. This must be corrected. Specifically:

Which exact terms from 35 P.S. § 6020.103 are incorporated?

The word 'regulated' does not appear in 35 P.S. § 6020.103! Thus there is considerable doubt as to exactly what is meant by the phrase "Any substance defined as a regulated substance in section 103 of The Pennsylvania Land Recycling and Environmental Remediation Act (Act 2) (35 P.S. § 6020.103)". Which specific terms? 'Contaminant'? 'Hazardous substance'? 'Hazardous waste'? The rulemaking doesn't specify. Surely many of the definitions in 35 P.S. § 6020.103 do not apply. Does the Environmental Quality Board intend for us to infer that under 25 PA Code § 78.1, the concept "Responsible person" is to be interpreted as a "Regulated Substance"? Obviously not. For those offended by this little bit of sarcasm, let it be taken as an indication of just how non-definitive the current wording of the definition of Regulated Substance is.

Does the "Halliburton Loophole" exemption for Oil & Gas from the Superfund Act now carry over to 25 PA Code § 78.1?

There are numerous references in 35 P.S. § 6020.103 to "the Federal Superfund Act". Unfortunately, Oil & Gas has been given an exemption from the Superfund Act — one of many regulatory exemptions contained in the Federal Energy Act of 2005 known colloquially as "the Halliburton Loophole". Because of this exemption it is impossible to know based on the current wording of § 78.1 that anything at all is a Regulated Substance. This introduces into 25 PA Code Chapter 78 a loophole of such massive and serious proportions as to call into question the entire regulatory intent of 25 PA Code Chapter 78. The Environmental Quality Board must eliminate even the hint of an

application of the Halliburton Loophole to 25 PA Code Chapter 78. Presence of these references is completely unacceptable. They must be stricken. Regulated Substances must be fully specified.

What is the actual workaday operator of a well to know about just what substances are regulated?

The word ‘brine’ is a simple word that everyone can understand. Its replacement by ‘Regulated Substance’ is unfortunate. If the definition of Regulated Substance is so opaque that it takes a team of lawyers a week to figure it out, how is an Oil & Gas operator supposed to train its personnel to know what substances are regulated? Not only is the definition of Regulated Substance completely indirect (relying entirely on an “external” specification in 35 P.S. § 6020.103), 35 P.S. § 6020.103 is itself indirect. This provides no actual guidance to working Oil & Gas industry personnel (or DEP inspectors, for that matter) as to what substances are and are not regulated. While it would be possible to remedy this problem by issuance of a Technical Guidance on this matter from DEP, the definition of Regulated Substance as currently worded is so vague that such a Technical Guidance would have the effect of carrying the entire force of PA Code. This is too important a matter to leave to Technical Guidance. The Environmental Quality Board must provide clarity as to which substances are regulated.

The definition of Regulated Substance must explicitly, unambiguously, and without indirection include produced water from unconventional gas wells. Produced water is likely to be hazardous, and can contain an unpredictable mix of chemicals from several sources, including toxic chemicals and biocides injected in the hydraulic fracturing process, radionuclides leached from the Marcellus Shale (which is known to be significantly radioactive), and chemicals resulting from underground reactions among these. This cluster of hazards is unique to Oil & Gas production. 25 PA Code Chapter 78 is unequivocally the correct place to define such material as a Regulated Substance. It should not be delegated to some other rulemaking body. (869a)

Response: The definition and use of the term “regulated substance” was intentionally selected to be very broad and cover all substances that may cause pollution. The Department does not believe that additional language is needed to cover any additional substances not already covered by the expansive definition of “regulated substance” in Act 2. The Department notes that the definition of “regulated substance” in section 103 of Act 2 (35 P.S. § 6026.103) specifically includes any “hazardous substances and contaminants regulated under the act of October 18, 1988 (P.L.756, No.108), known as the Hazardous Sites Cleanup Act.” The commentator raises concerns about exemptions from Federal laws but fails to note that the definition only cross-references state laws that do not contain similar exemptions. Thus, the definition of “regulated substance” in section 103 of Act 2 also specifically includes “substances covered by the act of June 22, 1937 (P.L.1987, No.394), known as The Clean Streams Law.”

126. Comment: Section 78.1, definitions: the “external” definition of regulated substance is a problem. What is the actual workaday operator of a well to know about just what is regulated? The word brine is a simple word that everyone can understand. Its replacement by ‘regulated substance’ is unfortunate. There is no definition of unconventional formation. This is a recipe for trouble. (869)

Response: See responses to comments 5 and 125. “Unconventional formation” is defined in section 3202 of the 2012 Oil and Gas Act as: “A geological shale formation existing below the base of the Elk Sandstone or its geologic equivalent stratigraphic interval where natural gas generally cannot be produced at economic flow rates or in economic volumes except by vertical or horizontal well bores stimulated by hydraulic fracture treatments or by using multilateral well bores or other techniques to expose more of the formation to the well bore.”

127. Comment: Regulated substance — “Any substance defined as a regulated substance in section 103 of The Pennsylvania Land Recycling and Environmental Remediation Act (Act 2) (35 P.S. § 6020.103).” This definition appears throughout the draft regulation. The concern is that referencing the Act 2 definition makes this unnecessarily broad and potentially affecting any substance stored or used. (952, 1164)

Response: The definition and use of the term “regulated substance” was intentionally selected to be very broad and cover all substances that may cause pollution.

128. Comment: Regulated substance-Any substance defined as a regulated substance in section 103 of The Pennsylvania Land Recycling and Environmental Remediation Act (Act 2) (35 P.S. § 6020.103). This definition in Act 2 was developed to assist those conducting cleanup operations at brownfield sites throughout the Commonwealth. The definition, which includes substances “covered by” six other named statutes, is overly broad and fails to provide the necessary guidance for reporting obligations that would be imposed under the proposed Section 78.66(b). At a minimum, the definition must be further clarified by reference to some known list of substances, such as those found in Chapter 250. (1071)

Response: See response to comment 127. A discrete list of substances would not meet the intent of the definition. There are many substances that are considered “regulated substances” for which adequate toxicological data does not exist and therefore do not appear in the tables of remediation standards contained in 25 Pa. Code Chapter 250.

129. Comment: Regulated Substance. This proposed definition refers to the definition in Section 103 of Act 2, which was developed to assist those conducting cleanup operations at brownfield sites throughout the Commonwealth. We are concerned that the definition, which includes substances “covered by” six other named statutes, appears overly broad, and when applied to specific proposed sections, creates ambiguity. To provide the needed guidance on how to apply the Board’s proposed requirements, it is suggested that the definition be replaced, and therefore clarified, with a definition that contains an express list of substances. In addition, the term should be replaced or removed entirely where the intent of the Rule is better served by a different term. Examples could include: Sections 78.55 (Control and disposal planning), 78.56 (Temporary storage), 78.59c (Centralized impoundments), 78.61 (Disposal of drill cuttings), and 78.64a (Containment systems and practices at unconventional well sites). (1085)

Response: See response to comment 128.

130. Comment: Regulated substances must be defined as pollutional substances. This is imperative for adequate preservation and protection. (1098)

Response: See response to comment 127.

131. Comment: Regulated Substance: This term is defined as, “Any substance defined as a regulated substance in section 103 of Act 2 (35 P.S. § 6026.103).” Act 2 is a land recycling program that encourages the voluntary cleanup and reuse of contaminated commercial and industrial sites. Why is this definition appropriate for the regulation of the oil and gas industry? (1099)

Response: See response to comment 127. Use of this term is appropriate to ensure that all substances which may cause pollution are managed and handled in a manner that protects public health and safety and the environment.

132. Comment: The definition of the term “regulated substance” is very broad and its use throughout the proposed regulation is often difficult to apply to the oil and gas industry. The term “regulated substance” was adopted in the context of Act 2 which focuses on characterization and remediation of releases causing impacts to environmental media. The term was not designed to be used in the context of affirmative regulatory obligations. Commentator recommends that revisions be made as suggested throughout the subsections below to address the DEP’s particular intent of the regulatory section in which the term has been proposed. The term may be appropriate in the spill reporting and remediation subsection 78.66, but even there, the scope of the term as defined above creates uncertainty with respect to reporting obligations in particular. Section 78.66(b) creates a two-tiered release reporting system for the oil and gas industry. The oil and gas industry is already subject to the requirements for reporting releases pursuant to 25 Pa. Code § 91.33 that apply to all other regulated entities in Pennsylvania, as well as the numerous federal reporting requirements under CERCLA (e.g. 40 C.F.R. 302), CWA (e.g. 40 C.F.R. 112), and EPCRA (e.g. 40 C.F.R. 355) that provide specified reportable quantity thresholds. In particular, Section 78.66(b)(1) as currently proposed would impose an obligation to report any spill or release of 5 gallons or more of a regulated substance over a 24-hour period that is not completely contained by a containment system. This reporting obligation applies regardless of whether there is any actual or threatened impact to waters of the Commonwealth or any other impact to the environment or to public health or safety. In recognition that EQB is proposing to eliminate the existing “reportable release of brine” definition and provision, MSC recommends that this additional requirement be clarified and limited to reporting brine spills over 5 gallons outside of containment.

Commentator suggests the following amendatory language: “Regulated substance — Any substance defined as a regulated substance in section 103 of Act 2 (35 P.S. § 6020.103) and listed in 25 Pa. Code Chapter 250.” (1137)

Response: There are many substances that are considered “regulated substances” for which adequate toxicological data does not exist and therefore do not appear in the tables of remediation standards contained in 25 Pa. Code Chapter 250.

133. Comment: The definition of the term “regulated substance” is very broad and its use throughout the proposed regulation is often difficult to apply to the oil and gas industry. The term “regulated substance” was adopted in the context of Act 2 which focuses on characterization and remediation of releases causing impacts to environmental media. The term was not designed to be used in the context of affirmative regulatory obligations. Suggested amendatory language: Regulated substance—Any substance defined as a regulated substance in section 103 of Act 2 (35 P.S. § 6020.103) and listed in 25 Pa. Code Chapter 250. (1147)

Response: It is correct that the term was developed as part of the statutory oversight of remedial activities in Pennsylvania. However, it is appropriate for use in the manner it is used in Chapter 78 – generally relating to the storage, handling, and containment of substances that would cause pollution or contamination if released.

134. Comment: Regulated Substance-- The definition of the term ‘regulated substance’ is very broad and its use throughout the proposed regulation is often difficult to apply to the oil and gas industry. The term “regulated substance” was adopted in the context of Act 2 which focuses on characterization and remediation of releases causing impacts to environmental media. The term was not designed to be used in the context of affirmative regulatory obligations. We recommend that revisions be made as suggested throughout the subsections below to address the DEP’s particular intent of the regulatory section in which the term has been proposed.

The term may be appropriate in the spill reporting and remediation subsection 78.66, but even there, the scope of the term as defined above creates uncertainty with respect to reporting obligations in particular. Section 78.66(b) creates a two-tiered release reporting system for the oil and gas industry. The oil and gas industry is already subject to the requirements for reporting releases pursuant to 25 Pa. Code § 91.33 that apply to all other regulated entities in Pennsylvania, as well as the numerous federal reporting requirements under CERCLA (e.g. 40 C.F.R. 302), CWA (e.g. 40 C.F.R. 112), and EPCRA (e.g. 40 C.F.R. 355) that provide specified reportable quantity thresholds.

In particular, Section 78.66(b)(1) as currently proposed would impose an obligation to report any spill or release of 5 gallons or more of a regulated substance over a 24-hour period that is not completely contained by a containment system. This reporting obligation applies regardless of whether there is any actual or threatened impact to waters of the Commonwealth or any other impact to the environment or to public health or safety. In recognition that EQB is proposing to eliminate the existing “reportable release of brine” definition and provision, we recommend that this additional requirement be clarified and limited to reporting brine spills over 5 gallons outside of containment. (1103)

Response: See response to comment 133.

- 135.** Comment: The Department should define “Regulated substances” to make it clear that, throughout the entirety of the Proposed Rulemaking, the definition includes, at a minimum, brines, drill cuttings, drilling muds, oils, stimulation fluids, well treatment and servicing fluid, plugging and drilling fluids as provided in § 78.56(a). (997a)

Response: See response to comment 125.

- 136.** Comment: The EQB has proposed to add to 25 PA Code § 78.1 a definition for the term “regulated substance.” On its face, the definition simply incorporates the definition of that term found in the Pennsylvania Land Recycling and Environmental Remediation Standards Act (“Act 2”). The definition of a “regulated substance” under Act 2 is extremely broad and was developed in the context of describing the framework under Act 2 for characterization and remediation of environmental media at brownfields and other locations. As such, the universe of regulated substances is wide-ranging and designed to cover a sweeping array of conditions that may be found at such locations. Moreover, regulated substances include many naturally occurring substances. Unlike the land recycling program under Act 2, more traditional regulatory programs that impose affirmative obligations generally focus on particular types or categories of materials (such as asbestos, lead, and hazardous wastes) that are more precisely defined than the universe of “regulated substances” under Act 2.

In the context of the proposed changes to 25 PA Code Chapter 78, the EQB has liberally used the term “regulated substance” in many places. In certain instances, the term “regulated substance” is appropriately used such as in the proposed version of 25 PA Code § 78.66(c) (addressing remediation of spills and releases). However, in many other instances, the use of the term does not appear to be warranted and may lead to unintended adverse consequences for both PADEP and the regulated community. For example, as noted above, regulated substances include many naturally occurring substances that would become subject to affirmative regulatory obligations if the proposed regulations are not modified. As a general proposition, the term “regulated substance” should not be used outside of the proposed provisions of 25 PA Code § 78.66(c). More precise terminology is necessary in lieu of use of the term “regulated substance.” In many instances, the proposed regulations can readily be modified by using terminology that is close to what is currently included

in 25 PA Code Chapter 78 or by simply eliminating the term “regulated substance.”

As illustration of the foregoing, we offer three examples. First, the proposed version of 25 PA Code § 78.56 (relating to temporary storage) contains multiple references to “regulated substances.” This term can be modified to read “substances” because in most instances, it is used in the context of describing what results from drilling, altering, completing, recompleting, servicing or plugging of a well. Second, in the proposed version of 25 PA Code § 78.61, the EQB has set forth requirements for handling drill cuttings “that are not contaminated with a regulated substance, including brines, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids or drilling fluids other than tophole water, fresh water or gases.” Given the breadth of the definition of a “regulated substance,” naturally occurring regulated substances will invariably be found in drill cuttings. To avoid confusion while preserving the intent of the provision, the phrase in question should be revised to read: “that are not contaminated with brines, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids or drilling fluids other than tophole water, fresh water or gases.” Third, the proposed version of 25 PA Code § 78.64a uses the term “regulated substance” in various locations, some of which lead to presumably unintended consequences. The proposed version of 25 PA Code § 78.64a(c) provides that all regulated substances must be managed within a containment system. This provision provides no delineation of when containment systems are required because virtually any materials present at a well site will contain one or more regulated substances. By contrast, Section 3218.2(c) of Act 13, 58 PA C.S.A. § 3218.2(c), specifies that containment systems must be used whenever the following materials are stored: drilling mud, hydraulic oil, diesel fuel, drilling mud additives, hydraulic fracturing additives, and hydraulic fracturing flowback. The same over-breadth problem presents itself in the other provisions of the proposed version of 25 PA Code § 78.64a where the term “regulated substance” is used. (1173)

Response: See response to comment 133.

137. Comment: Regulated substance – The definition of the term “regulated substance” is very broad and its use throughout the proposed regulation is often difficult to apply to the oil and gas industry. The term “regulated substance” was adopted in the context of Act 2 which focuses on characterization and remediation of releases causing impacts to environmental media. The term was not designed to be used in the context of affirmative regulatory obligations. Revisions should be made as suggested throughout the subsections below to address DEP’s particular intent of the regulatory section in which the term has been proposed. The term may be appropriate in the spill reporting and remediation Section 78.66, but even there, the scope of the term as defined above creates uncertainty with respect to reporting obligations in particular. Section 78.66(b) creates a two-tiered release reporting system for the oil and gas industry. The oil and gas industry is already subject to the requirements for reporting releases pursuant to 25 PA Code § 91.33 that apply to all other regulated entities in Pennsylvania, as well as the numerous federal reporting requirements under CERCLA, (e.g. 40 C.F.R. 302), CWA (e.g. 40 C.F.R. 112), and EPCRA (e.g. 40 C.F.R. 355) that provide specified reportable quantity thresholds. In particular, Section 78.66(b)(1) as currently proposed would impose an obligation to report any spill or release of 5 gallons or more of a regulated substance over a 24-hour period that is not completely contained by a containment system. This reporting obligation applies regardless of whether there is any actual or threatened impact to waters of the Commonwealth or any other impact to the environment or to public health or safety. In recognition that the EQB is proposing to eliminate the existing “reportable release of brine” definition and provision, Range recommends that this additional requirement be clarified and limited to reporting brine spills over 5 gallons outside of containment. See the subsections below for additional comments and suggestions that explain our recommendations for terms that will serve the purpose of the regulation and provide better guidance to the regulated community. Suggested

language: “Regulated substance -Any substance defined as a regulated substance in Section 103 of Act 2 (35 P.S. § 6020.103) and listed in 25 PA Code Chapter 250.” (1174)

Response: See responses to comments 132 and 133.

- 138.** Comment: Regulated substance – The use of the term “regulated substances” as defined under Act 2, which includes “substances covered by” the Clean Streams Law such as sediment, “hazardous substances and contaminants” under the Hazardous Substance Cleanup Act, and substances regulated by the Solid Waste Management Act and Air Pollution Control Act, would create an unreasonable and unattainable standard under several sections of Chapter 78. These statutes regulate literally thousands of substances, some of which are naturally occurring and generally benign (such as iron, manganese, chloride and sulfate) and most of which have no threshold concentration for regulation.

For example, Section 78.61 would allow the disposal of drill cuttings only if they are not contaminated with “regulated substances.” Under Act 2’s definition, however, any and all materials that might be considered as pollution under the Clean Streams Law or hazardous substances and contaminants under HSCA are regulated substances and therefore no cuttings may be disposed under this section because cuttings, no matter what they contain, are “covered” by Clean Streams Law or designated by HSCA. Section 78.66 is likewise impaired by the use of such a broadly defined term where some “regulated substances” may have absolutely no environmental impact when spilled on well sites. Several subsections of Chapter 78 must be modified to clarify that certain activities are permissible, even if the materials being managed may contain “regulated substances,” provided there is no pollution or reasonable potential for pollution. See recommended changes below in relevant subsections. (1135)

Response: See responses to comments 133 and 1446.

- 139.** Comment: The use of the term “regulated substances” as defined under Act 2 is too broad.

The term “regulated substances” was developed in a cleanup context but does not apply in the regulatory management of residual waste, in part because there is no threshold concentration to qualify as a regulated substance. The DEP’s approach ignores the facts that: (i) in the regulatory context, the focus of the Oil and Gas Act is on preventing pollution (Clean Streams Law) or harm to the public health, safety, welfare or the environment (Act 97, Solid Waste Management Act) from oil and gas operations; and (ii) not all materials containing regulated substances cause pollution or harm to the public health, safety, welfare or the environment. For example, when the concentration of regulated substances is low, such as meeting “Clean Fill” limits, the material is not regulated as a residual waste.

In addition, the proposed definition includes “substances covered by” the Clean Streams Law, such as sediment. This would create an unreasonable and unattainable standard under several sections of Chapter 78. See, for example, Section 78.61 that would allow the “disposal” of drill cuttings only if they are not contaminated with “regulated substances.” Under the Act 2 definition, however, any and all materials that might be considered as “pollution” under the Clean Streams Law are regulated substances and therefore no cuttings may be disposed under this section because cuttings, no matter what they contain, are “substances covered by” the Clean Streams Law. Section 78.66 is likewise impaired by the use of such a broadly defined term where some “regulated substances” may have absolutely no environmental impact when spilled on well sites.

Commentator suggests that materials generated at the well site that contain regulated substances should be managed so as not to cause (i) “pollution” (per the Clean Streams Law standards) or (ii)

harm to the public health, safety, welfare or the environment (per the standards of Act 97 and 25 Pa. Code Chapter 287. Delete this definition. (1153)

Response: See responses to comments 133 and 1446.

140. Comment: Reportable release of brine is problematic given that some is emitted in various “beneficial uses.” All releases should be reported along with their intended uses. (1098)

Response: This definition was deleted from the regulation.

141. Comment: Reportable release of brine – EQB has not provided the required harms analysis to explain why the reporting and remediation provisions in section 78.66 below would be revised to target the oil and gas industry when other industries are regulated under 25 Pa. Code § 91.33 with respect to spill reporting, and have access to the Act 2 process where desired. PGCC members are unaware of problems created by the current rule with respect to reporting releases of brine. The new proposal in section 78.66 improperly expands reporting obligations for this industry in a manner that creates uncertainty and ambiguity. If the Department does not substantially revise the reporting and remediation provisions as recommended below, it should simply maintain the current rule with respect to brines because it provides better guidance and accomplishes the appropriate level of environmental protection. (1135)

Response: This definition was deleted from the regulation to ensure that spills and remediation of all regulated substances are handled in a consistent manner.

142. Comment: Residual Waste and Waste: Neither term is defined in the proposed or current regulations. Given the importance of these regulations in protecting the waters of the Commonwealth, and the various controls proposed for these two substances, we believe the terms should be defined. (1062, 1133)

Response: A definition for the term “residual waste” has been added as the definition for the term in §287.1.

143. Comment: A definition for a “seasonal aquifer” should be added to § 78.1. The definition should provide for alternatives to groundwater monitoring wells in instances where the first water bearing zone located beneath an impoundment is approximately 50 feet or more below the impoundment sump elevation and the seasonal outcrops topographically. In cases where groundwater is >50 feet below an impoundment, groundwater monitoring wells may not detect a release since horizontal flow is preferential to vertical flow. A secondary collection zone constructed between the sub-base and secondary liner and similarly to the required Leak Detection Zone would be a reasonable alternative. (175)

Response: The term seasonal high groundwater table is retained in the regulations. The Department has revised §§ 79.59c and 78a.59c to disallow use of centralized impoundments without obtaining a residual waste permit from the Department.

144. Comment: Seasonal high groundwater table – The definition should be retained in the proposed regulations, because the term continues to play a key role in regulating oil and gas activities. (Section 78.1) (19, 19a, 21, 22, 23, 26, 142, 189, 192, 391, 429a, 843, 851, 868, 938, 938a, 946, 951, 958, 1005, 1019)

Response: The Department acknowledges the comment.

145. Comment: Clear definitions of terms like “seasonal high groundwater table” must be provided. Ambiguity in such vital terms is very dangerous. Clear definitions will be needed to facilitate enforcement. (153, 1229)

Response: The Department acknowledges the comment.

146. Comment: Proposed section 78.1 deletes the definition of “seasonal high groundwater table” even though that term is still used throughout the regulations, including in sections 78.56(a)(11), 78.59b(e). This definition should be maintained to ensure clarity and consistent enforcement. (938a)

Response: The term was not proposed for deletion and remains in the regulation.

147. Comment: There should be a definition for “seasonal high groundwater table,” since this term is used in the regulations. (1089)

Response: The Department acknowledges the comment.

148. Comment: Small business – Commentator recommends the addition of a defined term to allow for exemptions that would be appropriate for small businesses to comply with the 2012 amendments to the Regulatory Review Act and DEP’s obligation to consider exemptions for small businesses.

Suggested regulatory amendment:

“Small Business – defined in accordance with the size standards described by the United States Small Business Administration’s Small Business regulations under 13 C.F.R. Ch 1. Part 121 or its successor regulation.” (1135)

Response: The Department disagrees because the term is not used in the regulation.

149. Comment: Small Business – Commentator strongly supports and recommends the addition of a Small Business Exemption to provide relief to operators where such relief will have minimal or no environmental impact. In accordance with the Regulatory Review Act, the Department is required to provide such exemptions to reduce the impact of the proposed regulation on small businesses.

Suggested regulatory amendment:

Small Business—the term is defined in accordance with the size standards described by the United States Small Business Administration’s Small Business regulations under 13 C.F.R. Ch. 1. Part 121 or its successor regulation. (1153)

Response: See response to comment 819.

150. Comment: Stormwater – Commentator proposes to simplify the proposed definition which states:

“Runoff from precipitation, snowmelt, surface runoff and drainage.”

The problem with the definition as proposed is that it literally says that stormwater is: Runoff from runoff, which does not make sense; and it is: Runoff from drainage. Runoff occurs as a result of drainage – it is not caused by it.

The definition is also exclusive of a significant portion of stormwater which occurs as sub- surface runoff, referred to technically as “interflow”.

Commentator notes that the inclusion of the concept of interflow is critical to the definition because of the antidegradation requirement to replicate predevelopment hydrology as part of the PCSM requirements in special protection watersheds. The procedures for characterizing predevelopment hydrology were decided by the Environmental Hearing Board in 2011 in the *BMPA v PADEP & Alpine Rose Motor Sports* decision in which all components of stormwater flow had been required by DEP to ensure replication of water resources in special protection watersheds. The current definition is inadequate and does not provide DEP with the tools it needs to regulate stormwater in special protection watersheds. The definition should be modified to read:

“Stormwater – Water flow resulting from the drainage of direct precipitation or snowmelt. The term includes both overland runoff and subsurface interflow.” (954)

Response: The Department disagrees that the definition of stormwater should be modified. The definition in this rulemaking is consistent with the definition in Chapter 102, as amended in 2010. The record and hearing related to Environmental Hearing Board decision referenced occurred were developed before the Chapter 102 revisions in 2010 were effective in November 2010. The Department believes the definition is appropriate and has not made any revisions.

151. Comment: Oil and Gas operations are required to obtain Submerged Lands License Agreements from the State of Pennsylvania. Those Submerged lands of the Commonwealth need to be defined. For example, Submerged Lands of the Commonwealth - waters and permanently or periodically inundated lands owned by the commonwealth including beds of streams declared public highways which are owned and held in trust by the commonwealth. (92)

Response: Submerged lands license agreements are beyond the scope of Chapters 78 and 78a.

152. Comment: Temporary Pipelines - As proposed, the difference between a gathering pipeline and a temporary pipeline is that the gathering pipeline is used to transport hydrocarbons from wells to transmission pipelines, versus the temporary pipelines that are used to transport materials used in construction or stimulation of the oil or gas well or to transport residual waste from the well. The proposed definition for temporary pipelines appears to allow the temporary pipeline to exist until well site reclamation is triggered under § 78.65, nine months later (or 30 days after permit expiration).

Because temporary pipelines are not designed to safely transport hydrocarbons to a transmission pipeline, and these pipelines could potentially be operating at the well site while hydrocarbons are initially produced, the definition should make it clear that temporary pipelines cannot be used to transport hydrocarbons to a transmission line.

We also recommend that either § 78.65 or the definition of temporary pipelines be revised to make clear that these temporary pipelines must be removed within nine months of drilling and completing a well. The proposed requirements at § 78.65 state that drilling supplies and equipment not needed for production must be removed. This regulation should specifically state that temporary pipelines must be removed.

We recommend the definition for “temporary pipelines” be revised to read:

Temporary pipelines - Pipelines used for oil and gas operations, including well construction and waste removal, that:

- (i) Transport materials used for the drilling or hydraulic fracture stimulation, or both, of a well and the residual waste generated as a result of the activities.
- (ii) Lose functionality after the well site it serviced has been restored under § 78.65 (related to site restoration) and are prohibited from use as gathering pipelines. (1143)

Response: The Department has revised the definition to be “well development pipelines” instead of “temporary pipelines”.

Section 78a.68b does not allow flammable materials to be transported through well development pipelines. The same section also requires the pipeline to be removed in accordance with §78a.65 timeframes.

153. Comment: Temporary Pipelines – is this definition inclusive or exclusive of fresh water temporary pipelines? As written, the definition is inclusive but § 78.68b is exclusive in certain circumstances. (952)

Response: The proposed definition included transport of residual wastes. Section 78a.68b includes operational restrictions where appropriate, depending on the type of material being transported. The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

154. Comment: Temporary Pipelines – The term must be given fixed timelines given the potential for fracking and refracking wells over time and the long-term residual wastes that accompany such natural gas production. They are a threat to waters of the Commonwealth and must be defined more restrictively. Definitions should include criteria as to contents, composition, protective coatings, welding/connections, diameter, operational pressure, and so on to reduce risk.(1098)

Response: The definition as proposed is appropriate to meet the intent of the regulation. Additionally, the Department has revised 78a.68b to disallow use of the pipeline for longer than 12 months without approval from the Department. The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

155. Comment: Water purveyor needs clarification. Could those corporations involved with natural gas operations be subject to PL 842, No. 365 as persons (under the Supreme Court’s *Citizens United* decision) and hence develop their own source of water that may jeopardize public and/or private supplies? (1098)

Response: The Department believes the definition is appropriate and has not made any revisions. Water purveyor, as defined, captures those that fall within the purview of the Pennsylvania Safe Drinking Water Act and/or the Water Rights Act. This definition is appropriate to meet the intent of the regulation. According to Section 78a.69, a Department approved water management plan must be obtained prior to a corporation or person withdrawing or using water from water sources within this Commonwealth for drilling or hydraulic fracture stimulation of an unconventional well.

156. Comment: Temporary Pipeline – Inclusion of the phrase “pipelines used for oil and gas operations” in this definition is confusing, as “oil and gas pipelines” are included in the definition of “oil and gas operations”. The definition of “oil and gas operations” also includes “water and other fluids management and storage used exclusively for the development of oil and gas wells.” Commentators

recommend that the introductory clause be clarified to read as follows: “Pipelines that are part of oil and gas operations and that meet the following: ...” Also, those portions of temporary pipelines that are located within the boundaries of unconventional well sites subject to the containment system requirements of section 78.64a should be excluded from this definition. The Commentator suggests the following amendatory language: “Temporary pipelines—Pipeline that is part of oil and gas operations and that: (1) transport materials used for the drilling or hydraulic fracture stimulation, or both, of a well and the residual waste generated as a result of those activities; and (2) lose its functionality after the well site it serviced has been restored under § 78.65 (related to restoration). The term does not include those portions of pipelines that are located within the boundaries of unconventional well sites subject to the containment system requirements of § 78.64a.” (1137, 1174)

Response: The Department has revised the definition to be “well development pipelines” instead of “temporary pipelines.” Additionally, the definition of “oil and gas operations” has been revised to be consistent with the definition of “well development pipelines.” The definitions as proposed are appropriate to meet the intent of the regulation.

157. Comment: Temporary Pipeline – DEP should not target the oil and gas industry for special provisions related to pipelines that are not imposed on other activities and are largely duplicative of Chapter 102. Delete the definition and the new Section 78.68b. (1153)

Response: The scope and type of use of well development pipelines by the oil and gas industry is significantly different from the scope and type of use by other industries in such a manner that the Department has determined that the proposed regulations are appropriate.

The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

158. Comment: Temporary Pipeline – Commentator recommends deletion of the term “temporary pipelines” as an unnecessary term beyond the scope of the subchapter C. (1135)

Response: See response to comment 157.

159. Comment: Unique Buffer Zone – A Buffer Zone that is created to further provide for mitigations for special scenic areas, such as waterfalls, glens, vistas, nationally recognized features and Commonwealth recognized ecological resources within Commonwealth lands managed for recreational and wildlife management purposes may have a Unique Buffer Zone (UBZ) applied. These areas need to be designated. Designations may be done by public resources agencies and need to involve public input. (660a)

Response: The Department has considered this recommendation but does not agree that it is necessary or appropriate for inclusion in this rulemaking. See response to comment 31.

160. Comment: Viewshed – an area of land or water or that is visible to the human eye from a fixed vantage point, and of particular scenic value that is deemed worthy of preservation against development or other change as designated by a Commonwealth or County Agency. (660a)

Response: See response to comment 3019.

161. Comment: Vista – a pleasing view, especially one seen through a long, narrow opening which is designated as such by a Commonwealth or County Agency. (660a)

Response: See response to comment 3019.

- 162.** Comment: Watercourse – We strongly support consistent use of the watercourse definition at § 105.1 and recommend for clarity that it be spelled out in the new regulations.

Watercourse—The term as defined in 25 Pa. Code § 105.1, namely a channel or conveyance of surface water having defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

Furthermore, we urge the EQB to use this watercourse definition where stream or other watercourse protection is required in the proposed regulation or in associated guidance documents.

For example, proposed regulation § 78.59c(c)(5) bars construction of centralized impoundments “within 100 feet measured horizontally from any solid blue line stream, spring or body of water, except wetlands, identified on the most current 7.5 minute quadrangle map of the United States Geological Survey.” There is no technical or scientifically supported basis or consistent set of standards, however, for the identification of a watercourse as a blue line stream on a 7.5 minute U.S. Geological Survey quadrangle map. Luna Leopold, former Chief Hydrologist of the U.S. Geological Survey (1956-1966), stated that “blue lines do not reflect any statistical characteristics of stream flow occurrence. The specification that the blue line terminates no higher than about 1,000 feet from the watershed divide does not reflect differences in hydrologic performance among various combinations of climate, topography, and geology.” (Luna B. Leopold, *A View of the River* (Harvard University Press 1994). As a result of this practice, many perennial and intermittent streams are not represented as blue lines on 7.5 minute U.S. Geological Survey quadrangle maps.

The definition of watercourse as defined in 25 Pa. Code § 105.1 is a technically accurate definition of stream, and we urge the EQB to eliminate all references to blue-line streams. (1143)

Response: The Department has added a definition for the term “watercourse” which references the definition in Chapter 105. Section 78.59c has been revised to disallow construction of new centralized impoundments.

- 163.** Comment: Watercourse – We urge the Department to be consistent across programs and adopt the same definition for watercourse regulatory language that is noted in 25 PA Code § 105.1. (660a)

Response: The Department has added a definition for the term “watercourse” which references the definition in Chapter 105.

- 164.** Comment: Water Management Plan – The commentator asks that the Board specify the purpose of a Water Management Plan in the definition to clarify the expectations and purpose of such a plan. Accordingly, we suggest rewriting the definition to state: “a plan associated with drilling or completing a well in an unconventional formation that helps assure compliance with the withdrawal limits and use limitation established for that water source.” (1085)

Response: Requirements regarding Water Management Plans are described in §78a.69. The definition is appropriate as proposed.

- 165.** Comment: Water Management Plan – All oil and gas drilling and hydraulic fracturing operations require the use of water. As proposed by the EQB, a Water Management Plan (WMP) is defined to apply only to a well drilled or completed in an unconventional formation. As defined in § 78.1 an

“unconventional formation” would include only natural gas wells drilled and hydraulically fractured into geologic shale formations below the base of the Elk Sandstone. A WMP thus would not be associated with oil wells and all gas wells that are drilled into shale formations above the base of the Elk Sandstone or to oil and gas wells that are drilled into all other geologic formations. WMPs should be defined to apply to the drilling and completion of all oil and gas wells.

If the EQB rejects this recommendation, we ask that the EQB:

- (1) Provide an explanation of why not, or set a specific volume threshold for water use in any cases where detailed planning is not warranted; and,
- (2) Provide evidence that the proposed regulation would not result in adverse impacts to local water resources (e.g., the dewatering of streams).

We recommend that the definition of WMP be revised to read:

WMP - A plan associated with drilling or completing an oil and gas well that demonstrates that the withdrawal and use of water sources protects those sources, as required under law, and protects public health, safety and welfare. (1143)

Response: The regulation, is consistent with requirements in the 2012 Oil and Gas Act which provides that persons withdrawing or using water sources within this Commonwealth for drilling or hydraulic fracture stimulation of unconventional wells are required to obtain Department approved water management plans.

166. Comment: Water source – The “water source” definition precisely tracks 58 PA C.S. § 3203, so the problems with the statute are imported into the proposed regulations. All oil and gas drilling and hydraulic fracturing operations require the use of water. The EQB should seek a statutory amendment to define “water source” to include not only water used for drilling or completing a well in an unconventional formation but rather water used for drilling or completing a well in either a conventional or an unconventional formation. In addition, the EQB should ask the legislature to amend the definition to ensure that additives used in drilling or completing a well do not fall within the definition of “water source.” (1143)

Response: The proposed definition is consistent with the definition in the 2012 Oil and Gas Act. Statutory revisions are beyond the scope of Chapter 78.

167. Comment: Water source – Paragraph (i)(D) contradicts (ii)(A). Flowback or production water has and typically can be a beneficial use in the drilling or completion of another well. (411)

Response: Waters described in paragraph (ii) are explicitly excluded from paragraph (i).

168. Comment: Water source – The definition uses the phrase “Water of this Commonwealth,” which is undefined. An already defined term that should be used in its stead is “Waters of the Commonwealth,” as defined in Section One (1) of The Clean Streams Law. In addition, the definition for “Body of water” does reference the definition in 25 PA Code Chapter 105, but it is unclear why that term is limited to “a natural or artificial lake, pond reservoir, swamp, marsh or wetland,” and does not include all “Waters of the Commonwealth” as defined in The Clean Streams Law. See 25 PA Code § 105.1 and 35 P.S. § 691.1. (997a)

Response: The definition is consistent with the definition in the 2012 Oil and Gas Act. The two terms are understood to be synonymous.

169. Comment: Water source – Paragraphs (iv) and (2) - It is not clear whether recycled water obtained from third party vendors would require a WMP. This should be clarified. (1049)

Response: See response to comment 167.

170. Comment: Water source – It seems as though the first term, (i)(A) “Waters of the Commonwealth,” would encompass the following three sources of water listed in (i)(B)-(D). It is suggested that it read, “Waters of the Commonwealth, including” and then go on to list the other sources. (124a)

Response: The definition is consistent with the definition in the 2012 Oil and Gas Act.

171. Comment: Water source – Commentator understands subsection (ii) of this definition to be intended to allow operators to reuse flowback and production waters for drilling and completing unconventional wells without including those sources in a Water Management Plan. The definition is confusing, however, because subsection (ii) appears to conflict with, rather than provide an exception to, subsection (i)(D). Delete subsections (i)(D) and (ii). (1153)

Response: The definition is consistent with the definition in the 2012 Oil and Gas Act. The commentator’s proposed changes would alter the intent of the definition.

172. Comment: Water source – The definition is all inclusive and needs clarification. Are waters used for completing a well in an unconventional formation inclusive of chemicals and natural substances added to it? Does it include the reuse of flowback or produced waters or other fluid that may be used to complete such a well? Should the word “permitted” be added relative to waters that may be discharged in the Commonwealth? Please clarify. (1098)

Response: The definition is consistent with the definition in the 2012 Oil and Gas Act. Water source does not include chemicals and other natural substances added to water. The term does not include flowback or production waters or other fluids which are used for drilling or completing of a well or do not discharge to waters of the Commonwealth. Addition of the word “permitted” is not necessary.

173. Comment: Water supply – The term needs specificity as to “legitimate beneficial uses” that must be based on long-term scientific, peer-reviewed studies as to environmental benefit as opposed to risk for such use. (1098)

Response: The Department disagrees that water supply owners should be required to conduct long-term, scientific, peer-reviewed studies to demonstrate that a water supply serves a legitimate beneficial use.

174. Comment: Well operator or operator – The definition may include those who are trying to plug wells to prevent long term consequences. How does one determine intent or purpose of such an act to avoid misidentification? A storage operator should be defined separately given the nature of duties and responsibilities. (1098)

Response: The Department believes that the statutory definitions for operator and storage operator in Act 13 are sufficient to distinguish between duties and responsibilities.

175. Comment: Well pad spacing – minimum distance between well pads. (660a)

Response: Chapter 78 does not address well pad spacing.

176. Comment: Well site - Does this definition include the roads and gathering lines “necessary for or incidental to the drilling, production or plugging of a well”? (1062, 1133)

Response: Depending on site-specific conditions, the term may include roads and gathering lines.

177. Comment: Well site – The term should be limited to the permitted area and not be inclusive of facilities necessary or “incidental” to the drilling, production or plugging of a well. (1098)

Response: It is not clear to the Department as to what permitted area the commentator is referring to. The Department believes the definition is appropriate and has not made any revisions.

178. Comment: Well site – This definition should be updated to reflect the fact that multiple wells will be located on one well site with unconventional shale gas development. Suggested language: “Well site - The area occupied by the equipment or facilities necessary for or incidental to the drilling, production or plugging of a well or multiple wells.” (1137, 1147, 1174)

Response: The Department disagrees that the proposed change is necessary. The definition is clear as written.

179. Comment: Well site – The definition should be updated to expressly narrow it to the surface area required for oil and gas development. This would clarify that a horizontal well bore does not expand the well site beyond what is intended by the regulations. We recommend modifying the definition of well site to read as follows: “the area occupied at the surface by the equipment or facilities necessary for or incidental to the drilling, production or plugging of a well.” (1140)

Response: The Department disagrees that this clarification is necessary. The definition as proposed is appropriate to meet the intent of the regulation.

180. Comment: Numerous new definitions have been proposed that would expand the scope of obligations under Chapter 78, if adopted as written. Two definitions that potentially create major uncertainty are: The definition of “Mine influenced water” gives DEP discretion to include all waters impaired by mine drainage. Given the breadth of the DEP’s list of waters impaired by mine drainage this definition would include many surface waters throughout the Commonwealth, including sections of the major rivers such as the Allegheny, Monongahela, Youghiogheny and West Branch of the Susquehanna some of which are widely used for public water supplies. The definition is overly broad. Storage and use of such a vaguely defined and potentially broad universe of waters, which are routinely used for numerous other purposes by industries beyond the oil and gas industry, should not be subject to the special approval requirements of Section 78.59b(g). The definition of “Regulated substances” refers to the definition in Act 2 that was developed to assist those conducting cleanup operations at brownfield sites throughout the Commonwealth. The definition, which includes substances “covered by” six other named statutes, is overly broad and fails to provide the necessary guidance for reporting obligations that would be imposed under the proposed Section 78.66(b). At a minimum, the definition must be further clarified by reference to some known list of substances, such as those found in Chapter 250. In addition, the term should be replaced or removed entirely where the intent of the rule is better served by a different term. See Sections 78.55 (Control and disposal planning), 78.56 (Temporary storage), 78.59c (Centralized impoundments), 78.61

(Disposal of drill cuttings), and 78.64a (Containment systems and practices at unconventional well sites) for specific recommendations below. (1174)

Response: See responses to comments 87 regarding mine influenced water and 128 regarding regulated substances.

181. Comment: “Right-Of-Way” shall mean any permanently maintained opening in the forest cover which allows for access and maintenance of infrastructure and roadways. (643)

Response: The proposed definition of the term right-of-way is specific to forested areas but is used in a different context within the regulations. Therefore, inclusion of this definition is not appropriate.

182. Comment: “Native” shall mean any species that originate naturally and are indigenous to Pennsylvania. (643)

Response: The proposed definition of the term native is specific to plant species but is used in a different context within the regulations. Therefore, inclusion of this definition is not appropriate.

183. Comment: “Coverage” shall mean the amount of surface area covered by the vegetation’s point of contact with the ground. (643)

Response: The proposed term is not used in the regulation. Therefore, inclusion of this definition is not appropriate.

184. Comment: “Diversity” shall mean the number of species represented at a single instance. (643)

Response: The proposed term is not used in the regulation. Therefore, inclusion of this definition is not appropriate.

185. Comment: “Width” shall mean the horizontal distance running perpendicular from the centerline of the right-of-way to the right-of-way’s edge. (643)

Response: The proposed definition of the term width is specific to right of way measurements but is used in a different context within the regulations. Therefore, inclusion of this definition is not appropriate.

186. Comment: Define provisions for assurance that pipelines used to transport flow back may not be used to withdraw and transport fresh water. (118)

Response: Sections 78a.68 and 78a.68b provide appropriate requirements for the construction and operation of pipelines to ensure protection of public health and safety and the environment. Further requirements restricting use of pipelines are not necessary.

187. Comment: Define pipeline material requirements in prescriptive language by categorizing pipelines by what they carry (residual waste, production fluids, condensate, oil, gas) (118)

Response: Sections 78a.68 and 78a.68b provide appropriate requirements for the construction and operation of pipelines to ensure protection of public health and safety and the environment.

188. Comment: Suggested Changes:

Definitions:

Unless otherwise specified, the terms indicated below shall have the following meaning:

“Benches” or “shelves” shall mean flat areas which could be used as a development site which are otherwise surrounded by slopes of fifteen percent or greater.

“Development” shall mean any and all earth moving or vegetation clearing procedures related to oil and gas industry including, but not limited to, well pads, machinery storage areas, water or waste product retention or storage areas, access and maintenance roads, and pipeline right-of-ways.

“Director” shall mean the director of the conservation, development and planning department and/or his designee.

“Grading” shall be defined as earthmoving activity.

“Ridgeline” shall mean a visually prominent, relatively narrow strip or crest of land, which includes the highest points of elevation within a watershed, separating one drainage basin from another.

“Slope” means the inclination of the terrain, calculated as a percentile, the change in vertical distance divided by the change in horizontal distance.

“Viewshed” shall mean all visible areas that can be seen from a designated location, feature, roadway, waterway, or recreational trail. A viewshed is an area of land, water, or other environmental element that is visible to the human eye from (a) fixed or linear vantage point(s). (1016)

Response: The Department has considered the recommended additional definitions but does not agree that inclusion of these terms is necessary or appropriate, and in some instances the definitions proposed by the commentator conflict with definitions in this rulemaking or in other applicable chapters of the Pennsylvania Code. See also the Department’s response to comment 3019.

§ 78.2 Scope

189. Comment: Commentator recommends that the EQB retain this scope as the proper description of activities subject to Chapter 78 Subchapter C. Consistent with this scope, there is no need to provide a definition of “oil and gas operations” and several subsections below would be deleted entirely, including 78.59a, 78.59b, 78.59c and 78.68, 78.68a and 78.68b. (1135)

Response: This section is deleted to avoid confusion regarding the activities regulated under the final rulemaking and maintain consistency with the framework of the 2012 Oil and Gas Act whose scope “relates to oil and gas.” See 58 Pa.C.S. § 3201.

190. Comment: The current scope of Chapter 78 should be retained as is. (1153)

Response: The revisions to the regulation and to the scope are necessary and appropriate to comply with amendments to the statute, technological advances in the industry and to

adequately protect the environment.

§ 78.11 Permit requirements

- 191.** Comment: Commentators are concerned about the Department's new position, following the adoption of Act 13, which interprets some provisions of the Act to require well permits to be posted prior to construction of well sites or access roads. The Commentators do not believe that this interpretation is required or necessary under the language of Act 13. The timing of permit applications and issuance is further complicated and delayed by the Department's proposed revisions to Section 78.15, discussed in more detail below. Revisions to Section 78.11 should clarify an operator's permit and approval obligations to construct a well site.

Suggested amendatory language (note, this is new language, not replacing the proposed subsection (c)):

(c) Well permits, once obtained, must be posted at the drilling site during site preparation, drilling, operating or altering the well. Well sites, including access roads, may be constructed prior to issuance of a well permit, in accordance with any necessary permits or approvals required and obtained under the Clean Streams Law. (1137, 1153)

Response: This rulemaking does not relieve an Operator from the requirements of Title 58, Chapter 32, particularly 3211(g) requiring well permits to be posted during overall well site construction including but not limited to access roads, well pads, etc.

- 192.** Comment: Commentator is concerned about the Department's new position following the adoption of Act 13, which interpreted some provisions of the Act to require well permits to be posted prior to construction of well sites or access roads. This interpretation is neither required nor necessary under the language of the Act and it has imposed great burdens on conventional operators who build well sites on leases according to operational efficiency and contractor availability, which does not ordinarily coincide with permit applications and issuance. Conventional operators routinely build locations during the dry time of the year when there is a diminished potential for accelerated erosion and sedimentation and the new interpretation, the timing of which is impeded by this new requirement. Building the locations months or years before drilling allows the locations to become firm before use, reducing the amount of stone that must be applied and commensurately reducing earth disturbance and the number of necessary truck trips. Construction of locations more than a year in advance of drilling was formerly a Best Management Practice recommended by the Department. The timing of permit applications and issuance is further complicated and delayed by the Department's proposed revisions to Section 78.15 below. Revisions to Chapter 78.11 would clarify the obligations with respect to the permits and approvals needed to construct well sites.

Suggested amendatory language (note, this is new language, not replacing the proposed subsection (c)):

(c) Well permits, once obtained, must be posted at the drilling site during site preparation, drilling, operating or altering the well. Well sites, including access roads, may be constructed prior to issuance of a well permit, in accordance with any necessary permits or approvals required and obtained under the Clean Streams Law, including Chapters 102 and 105 approvals. (1135)

Response: See response to comment 191.

193. Comment: § 78.11(c) Suggested amendatory language: Well permits, once obtained, must be posted at the drilling site during site preparation, drilling, operating or altering the well. Well sites, including access roads, may be constructed prior to issuance of a well permit, in accordance with any necessary permits or approvals required and obtained under the Clean Streams Law. (1147)

Response: See response to comment 191.

194. Comment: We are writing in support of the 10 public water systems in Potter County and many others in northern and central Pennsylvania who are calling on the Pennsylvania Department of Environmental Protection to include the location of delineated water supply recharge areas in its gas/oil permit review process, and to require that public drinking water system operators be notified when a permit is issued in close proximity to these sensitive areas. This requirement would assure that municipal water authorities are informed of pending drilling activity, while opening a line of communication between the drillers, DEP's Oil and Gas and Safe Drinking Water Programs, and the municipal water authorities.

We appreciate DEP's support of our local public water system operators' development of Source Water Protection Plans. It naturally follows that these facilities and the recharge areas that feed their sources should be afforded priority protection in DEP's consideration of applications for energy development and other permitted activities and should be incorporated into the eFACTS system, as they are mapped in electronic format.

One of the common misconceptions sometimes voiced during discussions on this issue is the assumption that it was adequately addressed in Pennsylvania Act 13 of 2012. Indeed, Act 13 increased the regulatory notification distance for drilling activities in close proximity to a Source Water Protection Zone from 1,000 feet to a new standard of 3,000 feet. However, in many cases – especially for the water systems with high-capacity water supply wells – the Zone II wellhead protection area (as defined in 25 Pa. Code Chapter 109) is larger than the 3,000-foot limit. The complicated geology of Pennsylvania requires that a standard be based on each water supply source's individual characteristics, rather than a blanket generalized distance.

Potter County's interest in this and related issues goes back to the early stages of shale gas exploration and development in Pennsylvania. Given our unique location as a headwaters region for three of the major river systems in the east, local leaders formed three organizations – the Natural Gas Task Force, the Water Quality Work Group and the Triple Divide Watershed Coalition (not to be confused with a documentary or a hiking trail system using the same 'Triple Divide' moniker).

The Task Force was dedicated to responsible public education on gas drilling and related issues and facilitation of respectful dialogue between all affected parties. It has since evolved to the Natural Gas Resource Center, dedicated to those same objectives while serving as a clearinghouse and information/referral service.

The Work Group brings together a broad cross-section of individuals directly or indirectly involved in water conservation and related topics. (96)

Response: The Department acknowledges the comment. The final-form rulemaking adds zones 1 or 2 of a wellhead protection area identified as part of a wellhead protection program approved under § 109.713 to the list of public resources included in the public resources impact screening process established by §§ 78.15(f) and 78a.15(f).

§ 78.14 Transfer of well ownership or change of address

195. Comment: While beyond the scope of this rulemaking, nevertheless, this is an issue that landowners are concerned about, that is not being notified when their lease is sold, especially when there are permits issued concerning their property with an operator other than whom they are leased. Most recently, this occurred with Chief Oil & Gas LLC. Permit 131-20367 Garrison West Unit 3H where landowners were leased with a different operator and found out via the community grapevine that their property was proposed to be laterally crossed with this well and others. This was months in advance of any news release stating that the leases had been sold. Repeated calls to their operator availed no information. Landowners had a variety of concerns; some of them related environmental protection issues. It is well known that not all operations are created equal and thus, landowners are concerned about what those operations may mean to their property when such a variety of methods are employed. This is a simple matter of notification that operators can easily comply through regular mail.

(d) The permittee shall notify all leasehold landowners subject to the transfer of a change in address or name within 30 days of the change. (660a)

Response: As noted by the commentator, notifications to landowners when leases are bought and sold are beyond the scope of this rulemaking.

§ 78.15 Application requirements

196. Comment: Application requirements (includes conventional drillers) -- This provision also applies to conventional drillers. While conventional drilling locations are much smaller than unconventional, they still have the possibility of accessing areas that require special and careful evaluation. Since the area of review is generally limited to the discrete area, we see no unreasonable hardship here to the conventional drillers. What we see is a measure of consideration towards core habitat areas for example. We need to consider the comprehensive view of the amount of new disturbed areas that are subject to both conventional and unconventional drilling. We need to sufficiently and adequately protect such areas towards the great balancing act of exploitation. We support these provisions as they pertain to the conventional drillers at a minimum as they are written. (660a)

Response: The Department acknowledges this comment.

197. Comment: The permit application has become a nightmare. The application for a permit has gone from two pages to 17. The notification of all adjoining townships or municipalities bordering the township or municipalities you are applying for a permit in is ridiculous especially for a shallow well. (987, 1091)

Response: The well permit application requirements are reasonable and appropriate to ensure compliance with applicable law. The referenced notifications are required by Section 3211(b)(2). Any change to those provisions should be legislative.

198. Comment: As with other regulatory programs (e.g., RCRA), the regulations should provide language that allows the operators to rely on generator knowledge for disposal purposes in lieu of continued chemical analysis of materials generated on site. (639)

Response: To the extent that the commentator is referring to provisions in §§ 78.58 and 78a.58 regarding characterization of waste prior to removing the waste from the site, the Department does not believe that any revisions are necessary because this section

incorporates the requirements of Chapter 287 by reference. To the extent that the commentator is referring to chemical analysis requirements in §§ 78.62 and 78.63, the Department does not believe that any revisions are necessary to address the commenter's concerns. These requirements remain unchanged and the Department has in the past and will continue to allow generator knowledge, as appropriate to ensure compliance with these requirements.

- 199.** Comment: We urge the EQB to reconsider the proposed regulations. Modifying and revising the Oil & Gas regulations at this time without providing scientifically sound and clear language would be detrimental to the EQB, PADEP, industry and the citizens of the Commonwealth. (639)

Response: Please see the Department's response to question 10 of the regulatory analysis form for the final form rulemaking.

- 200.** DEP should not be required to consider the rights of the applicants: DEP's mission is to uphold citizens' constitutional right to a clean environment. Abrogating these rights through consideration of the rights of applicants would be unconstitutional. (153)

Response: The well permit application process outlined in §§ 78.15 and 78a.15 ensure that the Department fulfills its constitutional and statutory obligation. Sections 78.15(g) and 78a.15(g) have been amended to clarify the criteria the Department will consider when deciding whether to condition an oil or gas well permit based on impacts to public resources. Sections 78.15(g) and 78a.15(g) have been revised to remove the language regarding the Department's burden of proof upon appeal of a condition necessary to protect a public resource. Section 3215(e) of the Oil and Gas Act of 2012 states that the Department has the burden of proving that a well permit condition imposed to protect a public resource is necessary to protect against a probable harmful impact of the public resource.

Please see the response to comment 264 and 416.

- 201.** Comment: The continued rulemaking activity to include any potential promulgation of rules within or associated with Sections 78.15 (d) through (g) must be discontinued and all proposed revisions to 25 Pa. Code Chapter 78 that would apply or implement those regulation sections should be removed from the rulemaking proposal. The Pennsylvania Supreme Court in the recent December 19, 2013 decision in *Robinson Township v. Commonwealth of Pennsylvania*, No. 63 MAP 2012, has ruled that Sections 3215 (c) and (e) of Act 13 - the statute sections delegating authority to the DEP/EQB to develop regulations and apply the statutory requirements therein - has been enjoined.

Specifically, at pages 158 & 159 (*pages attached*) of the *Robinson* decision Sections 3215 (c) and 3215 (e) of Act 13 have been held to not be severable from Section 3215 (b) which was enjoined in its entirety. "Moreover, insofar as Section 3215 (c) and (e) are part of the 3215 (b) decisional process; these provisions are as well incomplete and incapable of execution in accordance with legislative intent. Application of Section 3215 (c) and (e) is therefore, also enjoined."

The Section fails to comply with the Act 13 section 3215 (e) statutory requirement to develop "criteria" for 1) conditioning a well permit based on its impact, 2) ensuring optimal development of oil and gas resources, and for 3) respecting property rights of oil and gas owners. Put simply, no "criteria" or standards whatsoever are identified or articulated in the proposed regulations that would carry these mandates into effect.

ordinance purportedly does not comply. The prerogatives of acting upon policy judgments and enacting local legislation, while limited by the General Assembly's enactment, remain ultimately with local government under the Act 13 scheme. No valid separation of powers concern exists regarding Section 3305(a). See 828 A.2d at 1051. As against this claim, the Commonwealth Court's decision is affirmed, on these different grounds.

V. Severability

The citizens' requested relief is a declaration that Act 13 is unconstitutional in its entirety, based solely on arguments related to the discrete provisions discussed above. We recognize that certain of the provisions we have held to be unconstitutional represent core aspects of Act 13. But, by the same token, several provisions appear relatively independent of other parts of Act 13. See, e.g., 58 Pa.C.S. § 2302 (unconventional gas well fee); § 2505 (appropriations for Marcellus Legacy Fund). Notably, neither the parties nor Act 13 itself address the potential severability of provisions found unconstitutional. Nevertheless, our holding that Sections 3215(b)(4) and (d), 3303, and 3304 violate the Environmental Rights Amendment does not automatically require finding Act 13 unconstitutional in its entirety. Mockaitis, 834 A.2d at 502. Indeed, the presumption is that "[t]he provisions of every statute shall be severable." 1 Pa.C.S. § 1925 (constitutional construction of statutes).⁶⁹ Notably, while not citing to the Section 1925 severability

⁶⁹ Section 1925 of the Statutory Construction Act provides that:

If any provision of any statute . . . is held invalid, the remainder of the statute . . . shall not be affected thereby, unless the court finds that the valid provisions of the statute are so essentially and inseparably connected with, and so depend upon, the void provision . . . that it cannot be presumed the General Assembly would have enacted the remaining valid provisions without the void one; or unless the

(continued...)

presumption expressly, the Commonwealth Court obviously recognized that the issue was implicated because, upon finding Section 3304 unconstitutional, the panel was careful to enjoin only those “provisions of Chapter 33 that enforce 58 Pa.C.S. § 3304.” Robinson Twp., 52 A.3d at 485

Setting aside the question of global severability – *i.e.*, whether the specific provisions held to be unconstitutional require that the entire Act be enjoined – there are obvious consequences of certain of our holdings. Thus, we have already recognized that Section 3215(b)(4), which addresses waivers of the general rule requiring setbacks for the protection of certain waters of the Commonwealth, is a key part of the Section 3215(b) scheme. It would appear that the General Assembly did not intend for the setback provision to operate without allowing industry operators to secure waivers from the setbacks. Absent the enjoined Section 3215(b)(4), the remaining parts of Section 3215(b) – which the citizens do not challenge on appeal – are incomplete and incapable of execution in accordance with the legislative intent. Having held that Section 3215(b)(4) is unconstitutional, we conclude that the remaining parts of Section 3215(b) are not severable. Accordingly, application of Section 3215(b) is enjoined.

Moreover, insofar as Section 3215(c) and (e) are part of the Section 3215(b) decisional process, these provisions as well are incomplete and incapable of execution in accordance with legislative intent. Application of Section 3215(c) and (e) is, therefore, also enjoined. Finally, Sections 3305 through 3309 are those parts of the statutory scheme that establish a mechanism by which to enforce compliance with the Municipalities Planning

(...continued)

court finds that the remaining valid provisions, standing alone, are incomplete and are incapable of being executed in accordance with the legislative intent.

1 Pa.C.S. § 1925.

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(81, 419)

Response: Please see the responses to comments 265 and 413.

202. Comment: I am very heartened to see that the natural gas industry will be required to consult with the Pennsylvania Natural Heritage Program as well as be required to notify about the impacts to

public lands, natural landmarks, and historic properties. While it is not as encompassing or as protective as it should be, it is a start and these regulations need to be approved quickly to afford some type of Endangered Species and public land protection.

I recommend that DEP look at adding a provision to this section that a company planning for a well, pipeline right-of-way, compressor station or other gas processing facility, should only be allowed to apply for a permit if they have a current lease in place or a Letter of Authorization from the landowner. Currently the above-described applications can be submitted to the DEP for review without a lease in place with the landowner. It would save DEP's time and resources and allow the public to have accurate information on a facility prior to the installation instead of receiving amendments to the permit after the fact. (870)

Response: The Department has considered this comment and declines to make the suggested amendment to this rulemaking. The well permit does not convey any property rights. Further, the well permit is conditioned on the permittee's compliance with all applicable law.

203. Comment: We fully support the Department of Environmental Protection's (DEP) efforts towards amending Chapter 78 Subchapter C, relating to Oil and Gas regulations in order to strengthen environmental protection measures at oil and gas sites within Pennsylvania. For the most part, we concur with the proposed amendments. (1006)

Response: The Department acknowledges this comment.

204. Comment: I would suggest the EQB address the issue of operators applying for additional wells at well sites with a history of violations. A permit should not be granted to operators that have committed multiple and ongoing violations at specific well sites. Permits should not be granted to those operators until they have a proven track record of implementing improved best practices at their leased well sites. (1066)

Response: Section 3211(e.1)(5) of the 2012 Oil and Gas Act gives the Department the authority to deny a well permit based on the well permit applicant's compliance history. Any change to that provision should be legislative.

205. Comment: When protecting public resources, the Board, Department and industry must have a thorough mutual understanding of all permit application requirements related to all public resource regulations, and these regulations must be based in law. We appreciate the Board's efforts to streamline the permitting process. (1085)

Response: The Department acknowledges this comment.

206. Comment: Section 78.15 includes references to wells, well sites and access roads. Do the requirements of this section pertain to all activities included under the definition of "oil and gas operations"? (1099)

Response: No. Sections 78.15 and 78a.15 establish the well permit application process and are limited to activities associated with well construction and development. The requirements of these sections are designed to address the impacts within the limit of disturbance of the well site. Other activities associated with the oil and gas operations are regulated through various other provisions in Chapters 78 and 78a or other laws implemented by the Department.

207. Comment: This letter is written in direct response to Oil City Engineer, Chris Sporer's public

comments regarding Act 13 generally and the protection of the Oil City water supply in particular. I write this letter from the perspective of a lifetime resident of Venango County, a landowner with in excess of 100 acres, a landowner within Zone III of the Oil City water wells, and an experienced employee in the oil & gas industry as a retired Senior Gas Measurement and Regulator Specialist for National Fuel Gas.

Let me begin by saying that I believe state regulation of the oil & gas industry, as well as protection of our water resources is a good thing. However, overregulation of oil & gas exploration is almost as detrimental as proper regulation is beneficial. To that end, the greatest scientific mind in the history of our country, Albert Einstein, had it exactly right whenever he said, "Make everything as simple as possible, but not simpler."

As such, the Department of Environmental Protection already has proper and sufficient regulations in place to accomplish the dual purpose of regulating the oil & gas industry and protecting our natural resources, in particular our water.

A few ways that our water is already protected are as follows: First, the drilling of deep or unconventional oil & gas wells is thousands of feet below the aquifers, which means any tracking done will not communicate with the aquifer. Second, any bore hole that penetrates the aquifer is already protected pursuant to DEP regulations and industry best practices by multiple layers of casing and cement. Third, all of the landowners within a 3,000 foot radius of the well are notified so that they can object if they see fit 'in order to protect their water supply or for some other reason:

Further, in relation to the Oil City water wells in particular, they already have more than enough protection given the above regulations, as well as for a number of other reasons. Namely, the .water wells are located on 300 acres of land owned by the city, which means they already have a protective buffer zone of almost one-half of a square mile (a square mile being approximately 27.9 million square feet and the 300 acres being approximately 13.2 million square feet). This protective zone is well in excess of the 105 acres (4.6 million square feet) required for Zone II protection.

Moreover, in the event that a Zone III classification is imposed on the Oil City water wells my farm and most of my neighbors' and friends' properties would fall within this Zone. This would essentially result in a *de facto* taking of our oil & gas rights due to the restrictions and liabilities that would be imposed upon us and any oil & gas exploration company that may otherwise be interested in developing our properties. On that subject, development of our properties is not just a fleeting, unrealistic possibility given that our properties were recently leased by Halcon Resources, which spent millions of dollars in order to obtain the right to develop the oil & gas rights under our properties.

To head off such diligent and environmentally responsible development would not only be a financial blow to us as local property owners, but would also be a financial stumbling block for all of our fellow Venangonians who are waiting for an economic resurrection of our county. The DEP should also remember not just to worry about greasing the squeaky wheel (of the 200 people at the meeting 37 spoke according to the Meadville newspaper some for more regulation some for less regulation), but should maintain focus on the vast majority of Venangonians who have relied on the economics of oil & gas for more than 150 years.

In conclusion, my hope is that the already-in-place responsible regulations and the existing 300-acre buffer zone be determined to be significant, substantial, and suitable protection. Additionally, I would argue that the strong standing regulations already in existence be used to regulate the oil & gas industry rather than imposing greater, unnecessary regulations that would unduly restrict

Venango County's - and Pennsylvania's - economic resurrection. Some may think that the current regulations are simple; however, these regulations are perfect in their simplicity. (451a)

Response: Please see Department's response to question 10 of the Regulatory Analysis Form of the final rulemaking for more details regarding the need for the regulations.

208. We are concerned that the current Chapter 78 Environmental Protection Performance Standards for Oil and Gas Well sites which regulate natural gas operations, as proposed, do not provide sufficient protection from potential adverse impacts of gas well drilling and associated activities on the recharge areas associated with drinking water resources.

Source Water Protection Plans for public drinking water sources have been developed included Source Water Protection Zones (SWPZs) to delineate sensitive surface supply and groundwater recharge areas which may be vulnerable to contamination. The SWPZs are used to identify and evaluate risks of potential contamination threats to the drinking water supply in order to help prevent and mitigate the impact of any contamination incidents from such identified potential sources.

The relatively new and large-scale development of natural gas drilling and pipeline operations in source water supply areas raise significant risks of contamination to surface and groundwater supplies from activities associated with unconventional gas development including, but not limited to, changes to the land use in sensitive recharge areas, erosion and sedimentation, the potential for aquifer contamination from inadequately cased and cemented well bore holes through fresh water zones and orphaned and abandoned wells, and spills and leakage from well pads, access roads, compressor stations or transmission lines.

While we support all of the proposed changes in the Chapter 78 regulations which strengthen performance standards for natural gas operations and improve the degree of protection for water supplies, we believe that the regulations also need to require the Department, as part of the gas well drilling permitting process, utilize SWPZ delineations for public water supplies, where available and appropriate, to expand the prescribed set isolation distances from public water supply sources used throughout the regulations. The regulations should specifically require the use of these delineations and enable the Department staff to condition, deny or modify well drilling permits where necessary to prevent potential contaminants from reaching sensitive surface and ground waters in order to adequately protect drinking water supplies.

We appreciate this opportunity to comment on the proposed Chapter 78 regulations, and urge the Department to carefully consider additional measures to protect Source Water Protection Zones of public water supplies during the permit review process for natural gas wells, pipelines, and associated facilities. (852a, 137)

Response: The Department amended §§ 78.15(f)(1) and 78a.15(f)(1) of the final rulemaking to wellhead protection areas.

The Department has determined that the public resource impact screening provisions as outlined in Section 78.15(f)-(g) and 78a.15(f)-(g) are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Please see the response to comment 265.

Wellhead protection areas were added because these resources are similar in nature to those included in Section 3215(c) of the 2012 Oil and Gas Act. Wellhead protection areas are associated with sources used for public drinking supplies, another listed resource.

In further response to comments, wellhead protection areas have been clarified by including a cross reference to 25 Pa. Code §109.713 and limiting the areas to those classified as zones 1 and 2.

- 209.** Comment: We strongly believe in the protection of Pennsylvania's vital drinking water resources. The broadening development of the oil and gas industry may expose our water sources to multiple avenues for contamination if the proper safeguards are not put into place. While the proposed amendments enact source water risk-reduction regulations, there is room to further strengthen these amendments by utilizing the information collected in Source Water Protection Plans (SWPPs).

DEP should recognize and apply the Source Water Protection Zones (SWPZs) during the permit review process, when they are available, instead of the blanket setback distance. We recommend that no drilling and related activity be allowed in areas delineated as groundwater protection Zone II and surface water protection Zone A. At a minimum Zone IIs and Zone As should be recognized as needing special consideration with locating of the well sites, centralized impoundments, freshwater impoundments, temporary storage pits and tanks, any drill cutting and residual waste disposal, including access roads. Also, the Zone affiliated water system should be notified and be given the opportunity to submit a comment within a minimum of 30 days, to DEP on the proposed permit activity.

Whenever possible, DEP should be allowed to assist water systems, Source Water Protection Committees and Coalitions in their endeavors to protect these Zones that have been deemed vital, in essence by DEP, in preventing the contamination of drinking water sources. The proposed amendments to Chapter 78 present an opportunity to formalize this assistance. (951, 1019, 1054 1128, 1149, 1150, 1169, 1189-1200)

Response: Please see response to comment 208.

- 210.** Comment: The City of Oil City owns and operates a public drinking water system which serves all residents of Oil City, as well as parts of neighboring Cranberry and Cornplanter Townships. The source of our drinking water is a well field, and the City is fortunate that it owns over 300 acres of the watershed, which at one time was thought to protect the source water from contamination. However, the area that actually needs protecting is now known to extend beyond the City's ownership onto privately owned land.

In 2010, the City participated in the Source Water Protection Technical Assistance Program sponsored by the Pennsylvania Department of Environmental Protection or DEP. DEP hired and paid a consultant, SSM Group of Reading, PA, to develop a Source Water Protection Plan for the City's well field. Part of that Plan was to determine the area from which the wells withdraw water; this is a challenging task since water flows through the ground in complex ways. SSM Group developed a computer model using the Groundwater Modeling System developed by the United States Department of Defense. This model is well-accepted among geologists and hydrogeologists, and is commonly used to help manage groundwater resources. The model required significant information about the study area -topography, geology, slopes, soils, infiltration rates, and water table elevations. SSM Group collected the necessary data for the model to estimate the recharge areas of the wells, and how long it takes water to travel through the subsurface to the wells. The model was then used to delineate protection Zones I, II, and III.

Zone I is the smallest of the three zones, encompassing a 400' radius around each well. Zone II is defined as the land that contributes groundwater to the wells in a ten-year time of travel, and is an area of 105 acres; it is irregular-shaped, not just a radius around each well, and it goes onto privately-owned land not under the City's control. Zone III is the remaining land that can contribute water to Zone II and ultimately reach the groundwater wells in more than ten years' time of travel. Zone III for Oil City's wells occupies an area of 1.45 square miles, and is also irregular-shaped.

The State's oil and gas regulations do not protect our drinking water sources. The regulations call for unconventional well developers to simply notify water purveyors when a proposed well is within 1,000 feet from a public water source - that's it! We can comment, and then DEP will make a decision. Why would the Commonwealth of Pennsylvania not use the information developed by source water protection plans throughout the State to limit oil and gas well development? Allowing oil and gas wells within delineated drinking water protection zones doesn't make sense!

I have been told that private property owners have rights. Do they have the right to threaten contamination of a drinking water supply in existence since 1897 serving 15,000 people? How about setting up a State fund using impact fees for water suppliers to purchase mineral rights within our water protection zones?

I have been told that well drilling is very safe and the threat of contamination is very small. I say to you, is it worth the risk? According to DEP, clean safe and reliable drinking water is fundamental to the viability of any community, and as advanced as today's treatment technologies are, they are not perfect. Not all contaminants can be removed or treated - and it is often far more costly to treat contaminated water than prevent contamination from occurring in the first place. The oil and gas regulations completely contradict what DEP already knows.

Information from the State puts all the responsibility for source water protection on the water supplier. They tell us to perform baseline monitoring for contaminants, stay abreast of oil and gas development in the area, and have a collaborative dialogue with resource extraction companies. The regulations tell us what we can do after our water becomes polluted. All of this is a mockery to those of us who take the quality of our drinking water seriously - it is time for the Commonwealth of Pennsylvania to take a stand and be proactive in protecting our drinking water instead of passing the buck.

And finally, I want you all to know I am not against oil and gas development. Indeed, the new shale gas extraction methods offer a shining ray of hope in our dismal regional economy. Rather, I support the intelligent development of oil and gas resources while protecting existing resources that provide our citizens a good quality of life and that includes our drinking water.

If the current drilling technology and methods are completely safe, is the Commonwealth of Pennsylvania willing to provide unlimited grant funding to cover the costs of clean-up and alternate supply of water associated with contamination of a municipal water supply resulting from oil or gas drilling? In other words, is the state willing to put its money where its mouth is? (795)

Response: Please see response to comment 208.

- 211.** Comment: Pennsylvania American Water has many final Source Water Protection Plans and Wellhead Protection Plans that have been developed in partnership with external stakeholders and the Pa Department of Environmental Protection (PaDEP). The first general comment to the proposed regulatory changes is that these plans should be used to establish set-back distances for drilling

operations and storage of waste materials (flowback water, cuttings, waste pits, impoundments) instead of a universal distance. Detailed work has been completed to form the various zones of protection for groundwater and surface water systems used as sources of drinking water. It is recommended that DEP create isolation zones for activity within Zone I of the wellhead protection plan radius identified. It is also recommended that no activity be permitted within Zone A for surface water supplies under the final Source Water Protection Plan. These zones have been identified by DEP, the public water supplier, and external experts as the areas of direct impact to the source in a short time. (1138)

Response: Please see response to comment 208.

212. Comment: Whenever possible, DEP should be allowed to assist water systems, Source Water Protection Committees and Coalitions in their endeavors to protect these Zones that have been deemed vital, in essence by DEP, in preventing the contamination of drinking water sources. The proposed amendment to Chapter 78 presents an opportunity to formalize this assistance. (1149)

Response: Please see response to comment 208.

213. Comment: 78.15(a) – We support electronic submittal of applications to improve processing efficiency. We recommend, however, the following revision to § 78.15(a) to improve transparency to the public and to require that the applicant provide a secure electronic signature on the application, certifying under penalty of perjury that the application contents are true and correct:

(a) An application for a well permit shall be submitted [on forms furnished by the] electronically to the Department through its web site. The permit application shall be made available to the public on the Department's website on the same day that the Department has determined that the application is complete. The electronic application must and contain the information required by the Department to evaluate the application and must include a secure electronic signature on the application certifying under penalty of perjury that the application contents are true and correct. (1143)

Response: The Department is committed to continually improving public access to environmental information. The Department declines to make posting application materials on our website a requirement; however, the Department will be working to make this information publically accessible on our website. The electronic well permit application has been developed and includes a certification and secure signature.

214. Comment: 78.15(a) should explain how the Department will make public an application submitted electronically and how public comment on the application will be accepted electronically, such as through email or its web portal. The Department has an obligation to make available to the public permit applications submitted to it for review and approval. The Department should explain in its regulation how it will make electronic applications available to the public, and how the public can submit comments on the applications. (852a)

Response: The Department's objective with respect to oil and gas operations is to make all electronic submissions available on our website as soon as possible after submission. Additionally, the Department provides access to public records in accordance with the Department's "Public Access to Information and Right to Know Law Policy," Document Number 012-0200-005. DEP routinely provides an extensive range of records for public inspection at its Regional Offices, including applications submitted electronically. Well permit applications are available for review at the Department's Southwest District Office of Oil and Gas Operations and Northwest Office of District Office of Oil and Gas Operations.

Additionally, the Board further declines to include a process for public comment as 2012 Oil and Gas Act outlines a notice, objection and conference process in Sections 3211(b)(2), 3212, and 3251.

215. Comment: Simultaneous electronic posting of the entire text of all well permit applications grouped by watersheds and political subdivisions. This should be in an easily accessible and user-friendly format on a website for public review. Will the PA DEP ensure that the public may review electronic submittals at PA DEP Regional offices? (15, 92, 867, 1098)

Response: The Department's objective with respect to oil and gas operations is to make all electronic submissions available on our website as soon as possible after submission. All electronic documents that the Department currently receives with respect to oil and gas operations are currently available via the Oil and Gas Mapping application. Additionally, electronic copies of some paper document submissions are available via the Oil and Gas Mapping application after scanning and upload by Department staff. Additional electronic documentation will become available as additional electronic reporting functionality is developed.

216. Comment: 78.15(a) Given the complexity of establishing electronic permitting, we recommend electronic submission be an option for a period of time, no less than 2 years, from the date electronic well permit submission is fully operational. (1174)

Response: The Department declines to make electronic permitting a voluntary requirement. The Department developed Electronic "eWell" Permitting in 2013 and this application became available to all permit applicants in early 2014. The eWell process streamlines the current oil and gas permitting process by converting the paper-based Drill and Operate a Well (DOW) permit, to an online process that includes an electronic application submission, online fee payment, and electronic review by Department staff.

217. Comment: We would like to see electronic comments, electronic submission of well application permits available to the public in advance of drilling and fracking. These should identify the full, range of cumulative impacts that may occur on that site, not only from the well pad but from storage tank area to the ponds to the pipelines and roads that come in. (845)

Response: Please see response to comment 215.

218. Comment: We would like support for the submittal of electronic permit applications. Travelling to the Regional Offices in for permit reviews is expensive in terms of staff time and resources. Electronic permit files should be available to the public upon request to limit the burden on affected citizens and interested organizations. (943)

Response: The Department acknowledges this comment.

219. Comment: 78.15(a) should be revised to state the following:

(a) An application for a well permit **may** ~~shall~~ be submitted [on forms furnished by the] **electronically to the Department through its website** and contain the information required by the Department to evaluate the application. **Registered Small Businesses may submit hard copy applications on forms furnished by the Department.** (1135)

Response: To the extent this comment recommends that electronic permitting be voluntary; please see response to comment 216.

To the extent this comment recommends that Registered Small Businesses be exempt from electronic permitting requirements, the Department has considered this comment but declines to make this change. The Department believes that the requirement to submit an electronic permit application is reasonable, appropriate, and necessary to allow the Department to fulfill its mission.

The Department is not initiating required electronic communication by operators with this final-form rulemaking. The Department notes that electronic reporting of production data for all operators – conventional and unconventional - was established by the “Oil and Gas Well Cementing and Casing” rulemaking (41 Pa.B. 805) in 2011 and is not a new requirement. Therefore, all operators should already be registered with the Department and submitting information to the Department electronically.

The Department also believes that utilization of electronic well permit application will have the effect of reducing the time spent filing information with the Department. In addition, it is the intent of the Department to utilize electronic filings and reports to enhance the transparency of the Department activities relative to oil and gas extraction in the Commonwealth. The Department strives to develop a process for submitting information that is user friendly and reliable for both external users and Department staff. Electronic submissions allow the public to have easy access to data via the Department’s web site.

Electronic submissions also have the benefit of reducing Department staff time doing data entry and avoiding the inevitable errors that occur when data is transferred from paper to a database.

Because applications cannot be filed electronically until they are complete, electronic reporting and notifications allow the Department to develop business rules to ensure that the data submitted is complete and accurate, thereby reducing the workload for both the Department and operators in returning and addressing deficient submissions.

Finally, electronic reporting and notifications allow the Department to have a complete picture regarding well development/operations to more efficiently determine compliance. For example, when reviewing production data, Department staff needs to have the permit, Well Record, Completion Report, and additional information readily available in order to help determine the validity of the production/waste data. Currently, paper files need to be retrieved, sometimes from other offices, to obtain this information.

The Department will continue in this effort by continually enhancing the existing applications based upon user feedback.

Please see the RAF for the final rulemaking to see how the Department considered cost of permit conditions against the benefits of electronic submission of forms.

220. Comment: Section 78.15 Application requirements: “An application for a well permit shall be submitted... and contain the information required by the Department to evaluate the application” appears to be absent of pipeline infrastructure requirements. Recommendation: include pipelines and infrastructure in application information requirements. (118)

Response: The Department disagrees that this information is needed as part of the well permit application as the well permit does not authorize pipelines activities. Pipeline construction activities are separately permitted under other laws, regulations and permits administered by the Department.

221. Comment: Since the onset of Unconventional gas well drilling, well applications have morphed from a two page application to a ten plus page application which must be applied for electronically to the DEP website. (627, 4681 – 4682)

Response: The Department acknowledges the comment.

222. Comment: 78.15(a), 78.15(b) We recommend that “complete” permit applications be further clarified, as provided in suggested language for 78.15(d), so that the applicant’s obligation to provide information with respect to threatened and endangered species is clear. We suggest that the Department carefully evaluate the placement of all submitted application forms on its public website for all public access, given the need expressed by public resource agencies to limit location information regarding threatened and endangered species and their habitat. (1103, 1174, 1137)

Response: The Department amended §§ 78.15 and 78a.15 to clarify that the permit application will not be considered complete until the applicant provides the information in subsection (d). In terms of posting well permits and well permit application materials on the Department’s website, the information contained in well permits and application materials is public information and it is appropriate for the Department to post public information on its website. The Department may redact sensitive habitat information.

223. Comment: Section 78.15(b) should be revised to state the following:

(b) The permit application will not be considered complete until the applicant submits a complete and accurate plat, an approvable bond or other means of complying with section [215] 3225 of the act [(58 P. S. § 601.215)] (58 Pa.C.S. § 3225), the fee in compliance with § 78.19 (relating to permit application fee schedule), proof of the notifications required under section 3211(b.1) of the act (58 Pa.C.S. § 3211(b.1), necessary requests for variance or waivers or other documents required to be furnished by law or the Department, and the information contained in subsection (c)–(e). **For purposes of notification, the adjacent municipality is the municipality in which the well is actually located unless the well is within 1,000 feet of the municipal boundary, in which case the bordering municipality shall also be notified under section 3211.b.2.** The person named in the permit shall be the same person named in the bond or other security. (1135)

Response: The Department declines to make the commentator’s suggested revision. Section 3211(b)(2) of the 2012 Oil and Gas Act requires both conventional and unconventional operators to forward a copy of the plat to “the municipalities adjacent to the well.” The Department has interpreted this requirement to require notice to those municipalities sharing a common border with the municipality in which the tract of land upon which the well to be drilled is located. Any change to this provision should be legislative.

224. Comment: Section 78.15 (b): The Section is inadequate for at least four reasons.

First, the Department has no authority to designate or regulate species or condition well permits based on species apart from the “habitat” of species that have otherwise been properly designated by the governing resource agency.

Second, for a permit application to be considered “complete” the applicant must provide “information contained in subsections (c) - (e).” Existing subsection (d) describes a negotiation process and both applicant and department duties rather than an information requirement. It requires the applicant to “consult” and “demonstrate,” and provide “proof of consultation.” None of this is clear with respect to anyone knowing what it is that is the required “information” to be supplied in order to satisfy subsection (b) and have a complete application. In effect, an endless merry-go-round of dialogue is proffered seemingly designed to force applicants to submit to whatever demonstrations or responses that the Department or a resource agency demand before an application may be considered complete.

Third, the standard of “may adversely impact” is in conflict with the Act 13 Section 3215 (e) statutory standard of “probable harmful impact” and for that reason the “may impact” standard is illegal as DEP was not delegated the authority to condition well permits unless the impact was “probable.”

Fourth, the subsection is in direct conflict with and appears to duplicate what appears in proposed subsection (f) (iv). Special concern species is discussed below, but any use or application of the term in what we have observed has always included threatened and endangered species. For the foregoing reasons, subsection (d) should simply be stricken from the proposed regulations. (81, 419)

Response: The Department has determined that the public resource impact screening provisions as outlined in Section 78.15(f)-(g) and 78a.15(f)-(g) are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Please see the response to comment 265.

The Department amended §§ 78.15(d) and 78a.15(d) to clarify what is required to be submitted as part of the well permit application.

The Department amended 78.15(d) and 78a.15(d) to require a detailed analysis of the impact of the well, well site and access road on threatened and endangered species. The process outlined in this section ensures that permit issuance will not violate the Endangered Species Act of 1972, 16 U.S.C.A. § 1531 et seq.; the Wild Resource Conservation Act, 32 P.S. § 5301; the Fish and Boat Code, 30 Pa. code § 101 et seq.; and the Game and Wildlife Code, 34 Pa.C.S. § 101 et seq.

The Department added definitions of “threatened and endangered species” and “other critical communities” in both 78.1 and 78a.1. These definitions seek to clarify that §§ 78.15(d) and 78a.15(d) apply to threatened and endangered species and §§ 78.15(f) and 78a.15(f) applies to other critical communities.

225. Comment: 78.15(b) – The EQB proposes minor changes to § 78.15(b) to conform the rule to the Act. The EQB does not propose to change the requirements for a complete permit application.

Because the current rules do not require submission of any substantive baseline assessment of the original ecological and soil characteristics of the well site, the site “restoration” required in proposed § 78.65 is largely meaningless. Without such an assessment, the PADEP will have no basis for judging whether the site actually has been restored to its original condition. To provide an empirical basis for that judgment, the applicant should be required to submit a written site restoration plan

with studies of baseline conditions sufficient to serve as the benchmark for the site restoration we recommend in our comments on § 78.65. The restoration plan also should identify measures sufficient to restore the site to its original condition. Where such restoration is not possible, the restoration plan should identify measures sufficient to mitigate any remaining adverse effects of the well construction and operation. The burden should be on the applicant to prove any claim that full site restoration is not possible and that proposed mitigation measures will be adequate to compensate for any loss of original features. The permit application should not be considered complete without the restoration plan, and submission of the application should be deemed a commitment to implementing the plan.

We recommend that proposed § 78.15(b) should be revised as follows:

(b) The permit application will not be considered complete until the applicant submits a complete and accurate plat, a site restoration plan including the baseline studies in paragraph (1), the restoration measures in paragraph (2), and the mitigation plan in paragraph (3), an approvable bond or other means of complying with section 3225 of the act (relating to bonding), the fee in compliance with § 78.19 (relating to permit application fee schedule), proof of the notification required under section 3211(b.1) of the act (relating to well permits), necessary requests for variance or waivers or other documents required to be furnished by law or the Department, and the information in subsections (c)-(e). The person named in the permit shall be the same person named in the bond or other security.

(1) A site restoration plan shall include studies and photographs documenting the existing contours, drainage patterns, type and density of native plant community, soil characteristics, and habitat of the full footprint of the proposed well site and any area potentially affected by Oil and Gas Operations associated with the proposed well construction and operation. Documentation of existing conditions shall include field data and shall not be based solely upon aerial and/or remote sensing studies. The site restoration plan shall be prepared by a qualified professional ecologist, certified forester, or landscape architect with demonstrated experience in restoration ecology.

(2) A site restoration plan shall include measures that the applicant will implement to restore the contours, drainage patterns, type and density of native plant community, soil characteristics, and habitat of the full footprint of the proposed well site and any area potentially affected by Oil and Gas Operations associated with the proposed well construction and operation to the baseline conditions documented in paragraph (1).

(3) If it is not technically feasible fully to restore the well site and potentially affected area in accordance with paragraph (2), the site restoration plan shall include measures that the applicant will implement to mitigate remaining impacts of Oil and Gas Operations associated with the proposed well construction and operation. The burden shall be on the applicant to prove that full site restoration is not technically feasible and that the proposed mitigation measures will be adequate to compensate for the loss of features that cannot be restored. (1143)

Response: The Department added requirements in 78.65(b) and 78a.65(b) outlining the requirements for a site restoration plan. The Department disagrees that this must be a component of the well permit application or that the restoration plan must contain an assessment as described by the commentator. Rather, restoration to approximate original conditions, capable of supporting original uses to the extent practicable is the best practice to achieve site restoration within reasonable operational parameters. Projects meeting the well site restoration requirements in Sections 78.65 and 78a.65 will satisfy the statutory restoration requirements and include performance requirements that will protect waters of the

Commonwealth. Additionally, well site projects that trigger the Chapter 102 requirements for an erosion and sediment control permit must submit a Site Restoration/Post Construction Stormwater Management Plan to the Department for review and approval prior to construction of the site as part of the Chapter 102 permitting requirements. Moreover, in Sections 78.65 and 78a.65, operators must submit a well site restoration report to the Department 60 days after restoration. When this report is submitted, the Department conducts an inspection to ensure that the restoration requirements have been met.

226. Comment: Notification of all municipalities touching the host municipality of a conventional or unconventional well is excessive. Notification of the host municipality and any municipality that will be drilled under should be sufficient.

There are no less than 23 separate notification requirements for the completion of a new well. This is excessive, time consuming and frankly an opportunity for well-meaning operators to get caught in non-compliance issues.

There are 19 separate and new forms referenced in the regulation package and not one of the forms was included in the draft package. This is a significant oversight and does not allow for public comment on the forms. (606, 606a)

Response: The referenced notifications are required by Section 3211(b)(2) of the 2012 Oil and Gas Act. Any change to those provisions should be legislative. The Department plans to have all necessary forms, guidance documents, and procedures available at the effective date of the rule making.

227. Comment: One of my biggest objections to the proposed regulations is the increased burdens concerning notification requirements. For example, on wells that I drilled on my property in Venango County last year, it was necessary for me to notify the surface landowner, the local municipality, and no less than an additional eight adjacent municipalities. What possible environmental benefit can come from me notifying these eight adjacent municipalities of my intention to drill four shallow, nine hundred foot deep oil wells? Municipality notification is just a start. You are then faced with spud notifications, casing cement notifications, frac notifications, well reports after drilling, completion reports after fracing, well sight restoration reports, and last but not least, annual production reports, and probably a few yet that I can't bring to mind. Forget to do any of them, and you are faced with a possible Notice of Violation. Additionally D.E.P.'s proposed Mechanical Integrity Assessment program will add another crushing layer of operator reporting requirements, with very little environmental benefit to show for it. (875)

Response: The referenced notifications are required by Section 3211(b)(2) of the 2012 Oil and Gas Act. Any change to those provisions should be legislative.

228. Comment: The requirement to notify the host municipality and all municipalities surrounding a proposed well adds unnecessary and time-consuming costs on the well drilling application process. We understand the need to notify surrounding municipalities due to the amount of truck traffic associated with unconventional well projects however, this requirement is especially burdensome to conventional shallow well projects. Shallow oil and gas wells typically see 10 to 20 truckloads over the entire drilling and completion process.

We support the PGCC recommendation that the requirement to notify adjacent municipalities be limited to within a reasonable distance, such as 2,000 feet, from the proposed well location. (885)

Response: The referenced notifications are required by Section 3211(b)(2) of the 2012 Oil and Gas Act. Any change to those provisions should be legislative.

229. Comment: The currently proposed regulations reference no less than 23 separate notifications to the Department. This onerous notification process should be limited or streamlined wherever possible. Furthermore, we would support the establishment of a building permit for conventional well operators, which would allow for well pad and access road construction if appropriate erosion and sediment controls are followed. (1118)

Response: The Department has considered this comment and declines to make the suggested amendments to this rulemaking. The referenced notifications are required by Section 3211(b)(2) of the 2012 Oil and Gas Act. Any change to those provisions should be legislative.

230. Comment: Jurisdictional agencies, including municipalities, should be encouraged to participate in decision making. Similarly other aspects of the proposed rulemaking that result in permits or decisions that can impact agencies and local governments and the resources they responsible for should be designed to encourage participation and sharing of information. Participation of these entities will improve the public input process and, in turn, provide DEP with valuable information and perspective, resulting in better decisions by the agency. There are several reporting requirements proposed, for instance, in this rulemaking. Municipalities and jurisdictional agencies should be copied on reports, sampling results, and other information that will assist in the management and protection of important resources and community assets. (1156)

Response: The Department has considered this comment and declines to make the suggested amendment to this rulemaking. Municipalities and applicable public resource agencies receive notice of the well permit application. To the extent that municipalities want access to additional information, the Department's objective with respect to oil and gas operations is to make all electronic submissions available on our website as soon as possible after submission.

231. Comment: **Setbacks from Waters of the Commonwealth**

- We recommend the establishment of setbacks at a minimum of 300 feet from the wellbore from any stream, water body, or wetland and a minimum of 100 feet from the edge of the disturbance of the well site.
- For High Quality and Exceptional Value streams, we recommend the requirement of additional setbacks or best management practices as determined necessary by the Department to protect existing high value water quality. (1031)

Response: The Department has considered this comment and declines to make the suggested change to this rulemaking. The Department added §§ 78.15(b.1) and 78a.15(b.1) to the final rulemaking that require additional consideration during the well permit application review process for any watercourse or any high quality or exceptional value body of water or any wetland one acre or greater in size. Importantly, Chapters 78 and 78a contain many provisions, including the requirements related to erosion and sediment control, surface water discharges, waste management, onsite processing, protection of water supplies, water management planning, secondary containment, well construction, and site restoration that ensure protection of waters of the Commonwealth.

232. Comment: § 78.15(c) The term “any changes to its business relationships” is overly broad and ambiguous. The commentator suggests the following amendatory language: “(c) The applicant shall submit information identifying parent and subsidiary business entities operating in this Commonwealth with the first well permit application submitted after [effective date] and provide

any changes to this information with each subsequent well permit application.” (1137,1147)

Response: The Department agrees. Sections 78.15(c) and 78a.15(c) have been modified to address the comment.

233. Comment: Given the nature of subcontracting in the industry, the identification of parent/subsidiary business entities is important. (15, 867, 1098)

Response: The Department acknowledges the comment.

234. Comment: We commend the Department for ensuring that the Proposed Regulations requires corporate disclosure information on parent and subsidiary entities in the permit application requirements in Section 78.15 (c). We believe this requirement should also extend to partnership and joint venture interests. (1142, 997a)

Response: The Department acknowledges the comments. To the extent that the commentator recommends adding partnerships and joint venture interests, the Department declines to make this change as Section 3211(e.1)(5) limits this inquiry to parent or subsidiary corporations. This change should be made to the 2012 Oil and Gas Act.

235. Comment: § 78.15 (c) Language should be added to clarify what change in business relationships means or alternatively, replace the wording “changes to its business relationships” with “changes to this information” which would more clearly refer back to the information previously provided (i.e. The information identifying parent and subsidiary business entities operating in Pennsylvania). (124a)

Response: The Department agrees. Sections 78.15(c) and 78a.15(c) have been modified to address the comment.

236. Comment: We support requiring identification of well operators’ parent and subsidiary companies (113)

Response: The Department acknowledges the comment.

237. Comment: Section 78.15(c) should be revised to state the following:

(c) The applicant shall submit information identifying parent and subsidiary business entities operating in Pennsylvania with the first application submitted after [effective date] and provide updated parent/subsidiary information ~~[any changes to its business relationships]~~ with each subsequent application. (1135)

Response: The Department has clarified when and what information must be updated in 78.15(c) and 78a.15(c) to address this suggested change.

238. Comment: 78.15(c): Clarify Parent and Subsidiary Compliance History and When a Change is Deemed to have occurred. Clarifying the proposed text in Section 78.15(c) will ensure the requested information on compliance history is utilized as an effective and responsible compliance tool. We agree that the Ownership and Control form need only be submitted once and updated when applicable. We hope the Board will consider events that trigger the proposed language of “provide any changes to its (the operator’s) business relationships” to ensure expectations on operator reporting are met. Without clarity on such triggering events, operators will likely continue the practice of submitting an Ownership and Control form with each permit application, generating

approximately nine pages of unnecessary filings with each permit application. This appears to be exactly the scenario that the Board is attempting to avoid with its proposal. (1085)

Response: The Department has clarified when and what information must be updated in 78.15(c) and 78a.15(c).

239. Comment: 78.15(c) The Proposed Rulemaking would add 25 Pa. Code § 78.15(c), which requires applicants for drilling permits to identify parent and subsidiary entities in their initial permit applications following the effective date of the rulemaking, and also identify changes to their “business relationships” in subsequent permit applications. The EQB should clarify exactly which “business relationships” must be disclosed. Further, applicants should be required to identify joint ventures and sister entities (meaning, those having the same parent entity as the applicant) in their initial permit applications. The Department must consider joint ventures and sister entities when determining whether nearby facilities are under common control and thus potentially subject to aggregation under the Title V, New Source Review and/or Prevention of Significant Deterioration rules established under the federal Clean Air Act and Pennsylvania’s Air Pollution Control Act.2 (1159)

Response: The Department has clarified when and what information must be updated in 78.15(c) and 78a.15(c). To the extent that the commentator recommends adding joint ventures and sister entities, the Department declines to make this change as Section 3211(e.1)(5) limits this inquiry to parent or subsidiary corporations. That change should be made to the 2012 Oil and Gas Act.

240. Comment: 78.15(c) We recommend clarifying language for “information identifying parent and subsidiary business entities.” Suggested Language: The applicant shall submit information identifying parent and subsidiary business entities operating in Pennsylvania with the first well permit application submitted after [effective date] and provide any changes to this information with each subsequent well permit application. (1174)

Response: The Department agrees. Sections 78.15(c) and 78a.15(c) have been modified to address the comment.

241. Comment: 78.15(c) Application Requirements - “within 30 days of any change to its business relationships”. It is suggested that the language be revised to state “any change of control or ownership in the local operating entity” so that operators do not have to notify the DEP every time there is a change in the business entity. In addition, language should be added to clarify what change in control means (e.g. merger, transfer of more than 50% of the parent company’s stock, etc.). (1057)

Response: The Department agrees that clarity is needed and has modified 78.15(c) and 78a.15(c). The Department declines to make the suggested change relating to “change in control.” Given the language in 3211(e.1)(5), it is appropriate to ask for well permit applicants to update this information when the applicant’s parent or subsidiary corporations change.

242. Comment: 78.15(c) should require the applicant to identify all corporate affiliates – not just parent and subsidiaries, and include a certification that no violations exist or are being contested.

The Department’s preamble to this provision mistakenly indicates that the amendment is intended to address a permit applicant’s “compliance history.” Section 3211(e.1) does not authorize the Department to deny a permit based on compliance history; it instead addresses continuing violations of the law – a concept completely different than violation history. The authority to deny a permit for

a continuing violation of law enables the agency to leverage the operator's need for a permit to obtain compliance with the law at other operations throughout the Commonwealth at a specific point in time; the authority to deny a permit based on violation history provides a continuing incentive for companies to comply with the law for fear that its cumulative history of violations will be deemed to demonstrate a lack of ability or intent to comply with the law, which thereby justifies a permit denial.

We support disclosure of parent and subsidiary relationships, and encourage the Department to extend that disclosure to affiliates with common financial or ownership interests. The reasoning that supports disclosure of parent and subsidiary relationships applies equally to affiliates – persons should not benefit financially from a company when a related company is violating the law. To maximize the Department's ability to ensure compliance with the law within the industry, the Department should extend the disclosure under this section to include affiliates that have a common financial or ownership interest.

Second, we urge the Department to add a requirement to this section that applicants submit a certification, under penalty of law pursuant to 18 Pa. Cons. Stat. § 4904, that the companies, its parents and subsidiaries are in compliance with the law or have obtained a supersede as in relation to an appeal of the alleged violation. Considering the limited time that the Department has to make permit decisions, such a certification would promote the efficient processing of permits by ensuring that companies self-police their own conduct prior to submitting a permit application. It would also promote self-reporting and self-correction of violations by applicants. Further, any company that knowingly fails to self-report or self-correct when submitting an application would risk serious penalties for submitting a false sworn statement to the Department. (852a)

Response: To the extent that the commentator recommends requiring applicants to identify all corporate affiliates with common financial or ownership interests, the Department declines to make this change as Section 3211(e.1)(5) limits this inquiry to parent or subsidiary corporations. To the extent that the commentator suggests a requirement that the well permit applicant submit a certification that the applicant and its parent and subsidiary corporations are in compliance with the law, the Department declines to make that change in this rulemaking.

243. Comment: The permit applicant, not DEP, should be responsible for determining whether proposed oil and gas operations would affect threatened or endangered species. (Section 78.15(d)). (19, 21, 23, 26, 90, 142, 153, 165, 180, 189, 192, 391, 429a, 609, 843, 851, 938, 946, 958, 1005, 938a)

Response: Sections 78.15(d) and 78a.15(d) require the well permit applicant to provide a detailed analysis of the impact of the well, well site and access road on threatened and endangered species. This analysis must include a PNDI receipt and, if there is conflict, written documentation demonstrating that the impact will be avoided, mitigated, or minimized along with any clearance letters, determinations, or correspondence with the applicable public resource agency. This process is necessary to ensure compliance with applicable law. Additionally, the Department has an obligation to ensure that permit issuance will not violate the laws that protect threatened and endangered species.

244. Comment: I applaud the addition of the proposed Subsection (d). With gas well drilling occurring in over 60% of the Commonwealth, and oil and gas pipeline activities occurring throughout the entire Commonwealth, the protection of threatened or endangered species is paramount. Hopefully, the misguided attempt to revise the Pennsylvania Endangered Species Act does not pass through the state legislature. (625)

Response: The Department acknowledges the comment.

245. Comment: § 78.15(d) - Suggested amendatory language: The applicant shall utilize PNDI to identify the presence or absence of a State or Federal threatened or endangered species where the proposed well site or access road is located and shall provide proof of notification and consultation with the applicable resource agency regarding the screening for the presence of such species and their critical habitat in the well permit application. For purposes of consulting with the Department, if the proposed well site or access road will have a probable adverse impact on such species or their critical habitat, the applicant shall submit a proposed plan or measures to avoid, prevent, or minimize the impact in accordance with State and Federal laws pertaining to the protection of threatened or endangered species and their habitat. An applicant's submission of the proposed plan or measures concludes the information required to be submitted to the Department pursuant to subsection (b). (1103, 1137, 1147, 1174, 1171)

Response: The Department disagrees and declines to include the suggested language. In accordance with federal and state law, the Department has an obligation to ensure that permit issuance will not result in a violation of the laws that protect federal or state threatened or endangered species. Accordingly, the Department has amended §§ 78.15(d) and 78a.15(d) in the final rulemaking to require well permit applicants to include a detailed analysis of the impact of the well, well site and access road on threatened and endangered species. This analysis must include a PNDI receipt and, if there is conflict, written documentation demonstrating that the impact will be avoided, mitigated, or minimized along with any clearance letters, determinations, or correspondence with the applicable public resource agency. This process is necessary to ensure compliance with applicable law.

246. Comment: Proof of consultation with the Pennsylvania Natural Heritage Program (PNHP) for State and Federal threatened or endangered species extended to all ecologically significant species and communities. Given rapidly increasing rate of environmental degradation and evolving issues related to climate change, the broader the purview, the greater protection of our Constitutional rights. [78.15 (d)] (15, 867, 1098)

Response: Sections 78.15(d) and 78a.15(d) apply to threatened and endangered species. Sections 78.15(f) and 78a.15(f) apply to "other critical communities" as that term is defined in §§ 78.1 and 78a.1. Section 78.15(d) and 78a.15(d) work in tandem with the public resource consideration requirements in §§ 78.15(f)-(g) and 78a.(f)-(g) to ensure the Department complies with its constitutional and statutory obligations.

247. Comment: 78.15(d) New Section – Proposed - Concurrent review of any permits and PNDI clearances (1057)

Response: The Department applies the "Policy for Pennsylvania Natural Diversity Inventory (PNDI) Coordination During Permit Review and Evaluation," Document No. 021-0200-001 (PNDI Policy), to applicable permits and authorizations related to threatened and endangered species and special concern species. In accordance with the PNDI policy, there are two options available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either threatened and endangered species or special concern species – sequential review or concurrent review. For more information, refer to page 7 of the PNDI Policy. The Department follows this policy when reviewing well permit applications.

248. Comment: 78.15(d) – The EQB proposes to add a new requirement that the applicant provide proof of consultation with the Pennsylvania Natural Heritage Program (PNHP), with the goal of protecting threatened or endangered species where the well site or access road is located. If impacts are identified, the EQB proposes working with the applicant to minimize the impacts, without further inclusion of the PNHP in the decision-making process.

We support the additional consultation requirements with the PNHP. We recommend, however, that the consultation be improved in three ways.

First, the consultation should consider all species of special concern, as defined by the PNHP, not only threatened or endangered (T&E) species.

Second, the examination conducted for purposes of the consultation should include impacts from the full footprint of development, including all areas required for waste handling, processing, pipeline construction, storage, and other activities encompassed in the new proposed definition for “Oil and Gas Operations.” The newly defined term “Oil and Gas Operations” should be used to make the full scope of the activities within the development footprint clear. The area of analysis also should account for noise, light, and air pollution impacts that reach beyond the immediate footprint of Oil and Gas Operations. When Oil and Gas Operations are located in forest, the area of analysis should extend at least an additional 100 meters (328 feet) from the footprint perimeter of all Oil and Gas Operations to account for edge effects of tree cutting and their potential impacts on migratory birds. (19 See K.A. Harper, et al., Edge Influence on Forest Structure and Composition in Fragmented Landscapes, 19 Conserv. Biology 768–82 (2005); U.S. Geological Survey, Landscape Consequences of Natural Gas Extraction in Bradford and Washington Counties, Pennsylvania, 2004-2010, <http://pubs.usgs.gov/of/2012/1154/>; Md. Dep’t Natural Res., Maryland Forest Land Use Assessment, http://www.dnr.state.md.us/forests/download/sfla_report.pdf.)

Third, the regulations should require more than a standard T&E consultation, which is a minimal, reductionist approach to addressing habitat and forest sustainability. The standard approach is grossly inadequate for protecting forest structure and function, as it makes no attempt to define the spatial parameters of the ecosystem prior to the proposed disturbance. A failure to address pad, road, and gathering line configuration with respect to habitat continuity and connectivity will ensure widespread disruption of ecological processes. The science is clear on this issue, as the species impacts of habitat fragmentation are not specific to oil and gas development. What sets Oil and Gas Operations apart, however, is the dispersed area of build-out. We recommend that the deficiencies in the standard consultation process be cured in these regulations

Finally, PADEP should work with the applicant and PNHP to determine the appropriate mitigation (if any) for impacts that cannot be eliminated or determine when projects cannot be sufficiently mitigated.

The regulation should also require that all mitigation measures be included as conditions in the final permit.

We propose the following revisions:

§ 78.15(d) Application Requirements

The applicant shall provide proof of consultation with the Pennsylvania Natural Heritage Program (PNHP) regarding the presence of a State or Federal threatened or endangered species or species of special concern anywhere the proposed well site or access road is located within the full footprint

of the Oil and Gas Operations and adjacent area affected by such operations. The area of analysis must account for noise, light, and air pollution impacts that reach beyond the immediate footprint of Oil and Gas Operations. When Oil and Gas Operations are located in forest, the spatial parameters of the ecosystem in existence prior to the proposed disturbance shall define the area of analysis, which also shall extend at least an additional 100 meters (328 feet) from the footprint perimeter of all Oil and Gas Operations, and the analysis shall include a description of impacts on habitat continuity, forest connectivity, patch size, and core forest area.

If the Department determines, based on PNHP data or other sources, that the full footprint of the proposed Oil and Gas Operations well site or access road may adversely impact the species or critical habitat within the appropriately defined ecosystem, the applicant shall consult with the Department and PNHP to avoid or prevent the impact. If the impact cannot be avoided or prevented, the applicant shall demonstrate how the impacts will be minimized in accordance with State and Federal laws pertaining to the protection of threatened or endangered flora and fauna and species of special concern and their habitat by proposing specific mitigation measures for Department and PNHP consideration. The Department may deny the permit if no acceptable means is available to avoid or mitigate the impact. If avoidance or mitigation methods proposed by the applicant are acceptable to the Department and PNHP, those requirements shall be included as conditions of permit approval. (1143)

Response: Regarding noise, see response to comment 2913.

To the extent the commentator suggests that species of special concerns be addressed in §§ 78.15(d) and 78a.15(d), please see response to comment 246.

To the extent that the commentator suggests that these provisions extend to all oil and gas operations, Sections 78.15 and 78a.15 establish the well permit application process and are limited to activities associated with well construction and development. The requirements of these sections are designed to address the impacts within the limit of disturbance of the well site. Other activities associated with the oil and gas operations are regulated through various other provisions in Chapters 78 and 78a, or other laws implemented by the Department.

To the extent that the commentator suggests that the threatened and endangered species impacts review must be expanded to consider additional public resources, §§ 78.15(d) and 78a.15(d) work in tandem with the public resource consideration requirements in §§ 78.15(f)-(g) and 78a.(f)-(g). Notwithstanding the enumeration of specific public resources in the regulations, the Department will consider the potential impacts to other public resources identified during the permitting process. To the extent that the commentator suggests that additional protections are needed, Chapters 78 and 78a, as well as other regulations, permits and policies implemented by the Department under Pennsylvania's environmental laws as well as the laws implemented by other agencies, establish a comprehensive regulatory scheme for oil and gas well development activities to ensure protection of public health, safety and the environment. The purpose of these provisions is to identify, consider, and protect public resources.

- 249. Comment: 78.15(d). Application Requirements. - Well pads, access roads and gathering lines have been located either within or in close proximity to core habitat areas in Wyoming County. [Sharpe Location ESX13-131-0010, EDF 1H-6H ESX10-131-0002] Core habitat polygons typically represent the aggregation of core habitats for the assortment of species of concern occurring in any one area. Core habitat areas host critical communities, species of special concern. The fact that we have such areas within our region, attests to the healthy environment in which we live. Because**

we've been unable to adequately protect these areas on private lands, it is imperative to protect these areas on our public lands. Therefore, we recommend this provision as written. (660a)

Response: The Department acknowledges this comment. Please see comment 245 relating to amendments to this section in the final rulemaking.

250. Comment: Request for Clarification as to Scope of Operator Consultation with Pennsylvania Natural Heritage Program (PNHP). We ask that the Board streamline its use of terms related to species and habitats throughout this section and others to ensure uniformity of interpretation among the Department and the regulated community; especially, when related to obligations of permit applications that relate back to the direction of Act 13 Section 3215(e) related to well permit conditions for public resources. The proposed provision creates uncertainty about a permit applicant's obligations related to protecting important public resources.

In Section 78.15(d), the Board proposes that operators consult PNHP regarding the presence of a federal or state threatened or endangered species where a well site or access road is proposed. The Rule then goes on to give the Department the authority to determine, based on PNHP data or other sources, if the proposed well site or access road may adversely impact a species or critical habitat. We note that neither the PNHP Species of Special Concerns Lists nor PNHP's Pennsylvania Natural Diversity Inventory (PNDI) is defined as tools to find, define, or verify any potential impacts to "critical habitats." Currently, as stated on the PNHP website, the PNHP Species of Special Concerns List system is not used to find, define, or verify any potential impacts to critical habitats; rather it inventories and maintains a list of ecologically significant species and communities. PNHP's PNDI lists potential impacts on resources of special concern, and PNDI offers a means of documenting that it was consulted (i.e., issues a receipt). Thus, the use of this term appears superfluous in the proposed language and it should be deleted. However, If the Board intends "consultation with the PNHP" to mean a search through the PNHP's PNDI system, it could expressly state so in the Rule to assure uniform consultation among operators.

Additionally, the proposed language allowing for the Department to consult other sources to determine whether the proposed well site or access road may have an adverse impact should be further clarified as to set reasonable expectations. To maximize compliance, we recommend including a clear and expressly enumerated list of Department consulted sources. (1085)

Response: The Department has amended these sections in the final rulemaking. For the changes to §§ 78.15(d) and 78.15(d), please see response to comment 245. Additionally, the Department added definitions for "common area of a school's property," "limit of disturbance," "other critical communities," "Pennsylvania Natural Diversity Inventory," "PNDI receipt," "playground," "public resource agency," and "threatened and endangered species." These new definitions were added to provide clarity and establish a known universe of public resources that are identifiable. The purpose of these public resource provisions is to largely codify how the Department currently implements its obligations to consider public resources as part of the well permit application process through the well permit applicable forms, the PNDI policy, and "Coordination with Public Resources" form.

251. Comment: 78.15(d) – Commentator supports requiring well permit applicants to consult with the Pennsylvania Natural Diversity Inventory Environmental Review Tool (PNDI ER Tool) and we strongly recommend that the Pennsylvania Department of Environmental Protection (Department) Policy for Pennsylvania Natural Diversity Inventory (PNDI) Coordination During Permit Review and Evaluation (Document Number 021-0200-001) be followed during this environmental review process. The PNDI ER Tool provides immediate access to a database of known occurrences of

federally listed threatened and endangered species. The PNDI ER Tool is continually updated. Although field habitat or species surveys may reveal previously unknown locations, the PNDI ER Tool will assist the Department with avoiding issuance of a permit that may result in take of known federally listed species in a proposed permit area. Section 9 of the Act prohibits the take of any federally listed animal species by any person subject to the jurisdiction of the United States. Section 11 of the Act provides for both civil and criminal penalties for those convicted of section 9 violations. When no federal nexus (i.e., a Federal agency funds, authorizes, or carries out an action) exists, take incidental to an otherwise lawful activity may be authorized, and a section 9 violation avoided, through issuance of an incidental take permit pursuant to section 10(a)(1)(B) of the Act should be obtained. The Service may issue such a permit upon completion of a satisfactory habitat conservation plan for the listed species that would be taken by the project. (1006, 1134)

Response: The Department acknowledges the comment.

252. Comment: 78.15(d) should clarify that it applies to any activities associated with well construction that may impact threatened or endangered species.

Subsection (d) requires consultation with PNHP for any threatened or endangered species where the proposed well site and access road are to be located. The term “well site” means the area where the equipment necessary for or incidental to drilling, production or plugging of the well. The investigation should encompass all activities authorized under the permit that may affect threatened or endangered species, including those that are not located on the specific area where equipment will be located for drilling, production or plugging. To ensure a properly scoped investigation, we suggest the proposed language 78.15(d) read: “the well site, access road, or other area that may be impacted by activities authorized by the permit.” (852a)

Response: See responses to comments 245 and 250.

253. Comment: The proposed regulations change that obligation by only requiring gas operators to mitigate the impact of their operations on threatened or endangered species if the DEP determines that the well site location will adversely impact species or “critical habitat.” Because an operator proposing an oil or gas project stands to gain financially from the project, and is in the best position to understand the scope and potential impact of its proposal, the operator (and not DEP) should have the burden of determining whether its project would affect listed species and their habitat.” The analysis of the habitat and the species at risk can then be reviewed by the public. (19, 21, 23, 26, 90, 142, 165, 189, 192, 391, 938, 946, 958, 1005, 938a)

Response: See response to comment 245.

254. Comment: Section 78.15(d) should be revised to state the following:

(d) The applicant shall utilize the Pennsylvania Natural Diversity Inventory (PNDI), or comparable database, to identify [provide proof of consultation with the Pennsylvania Natural Heritage Program (PNHP) regarding] the presence of a State or Federal threatened or endangered species where the proposed well site [~~or access road~~] is located. If [~~the Department determines, based on PNHP data or other sources, that~~] the proposed well site [~~or access road~~] may adversely impact the species or critical habitat, the applicant [~~shall consult with the Department to avoid or prevent the impact. If the impact cannot be avoided or prevented, the applicant~~] shall demonstrate how the impacts will be minimized in accordance with State and Federal laws pertaining to the protection of threatened or endangered flora and fauna and their habitat. An applicant’s submission of the proposed

plan or measures concludes the information required to be submitted to the Department pursuant to subsection (b). (1135)

Response: The Department disagrees that the suggested changes should be included in the final rulemaking.

The Department has amended §§ 78.15(d) and 78a.15(d) in the final rulemaking to require well permit applicants to include a detailed analysis of the impact of the well, well site and access road on threatened and endangered species. This analysis must include a PNDI receipt and, if there is conflict, written documentation demonstrating that the impact will be avoided, mitigated, or minimized along with any clearance letters, determinations, or correspondence with the applicable public resource agency. This process is necessary to ensure compliance with applicable law.

Use of PNDI is consistent with the Department's past practices and policies. Prior to this rulemaking, the Department's well permit application materials and its "Policy for Pennsylvania Natural Diversity Inventory (PNDI) Coordination During Permit Review and Evaluation," Doc. No. 021-0200-001 establish a process that has been and continues to be in use by well permit applicants to identify the impacts to threatened and endangered species. The final rulemaking codifies this process and is consistent with the Department's long-standing use of PNDI to fulfill its responsibilities related to threatened and endangered species when issuing permits under various environmental statutes.

§§ 78.15(d) and 78a.15(d) make appropriate use of information available in the PNDI database from the public resources agencies with the authority, knowledge and expertise to identify and protect species of special concern. Sections 78.15(d) and 78a.15(d) outlines a reasonable and appropriate process that provides important information to the Department to ensure compliance with applicable federal and state law related to threatened and endangered species.

To the extent the commentator suggested limiting this obligation to the well site, the Department disagrees because it considers the impacts of the well to include impacts from the well site and access road.

255. Comment: The Pennsylvania Natural Diversity Inventory (PNDI) system was originally set up with two goals—species protection as part of the DEP permitting process and government and conservation planning efforts - two goals that do not necessarily coincide.

The Pennsylvania Natural Heritage Program (PNHP) maintains a list of special concern species, which cannot be the source of undefined obligations for permit applicants because it is a disparate grouping of entries, over 50% of which have not been designated any status in accordance with rulemaking procedures. Even among those designated by state agencies, aside from those listed as threatened or endangered, no particular protections are conferred upon any species.

Recent activity on the PNHP list, which contains over 1600 entries, also indicates why the database cannot be used to determine legal obligations of permit applicants. Between May 2012 and August 2012, entries with no codes increased from 400 to 534. In the 14 months between 5/25/2012 and 7/31/2013, the following activity occurred:

- federal listed species increased from 25 to 39, most of which are "partial" status;
- state listed species increased from 751 to 776, which is not reflective of rulemaking activity during that time period, raising a question about the daily accuracy of the list;

- species with Pennsylvania Biological Survey codes, but with no corresponding federal or state codes, increased from 145 to 204.

PHNP's list of special concern "species" includes non-species entries as well.

- 20 "geology" entries, listing anticlines, drainage patterns, erosional remnants, kettelholes, meandering channels, potholes, dunes, waterfalls and rapids; and
- 161 "community" entries, listing lakes, wetlands, woodlands, marshes, cliffs, meadows, tree stands, forests, thickets, shrubland, peatland, and more.

PNDI receipts do in fact provide hits for plant communities. Every natural plant community that occurs in Pennsylvania is on that list including the most common forest types, such as the "northern hardwood" plant community. Pennsylvania has over 29 million acres of land, over 16 million of which is forested. About 38% of Pennsylvania forests, over 6 million acres, are of the northern hardwoods type. We are unaware if anyone received a hit for "northern hardwoods" but there have been hits for the very common "hemlock-northern hardwood" subtype.

In an effort to further understand the scope of the proposed obligations related to special concern species—which are any species other than threatened or endangered species that have been placed in a database tool used for project and permit reviews — Commentator requested a meeting and met on October 8, 2013 with representatives from DEP, Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission and the Department of Conservation and Natural Resources. DCNR informed attendees that:

- The actual database of special concern species, upon which permit obligations are based, is not public, viewable or printable;
- "Special concern" species, other than threatened or endangered species, are added by agencies and scientist volunteers without public notice, comment, participation or rulemaking procedures; and
- The resource agencies acknowledged that there are no binding legal survey or mitigation obligations associated with special concerns species that are neither threatened nor endangered.

In the absence of any explanation and in an effort to understand how the DEP recently arrived at the conclusion that "special concern species" meant or equates to the term "critical communities" in Section 3215(c)(4) of Act 13 and the identical and earlier use of the term in the original 1984 Oil and Gas Act legislation, it is instructive to examine the legislative record and relevant historic publications. This review resulted in the following findings:

- Senate Bill 402 of the 1983 and 1984 Legislative Session was the Bill that comprised the 1984 Oil and Gas Act or what became Act 223.
- The Original Bill referred to the Senate Environmental Resources and Energy Committee on February 24, 1983 had no separate provisions addressing consideration of public resources in well permitting.
- Printers copy number 2087 of the Bill, which first appeared on June 12, 1984 included a Section 205(c) which is identical to the current Act 13 Section 3215(c), to include the term "critical communities" except for the Act 13 addition of subsection 3215(c) (6) pertaining to public drinking water supplies and 3215(b) waivers.
- Act 223, to include Section 205(c) was signed in the House and Senate on November 29, 1984 and approved by the Governor on December 19, 1984.

- As reported on the Pennsylvania Biological Survey (PABS) website, the book or publication discussing ‘species of special concern’ in Pennsylvania was not published until 1985.
- The PABS history states: “The Pennsylvania Biological Survey traces its origin to an initiative by representatives of the National Audubon Society, Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, and the former Department of Natural Resources (now two departments - Department of Conservation and Natural Resources and Department of Environmental Protection), who met in 1979 to discuss the need to develop a coordinated inventory and assessment of the flora and fauna of Pennsylvania. The Survey’s first task was to document the status of plants and animals of special concern in Pennsylvania. A subsequent five-year effort resulted in the publication in 1985 of Species of Special Concern in Pennsylvania (H. H. Genoways and F. J. Brenner, eds., Carnegie Museum of Natural History, Special Public. No. 11, Pittsburgh, Pa. 1985). This volume contained information on the status of 297 species, including representatives of all 5 classes of vertebrates, selected groups of invertebrates, and vascular plants.” According to the experts who wrote an edited this book, the term “special concern species” includes both listed and non-listed species; it is an umbrella term with no clear meaning or definition.
- The term “critical communities” as used in Act 223 and Act 13 predated the publication of this inventory of and any general use of the term “species of special concern” or “special concern species” by at least 7 months.
- There is no reference in the legislative history of Act 223 to “species of special concern” or “special concern species.”

Because the term, concept, and actual inventory of “special concern species” or “species of special concern” with respect to Pennsylvania post-dates the use of the term “critical communities,” in Act 223 the Pennsylvania legislature could not and did not intend for the term to include or mean “species of special concern” or “special concern species.” Accordingly, the DEP has no basis in law or fact from which to conclude that the terms “critical communities” means or is synonymous with the terms “special concern species” or “species of special concern.” Accordingly, it cannot extend legal protection obligations to such species via Chapter 78 regulatory revisions absent authority delegated to it to do so by the legislature.

When the DEP submitted proposed Section 78.15(f)(iv) to the EQB as a proposed rule on August 30, 2013, it did not even know the meaning or potential meaning of the term “special concern species.”

The Agenda for a “DEP and Jurisdictional Agency Meeting” held on Friday, November 1, 2013 with respect to “public resources” poses in the 9:10 to 9:30 meeting time frame titled “Species of Special Concern” three questions. The questions were: 1) “What is the universe of species considered as species of special concern?” 2) What is the process for listing a species of special concern by each jurisdictional agency?” and 3) What are the mitigation measures recommended by the jurisdictional agencies for species of special concern?”

Suggested amendatory language:
Section 78.15 Application Requirements

* * * * *

(d) The applicant shall utilize the Pennsylvania Natural Diversity Inventory (PNDI) to identify the presence or absence of a state or federal threatened or endangered species where the proposed well site or access road is located and shall provide proof of notification and consultation with the applicable resource agency regarding the screening for the presence of such species and their critical habitat in the well permit application. For purposes of consulting with the Department, if the proposed well site or access road will have a probable harmful impact on such species or their critical habitat, the applicant shall submit a proposed plan or measures to avoid, prevent, or minimize the impact in accordance with state and federal laws pertaining to the protection of threatened or endangered species and their habitat. An applicant's submission of the proposed plan or measures concludes the information required to be submitted to the Department pursuant to subsection (b).

(e) If an applicant seeks to locate a well on a well site where the applicant has obtained a permit under § 102.5 (relating to permit requirements), the applicant is deemed to comply with the application submission requirements of subsections (b) and (d) with respect to supplying the required information regarding proof of consultation with the applicable resource agency and the Department.

(f) An applicant proposing to drill a well at a location listed in paragraph (1) shall notify the applicable resource agency, if any, in accordance with paragraph (2) and provide the information in paragraph (3) to the Department in the well permit application.

(1) This subsection applies if the proposed well is located:

- (i) in or within 200 feet of a publicly owned park, forest, game land or wildlife area.
- (ii) in or within the corridor of a state or national scenic river.
- (iii) within 200 feet of a national natural landmark.
- (iv) within 200 feet of a historical or archeological site listed on the Federal or State list of historic places.
- (v) in the case of an unconventional well, within 1000 feet of a water well, surface water intake, reservoir or other water supply extraction point used by a water purveyor.
- (vi) in a location that will impact critical habitat of state or federal threatened or endangered species.

(2) The applicant shall notify the public resource agency responsible for managing the public resource identified in paragraph (1), if any. The applicant shall forward by certified mail a copy of the plat identifying the proposed location of the well, well site and access road and information in paragraph (3) to the public resource agency at least 15 days prior to submitting its well permit application to the Department. With respect to surface landowners who are also the public resource agency to be notified, the notification required by Section 3211 (b.1.) of the Act, provided it includes the information prescribed by this subsection, satisfies the notification requirements of this subsection. With respect to subsection (f) (vi) above, the notification requirements of this paragraph only apply if the applicant has not previously notified the applicable resource agency pursuant to the applicant's use of the PNDI process. The applicant shall submit proof of notification required by this subsection with the well permit application. From the date of notification, the public resource agency shall have 15 days to provide written comments to the Department and the applicant on the functions and uses of the public resource and the measures, if any, that the public resource agency recommends the Department consider to avoid or minimize probable harmful impacts to the public resource where the well, well site and access road is located. The applicant may provide a response to the Department to any such comments within 10 days of receipt of the comments.

(3) The applicant shall include the following information in the well permit application on forms provided by the Department:

- (i) an identification of the public resource.
- (ii) a description of the measures proposed to be taken to avoid or mitigate impacts, if any.

(4) The information required in paragraph (3) shall be limited to the discrete and physically separate and distinct area of the public resource that may be affected by the well, well site and access road.

(g) Subject to satisfying and complying with the criteria prescribed in subparagraphs (1)-(3) below, the Department may include conditions in the well permit to avoid or mitigate impacts to the public resource. The presence of well sites and the conduct of oil and gas operations on or in the vicinity of public resources, as listed in Section 3215(c) of the Act, are not in and of themselves an impact or considered a harm requiring or authorizing the imposition of any well permit conditions under Section 3215(e). The conduct of oil and gas operations is one of many lawful and multiple uses of land that occur on or in the vicinity of public resources. As prescribed in Section 3215(e)(1) of the Act, in determining whether to impose a condition, the Department shall utilize the following three sets of criteria:

(1) Criteria to use for conditioning a well permit based on its impact:

- (i) No permit condition may be imposed unless DEP determines that such a condition is necessary to protect against the probable harm.
- (ii) No permit condition may be imposed unless the evidence of probable harm is supported by clear and convincing evidence that the harm to the public resource is probable, rather than merely possible or speculative harm.
- (iii) No permit condition may be more restrictive or limiting with respect to a well, well site or access road than the set-back prescriptions contained in the applicable section of Act 13 unless it is shown by clear and convincing evidence that the existing protections of Act 13, Clean Streams Law, or other applicable statutes are insufficient to protect against the specified harm or unless the applicant consents in writing to the condition.
- (iv) No permit condition may be more restrictive or limiting with respect to a well, well site, or access road or the conduct of oil and gas operations incident thereto than the existing measures and protections established and required under Chapter 78, Act 13, or any other environmental Act or regulation administered by the Department unless it is shown by clear and convincing evidence that the existing measures and protections are insufficient to protect against the specified harm or unless the applicant consents in writing to the condition.
- (v) The nature of the harm to be avoided or mitigated by the permit condition must be clearly described in the terms of any proposed permit condition and permit.

(2) Criteria, in addition to those in paragraph (1), to ensure optimal development of oil and gas resources:

- (i) no condition implicating surface activities or operations may be imposed that results in commercially unreasonable financial burdens on applicants.
- (ii) for purposes of conservation and avoiding the waste of recoverable oil and gas resources, no conditions may be imposed that result in alterations to the well design in a way that will reduce the anticipated volume of recoverable gas or oil resources.
- (iii) for purposes of administering this subsection, no condition may be imposed that results, or could result, in permitting delays in violation of the Permit Decision Program.
- (iv) permitting decisions may not be influenced by an applicant's refusal to waive the financial burden restriction.

(3) Criteria, in addition to those in paragraphs (1) and (2) above, to use for respecting private property rights of oil and gas owners:

- (i) in accordance with subsection 3215(g)(2) of the Act, no conditions may be imposed on well permits where the proposed condition itself alters or abridges the terms of any lease, deed, surface use agreement or similar contract or agreement between a surface owner and subsurface oil and gas owner or to which they are subject as signatories or successors in interest.
- (ii) denial of a well permit is not a prevention, avoidance, or mitigation measure authorized by this section.
- (iii) no permit conditions may be imposed if the effect would deprive the owner of the oil and gas rights of the right to produce or share in the oil or gas underlying a surface tract.

(h) A decision to impose or not to impose a condition is non-precedential and does not bind the Department or applicant or require either adhering to or including the same condition or conditions addressing the same subject matter in any subsequent permits.

(i) The issuance of a permit containing conditions imposed by the Department pursuant to this subsection shall be an action that is appealable to the Environmental Hearing Board. The Department shall have the burden of proving that the conditions were necessary to protect against a probable harmful impact of the public resource. (1153)

Response: The Department has considered the commentator's comments and declines to make the suggested changes.

To provide clarity; however, the Department has made several changes in the final rulemaking in §§ 78.15 and 78a.15.

For changes to §§ 78.15(d) and 78a.15(d), please see response to comment 245.

To the extent the commentator comments on the provisions related to species of special concern, the Department has determined that the public resource impact screening provisions as outlined in Section 78.15 and 78a.15 are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Please see the response to comment 265.

Specifically, under Section 3215(c)(4) of the 2012 Oil and Gas Act, the Department has a legal obligation when reviewing a well permit application to consider the impacts to public resources including "other critical communities." The phrase "other critical communities" is defined in the final rulemaking to mean species of special concern identified through the Pennsylvania Natural Diversity Inventory (PNDI) consistent with the Department's past practices and policies. Under Section 3274 of the 2012 Oil and Gas Act, the Environmental Quality Board has the authority to promulgate regulations necessary to implement the statute.

The Department's well permit application materials and its "Policy for Pennsylvania Natural Diversity Inventory (PNDI) Coordination During Permit Review and Evaluation," Doc. No. 021-0200-001 establish a process that has been and continues to be in use by well permit applicants to identify and consider species of special concern. The final rulemaking codifies this process and is consistent with the Department's long-standing use of PNDI to fulfill its

responsibility to consider impacts on species of special concern when issuing permits under various environmental statutes. Any suggestion that there is no basis for this process ignores long-standing, existing Department practice prior to the General Assembly's re-codification of these requirements in Act 13 of 2012.

In response to comments, the final rulemaking amends the definition of "other critical communities" to clarify that this term applies only to those species of special concern that appear on a PNDI receipt. Also in response to comments, the Department removed the provisions in the draft-final rulemaking relating to specific areas within the geographical area occupied by a threatened or endangered species and significant non-species resources. These changes were to ensure that the definition reflects the existing PNDI process.

The processes for consideration of public resources in Sections 78.15 and 78a.15 makes appropriate use of information available in the PNDI database from the public resources agencies with the authority, knowledge, and expertise to identify and protect species of special concern. Sections 78.15(f) and 78a.15(f) outline a reasonable and appropriate process that provides important information to the Department to evaluate potential impacts and to assess the need for additional conditions in the well permit using the criteria in Section 78.15(g) and 78a.15(g). This process is necessary to ensure that the Department fulfills its constitutional and statutory obligations.

To the extent that the commentator suggests amendments to §§ 78.15(g) and 78a.15(g), these sections have been amended to clarify the criteria the Department will consider when deciding whether to condition an oil or gas well permit based on impacts to public resources.

256. Comment: The permit applicant and the PA Fish, Boat and Game Commission (not the DEP) should be responsible for determining whether proposed oil and gas operations would affect threatened or endangered species.(429a)

Response: In accordance with federal and state law, the Department has an obligation to ensure that permit issuance will not result in a violation of the laws that protect federal or state threatened or endangered species. Please see response to comment 245.

257. Comment: An additional problem with DEP's proposed revision to 78.15 is the cumulative nature of the obligations. The PNDI requirements for the protection of threatened and endangered species are time consuming and sometimes require modifications of well sites, activity times, or dates, and other operational sequencing. There is a cost involved with paying a professional consultant to conduct the PNDI search and those costs increase when PNDI conflicts are encountered. (413a)

Response: The provisions in this rulemaking impose no new requirements on well permit applicants. Rather, these provisions seek to codify existing practices and policies to ensure compliance with applicable federal and state law relating to threatened and endangered species.

258. Comment: Like others, the conventional oil and gas industry has been adversely impacted by the ambiguity surrounding the requirements related to threatened species, endangered species and species of special concern. We urge cooperation between the Department of Environmental Protection and the resource agencies to establish an efficient system for identifying and protecting endangered species, including availability of a centralized database of endangered species and their areas of critical habitat. (1113, 1115a, 1118, 1120, 1176-1188)

Response: The Pennsylvania Natural Diversity Inventory is the applicable tool. To provide clarity, the Department has added definitions for “limit of disturbance,” “other critical communities,” “Pennsylvania Natural Diversity Inventory,” “PNDI receipt,” “public resource agency,” and “threatened and endangered species” to the final-form rulemaking. These new definitions were added to provide clarity and establish a known universe of public resources that are identifiable. The purpose of these public resource provisions is to largely codify how the Department currently implements its obligations to consider public resources as part of the well permit application process through the well permit applicable forms, the PNDI policy, and “Coordination with Public Resources” form.

259. Comment: Section 78.15(e) should be revised to state the following:

(e) If an applicant seeks to locate a well on a well site where the applicant has obtained a permit under 25 Pa. Code § 102.5 (relating to permit requirements) and complied with 25 Pa. Code § 102.6(a)(2), the applicant is deemed to comply with the application submission requirements of subsections (b) and (d) with respect to supplying the required information regarding proof of consultation with the applicable resource agency and the Department. (1135)

Response: The Department has amended §§ 78.15(e) and 78a.15(e) in the final rulemaking to clarify when and how Chapter 102 permitting may be used to demonstrate compliance with the provisions of Chapter 78 and 78a.

260. Comment: 78.15(e) – The EQB proposes to exempt applicants from the new requirement at § 78.15(d) to provide proof of consultation with the PNHP if the applicant has submitted an Erosion and Sediment Control Permit Application under 25 Pa. Code § 102.5 and complies with 25 Pa. Code § 102.6(a)(2). We do not support the proposed exemption under § 78.15(e), because, existing regulations at Pa. Code § 102.6(a)(2) do not incorporate the changes we have recommended to the proposed regulatory language in § 78.15(d).

Permits issued under Chapter 102 are issued as General Permits under an Erosion and Sediment Control General Permit (ESCGP), specifically permit number ESCGP-2 (and formerly ESCGP-1). Many permit applications are administered at the County Conservation District level, but even those administered at the Department level are not subject to detailed technical review. As a result, many projects that are operating under an ESCGP-1 or ESCGP -2 permit are operating in violation of permit requirements for erosion and sediment control and stormwater management. Since permits issued under § 102 are currently failing to meet the requirements of Chapter 102 for erosion and sediment control and stormwater management, it would be inappropriate to assume that adequate consultation with the PNHP has occurred for purposes of a well permit simply because general permit coverage under Chapter 102 has been obtained. General permit coverage under ESCGP-2 provides no assurance that permit requirements have been met.

We recommend that the PADEP work with the applicant and the PNHP to determine the appropriate mitigation for adverse impacts and require that those mitigation measures be included in the final permit, or if adverse impacts cannot be sufficiently mitigated to deny the permit.

We recommend that § 78.15(e) be deleted in its entirety. (1143)

Response: The Department does not agree that “many projects that are operating under an ESCGP-1 or ESCGP -2 permit are operating in violation of permit requirements for erosion and sediment control and stormwater management.” The Department has amended the

language of Sections 78.15(e) and 78a.15(e) to include the requirement that the PNDI must have been received by the permittee within two years of the application submitted under this section. This is consistent with the PNDI policy which provides that PNDI receipts are valid for two years.

- 261.** Comment: § 78.15(e) - This section is apparently meant to preclude duplicate PNDI clearances for the same location. We understand the purpose of this section is to provide for circumstances where the applicant has obtained an ESCGP-2 for a well site, and the PNDI review would therefore not need to be duplicated for the permit application. Because we have experienced several lengthy delays as a result of just such a situation, this is a particularly important change in our view. We recommend clarification that this deemed compliance also incorporates the application submission requirements under 78.15(b). Suggested amendatory language: § 78.15(e) If an applicant seeks to locate a well on a well site where the applicant has obtained a permit under § 102.5 (relating to permit requirements), the applicant is deemed to comply with the application submission requirements of subsections (b) and (d) with respect to supplying the required information regarding proof of consultation with the applicable resource agency and the Department. (1147, 1103, 1174)

Response: The Department disagrees that this change is necessary. Sections 78.15(e) and 78a.15(e) specify that Chapter 102 permit coverage may be used to comply with §§ 78.15(b.1), 78.15(d), 78a.15(b.1) and 78a.15(d) respectively. This applies when the project area is the same and the Chapter 102 permit was obtained within 2 years of receipt of the well permit application. When an applicant makes this demonstration in the well permit application, the applicant has complied with §§ 78.15(d) and 78a.15(d) for purposes of § 78.15(b) and 78a.15(d).

- 262.** Comment: Avoid duplication via a permit under 25 Pa. Code § 102.5 but trigger the initiation of the 78.15 process when modifications or renewals of permits occur. [78.15 (e)] (15, 867, 1098)

Response: In accordance with the PNDI policy, PNDI receipts are valid for two years. To the extent that an operator seeks a modification or renewal during that timeframe, a new PNDI receipt is not required.

- 263.** Comment: § 78.15(e) - Because 78.15(d) essentially restates 25 Pa. Code 102.6(a)(2), it seems unnecessary to refer to Chapter 102. This section is apparently meant to preclude duplicate PNDI clearances for the same location. We understand that the purpose of this section to provide for circumstances where the applicant has obtained an ESCGP-2 for a well site, and the PNDI review would therefore not need to be duplicated for the permit application. We recommend clarification that this deemed compliance also incorporates the application submission requirements under 78.15(b).

The Commentator suggests the following amendatory language: “(e) If an applicant seeks to locate a well on a well site where the applicant has obtained a permit under § 102.5 (relating to permit requirements), the applicant is deemed to comply with the application submission requirements of subsections (b) and (d) with respect to supplying the required information regarding proof of consultation with the applicable resource agency and the Department.” (1137)

Response: Please see response to comment 261.

264. Comment: The DEP's constitutional obligation is to protect the environment. So long as the DEP's actions do not affect a taking of private property, the DEP should be obligated to take whatever actions are necessary to condition permits in a manner that protects important public resources. (55)

Response: The Department has an obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Moreover, the Department shares responsibility for the protection of natural resources with other Commonwealth agencies and municipalities that also have trustee duties under Article I, Section 27 of the Pennsylvania Constitution, as well as federal agencies. To meet these constitutional and statutory obligations, Sections 78.15 and 78a.15 establish a process for the Department to identify, consider and protect public resources from the potential impacts of a proposed well and to coordinate with applicable public resource agencies.

265. Comment: The holdings in the recent Pennsylvania Supreme Court decision, *Robinson et al. v. Commonwealth of Pennsylvania et al.*, may have implications with respect to the Department's authority to propose rules that implement or apply section 3215(c) and/or (e) of Act 13, such as the provisions related to public resources below. Revisions are needed to accommodate and mitigate impacts on conventional operators if the rulemaking under these sections proceeds to a final rule. Revisions are needed that will not result in any significant environmental impact and will substantially reduce the compliance costs for conventional operators. (1135)

Response: The Department has determined that the public resource impact screening provisions as outlined in Section 78.15(f)-(g) and 78a.15(f)-(g) are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes.

The public resource impact screening process in Sections 78.15(f)-(g) and 78a.15(f)-(g) is needed because the Department has an obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Moreover, the Department shares responsibility for the protection of natural resources with other Commonwealth agencies and municipalities that also have trustee duties under Article I, Section 27 of the Pennsylvania Constitution, as well as federal agencies. To meet these constitutional and statutory obligations, Sections 78.15 and 78a.15 establish a process for the Department to identify, consider and protect public resources from the potential impacts of a proposed well and to coordinate with applicable public resource agencies.

Public resource consideration has been a required component of the well permit application process since the Oil and Gas Act was first enacted in 1984. The provisions in this final-form rulemaking are needed to provide a clear process for identifying potentially impacted public resources, notifying applicable public resource agencies, soliciting any recommended mitigation measures and supplying the Department with sufficient information to determine whether permit conditions are necessary to avoid a potentially harmful impact to public resources.

If the limit of disturbance associated with a proposed oil or gas well site is located within a certain distance of a listed public resource as provided in Sections 78.15(f)(1) and 78a.15(f)(1), the well permit operator must provide additional information in the well permit application and notify applicable public resource agencies thirty days prior to submitting the well permit application. Under Sections 78.15(f)(2) and 78a.15(f)(2), the public resource agencies have thirty days to provide written comments to the Department and the applicant on the functions and uses of the public resource and any recommended mitigation measures. The applicant is then afforded an opportunity to provide a response to those comments. The Department then evaluates the potential impacts and assesses the need for conditions in the well permit using the criteria in Sections 78.15(g) and 78a.15(g). Section 78.15(g) and 78a.15(g) are added to this rulemaking to provide needed clarity regarding implementation of these obligations and to comply with Section 3215(e) of the 2012 Oil and Gas Act, which specifically directs the Environmental Quality Board to develop such criteria by regulation.

The right of the people of Pennsylvania to clean air, pure water, and the preservation of the natural, scenic, historic and esthetic values of the environment as expressly provided by Article I, Section 27 of the Pennsylvania Constitution are fundamental to the quality of life of the people of Pennsylvania. Additionally, public natural resources held in trust by the Commonwealth for the benefit of the people are a major economic contributor to Pennsylvania through tourism, outdoor fish and game sports, and recreation. The public resource impact screening provisions in this rulemaking provide needed clarity and clear standards for the Department to carry out its trustee obligations in administering the 2012 Oil and Gas Act program and will ensure the continued availability and benefits of these public resources throughout the Commonwealth.

Despite the Department's duties and obligations as described above, some commentators argued that the Department does not have the statutory authority to promulgate regulations regarding public resources under Sections 78.15(f)-(g) and 78a.15(f)-(g) because the Pennsylvania Supreme Court enjoined Sections 3215(c) and (e) in *Robinson Twp. v. Commonwealth*, 83 A.3d 901 (Pa. 2013) (*Robinson Twp.*). The Department asserts that Sections 3215(c) and (e) were not enjoined or otherwise invalidated by *Robinson Twp.* and that neither the plurality nor the concurring opinions in *Robinson Twp.* read in their totality overturn the public resource protection requirements as part of the well permitting process. Additionally, as of the date of the finalization of this document, this issue is being litigated in Commonwealth Court. See *Pennsylvania Independent Oil & Gas Association v. Commonwealth* (321 M.D. 2015). The Department's Answer reflecting its interpretation of *Robinson Twp.* will be filed before Commonwealth Court by January 30, 2016."

The Pennsylvania Supreme Court's decision in *Robinson Twp.* invalidated Sections 3215(b)(4), 3215(d), 3303 and 3304 of the 2012 Oil and Gas Act as unconstitutional. As for Sections 3215(c) and 3215(e), the Court held: "Sections 3215(c) and (e) . . . are not severable to the extent that these provisions implement or enforce those Sections of [the 2012 Oil and Gas Act] which we have found invalid and in this respect, their application or enforcement is also enjoined." *Id.* at 1000 (emphasis added).

Sections 3215(b), 3215(d), 3303 and 3304 of the 2012 Oil and Gas Act address protection of surface water quality; comment and appeal rights of municipalities and storage operators; preemption of local ordinances; and uniformity of local ordinances, respectively. Section 3215(c) is a separate, independent, free-standing provision that does not implement or enforce these invalidated provisions. Rather, Section 3215(c) requires the Department to consider the impacts of a proposed well on “public resources” including, but not limited to, publicly owned parks, forests, game lands and wildlife areas; national and state scenic rivers; national natural landmarks; habitats of threatened and endangered species and other critical communities; historical and archeological sites; and sources used for public drinking supplies.

Section 3215(e) of the 2012 Oil and Gas Act operates in tandem with Section 3215(c). Under Section 3215(e), the Environmental Quality Board is directed to develop regulations to establish criteria for the Department to consider when conditioning well permits based on impacts to public resources identified under Section 3215(c).

The Department believes that Sections 3215(c) and 3215(e) do not implement or enforce Sections 3215(b), 3215(d), 3303 or 3304 of the 2012 Oil and Gas Act and, therefore, remain valid and enforceable.

For these reasons, in addition to the authority discussed above, the Department retains a specific statutory obligation to protect public resources under Sections 3215(c) and (e) of the 2012 Oil and Gas Act.

However, even if those paragraphs were invalidated as some commentators assert the provision under the prior law enacted in 1984 mandating protection of public resources would then remain in effect. See 58 P.S. § 601.205(c). Thus, the Environmental Quality Board has authority under either the 2012 revisions to the law or the prior provision enacted in 1984 to promulgate regulations for the consideration of impacts to protect public resources when issuing an oil or gas well permit.

Additionally, other provisions of the 2012 Oil and Gas Act also support the requirements in Sections 78.15 and 78a.15 of this final-form rulemaking. The General Assembly recognized the constitutional obligation to protect public resources in Section 3202 of the 2012 Oil and Gas Act, which provides that the purpose of the act is to “[p]rotect the natural resources, environmental rights and values secured by the Constitution of Pennsylvania.” 58 Pa.C.S. § 3203. Under Section 3274 of the 2012 Oil and Gas Act, the Environmental Quality Board has the authority to promulgate regulations necessary to implement the statute. The public resource protection provisions in Sections 78.15 and 78a.15 provide a reasonable and appropriate process for the Department to implement the constitutional and statutory requirements discussed above.

Further, the General Assembly has enacted several other statutes that provide the Department with the broad power and duty to protect public natural resources consistent with the

mandates of Article I, Section 27 of the Pennsylvania Constitution, including the Clean Streams Law, the Solid Waste Management Act, the Dam Safety and Encroachment Act, the Pennsylvania Land Recycling and Environmental Remediation Standards Act and the Administrative Code of 1929. These statutes also provide authority for this rulemaking.

Additionally, the General Assembly has enacted statutes that provide authority for other Commonwealth agencies to protect public natural resources, and the Department must coordinate with those agencies to fulfill its constitutional and statutory duties to protect public natural resources. The public resource protection provisions included in the Chapter 78 and Chapter 78a rulemaking facilitate the Department's compliance with this obligation.

Finally, the public screening requirements provided in this rulemaking establish a standardized and transparent process for the Department to identify, consider and to protect public resources from the impacts of a proposed well and to coordinate with other public resource agencies with constitutional and statutory duties to conserve and maintain these resources, in a manner that demonstrates compliance with Article I, Section 27 under the most recent court decisions interpreting the 1973 *Payne v. Kassab*, 312 A.2d 86 (Pa. Cmwlth. 1973) three-part test.

- 266. Comment: Public resources need greater protection. All species, for instance, need their habitats identified and protected, not only threatened and endangered species. And all oil and gas activities, including infrastructure such as pipelines and processing facilities, should be analyzed, and negative impacts should be avoided and prevented, not just mitigated. Science tells us that once a natural resource, like wetlands, for instance, or a mature forest is damaged, it will likely never be restored to its original value. Therefore prevention of harm makes more sense. (649)**

Response: The Department has determined that the public resource impact screening provisions as outlined in Section 78.15(f)-(g) and 78a.15(f)-(g) are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Please see the response to comment 265.

To the extent that the commentator suggests that additional public resources should be added to the list of public resources in §§ 78.15(f)(1) and 78a.15(f)(1), under Section 3215(c) of the 2012 Oil and Gas Act, the Department has the obligation to consider the impacts of a proposed well on public resources “including, but not limited to” certain enumerated resources when making a determination on a well permit. Accordingly, the Department has the authority to expand the list of public resources to include public resources similar to those listed.

Sections 78.15(f)(1) and 78a.15(f)(1) of the final rulemaking include the public resources listed in 3215(c). Based on comments received, common areas of a school's property or playground and wellhead protection areas were added because these resources are similar in nature to those included in Section 3215(c). Playgrounds and school common areas are frequently used by the public for recreation, similar to parks. Wellhead protection areas are associated with sources used for public drinking supplies, another listed resource. In further response to comments, wellhead protection areas have been clarified by including a cross reference to 25

Pa. Code §109.713 and limiting the areas to those classified as zones 1 and 2. Additionally, definitions for the terms “common areas of a school’s property” and “playground” have been added.

Notwithstanding the enumeration of specific public resources in the regulations, the Department will consider the potential impacts to other public resources identified during the permitting process.

To the extent that the commentator suggests greater species protection, please see the response to comments related to the threatened and endangered species and other critical communities related.

To the extent that the commentator suggests the public resource consideration provision should apply to all oil and gas operations, §§ 78.15 and 78a.15 establish the well permit application process and are limited to activities associated with well construction and development. The requirements of these sections are designed to address the impacts within the limit of disturbance of the well site. Other activities associated with the oil and gas operations are regulated through various other provisions in Chapters 78 and 78a, or other laws implemented by the Department.

- 267.** Comment: The proposed regulations focus exclusively upon on problems arising at a single well site, such sediment and other contaminant releases to water resources. The draft rules do not attempt to address the chronic and cumulatively more serious water pollution, flow disruption, and surface compaction impacts across a watershed from a dispersed industrialization. The proposal also fails to address forest fragmentation or habitat connectivity issues and ignores cumulative impacts of numerous but dispersed Oil and Gas Operations on cover type conversion, edge creation, invasive species, and deforestation. This limited vision ensures that the proliferation of well sites, access roads, gathering pipelines, and other Oil and Gas Operations will transect and disrupt areas important to continued ecological functioning. (1143)

Response: See response to comment 2910.

- 268.** Comment: To mitigate the impacts on public natural resources held in trust by the Commonwealth for the benefit of the people, a number of measures are needed. In particular, this provision should expand the scope of public natural resources with respect to which information is required in a permit application. This provision should also require submission and implementation of a detailed restoration plan for every site, to promote sustainable development to the extent possible with an extractive industry and to ensure against degradation of the trust. (1143)

Response: The Department has considered this comment and declines to make the suggested amendment to this rulemaking. Please see the restoration requirements outlined in §§ 78.65 and 78a.65.

- 269.** Comment: We are concerned that the current permitting process does not provide sufficient protection from potential adverse impacts from gas well drilling and associated activities on the recharge areas associated with drinking water resources, due to the absence of mandatory notification of public water system operators.

We have observed that the new isolation distances proposed in the Chapter 78 regulations provide an increased degree of protection for water supplies. However, we strongly urge you to consider utilizing specific recharge area delineations when they are available, rather than a generic setback

distance, when requiring notification of public water system operators. The 3,000 ft. setback, as proposed, should be utilized as a default in those cases when a specific delineation is not available. Enabling language could be included by inserting a new paragraph similar to Section 78.15 (d) or by adding the term “delineated source water protection areas” in Section 78.15 (e). Many systems have delineations which were written by professional geologists and approved by DEP staff. These recharge areas are mapped in electronic format and could easily be included into the eFACTS system and referenced by DEP staff during the permit review process.

We request that the Department carefully consider Source Water Protection Areas during the permit review process for natural gas wells, pipelines, and appurtenant facilities. (408)

Response: To the extent that this comment suggest notifications requirements for public water systems, Section 3211(b.1) of the 2012 Oil and Gas Act specifies that public water suppliers within 1000 feet of a conventional well and 3000 feet of an unconventional well are required to get notice of the location of a proposed well.

In the final rulemaking, the Department added zones 1 and 2 of a wellhead protection area as part of a wellhead protection program approved under § 109.713 (relating to wellhead protection program) to the list of public resources in §§ 78.15(f)(1) and 78a.15(f)(2) that require additional consideration as part of the well permit application review process.

To the extent that the commentator suggests that §§ 78.15 apply to pipeline and appurtenant facilities, please see response to comment 266.

270. Comment: DEP failed to properly balance the cost of permit conditions to protect public resources against the benefits of these provisions. In an attempt to demonstrate how the benefits of the new consultation and mitigation provisions outweigh the costs, DEP simply compared the cost of consulting a database and a field site visit to the “permanent loss of a public resource.” (RAF 18) Such a comparison is very misleading. That analysis assumes every impact results in a total loss of a public resource or endangered species, which is a facially unreasonable assumption, and assumes there are no costs beyond the search of a database and field visit. Yet when estimating the costs of the public resource provisions, DEP fails to include even these costs and assumes that consultation costs are zero. (RAF 19) Experience with current consultation requirement indicates that there will be considerable expense in industry personnel time, expert consultants needed for surveys, and project delays in receiving resource agency responses - all well beyond a simple field visit. The Commentator believes the costs will be orders of magnitude higher than the DEP estimate, even without considering mitigation. DEP plainly acknowledges that it has included no estimate of mitigation costs, which precludes full analysis of the provision by EQB, the Independent Regulatory Review Commission, and interested stakeholders. Even under existing, less expansive, requirements individual operators have experienced mitigation costs in the hundreds of thousands of dollars. (1137, 1174)

Response: The Department believes that the cost estimates provided in the regulatory analysis form developed for the proposed rulemaking were accurate and appropriate. The Department has developed a comprehensive cost estimate for the final-form rulemaking. Please see the Department’s responses.

271. Comment: Commentator asserts that DEP no longer has authority to promulgate rules or proceed with rulemaking activity related to the regulations proposed in Sections 78.15(b) through (g) of the Chapter 78 proposed regulations implementing or applying Sections 3215(b), 3215(c) or 3215(e) of

Act 13 because of the Pennsylvania Supreme Court's decision in *Robinson Township et. al v. Commonwealth*.

Commentator asserts that the December 19, 2013 Pennsylvania Supreme Court's *Robinson* decision enjoined Section 3215(c) and (e). Additionally, Commentator contends that the Commonwealth and DEP in their January 2, 2014 Application for Reconsideration of the *Robinson* decision, acknowledged that Sections 3215(c) and (e) of Act 13 are currently enjoined. Commentator states that the Department, in its Reconsideration Application, requested a remand of this aspect of the *Robinson* decision to ensure that its "ability to protect important public resources is not needlessly eliminated." Commentator asserts that DEP conceded that it no longer has authority to proceed with rulemaking activity related to these enjoined sections or to promulgate proposed Sections 78.15(b) through (g).

Additionally, Commentator argues that *Robinson* held that Sections 3215(c) and 3215(e) are not severable from Section 3215(b) which was enjoined in its entirety citing the following from the *Robinson* decision:

"Moreover, insofar as Section 3215(c) and (e) are part of the 3215(b) decisional process, these provisions are as well incomplete and incapable of execution in accordance with legislative intent. Application of Section 3215(c) and (e) is therefore, also enjoined."

See *Robinson*, OAJC at 159.

Commentator asserts that Section 3215(b)(4) addresses setbacks from blue-lined streams and water bodies and wetlands and allows for waivers of the setbacks provided certain conditions are satisfied by waiver applicants. Commentator contends that Section 3215(c)(6) expressly incorporates subsection 3215(b) by applying it to the public resource identified as "Sources used for public drinking supplies." Commentator concludes that Section 3215(c)(6) is enjoined as it expressly incorporates invalidated Section 3215(b) and cannot reasonably be severed from the Section 3215(b) decisional process.

Commentator further argues that blue-lined streams and water bodies as well as wetlands (the subjects of Section 3215(b) set-back buffers) are identified public resources themselves (e.g. "scenic rivers" or "habitats" of an endangered aquatic species), and may, as well, be or clearly are part of, found upon, integral to, and indispensable or key features of all of the other public resources identified in Section 3215(c). Commentator claims that the consideration of impacts to the public resources identified in Section 3215(c) is incapable of being accomplished or executed "in accordance with the legislative intent" as the legislative intent is for the constitutionally defective waiver provision to apply to the location of all wells with respect to the water body, wetlands, and public drinking supply setback buffers to/on all the public resources identified in Section 3215(c). Commentator further concludes that Section 3215(c) is now incomplete as the location of wells on or in relation to the public resources is a potential, if not an absolutely certain, part of the 3215(b) decisional process and now cannot be accomplished in accordance with the legislative intent. Commentator argues that it would be a rare occurrence if in the preparation of the well site plats to be sent to surface owners such as DCNR and the Game Commission, other public resource managers, and municipalities as part of the well permit notification and comment process (as well as the preparation of the erosion and sediment control plans for accompanying access roads and other infrastructure) that blue-lined streams and water bodies as well as wetlands would not be encountered and that decisions about set-backs and possible waivers would not be implicated. Commentator contends that Section 3215(c) cannot reasonably be severed from the 3215(b) decisional process. Commentator further contends that that process contemplated waivers to

accommodate and recognize optimal development considerations and protection of private property rights in siting wells on public lands and otherwise in relation to public resources.

In like manner, and as section 3215 contemplates the waiver of various set-backs, the development of the criteria to use in conditioning a well permit, providing for optimal development, or protecting private property rights as directed in Section 3215(e) cannot be accomplished in accordance with legislative intent as the constitutionally defective waiver provision, would necessarily operate and apply in the decisional process of conditioning permits. Accordingly, Section 3215(e) cannot stand alone and is now incomplete.

Since the Pennsylvania Supreme Court refused to reconsider the constitutionality of Sections 3215(c) and (e), all revisions to implement or apply these Act 13 provisions – proposed Sections 78.15 (b) through (g) – must be removed from the proposed regulations. (1153)

Response: Please see response to comment 265.

272. Comment: Commentator asserts that DEP no longer has authority to promulgate rules or proceed with rulemaking activity related to any regulations proposed in Sections 78.15(b) through (g) of the Chapter 78 proposed regulations implementing or applying Sections 3215(b), 3215(c) or 3215(e) of Act 13 because of the Pennsylvania Supreme Court’s decision in *Robinson Township et. al v. Commonwealth*.

In accordance with the December 19, 2013 Pennsylvania Supreme Court’s *Robinson* decision and as acknowledged by the Commonwealth and DEP in their January 2, 2014 Application for Reconsideration of the *Robinson* decision, Sections 3215(c) and (e) of Act 13 are currently enjoined. The DEP itself believes that application of these Sections is enjoined. In its Reconsideration Application, the Department requested a remand of this aspect of the *Robinson* decision to ensure that its “ability to protect important public resources is not needlessly eliminated.” Consequently, DEP concedes that it no longer has authority to proceed with rulemaking activity related to these enjoined sections or to promulgate proposed Sections 78.15(b) through (g).

Robinson held that Sections 3215(c) and 3215(e) are not severable from Section 3215(b) which was enjoined in its entirety.

“Moreover, insofar as Section 3215(c) and (e) are part of the 3215(b) decisional process, these provisions are as well incomplete and incapable of execution in accordance with legislative intent. Application of Section 3215(c) and (e) is therefore, also enjoined.”

See *Robinson*, OAJC at 159.

Section 3215(b)(4) addresses setbacks from blue-lined streams and water bodies and wetlands and allows for waivers of the setbacks provided certain conditions are satisfied by waiver applicants. Section 3215(c)(6) expressly incorporates subsection 3215(b) by applying it to the public resource identified as “Sources used for public drinking supplies.” Accordingly, Section 3215(c)(6) is enjoined as it expressly incorporates invalidated Section 3215(b) and cannot reasonably be severed from the Section 3215(b) decisional process.

Moreover, blue-lined streams and water bodies as well as wetlands (the subjects of Section 3215(b) set-back buffers) are identified public resources themselves (e.g. “scenic rivers” or “habitats” of an endangered aquatic species), and may, as well, be or clearly are part of, found upon, integral to, and

indispensable or key features of all of the other public resources identified in Section 3215(c). Simply put, the consideration of impacts to the public resources identified in Section 3215(c) is incapable of being accomplished or executed “in accordance with the legislative intent” as the legislative intent is for the constitutionally defective waiver provision to apply to the location of all wells with respect to the water body, wetlands, and public drinking supply setback buffers to/on all the public resources identified in Section 3215(c). Consequently, Section 3215(c) is now incomplete as the location of wells on or in relation to the public resources is a potential, if not an absolutely certain, part of the 3215(b) decisional process and now cannot be accomplished in accordance with the legislative intent. Pointedly, it would be a rare occurrence if in the preparation of the well site plats to be sent to surface owners such as DCNR and the Game Commission, other public resource managers, and municipalities as part of the well permit notification and comment process (as well as the preparation of the erosion and sediment control plans for accompanying access roads and other infrastructure) that blue-lined streams and water bodies as well as wetlands would not be encountered and that decisions about set-backs and possible waivers would not be implicated. In short, Section 3215(c) cannot reasonably be severed from the 3215(b) decisional process. That process contemplated waivers to accommodate and recognize optimal development considerations and protection of private property rights in siting wells on public lands and otherwise in relation to public resources.

In like manner, and as section 3215 contemplates the waiver of various set-backs, the development of the criteria to use in conditioning a well permit, providing for optimal development, or protecting private property rights as directed in Section 3215(e) cannot be accomplished in accordance with legislative intent as the constitutionally defective waiver provision, would necessarily operate and apply in the decisional process of conditioning permits. Accordingly, Section 3215(e) cannot stand alone and is now incomplete.

Since the Pennsylvania Supreme Court refused to reconsider the constitutionality of Sections 3215(c) and (e), all revisions to implement or apply these Act 13 provisions – proposed Sections 78.15 (b) through (g) – must be removed from the proposed regulations. (1153)

Response: Please see response to comment 265.

273. Comment: The Proposed Rulemaking would add § 78.15(f) in an attempt to implement 58 Pa.C.S. § 3215(c)’s broad mandate that the Department “shall consider the impact of [a] proposed well on public resources” during its review of an application for a permit to drill an oil or gas well. Notably, by its own terms, Section 3215(c)’s mandate regarding public resources is not limited to public resources within a set distance from the proposed well. In contrast, the revised Section 78.15(f) would impose a duty to identify public resources on only those applicants who seek permits to drill wells within 200 feet of such resources;⁴ such applicants would be required to notify the agencies responsible for managing nearby public resources of their permit applications, so that the agencies could comment on, and seek permit conditions which would minimize or eliminate, any anticipated negative impacts the wells might have on nearby public resources.⁵ Section 78.15(f) does not, however, require any disclosure to the Department regarding public resources that are more than 200 feet from a proposed well. Section 78.15(f) is thus inconsistent with 58 Pa.C.S. § 3215(c). The EQB is not empowered to write environmental protections that the General Assembly included in the Oil and Gas Act out of that Act.⁶ Section 78.15(f) should be revised so that the Department is explicitly authorized to consider any impact a proposed well might have on any public resource as Section 3215(c) plainly requires, and, in cases where the Department finds that the proposed well might impact a public resource in a significant and adverse manner, require that it give the agency responsible for managing the public resource an opportunity to propose permit conditions that would avoid or minimize the impact. Further, even if the EQB could unilaterally limit the mandate imposed

on the Department by 58 Pa.C.S. § 3215(c) to only those permit applications concerning proposed wells that were within a specified distance of public resources, Section 78.15(f) fails as a means to protect such resources. The 200-foot distance incorporated into 78.15(f) is obviously insufficient to protect public resources against negative impacts that might result from unconventional gas wells. By way of comparison, the Oil and Gas Act prohibits an unconventional gas well that is within 500 feet of an existing building unless the well operator has obtained a waiver from the building's owner,⁷ presumably to ensure that the building's owner has been given an opportunity to evaluate (and protect the building against) the potential negative impacts from the proposed well. Public resources deserve at least as much protection from potential adverse impacts caused by unconventional wells as do buildings. If the EQB can validly limit the mandate that Section 3215(c) imposes on the Department according to the distance between a proposed well and a public resource, that distance should be at least 500 feet. It is also worth noting that neither Act 13 of 2012 nor Chapter 78 define what a "public resource" is. Leaving this key term undefined creates significant uncertainty as well as an obvious invitation to litigation. The Proposed Rulemaking should include a definition of "public resources" so that the Department, the public, and operators know which resources may be protected under Sections 3215(c) and 78.15(f). We suggest that the Department, in connection with stakeholders, develop guidance regarding how it will consider impacts to public resources in connection with permit applications, and what type of mitigation it will require when it finds that drilling is likely to impact public resources negatively. (1159)

Response: The Department has determined that the public resource impact screening provisions as outlined in Section 78.15(f)-(g) and 78a.15(f)-(g) are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Please see the response to comment 265.

The distances to certain public resources identified in Sections 78.15(f)(1) and 78a.15(f)(1) of the final rulemaking are consistent with those used by the Department to consider public resources in well application forms since the oil and gas permitting program was established under the 1984 Oil and Gas Act. The Department has found these distances to be effective for purposes of identifying and considering potential impacts to public resources. However, given the increased size of well sites constructed when enhanced development techniques such as hydraulic fracturing are used, Sections 78.15(f)(1) and 78a.15(f)(2) require these distances to be measured from the limit of disturbance of the well site rather than from the well itself, as was the prior practice. For conventional operations this change will have little to no practical effect given the relatively small size of these conventional sites.

Under Section 3215(c) of the 2012 Oil and Gas Act, the Department has the obligation to consider the impacts of a proposed well on public resources "including, but not limited to" certain enumerated resources when making a determination on a well permit. Based on this provision in the 2012 Oil and Gas Act and the Department's other authority to protect public resources, the Department has the authority to expand the list of public resources to include public resources similar to those listed.

Sections 78.15(f)(1) and 78a.15(f)(1) of the final rulemaking include the public resources listed in 3215(c). Based on comments received, common areas of a school's property or playground and wellhead protection areas were added because these resources are similar in nature to those included in Section 3215(c). Playgrounds and school common areas are frequently used by the public for recreation, similar to parks. Wellhead protection areas are associated with

sources used for public drinking supplies, another listed resource. In further response to comments, wellhead protection areas have been clarified by including a cross reference to 25 Pa. Code §109.713 and limiting the areas to those classified as zones 1 and 2. Additionally, definitions for the terms “common areas of a school’s property” and “playground” have been added.

Notwithstanding the enumeration of specific public resources in the regulations, the Department will consider the potential impacts to other public resources identified during the permitting process.

To the extent the commentator suggests that additional protections are needed, the Department has developed a comprehensive regulatory scheme, in Chapters 78 and 78a as well as the other regulations, permits and policies implemented by the Department under Pennsylvania’s environmental laws, to regulate oil and gas development activities to ensure protection of public health, safety and the environment. The purpose of these provisions is to identify, consider, and protect public resources.

- 274.** Comment: In regard to section 78.15 Application Requirements, the mandatory notification by those seeking well permits within close proximity of public resources to the appropriate agency is an important first step. (15, 867)

Response: The Department acknowledges this comment.

- 275.** Comment: Section **78.15(f)**: The term “resource agency” is used but not defined. We presume that it is to mean “a state agency, a municipality, a private entity, or some other entity?” In Section 78.15 (f) (2) the term “public resource agency” is used but again not defined. Do these two terms have the same meaning? (415)

Response: In the final rulemaking, the Department added a definition of “public resource agency” to §§ 78.1 and 78a.1.

- 276.** Comment: We recommend the following proposed revision to § 78.15(f).

§ 78.15 Application Requirements

(f) An applicant proposing to drill a well conduct one or more new Oil and Gas Operations, or to expand one or more existing Oil and Gas Operations (including but not limited to well drilling) at a location listed in paragraph (1) shall notify the applicable resource agency, if any, in accordance with paragraph (2) and provide the information in paragraph (3) to the Department in the well permit application.

(1) This subsection applies if the proposed surface location of the well any portion of the surface footprint of a new Oil and Gas Operation, or an expansion to an existing Oil and Gas Operation is located:

- (i) In or within ½ mile (2,640 feet) of a publicly owned park, forest, game land or wildlife area.
- (ii) In, within, or within view of the corridor of State or National wild or scenic rivers.
- (iii) Within ¼ mile (1,320 feet) of a National natural landmark.
- (iv) In a location that will impact other critical communities. For the purposes of this subparagraph, other critical communities means special concern species, High Quality or Exceptional Value Waters, national recreational areas, or lands within the boundaries of the National Wildlife Refuge System, the National System of Trails, or the National Wilderness Preservation System.

(v) Within ¼ mile (1,320 feet) of a historical or archeological site listed on the Federal or State list of historic places.

(vi) Within 4,000 feet of a water well, surface water intake, reservoir or other water supply extraction point used by a water purveyor or a storm drain that discharges to within 4,000 of any of the above.

(2) The applicant shall notify the public resource agency responsible for managing the public resource identified in paragraph (1), if any. The applicant shall forward by certified mail a copy of the plat identifying the proposed location of the full footprint of the new Oil and Gas Operation, or expansion to an existing Oil and Gas Operation and information in paragraph (3) to the public resource agency at least 30 business days prior to submitting its permit application to the Department. The applicant shall submit proof of notification with the permit application. From the date of notification, the public resource agency has 30 business days to provide written comments to the Department and the applicant on the functions and uses of the public resource and the measures, if any, that the public resource agency recommends the Department consider to avoid or minimize probable harmful impacts to the public resource where the new or expanded Oil and Gas Operation is located. The applicant must provide a response to the Department to the comments adopting the mitigation measures proposed by the public resource agency or proposing equally or more protective alternative measures.

(3) After the public resource agency comment period is complete, the applicant shall include the following information on forms provided by the Department and submit the forms with the well permit application in accordance with § 75.15(a):

(i) An identification of the public resource.

(ii) A description of the functions and uses of the public resource.

(iii) A description of the measures proposed to be taken to avoid or mitigate impacts, if any.

(iv) Proof that the public resource agency was notified and provided 30 business days to comment.

(iv) A copy of the public resource agencies comments, and a response to each comment.

(4) The information required in paragraph (3) shall include any portion of the public resource that may be affected by full footprint of the new Oil and Gas Operation, or an expansion of an existing Oil and Gas Operation. (1143)

Response: The Department has determined that the public resource impact screening provisions as outlined in Section 78.15(f)-(g) and 78a.15(f)-(g) are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Please see the response to comment 265.

To the extent the commentator suggests that §§78.15 and 78a.15 apply to all oil and gas operations; please see response to comment 266.

To the extent the commentator suggests that the distances in §§ 78.15(f)(1) and 78a.15(f)(1) be extended, please see response to comment 273.

To the extent the commentator suggests that the list of public resource in §§ 78.15(f)(1) and 78a.15(f)(1) be expanded to include additional resources, please see response to comment 273.

To the extent that the commentator suggests adding certain waters of the Commonwealth to the list of public resources, Sections 78.15(f) and 78a.15(f) have not been expanded because protection of these waters is achieved through other provisions in Chapters 78 and 78a, as well as implementation of other water permitting programs administered by the Department

through other environmental laws and regulations. Specifically, § 78.15(b.1) and 78a.15(b.1) require additional consideration during the well permit application review process for any watercourse or any high quality or exceptional value body of water or any wetland one acre or greater in size. Importantly, Chapters 78 and 78a contain many provisions, including the requirements related to erosion and sediment control, surface water discharges, waste management, onsite processing, protection of water supplies, water management planning, secondary containment, well construction, and site restoration that ensure protection of waters of the Commonwealth.

The Department has amended §§ 78.15(f)(2) and 78a.15(f)(2) in the final rulemaking to allow public resource agencies 30 days to comment on the impacts to public resources.

277. Comment: § 78.15(f)(1)(i)-(vi) – Commentator suggests that all distance requirements under Section 78.15 (f) be stipulated as distances from the edge of the well pad and not “the proposed surface location of the well.” Surface facilities associated with activities on the well pad may pose more potential for offsite impacts than the well itself. (1062, 1133)

Response: The Department amended §§ 78.15(f)(1) and 78a.15(f)(1) in the final rulemaking. Given the increased size of well sites constructed when enhanced development techniques such as hydraulic fracturing are used, §§ 78.15(f)(1) and 78a.15(f)(1) require these distances to be measured from the limit of disturbance of the well site rather than from the well itself, as was the prior practice. For conventional operations this change will have little to no practical effect given the relatively small size of these conventional sites. Additionally, the Department added a definition of “limit of disturbance” in the final rulemaking in §§ 78.1 and 78a.1.

278. Comment: The protection of Public Resources was directly addressed by the Supreme Court decision, and we believe Sections 78.15(f) and (g) should be redrafted. We maintain that the Department should expand upon on the list of, and analysis required for, identified Public Resources, and that there should be a presumption of permit conditions or denial where analysis determines probable impact. These standards should be mandatory for both conventional and unconventional operators. (997)

Response: The Department has determined that the public resource impact screening provisions as outlined in Section 78.15(f)-(g) and 78a.15(f)-(g) are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Please see the response to comment 265.

Please see response to comment 273.

279. Comment: 78.15 (f)(1): This section states that the applicant is to contact the resource agency if the well is within 200 surface feet of a well. The 200 feet from a well will often not take you off of the well pad. Consider changing the well to well site or well pad. (1006)

Response: Please see response to comment 277.

280. Comment: § 78.15 Public Resources: We recommend consideration of additional named Public Resources that have been designated through agency review and public processes including Exceptional Value and High Quality Waters, Wild and Wilderness Trout Streams, Exceptional Value

Wetlands, and Pennsylvania Scenic Rivers as designated under the Pennsylvania Scenic Rivers Act of 1982.

In light of modern technology and large-scale unconventional operations, we encourage the Department to also consider increasing the 200-foot radius currently utilized for many of the public resources listed.

We recommend including in the draft proposal a definition of “discrete area” in § 78.15(f)(4) and specification of who will make the determination.

We recommend that the draft proposal include the Department’s consideration of the impact of a proposed well on a public resource and the requirement for the Environmental Quality Board to develop regulation criteria for the department to utilize for conditioning a well permit based on its impact to the public resources.

We recommend that the Department expressly states that it has the sole authority to condition or deny a permit if it makes a determination that there will be “probable harmful impact” to a public resource. (1031, 997a, 1142)

Response: The Department has determined that the public resource impact screening provisions as outlined in Section 78.15(f)-(g) and 78a.15(f)-(g) are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Please see the response to comment 265.

To the extent the commentator suggests adding certain waters of the Commonwealth to the list of public resources; please see response to comment 274.

To the extent that the commentator suggests extending the distances in §§ 78.15(f)(1) and 78a.15(f)(1), please see the response to comment 273.

The Department declines to define the term “discrete area” at this time. If the need for further clarification becomes apparent during implementation of this provision, the Department will develop guidance to address any issues identified.

Sections 78.15(g) and 78a.15(g) have been amended to clarify the criteria the Department will consider when deciding whether to condition an oil or gas well permit based on impacts to public resources.

To the extent that the commentator recommends “that the Department expressly states that it has the sole authority to condition or deny a permit if it makes a determination that there will be ‘probable harmful impact’ to a public resource,” the Department declines to make this change. Additional clarity to is not needed because the Department has the obligation to consider the impacts to public resources based on the information provided by the applicant and public resource agencies and determine using the criteria in §§ 78.15(g) and 78a.15(g) whether any permit conditions are necessary to prevent a probable harmful impact.

281. Comment: The proposed provisions concerning protection of public lands are so weak that they do no good. For example, the proposed rules require drillers to give notice to state resource agencies

only if a proposed gas well is within 200 or less feet of a public land. Consequently, for example, the Department of Conservation and Natural Resources would not be notified of a gas well drilled within 201 feet of a state park, though a well that close, of course, to a state park would impact the state park and its visitors.

By contrast, the proposed rules require notice of a proposed gas well within 1,000 feet of private water well. Both distance requirements for simply notice are much too small.

A standard distance for notice should be used for all circumstances, and I recommend at least 2,500 feet. We know that gas can migrate that distance when mistakes are made in gas drilling. And so people and agencies deserve 2,500 feet for notice. (1055)

Response: To the extent that the commentator suggests extending the distances in §§ 78.15(f)(1) and 78a.15(f)(1), please see the response to comment 273.

282. Comment: Expanding distances around proposed surface locations. The proposed 200 feet distance from these sites is inadequate as degradation from noise, light, and air pollutants that extend beyond such a boundary. The 1000 feet distance from a drinking water source is inappropriate. Penn State University notes that homeowners receive notification by certified mail of unconventional wells within 3000 feet of their water wells or springs. As taxpayers, public lands belong to us. To safeguard the public health, the distance should be one kilometer or more as evidenced by the Duke study. [78.15(f)(1)] (15, 867, 1098)

Response: To the extent that the commentator suggests that the distances in §§ 78.15(f)(1) and 78a.15(f)(1) should be expanded, please see response to comment 273.

To the extent that the commentator suggests greater setbacks, the provisions in this rulemaking in §§ 78.15(f) and 78a.15(f) are not setbacks. The distances in these provisions define an area that requires coordination with public resource agencies and additional consideration during the permit review process. These provisions do not prohibit drilling activities within these defined areas.

In Section 3215(a) of the 2012 Oil and Gas Act, the General Assembly established setbacks prohibiting the drilling of oil and gas wells within certain distances from buildings and drinking water wells. For a conventional well, this distance is 200 feet; for an unconventional well, this distance is 500 feet. Additionally, unconventional wells may not be drilled within 1000 feet of a public water supply. To the extent the commentator suggests that the General Assembly should extend these setbacks or provide setbacks for particular facilities or resources that change should be made through an amendment to the 2012 Oil and Gas Act.

Section 3211(b)(1) of the 2012 Oil and Gas Act requires notice to users of water supplies within 3,000 feet of a proposed unconventional well. To the extent the commentator suggests that the General Assembly should increase that area of notification that change should be made through an amendment to the 2012 Oil and Gas Act.

283. Comment: It would be appropriate to add certain waters, streams and wetlands to 78.15(f)(1). Does the list of locations under this paragraph adequately protect all of this Commonwealth's natural resources? (1099)

Response: In the final rulemaking, the Department did not expand the list of public resources in §§ 78.15(f)(1) and 78a.15(f)(1) to include additional water resources because protection of

these waters is achieved through other provisions in Chapters 78 and 78a, as well as implementation of other water permitting programs administered by the Department through other environmental laws and regulations. Specifically, § 78.15(b.1) and 78a.15(b.1) require additional consideration during the well permit application review process for any watercourse or any high quality or exceptional value body of water or any wetland one acre or greater in size. Importantly, Chapters 78 and 78a contain many provisions, including the requirements related to erosion and sediment control, surface water discharges, waste management, onsite processing, protection of water supplies, water management planning, secondary containment, well construction, and site restoration that ensure protection of waters of the Commonwealth.

284. Comment: 78.15(f)(1) This section states that the applicant is to contact the resource agency if the well is within 200 surface-feet of high priority habitats. To be effective this distance provision must be measured from the edge of disturbance from the well site, not measured from the actual well(s) as many well sites are large, with actual wells centrally located. Assessing risk of resource disturbance from actual well locations may not be predictive of either the actual exposure to disturbance, including that associated with supporting staging areas and access roads, or are locations for storage and transport of toxic chemicals. (1134)

Response: Please see response to comment 2909.

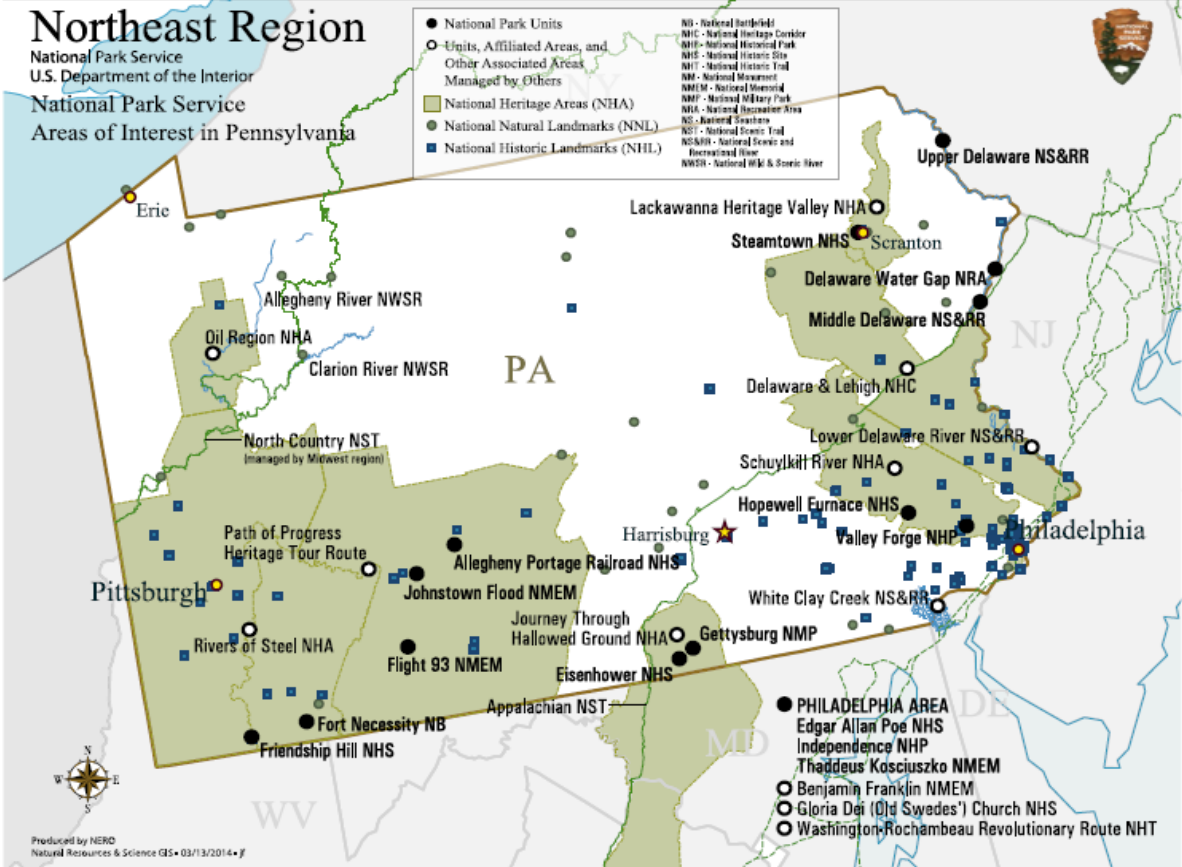
285. Comment: The 200 foot radius utilized for many of the resources listed in § 78.15(f)(1) is a carryover from the existing regulations, which were not developed in contemplation of unconventional well operations. Given the ruling of the Supreme Court, the Department should consider increasing setback distances where needed to protect functions and uses of public resources to account for the scale of operations at well sites. (997a)

Response: Please see responses to comments 273 and 277.

286. Comment: § 78.15 (f)(1)(i) - We recommend the DEP add the following language (in bold italics), “in or within 200 feet of a publicly owned or administered park, forest, game land or wildlife area.” Adding “or administered” would address a subset of management situations in a variety of units and affiliated areas within the National Park System, as we explain in more detail below. We also recommend the notification requirements be greater than 200 feet. We recommend 1,000 feet as the notification distance from the edge of the well pad. At this distance there is a reasonable potential for subsurface impacts from gas migration associated with possible over pressuring of the annulus, as well as potential surface impacts to natural sounds and night skies, wildlife, viewshed and other resources within National Park System units and affiliated areas.

We also recommend language clarifying that any property acquired and/or developed with federal grant assistance from the Land and Water Conservation Fund (LWCF) is subject to LWCF Act Section 6(f)(3) restrictions to outdoor recreation uses in perpetuity unless such uses are approved by the National Park Service pursuant to the LWCF post-completion regulations at 36CFR59.3. Each LWCF grant-assisted site is encumbered by a Section 6(f)(3) boundary identifying the property subject to these provisions. The LWCF 6(f)(3) restricted areas may or may not include all property within the formal boundary of the public outdoor recreation/park area in question. For the Commonwealth, the governor-appointed LWCF State Liaison Officer is Ms. Lauren Imgrund, of the Department of Conservation and Natural Resources (DCNR) whose responsibility is to ensure that all LWCF 6(f)(3) restricted property throughout the Commonwealth, including all state and local lands, are used for public outdoor recreation purposes pursuant to the Act and implementing regulations. DCNR can provide more information on LWCF funded areas within the

Commonwealth subject to these restrictions. More information on LWCF funded lands is provided below.



03.13.2014

National Park Service

Areas of Interest in Pennsylvania

National Park Units (17)

Allegheny Portage Railroad National Historic Site
Benjamin Franklin National Memorial
Delaware Water Gap National Recreation Area
Edgar Allan Poe National Historic Site
Eisenhower National Historic Site
Flight 93 National Memorial
Fort Necessity National Battlefield
Friendship Hill National Historic Site
Gettysburg National Military Park
Gloria Dei Church National Historic Site
Hopewell Furnace National Historic Site
Independence National Historical Park
Johnstown Flood National Memorial
Steamtown National Historic Site
Thaddeus Kosciuszko National Memorial
Upper Delaware Scenic and Recreational River
Valley Forge National Historical Park

National Trails (3)

Appalachian National Scenic Trail
North Country National Scenic Trail
Washington-Rochambeau National Historic Trail

National Heritage Areas (7)

Delaware and Lehigh National Heritage Corridor
Journey Through Hallowed Ground National Heritage Area
Lackawanna Heritage Valley
Oil Region National Heritage Area
Rivers of Steel National Heritage Area
Schuylkill River National Heritage Area
Southwestern PA Heritage Preservation Commission

National Natural Landmarks (27)

Bear Meadows Natural Area
Box Huckleberry Site
Cook Forest
Ferncliff Peninsula Natural Area
Ferncliff Wildlife and Wildflower Preserve

Florence Jones Reineman Wildlife Sanctuary
Glens Natural Area
Hawk Mountain Sanctuary
Hearts Content Scenic Area
Hemlocks Natural Area
Hickory Run Boulder Field
John Heinz Tinicum Wildlife preserve
Lake Lacawac
McConnell's Mill State Park
Monroe Border Fault
Nay Aug Park Gorge and Waterfall
Nottingham Park Serpentine Barrens
Pine Creek Gorge
Presque Isle State Park
Reynolds Spring and Algerine Swamp Bogs
Snyder-Middleswarth Natural Area
Susquehanna Water Gaps
Tamarack Swamp
Tannersville Cranberry Bog
Tionesta Scenic and Research Natural Areas
Titus and Wattsburg Bogs
Wissahickon Valley

National Historic Landmarks (136)

Academy of Music
Acheson, Edward G., House
Allegheny County Courthouse and Jail
American Philosophical Society Hall
Andalusia
Antes, Henry, House
Athenaeum of Philadelphia
Augustus Lutheran Church
Bartram, John, House
Bedford Springs Hotel Historic District
Boat House Row
Bomberger's Distillery
Bradford, David, House
Brandywine Battlefield
Buchanan, James, House
Bushy Run Battlefield
Cambria Iron Company
Carlisle Indian School
Carpenters' Hall
Cedarcroft

Christ Church
 Church of St. James the Less
 Cliveden
 Colonial Germantown Historic District
 Cope, Edward Drinker, House
 Cornwall Iron Furnace
 Drake Oil Well
 Eakins, Thomas, House
 Eastern State Penitentiary
 Eisenhower National Historic Site
 Elfreth's Alley Historic District
 Emmanuel Episcopal Church
 Ephrata Cloister
 Esherick, Wharton, Studio
 Espy House
 Fairmount Water Works
 Fallingwater
 First Bank of the United States
 Fontheil, Mercer Museum and Moravian Pottery and Tile Works
 Forks of the Ohio
 Founder's Hall, Girard College
 Fulton Opera House
 Fulton, Robert, Birthplace
 Furness Library
 Gemeinhaus-Lewis David De Schweinitz Residence
 Germantown Cricket Club
 Graeme Park
 Green Hills Farm
 Grey Towers
 Gruber Wagon Works
 Hagan, Isaac Newton, House
 Harmony Historic District
 Harper, Frances Ellen Watkins, House
 Harris, John, Mansion
 Harrisburg Central Railroad Station and Trainshed
 Hershey, Milton S., Mansion
 Hill-Physick House
 Honey Hollow Watershed
 Horseshoe Curve
 Institute of the Pennsylvania Hospital
 Insurance Company of North America Building
 Johnson, John, House
 Kennywood Park
 Laurel Hill Cemetery

LeMoyné, F. Julius, House
 Lesley, J. Peter, House
 Lightfoot Mill
 Lukens Historic District
 Marshall, Humphry, House
 Masonic Temple
 Meadowcroft Rockshelter
 Memorial Hall
 Merion Cricket Club
 Merion Friends Meeting House
 Merion Golf Club, East and West Courses
 Mill Grove
 Mother Bethel A.M.E. Church
 Mount Pleasant
 Musical Fund Hall
 Neville House
 New Century Guild
 New Market
 Oakmont Country Club Historic District
 Old Economy
 Old Waterworks
 Old West, Dickinson College
 Packer, Asa, Mansion
 Peale, Charles Willson, House
 Pennsylvania Academy of the Fine Arts
 Pennsylvania Hospital
 Philadelphia City Hall
 Philadelphia Contributionship
 Philadelphia Savings Fund Society Building
 Philadelphia School of Design for Women
 Pinchot, Gifford, House
 Powderly, Terence V., House
 Priestley, Joseph, House
 Printzshof, The
 Pulpit Rocks
 Quay, Matthew S., House
 Race Street Friends Meetinghouse
 Reading Terminal and Trainshed
 Reynolds-Morris House
 RittenhouseTown Historic District
 Searights Tollhouse, National Road
 Second Bank of the United States
 Seventeen-hundred-and-four House
 Smithfield Street Bridge

South, George W., Memorial Protestant Episcopal Church of the Advocate
St. Mark's Episcopal Church
St. Mark's Episcopal Church
St. Peter's Church
Staple Bend Tunnel
State Capitol Building, Pennsylvania
Stenton
Stiegel-Coleman House
Sully, Thomas, Residence
Summerseat
Tanner, Henry O., House
Taylor, George, House
Thomas, M. Carey, Library, Bryn Mawr College
U.S. Naval Home
U.S.S. OLYMPIA
Union Canal Tunnel
USS BECUNA (SS-319)
Walnut Street Theatre
Wanamaker, John, Store
Washington Crossing State Park
Waynesborough
Weiser, Conrad, House
West, Benjamin, Birthplace
Woodford
Woodlands, The
Woodmont
Wyck House
Wyeth, N.C., House and Studio

National Wild and Scenic Rivers (6)
Allegheny Wild and Scenic River
Clarion Wild and Scenic River
Lower Delaware Scenic and Recreational River
Middle Delaware National Scenic River
Upper Delaware Scenic and Recreational River
White Clay Creek Wild and Scenic River

(1062, 1133)

Response: To the extent that the commentator suggests language that clarifies that land acquired with grant assistance from the LWCF is subject to the LWCF Act, the Department declines to make this suggested change as it is not appropriate to restate such federal requirements in this rulemaking.

To the extent that the commentator suggests extending the distances in §§ 78.15(f)(1) and 78a.15(f)(1), please see response to comment 273.

287. Comment: The Proposed Regulations should establish stronger protections of public resources. § 78.15 of the Proposed Regulations addresses well permit application requirements. On January 16, 2014, the League of Women Voters submitted detailed comments regarding this section. We generally support the LWV comments, both because they are premised on the assumption that

environmental rights trump property rights in Pennsylvania, and because they recognize that “economic development related to oil and gas extraction... [should not come] at the expense of tourism related to a natural recreation areas.”

Specifically, we support the LWV comments with respect to “expanding distances around proposed surface locations,” *see* § 78.15(f)(1) and including conditions in the permit for cumulative as well as site specific modifications to avoid and mitigate impacts to public resources *see* § 78.15(g). The LWV comments are correct and consistent with *Robinson Township*, where they state that the DEP should not bear the burden of proving that the conditions it places on well permitting are necessary to protect against a probable harmful impact to a public resource. Rather, the applicant should bear the burden of showing that the DEP’s conditions will not protect against a probable harmful impact of a public resource. Again, *Robinson Township* stands for the proposition that in Pennsylvania, environmental rights are fundamental rights on par with individual rights. Environmental rights trump property rights or any other right granted under the General Assembly’s plenary powers to promote the public convenience or the general prosperity. (1070)

Response: The Department has determined that the public resource impact screening provisions as outlined in Section 78.15(f)-(g) and 78a.15(f)-(g) are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Please see the response to comment 265.

To the extent that the commentator suggests extending the distances in §§ 78.15(f)(1) and 78a.15(f)(1), please see response to comment 273.

Sections 78.15(g) and 78a.15(g) have been amended to clarify the criteria the Department will consider when deciding whether to condition an oil or gas well permit based on impacts to public resources.

Relating to the applicable burden of proof, please see Section 3215(e) of the Oil and Gas Act of 2012 which states that the Department has the burden of proving that a well permit condition imposed to protect a public resource is necessary to protect against a probable harmful impact of the public resource.

288. Comment: How are all of the distance standards included in 78.15(f) measured? The final-form regulation should specify if the measurements are from the edge of the well pad or from some other fixed point. (1099)

Response: The Department amended §§ 78.15(f)(1) and 78a.15(f)(1) in the final rulemaking. Given the increased size of well sites constructed when enhanced development techniques such as hydraulic fracturing are used, §§ 78.15(f)(1) and 78a.15(f)(1) require these distances to be measured from the limit of disturbance of the well site rather than from the well itself, as was the prior practice. For conventional operations this change will have little to no practical effect given the relatively small size of these conventional sites. Additionally, the Department added a definition of “limit of disturbance” in the final rulemaking in §§ 78.1 and 78a.1.

289. Comment: The PADEP grants itself broad, unquestioned power with the ability to deny permits based on species of special concern or cultural resources not defined in regulation. Passage of this portion of regulation will essentially allow PADEP to bypass laws that were created to keep its

governing ability in check. Passage of this proposed regulation will create a state of chaos between industry and all state agencies, which will subsequently push for arbitrary species or resources to be the reason for denying permits with no due legislative process. I recommend removing this provision. (450, 460)

Response: The Department has considered this comment and declines to make the suggested change. The Department has determined that the public resource impact screening provisions as outlined in Section 78.15(f)-(g) and 78a.15(f)-(g) are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Please see the response to comment 265.

This section outlines a process for considering the impacts to public resources, coordinating with public resources and determining when well permit conditions are necessary given the criteria outlined in §§ 78.15(g) and 78a.15(g).

290. Comment: All distances for notification or set back distances need to be one half mile to two miles, given the experience from the explosion and fire at the chevron well pad in Greene County this year. The heat, light, and fumes from flares cover great distances. The diesel trucks have now been shown to be the primary source of air pollution problems from drilling and hydro-fracking. Fumes from holding ponds also pollute the neighborhood. So, no ponds should be allowed. Or, they should be covered with a fume control system. (1053)

Response: To the extent that the commentator suggests extending the distances in §§ 78.15(f)(1) and 78a.15(f)(1), please see response to comment 273.

To the extent that the Commentator suggests that additional requirements are needed for emergency response, other sections of the regulatory framework for well development activities address obligations related to emergencies, including Section 78a.55(i), which contains comprehensive emergency response requirements for unconventional well sites.

To the extent that the commentator suggests greater setbacks, please see response to comment 282.

291. Comment: Unconventional wells should never be permitted less than 1mile from any school or college. (806)

Response: To the extent that the commentator suggests greater setbacks, please see response to comment 282.

Please note that the Department amended these provision in the final rulemaking and added common areas of a school's property or playground and wellhead protection areas to the list of resources in §§ 78.15(f)(1) that trigger additional consideration during the permit review process. Common areas of a school's property and playground were added to this list because these resources are similar in nature to those included in Section 3215(c) of the 2012 Oil and Gas Act. Playgrounds and school common areas are frequently used by the public for recreation, similar to parks. Additionally, definitions for the terms "common areas of a school's property" and "playground" have been added.

Notwithstanding the enumeration of specific public resources in the regulations, the Department will consider the potential impacts to other public resources identified during the permitting process.

292. Comment: Permitting the drilling and operation of unconventional drilling between 9 pm and 7 am within 1 mile of residential neighborhoods or homes needs to end completely as the stress this places on families who cannot sleep is uncalled for. (806)

Response: Regarding noise, see response to comment 2913.

To the extent that the commentator suggests greater setbacks, please see response to comment 282.

293. Comment: Compressor stations for unconventional gas wells must not be permitted less than one mile radius from family homes or farms. (806)

Response: Permitting compressor stations is outside the scope of this rulemaking.

294. Comment: The current regulations provide for a buffer between drilling activities and “solid blue line” streams, as classified in the US Geologic Survey. Protecting “solid blue line” streams alone, however, is not enough. The National Wildlife Federation states that more than half of Pennsylvania’s 83,000 miles of streams flow intermittently or are headwaters (source: http://www.nwf.org/pdf/State-Fact-Sheets/Pennsylvania_WeakeningTheCleanWaterAct.pdf), which is to say that these water bodies are not insignificant. Existing laws, such as the Clean Streams Law, guarantee the protection of all Pennsylvania waterways, including ephemeral and intermittent streams; Chapter 78 should do the same. Intermittent streams provide unique habitat and play an important ecosystem role. Also, because they carry less flow, intermittent streams are more easily harmed by smaller quantities of pollutants. (929)

Response: Sections 78.15(b.1) and 78a.15(b.1) require additional consideration during the well permit application review process for any watercourse or any high quality or exceptional value body of water or any wetland one acre or greater in size.

Importantly, Chapters 78 and 78a contain many provisions, including the requirements related to erosion and sediment control, surface water discharges, waste management, onsite processing, protection of water supplies, water management planning, secondary containment, well construction, and site restoration that ensure protection of waters of the Commonwealth.

295. Comment: Set back from a road right-of-way: Neither equipment nor storage facilities related to a gas well shall be built within three hundred feet of state or municipal right-of-way. This would include but not limited to storage tanks, compressors, water separators above ground section of high pressure lines. There are too many gas line and equipment too close to the roadways in Crawford County. One that I am familiar with is a site in Richmond Twp. where all the equipment lies next to the Township road and 30 feet from an occupied dwelling. There have been minor gas leaks before and if there would be a major one the people that live nearby will be extremely affected. The equipment has no protection from any out of control motorized vehicles. There was an accident in Richmond Twp. that occurred on Route 408 in close vicinity of Maplewood road whereas a vehicle damaged high pressure lines. (860)

Response: To the extent that the commentator suggests greater setbacks, please see response

to comment 282.

- 296.** Comment: We'd like to see any and all gas Drilling Operations; including gathering lines, pipelines and transportation operations, prohibited within a mile from all schools, churches, bus stops, parks and hospitals as well as any public place used for congregational purposes. We'd also like to see these same listed operations banned from all State Forests and State Game Lands. We would like to see the department put a halt to mountain-top removal. (862)

Response: To the extent that the commentator suggests greater setbacks, please see responses to comments 282 and 291. A moratorium on drilling activities on state forest and state game lands is outside the scope of this rulemaking. Mountain-top removal is also outside the scope of this rulemaking.

- 297.** Comment: Pennsylvania's Act 13 covers the regulations that guide the gas and oil industries drilling/fracking into the ancient radioactive Marcellus Shale. This highly industrial activity imposed statewide by ACT 13 should not be allowed to put our children in harm's way.

In 2011 Gov. Torn Corbett and the General Assembly cut \$1 billion from state education funding leaving district education budgets on shaky ground and clouding judgement. Gas lease deals can promise replacement money. And we are seeing gas drilling corporations getting DEP permits to drill next to Public Schools.

But can you believe that DEP does not have a single regulation that deals with drilling/fracking near schools, daycare centers, hospitals, senior living centers or any vulnerable population. No special monitoring or testing is required:

- not the soil where children will play sports and roll in the grass
- not the water susceptible to methane or chemical migration
- not for the air from diesel trucks, or equipment fumes or well flaring
- and not for any possible chemical contact by students or the teaching staff.

Thousands of industrial compounds have never been tested for their risk to human health and no driller is required to reveal what chemicals they are using or when. NO ONE is required to warn parents or to monitor or test. Risk Assessments haven't been performed.

We know many of these chemicals are carcinogenic or neurotoxic. The Marcellus shale layer is radioactive and radon can escape every time a well is drilled. Radon is the second most common cause of lung cancer says the American Lung Association.

No trained health expert is required. No toxicologist or even special training for school nurses is mandatory. No school safety protocols or evacuation plans are suggested or discussed. Who will provide lifelong care for teachers or children if they are harmed?

Our most vulnerable populations should not be used as a shield by the drilling concerns. Neither the Department of Health nor our hospitals provide public health information on fracking. We don't send our children to school to expose them to industrial chemical risks. Currently drillers can follow the same rules for fracking near my outhouse or barn that they use for fracking next to any elementary school. A set back of a few hundred feet. nothing more to protect our children, not one single rule.

According to Penn Environments' study in 2011 there are over a hundred day care centers and fourteen schools within a mile of current drilling activity. From January 2008 to June 2010 alone, DEP recorded 241 violations of environmental regulations at Marcellus wells within two miles of a day care facility, and 40 violations within two miles of a school – and these numbers don't include traffic safety violations by tanker trucks. Who pays for the schools: property owners, taxpayers. Heck, the largest checks I write each year are for property tax and school tax. Why permit endocrine disruptors and radiation and carcinogen exposure to harm our children? Research shows a link from toxic exposures to autism, diabetes, asthma, heart disease, even psychotic behavior.

Who writes that check? Right now establish a one mile set back from schools. Enforce 10 year monitoring of air and water near drilling sites. Fund a certified health examiner on site while these industrial processes are happening on already approved sites near a school. Delay or deny drilling or compressor start dates until school health and safety plans, evacuation plans, and monitoring protocols that include certified daily air and water tests are established.

And include indemnification language that will ensure lifetime health care for the harmed. As the Pa Supreme Court (p. 57) just ruled on December 19, 2013:

To describe this case simply as a zoning or agency discretion matter would not capture the essence of the party's fundamental dispute regarding Act 13. Rather at its core, this dispute centers upon an asserted vindication of citizens' rights to quality of life on their properties and in their hometowns. Insofar as Act 13 threatens degradation of air and water, and of natural, scenic, and esthetic values of the environment, with attendant effects on health, safety, and the owners' continued enjoyment of their private property. The citizens' interests as a result, implicate continued enjoyment of their private property. The citizens' interests as a result implicate primary rights and obligations under the Environmental Rights Amendment. Article I, Sec. 27.

By any responsible account, the exploitation of the Marcellus Shale Formation will produce a detrimental effect on the environment, on the people, their children, and future generations, and potentially on the public purse, perhaps rivaling the environmental effects of coal extractions. (933)

Response: To the extent that the commentator suggests greater setbacks, please see responses to comments 282 and 291.

To the extent that the Commentator suggests that additional requirements are needed for emergency response, other sections of the regulatory framework for well development activities address obligations related to emergencies, including Section 78a.55(i), which contains comprehensive emergency response requirements for unconventional well sites.

To the extent that the commentator suggested that additional protections are needed, Chapters 78 and 78a, as well as other regulations, permits and policies implemented by the Department under Pennsylvania's environmental laws, establish a comprehensive regulatory scheme for oil and gas well development activities to ensure protection of public health, safety and the environment. The purpose of these provisions is to identify, consider, and protect public resources. This rulemaking is consistent with the constitution, applicable statutes and provides appropriate protects of public health, safety and the environment as well as public natural resources.

- 298.** Comment: Marcellus Outreach Butler, MOB, is also a partner in the Protect Our Children Coalition that was formed in reaction to the alarming proliferation of gas activity being conducted near schools. Though our group is opposed to drilling until it can be proven safe, we nonetheless join this

coalition because it is the ethical and moral thing to do to protect our most valuable resource, our children.

Children are especially vulnerable to the hazardous effects of toxins transmitted in water and air pollution from natural gas activity for the following reasons. Their respiratory, immune and nervous systems are still developing. They have less ability to detoxify dangerous chemicals compared to adults and they spend greater amounts outdoors and are, therefore, exposed to sustained, low levels of chemicals for long periods of time.

We do not fully know the ramifications of such exposure, especially how they effect in combination with one another. We currently have a well site being prepared in the Connoquenessing borough of our county that is 1,900 feet from Connoquenessing Elementary School, as well as the nearby municipal park.

Maps contained with the Geological Survey Bulletin 873, of the United States Department of interior, published in 1936 demonstrate that numerous wells were drilled in the Little Creek field where the school is and those wells would be located. The Survey notes the many hundred abandoned wells, all trace of which have disappeared, and yet no more concern is accorded to the fact that the proposed wells will occur in a known pin cushion that surrounds an elementary school with a student population in kindergarten through grade six of over 270. There is no difference whether the structure is a school or whether it's a tool shed.

And Connoquenessing Elementary School not the only school in Butler with children that it will be putting children at risk. We had a well flare 900 feet, which, I believe you saw a photo of earlier, this summer at the Summit Elementary School. Another well was proposed to be replaced very close to the Moraine Elementary School in Prospect, PA. In Jackson Township, my township, the MarkWest Bluestone Processing Plant is operating 1.2 miles from the Seneca Valley Secondary School Campus, with approximately 4,000 students in three school buildings. They're building another adjacent plant and another one is planned next year. All within the same distance from this school campus.

These plants are not aggregated for purposes of EPA air quality standards. So we need to look to the DEP to protect our children. We request that DEP, therefore, include in its regulations that no drilling or gas-related, activity occur within a one-mile district of any school. (1107)

With respect to your regulations, I have the following general comments, though, in addition to this comment about schools. The public are excluded from your permitting process. Only people with water supplies within 1,000 feet are notified that there's even going to be drilling. People wake up and find out there is a drill pad coming next to their house, unbeknownst to them beforehand. You need to elicit the comments of the public. And, of course, they have to be notified in order to comment.

We are happy that you are looking at abandoned well issues, but it is not sufficient. (1107)

Response: To the extent that the commentator suggests greater setbacks, please see responses to comments 282 and 291.

To the extent that the commentator suggests greater public comment on well permit applications, please see the response to comment on §§ 78.15(a) and 78a.15(a).

299. Comment: Suggested Changes:

General provisions.

- A. No well pad may be located in areas where the existing slope exceeds fifteen percent as defined in Section 1.
- B. No grading may occur to create a bench for development on slopes greater than 15 percent.
- C. No development may be sited within 100 vertical feet of a ridgeline.
- D. No development may occur within the viewsheds of scenic overlooks, scenic roadways (such as community gateways, roads through state parks or wild areas, and roads identified as scenic byways), recreational trails, scenic waterways, and other locally (at the county or municipal level) identified natural, historical and cultural amenities.
- E. Determination of Adverse Affects on Ridgelines. The director shall determine whether the proposed location of development could adversely affect a ridgeline or viewshed for the purpose of administering this chapter based upon elevation of the proposed development and the location, slope, and visibility of the development in relationship to surrounding topography.
- F. Visibility Determination. If the director determines that the project cannot be viewed from any designated feature, because of its relationship to surrounding topography or existing vegetation, then the project will be cleared for further processing pursuant to the code. If the determination was made based on existing vegetation coverage, then the property owner or developer, prior to the issuance of a permit, shall be required to execute and record in the county recorder's office a use restriction, in a form approved by county counsel, requiring the existing covering vegetation to be maintained, or replaced with equivalent vegetation, by the owner or the owner's successors, so as to prevent the project from being viewed from any designated feature. (1016)

Response: To the extent that the commentator suggests a prohibition of drilling activities in certain areas, please see response to comment 282.

The Department declines to add certain viewsheds to the list of public resources in §§ 78.15(f)(1) and 78a.15(f)(1).

300. Comment: Impacts from natural gas and oil infrastructure

The proposed rulemaking does not fully consider all infrastructures when analyzing for impacts from oil and gas operations on public resources. In the proposed Section 78.15 (f) only the well and access road is considered for impacts to a public resource. The gathering pipeline, pit or open impoundment, soil stockpile area, and any area cleared of existing vegetation or where land use has changed or is impacted should also be analyzed for potential detrimental impacts. These impacts can occur a significant distance from the disturbance such as development of gas wells and related infrastructure near and adjacent to state parks and forest lands, national parks and the Wild and Scenic Delaware River, or high quality streams protected as special protection waters.

According to the Nature Conservancy, pipeline construction associated with natural gas wells in the Marcellus in Pennsylvania will increasingly impact the environment. Significant clearing of open lands and forest and the crossing of streams and disturbance of wetlands by the gathering and transmission pipelines cause degradation of soils and loss of vegetative and forest cover, erosion and sedimentation and degrading stream impacts.

Stream crossings require stream bank clearing and riparian area disturbance and are a routine source

of sediment and other construction related pollution to waterways despite permitting requirements. The long periods of time the lines are under construction, the areas excavated and under active disturbance for long distances and on steep slopes, and the clearing, grading, and trench cutting done in a sequence that leaves these areas susceptible to erosion before re-vegetation is accomplished, results in substantial environmental impact to both land and water.

The average shale gas well with infrastructure will clear approximately 7.4 acres of land directly and will cause indirect forest impacts from new edges of 18.5 acres, with a total 25.9 acres of direct and indirect impacts from each well. The thousands of gathering lines at a larger diameter than for shallow gas wells, perhaps even larger and operating at greater pressure than interstate transmission lines required to move gas from the well to transmission lines will affect between 120,000 and 300,000 acres in Pennsylvania, an area that is larger than the amount expected from all the other parts of the typical gas well (pads, roads, etc.) combined according to the Nature Conservancy study. About half of these pipeline impacts are expected to occur in currently forested areas. These forested areas will experience habitat value loss; “interior” forest species habitat could be eliminated on 360,000 to 900,000 acres, depending on the build out scenario. The report points out that this is far greater than the combined forest interior impacts of all other energy types examined in their report. (1156)

Response: Please see response to comment 266.

- 301.** Comment: We support the provision which will require permit applicants to consider the impact of a well site on public resources, including parks, water supplies, and protected species. Tourism is a significant economic driver in our watershed. The Laurel Highlands, Great Allegheny Passage bike trail, and Youghiogheny River draw visitors from all over the world. The consideration of state parks, protected species, natural amenities, and tourism generating features is welcomed. (943)

Response: The Department acknowledges this comment.

- 302.** Comment: The proposed regulations are not adequate to protect the environment and public health in Pennsylvania. To begin to protect Pennsylvania from the harmful effects of extracting this type of energy resource, DEP should provide leadership by zoning using a statewide screen filter, more strongly regulating, and taxing the fracking (unconventional well) industry. I urge DEP to:

Protected Land Consideration

Our landscapes and ecosystems are precious resources that should be managed for the benefit of all, not just for the profit of a few. The current regulations regarding protected areas are woefully inadequate to protect our natural resources.

I suggest that DEP stop issuing drilling permits until it implements a statewide screening system (as states have done to determine siting for disposal of low-level radioactive waste) to determine areas that could be considered for drilling for natural gas as follows. Eliminate from consideration for drilling in all areas mentioned in Subsections 78.15(c) through (f) while also eliminating from drilling the following areas:

- a. Protected land, including federal (e.g., national forests, wildlife refuges, historical and archaeological areas), state (e.g., parks, forests, wildlife/game management areas), county and local parks and protected areas, private conservation land, lands under a conservation easements, and land enrolled in the PA Clean and Green Tax program.
- b. Public drinking water supplies, perennial and ephemeral streams, wetlands, and vernal pools.

- c. Land with known or suspected federal or state endangered or threatened species or species of conservation concern in PA.
- d. Require a buffer of at least 0.75 mile around these sensitive areas. We know that in improper drilling situations, drilling fluid can migrate almost 0.5 mile (2,500 ft.). There should be at least a 0.25 mile buffer around that minimal potential migration area for protection of sensitive areas. A buffer of 1 mile would be much better where feasible.

Without these provisions, DEP cannot claim as in Section F, Benefits that “The proposed process for identifying and considering the impacts to public resources will ensure that any probable harmful impacts to public resources will be avoided or mitigated while providing for the optimal development of oil and gas resources.” These regulations need to be strengthened to effectively provide this benefit to lands of natural resource, conservation, and public recreation value.

In addition, municipal governments should have the right to zone areas for natural resource extraction within their jurisdiction. I applaud the Pennsylvania Supreme Court December 2013 decision restoring this right to municipalities. (140)

Response: To the extent that the commentator suggests a prohibition of drilling activities in certain areas, please see response to comment 282. The Department has considered this comment and declines to make the suggested amendments to the final rulemaking. The Department believes the revisions to Chapters 78 and 78a are consistent with the Constitution and applicable statutes, and provide appropriate protections for public health and safety.

303. Comment: 78.15(f)(1). Application Requirements. - We recognize that Sullivan County is home to some of the most scenic vistas and viewsheds in our region. In addition, every county within the Northern Tier has public lands that may be subject to exploitation. These public lands and more, are home to threatened and endangered species, critical communities, species of special concern, scenic vistas and viewsheds, high quality and exceptional value streams and wetlands, and are well known for recreational opportunities and support regional tourism.

Public resources, such as parks may be affected by the development of a nearby pad. 200 feet is just too short of a distance for notification. Resource agencies need to be made aware of nearby pads such that they may provide input to either DEP or the operator for matters of public safety. For example, it is now customary that the operator locates a truck crossing sign near the access road approach area. Should a very busy park be located nearby, within 600 feet they may want to suggest that the operator place a yellow flashing light in addition to the sign to alert park visitors who may be unfamiliar with the industry associated heavy and oversized loads. Thus, there needs to be an extension from 200 feet to 600 feet.

Regarding notifications:

78.15(f)(1) This subsection applies if the proposed surface location of the well is located:

- (i) in or within 600 feet of a publically owned park, forest, game land or wildlife area.
- (iii) within 600 feet of a national natural landmark
- (v) within 600 feet of a historical or archeological site listed on the Federal or State list of historic places.

New provision:

The poor siting of a well pad along the Loyalsock Trail [permit# 113-20208] at some points within 30 feet [as measured on Google Earth] of the cleared well pad area indicates the need for better planning. A gem of Sullivan County, the Loyalsock Trail provides outdoor enthusiasts with recreational opportunities that support Sullivan County's tourism and the local economy. Emphasis on ensuring the trail experience and most enjoyed Canyon Vista for instance, is a very important concern among many folks in the Northern Tier Region and beyond. This is a primary example of why we are recommending an additional provision in section 78.15(f)(1). There needs to be a mechanism in place where county planning offices are able to submit comment regarding pad and infrastructure placement whether or not county zoning may apply.

The Northern Tier Region is home to the Endless Mountains. Our Counties, such as Sullivan County have scenic vistas and viewsheds which are valuable assets contributing to regional tourism and the local economy. Thus, protecting vistas and viewsheds are very important to a county such as Sullivan County. Because of that, Sullivan County's Planning and Community Development Department has a great deal of data regarding their vistas and viewsheds. It is important to note that DCNR also has considerable information on viewsheds and vistas. Agencies such as DCNR and Sullivan County through the use of available technology are able to plot well site and facility locations and analyze data indicating the effects on the viewshed and propose better siting that adequately, appropriately and reasonably mitigate, minimize, avoid or eliminate those effects. Additionally, further consideration needs to be given to areas such as Tioga County's Pine Creek Gorge, the Pennsylvania Grand Canyon of which 12 miles have been designated as a National Natural Landmark. The 200 feet measure is simply too inadequate to sufficiently protect such a splendid and nationally recognized area. The siting of well pads, pipelines and facilities within the viewsheds can have a dramatic effect upon whether people still consider that place as special. That effect can have a dramatic effect upon the region's tourism and related economy. Thus, we recommend this additional provision:

An applicant proposing to drill a well, place a pipeline or any facility at a location that is deemed to be in or within one mile of a designated vista or viewshed's lookout point or trail location shall notify both the applicable resource agency and the appropriate county planning office in accordance with paragraph (2) and provide the information in paragraph (3) to the Department in the well permit application. The applicable resource agency and/or county planning office may provide suggestions as warranted to mitigate the effects on the vista and viewshed such as moving the location beyond the ridgeline. The Department needs to consider both comments and mitigation suggestions in regards to issuing such a location permit.

Please note, Penn State University Department of Landscape Architecture students and Professor Brian Orland lead a workshop in Marcellus Landscape Design during December 2013, in Sullivan County. The students provided demonstrations on how Marcellus sitings are able to be done using landscape design and thus preserving our vistas.

New Provision - Creation of Buffer Zones:

Buffer zones (BZ) are created to ensure the royalty owners maximum exploitation while ensuring the public's maximum enjoyment on publically owned lands. This is not a restriction, but rather a simple buffer zone which will provide a measure that will allow the public's enjoyment coexisting with resource extraction. Buffer zones will create a sense of harmony and eliminate unnecessary conflicts. These buffer zones are small enough to provide industry with flexibility, predictability and consistency while providing a measure of consideration and respect for the community at large. It is within these buffer zones that mitigation measures are taken to ensure that the both the public and industry have equal access and coexist within the shadow of each other.

These areas will need to be classified in such a manner that DEP has a method to track them within their system to ensure that buffer zones are designated and indicated on the permit applications. Special scenic areas, such as waterfalls, glens, vistas, nationally recognized features and Commonwealth recognized ecological resources within Commonwealth lands managed for recreational and wildlife management purposes may have a Unique Buffer Zone (UBZ) applied. These areas need to be designated. Certain trail areas, such as those that are nationally recognized need to be designated in parts as scenic corridors. (SC) These areas also need to have a method of designation within the DEP permitting system. In determining designations, there needs to be a public participation component. These buffer zones are minimal zones, the operator can very well choose to further respect the public access to these resources and propose mitigation measures within a greater buffer zone distance.

- A buffer zone of 600 feet applies to:
 - Perimeters: publically owned parks, wild, natural or environmentally sensitive areas
 - Buildings on public lands
 - Trails (300 feet on each side)
 - Camping areas
 - Natural national landmarks
 - Historic sites listed on the Federal or State list of historic places
- Within these buffer zone areas, mitigation efforts shall be at a minimum as follows:
 - During all drilling, fracturing and completion operations sound barriers aesthetically designed with consideration to the surroundings shall be erected. The sound barriers shall be able to substantially suppress noise to 45 decibels at either the publicly owned land property border or in cases where the activity is within publicly owned lands 45 decibels at the nearest building or permanent camping area. Natural ambient noise levels are an important aspect of the public land recreational experience.
 - Where necessary, trails need to be relocated an adequate distance from the industry activity to ensure a pleasurable experience. Consideration needs to be made for dust, noise; proximity to possibly dangerous events and ensuring the site is sufficiently secured from access by unauthorized individuals. Trails shall be relocated in such a way that the hiking experience is not diminished and further, that both parties have maximum access to their activity pursuits.
 - When necessary, in order to afford a more pleasant camping experience, consideration shall be given to noise levels during the drilling, fracturing and completion operations. This consideration may involve mitigation such as abandonment of the established primitive camping area and the creation of a new area with at a minimum, a like for like exchange of facilities such as rest rooms, etc. In such cases, the public agency is responsible for the new primitive camping area selection with operator agreement. Costs incurred in the process of abandonment and creation of the new primitive camping area is at the operator's expense. The operator as an option may choose not to do site mitigation when the natural ambient noise levels are attained.
 - In all designated camping areas special considerations need to be taken regarding lights during drilling, fracturing, work over rig, and any other night work activity. Ideally, lighting such as "Lunar" non-glare lighting directed at the work area is preferable to typical overhead directional lighting that sends light as much as over a thousand feet

beyond the work area. Operators shall take appropriate measures to avoid any unnatural lighting in all designated camping areas.

- All permanent equipment on a producing well site shall be housed in such a manner to suppress noise to the point that the pre-development natural ambient noise levels are attained at the well pad perimeter.
- Once the well pad is hosting producing wells, trees and tall native plants that are customarily found within the immediate area shall be planted near the well pad perimeter in an adequate manner to camouflage the well pad. Plants shall be of an appropriate height to camouflage well pad equipment upon planting. In forested areas the ideal is that the well pad is adequately camouflaged so that it is not readily visible.
- A unique buffer zone of 1000 feet (500 feet on each side) applies to:
 - Scenic and natural features
 - Designated scenic corridor
- Within the unique buffer zone areas, mitigation efforts shall be at a minimum as follows:
 - Sound barriers aesthetically designed with consideration to the surroundings shall be erected in order to suppress noise to either 45 decibels or natural ambient noise levels which ever may be greater.
 - When necessary, the operator shall take adequate mitigation measures to enhance the public enjoyment experience within areas of scenic and natural features, and also designated scenic corridors. Such measures for an example would be to provide continual adequate access to those scenic and natural areas that may be hampered with a well pad location. Measures may extend from adjusting the well pad location/size to building a new trail to create a similar public access and experience to the designated scenic and natural feature or scenic corridor.
 - Particular attention shall be paid to disrupted scenic viewsheds. This may involve the establishment of a new vista overlook location, with accompanying trail or other actions that would adequately provide for an opportunity for the both the public and industry to coexist. Mitigation may involve slight pad relocation to beyond the ridgeline. This does not mean that the industry does not work within the viewshed, but rather it means that the industry gives careful consideration to the aesthetic value of such areas and makes every effort to adequately camouflage or enhance these areas.
- The 45 decibel limit is not created lightly. Ambient noise testing has indicated that our rural areas are quiet having ambient noise tests results at 35 decibel levels. Noise experts have noted that reaching 40-45 decibel levels are adequate in rural areas and the industry is able to achieve such levels with reasonable effort. 45-50 decibel limits are more prescribed in suburban areas. 50-55 decibel limits are prescribed in urban areas. Prior to Act 13, the only industries that were able to widely utilize 60 decibel limits were the FAA and the military. It is important to note that this 'prescribed standard' in Act 13 has now been overruled by the Commonwealth's Supreme Court, based in part on the Environmental Rights Amendment. Prior to Act 13 operators were advising that they were designing facilities to meet 45 decibel limits, so it is able to be done. It has been noted in "The World Health Organization (WHO)'s document entitled "Guidelines for Community Noise" that 50 decibels creates moderate annoyance outdoors during both daytime and evening timeframes.

- Public lands having wild or natural areas and areas considered environmentally sensitive of three square miles or less in size shall not have surface disturbance, all resource exploitation shall be accomplished through subsurface activities such as through horizontal drilling from a wellbore based in an area beyond the three square mile area.
- Well pad design shall incorporate more than the average number of wells than are typically planned on private land well pads. The goal; maximum exploitation with minimal disturbance. (660a)

Response: Please see response to comment 3019. Regarding noise, please see response to comment 2913. To the extent the commentator suggests extending the distances in §§ 78.15(f)(1) and 78a.15(f)(1), please see response to comment 273. The Department otherwise considered this comment and declines to make the recommended amendments. The Department believes the revisions to Chapters 78 and 78a are consistent with the Constitution and applicable statutes, and provide appropriate protections for public health and safety.

- 304.** Comment: I believe that no drilling or fracking should be allowed in or near our parks and forests. DEP's current proposal in the Chapter 78 revisions requires companies to notify relevant agencies when applying for permits within 200 feet of a public resource. This distance and low hurdle for applicants is woefully inadequate to protect public resources from the impacts and nuisances of fracking and flaring. I believe DEP should prohibit drilling on and at least a half mile around key public resources including publicly owned parks, forests, game land or wild life areas, national natural landmarks, or historical or archaeological sites. These special areas belong to the public, provide significant ecological, recreational, and economic benefits, and should therefore be preserved for the enjoyment of present and future generations. (186, 242a, 629, 950)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

- 305.** Comment: Increase the setback for new wells near a publicly-owned park, forest, game land, or wildlife area. Two hundred feet is simply not enough space to protect our parks from fracking impacts, including air and water contamination, wildlife habitat fragmentation, and disruption of pristine viewsheds. A setback of at least half a mile would provide stronger protections. (119, 650, 651, 653, 655-658, 205a, 219a, 255a, 278a, 304a, 663-675, 678, 680-684, 687, 688, 692-694, 697, 701, 703-706, 710, 711, 713, 717-723, 726-728, 733, 735-736, 744a, 746, 747, 750-752, 755-757, 759, 762-767, 769, 771, 775, 778-780, 789-791, 796-797, 803, 805, 811, 813, 815-818, 825, 826, 828-830, 834-839, 960-969, 1020-1027, 1096)

Response: The extent that the commentator suggests extending the distances in §§78.15(f)(1) and 78a.15(f)(1), please see response to comment 273. To the extent that the commentator suggests greater setbacks, please see response to comment 282.

- 306.** Comment: In the past four decades, I have witnessed many changes in technology and concerns for the environment and safety as it applies to the conventional wells of western Pennsylvania. It has been through new technologies that this business has remained alive. The additional costs of both this technology and the adherence to environmental guidelines have cut into the potential profitability of developing oil and gas reserves. The Department of Environmental Protection is attempting to put additional restraints on the development of conventional oil and gas reserves that are not justified by a cost to benefit ratio. A good share of the work takes place in remote areas not shared by the general public and the DEP wants to treat these areas like they are public parks. The Department of Environmental Protection should be working with the conventional well operators

and not creating situations that make the operator work unreasonable. The fate of the industry depends on that. (610)

Response: There is a significant need to update the regulations that apply to conventional well operations. Statutory changes resulting from the passage of Act 13 of 2012 as well as environmental protection gaps in the Department's current regulatory requirements necessitate modest, common sense revisions. The Department believes that these modest regulatory revisions are necessary and appropriately tailored to the purposes served.

307. Comment: I understand that the proposed regulations could fail to protect our state and national parks from known impacts of fracking, including air and water contamination, wildlife habitat fragmentation, and destruction of our parks' beautiful view sheds. For example, the regulations would allow wells to be drilled just 200 feet away from our parks, and they fail to properly address Pennsylvania's 250,000 "orphaned or abandoned" wells. We need to strengthen, not weaken, regulations, so as to conform to the mandate of the Commonwealth's constitution: ARTICLE I, SECTION 27. ADDED BY AMENDMENT OF MAY 18, 1971 Natural Resources and the Public Estate. [Source: 1971 Pa. Laws 769] (659)

Response: The process outlined in §§ 78.15 and 78a.15 ensures that the Department has the information necessary to consider the impacts to public resources, including coordination with public resource agencies, and determine whether well conditions are needed to prevent a probable harmful impact. This process ensures that the Department fulfills its constitutional and statutory obligations. The Department believes the revisions to Chapters 78 and 78a are consistent with the Constitution and applicable statutes, and provide appropriate protections for public health and safety.

308. Comment: Please be very careful with what you allow near our national parks. (679)

Response: The Department acknowledges this comment.

309. Comment: After visiting Allegheny National Forest a number of times and witnessing the impact of drilling we are opposed to any further drilling on state lands. The negatives far outweigh the positives for the environment and the people. The beneficiaries will not be the above entities. The impacts of drilling are permanent and no matter how stringent the regulations or strict the enforcement of the regulations, will not prevent the continued degradation of land, water and other aspects of the environment. (690, 691, 1052)

Response: To the extent that the commentator suggests prohibiting drilling in certain areas, please see response to comment 282.

310. Comment: Pittsburgh is already having negative effects from fracking in that our water supplies are being tainted in increased levels of bromine. We do not want further destruction, ESPECIALLY not in our parks and public lands. Please protect these vital areas in our state! (712)

Response: The Department acknowledges this comment.

311. Comment: The DEP acknowledges that public resources are a major economic contributor to Pennsylvania Therefore, it is absolutely necessary that the strictest regulations are put into place to protect these resources. These regulations should also extend into the other areas of the gas drilling industry such as pipelines, compressor stations, gate and metering stations, dehydration stations etc. DEP'S current proposal in the Chapter 78 revisions requires applicants to notify appropriate

agencies when applying for permits within 200 feet of a public resource. I highly urge DEP to increase this distance to at least a half mile around public resources including publicly owned parks, forests, game land or wild life area, national natural landmarks, or historical or archaeological sites. These areas must be protected and preserved so present and future generations may be able to enjoy them. I live near Frances Slocum State Park in Luzerne County. There are already vast stretches of land that have been clear-cut for pipelines very near the park. I can't bear the thought to think that well pads or open pits, etc. can next be placed so close to this State Park if stricter regulations are not put in place. (848)

Response: Please see the response to comments 266.

- 312.** Comment: The setbacks proposed by the provisions of 200 feet of publicly owned lands and wildlife areas and historical and natural landmarks are simply token distances for the department to tell the citizens of PA that they are indeed regulating the drilling of new wells. The distance of 1000 feet from a private water well has been proven so many different times to be totally inadequate that the 200-foot distance is a moot point. DEP isn't prepared to have water provided to the whole of Pennsylvania once their water has been contaminated which it surely will be if this industry is allowed to continue with such woefully poor regulations. The problem of water contamination MUST be solved. The only reasonable solution to this destructive, catastrophic industry is a total ban of any of its activities in Pennsylvania. This is the only true and accurate way that we can be sure our water, air and land will not be polluted for us and for future generations. (864)

Response: Please see response to comment 282.

- 313.** Comment: I respectfully urge you to prevent any fracking development on any of our state or National Park land in PA. If we don't we will only learn once again, to our sorrow, that we have lost what can't be replaced. (935)

Response: Please see response to comment 282.

- 314.** Comment: I likewise support the provision which will require permit applicants to consider the impact of a well site on public resources, including parks, water supplies, and protected species. Tourism is a significant economic driver in my area. The Laurel Highlands, Great Allegheny Passage bike trail, and Youghiogheny River draw visitors from all over the world. The consideration of state parks, protected species, natural amenities, and tourism- generating features is appreciated. (919, 943)

Response: The Department acknowledges this comment.

- 315.** Comment: I don't think it's possible to mitigate the burden that this industry perpetrates on the environment. I don't see anything in these proposed regulations to adequately defend our woodlands and their residents. I don't know if these regulations apply to our state forests and conservation districts but we should stop ALL unconventional drilling in those places. (1003)

Response: Please see response to comment 282.

- 316.** Comment: Section 78.15(f)(1)(i) -This should be restated as "within a publicly owned park, forest, game land or wildlife area. As proposed, this is the potential taking of private property owners rights and their ability to develop their property if the owner so chooses to. (411)

Response: These provisions outline an area around the listed public resources that require additional consideration as part of the permitting process.

317. Comment: 78.15(f)(1)(i) - We recommend revisions to clarify language on the Department's definition of a wildlife area. This implies it is different from a forest game lands or park. There are several federal wildlife refuges in Pennsylvania but there are also 2,000,000 acres of "Important Bird Areas" in Pa. These areas are not in any regulation that could be interpreted as a wildlife area. (1174)

Response: The Department declines to define publicly-owned wildlife area at this time. If the need for further clarification becomes apparent during implementation of this provide, the Department will develop guidance to address any issues identified.

318. Comment: Please do not allow fracking in our state parks and state forests. These lands are the taxpayer's, NOT Governor Corbett's! (647)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

319. Comment: Please do not allow fracking close to our state, county, and national parks and recreation areas. (48a, 716, 732, 740, 742, 773)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

320. Comment: We love our parks! We work hard to keep them clean and unmolested. Please give them the protection they deserve! (745, 749, 773)

Response: The Department acknowledges this comment.

321. Comment: Please do not allow fracking in state forests and state parks. These are places for everyone to go enjoy on vacation, not for one crappy money grubbing company to destroy the water with toxic pollution and ruin it forever!! Please tell the fracking companies No. get lost! They don't create any jobs; all the well pads are completely empty of people after they are done drilling. They just create environmental destruction! (748)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

322. Comment: This isn't what our parks are for! No Windmills, no fracking!!(776)

Response: Please see response to comment 282.

323. Comment: Please keep our parks for what they are supposed to be used for, and do not allow fracking to destroy them. (781, 831)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

324. Comment: Oil and gas wells have no place in Pennsylvania's Parks and forests. (788)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

325. Comment: Don't allow Pa. parks to be ruined by big oil and gas. (793)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

326. Comment: State and National parks are meant for outdoor recreation and introducing gas drilling will raise potential risks to these public properties. The intent of public space is to reserve it for current and future use. Exploiting resources was not the intent. (820)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

327. Comment: I am totally against all fracking in our state parks and land. These lands belong to the Pennsylvania citizens and are not for sale for private consumption under privately held companies. I am for a full closure of any industrial practices on these public lands. I feel that we need quiet space, somewhere to see unscathed earth/land and a place to allow our water, air, soil, birds, animals, and just nature practice the code of nature. Leaving it untracked and undisturbed is what these lands were intended to do and why it was set aside.

At the least, I am concerned about the existing and potential impacts to Pennsylvania's state and national parks from increased hydraulic fracturing. (219a)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

328. Comment: I would just like to make an appeal concerning drilling/fracking, in our national forests and parks. Those areas are about as hallow as can be. They should be left in the natural state and preserved. They are not about making greedy money. They are our natural resources to be protected, preserved and respected. Just think about it and anyone with a true love of nature and a compassionate moral heart would leave drilling and fracking to other land, not our precious forest and parks. (800)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

329. Comment: Do not allow fracking in Pennsylvania's state parks and state game lands. I, as a Pennsylvania resident, know how these companies are destroying land and water quality in the areas that they are already extracting gas from. Our state parks belong to us, the citizens of Pennsylvania, and as our elected officials, it is your duty to protect these areas for us. (832)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

330. Comment: There should be no drilling on public lands which should be protected for future generations.(45)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

331. Comment: Buffer strips of 200 feet around all state properties. This has the potential for any public agency involved to stop or at least greatly slow the permitting process down. (627, 4681 – 4682)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282. To the extent that the commentator suggests that the process in §§ 78.15 and 78a.15 will slow permitting, please note that §§ 78.15(f)(2) and 78a.15(f)(2) gives public resource agencies a limit of 30 days to provide comments.

332. Comment: The further we keep the fracking process from the borders of our public lands, i.e. State parks and other recreational areas, the better for everyone! We only have one chance to do the right thing, and that is to preserve as much of our land as possible. Thank you for listening. (827)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

333. Comment: Stop fracking, or at least apply more stringent regulations, before it's too late and park waters become polluted and national treasures are lost. (1032)

Response: The Department drafted this final rulemaking to provide the needed protection for public health, safety and the environment.

334. Comment: The production of natural gas on nearby lands could harm Pennsylvania's national parks in two main ways. First are direct environmental impacts. The water quality in the parks – and especially in the three parks along the Delaware River – could be harmed if there are wastewater spills close to nearby waterways. Contamination of the Delaware River, in particular, would have far-reaching consequences that could degrade the drinking water supply for some 15 million citizens in the region.² Air quality at any one of Pennsylvania's parks can be negatively impacted by fracking development, which emits more pollutants than traditional oil and gas extraction methods. Finally, increased development near parks fragments the habitats of park wildlife that move across park borders.

The second type of impacts center around the visitor's enjoyment of national parks. As with any tourism-based economy, visitation, and repeat visitation, depends on the quality of the experience. Where there is industrial development too close to parks, the visitor experience suffers. Visitors travel to parks in order to escape the pressures of modern life, including industrial development. However, visitors to parks near fracking activities may experience air and water pollution, industrial noise from compressors, trucks and other equipment, the visual intrusion of oil rigs and lighted equipment on scenic or historic viewsheds, and traffic and congestion on otherwise rural roads. Industrialization of our park landscapes is already harming parks amid the drilling booms in the Rocky Mountain West. The experience of visiting North Dakota's rural Theodore Roosevelt National Park has been significantly degraded, and now visitors have to deal with heavy traffic, air quality warnings and nighttime gas flares. It's an experience Pennsylvania needs to prevent at the national parks in the Commonwealth. (1096)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

To the extent that the commentator suggests that additional protections are needed for waters of the Commonwealth, please see the response to comment 274.

335. Comment: I am not sold to begin with on the safety of Hydro-fracturing and feel that our parks are the last refuge that a person or their family can go for a nice inexpensive vacation and should not be exposed to this whole type of dirty energy and it's operation especially on land that is the public's. (158a)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

336. Comment: I have no problem using NG over coal or oil. However, the extraction will bear a cost long after the benefits will be exhausted. Let's not pass the cost of environmental cleanup and health issues to the population, but rather incur accordingly. We need to curtail unrestricted development and control it reasonably with an eye to the future. There are safer ways to extract NG that will not incur a massive social and financial cost. Primarily, we should restrict completely all extractions in our parks. PA is the only state in the US that does not charge an extraction fee. That alone is harmful to the future of PA. (841)

Response: To the extent the commentator suggests prohibiting drilling activities in certain areas, please see response to comment 282.

337. Comment: The regulation at § 78.15(f)(1)(i) requires the applicant to notify the applicable resource agency if a well is located "in or within 200 feet of a publicly owned park, forest, game land or wildlife area." The examination of impacts to public resources should include impacts from the full footprint of all activities encompassed in the new proposed definition for Oil and Gas Operations. The newly defined term Oil and Gas Operations should be used to make the full scope of the review obligation clear. Moreover, given that the science of conservation biology indicates that edge impacts (changes in light, moisture, etc.) protrude at least 300 feet into adjacent forest systems, the 200-foot buffer that triggers notification is inadequate and has no basis in either ecological or biological science. We recommend the addition of other public natural resources entitled to protection under Article 1, Section 27, of the Pennsylvania Constitution. (1143)

Response: To the extent the commentator suggests this provision should extend to all oil and gas activities, please see response to comment 266. The Department believes the revisions to Chapters 78 and 78a are consistent with the Constitution and applicable statutes, and provide appropriate protections for public health and safety.

338. Comment: § 78.15(f)(1) (ii) We recommend the Department provide a definition or additional clarifying language to the phrase "corridor of a state or national scenic river". (639, 1099, 1137, 1140, 1147, 1174)

Response: The Department declines to define the term at this time. The term "corridor of a state or federal national scenic river" is a term that is currently a component of the well permit application process. As part of the current well permit application process applicants must identify whether the proposed well is within the corridor of state or national scenic river. This is a detailed process that requires looking at maps developed by the Department of Conservation and National Resources and the National Park Service. For these reasons, it is more appropriate to develop guidance in policy. Accordingly, to the extent that more guidance is needed beyond what is already provided in the well permit application materials, the Department will provide any needed guidance.

339. Comment: § 78.15(f)(1)(ii) - We recommend that the language be changed from "in or within the corridor of a state or national scenic river" to "*in or within the corridor of a state designated scenic*"

river or a unit of the National Wild and Scenic River System” to more accurately reflect the range of potential designations. (1062, 1133)

Response: The Department considered this comment and declines to make the suggested change. Please see response to comment 338.

340. Comment: 78.15 Subsection (f)(1)(ii) should further define the term “corridor”, or used an alternate term that is further defined.

The concept of a river corridor is subject to varying interpretations. See, e.g., Federal Emergency Management Agency, available at www.training.fema.gov%2FEMIWeb%2Fedu%2Fdocs%2Ffmc%2FChapter%252014%2520-%2520River%2520Corridor%2520and%2520Watershed%2520Mgmt.pdf&ei=HYf6UrLkK4Lf0gGFp4GYCA&usg=AFQjCNFVrQDAFkRSip0OgTH1HZ0n8_DMrQ&sig2=u2q78vsVZ7jEFJi9YkKuuw (Last accessed February 11, 2014). Considering the protective nature of this regulation, we suggest that the term “corridor” be defined in the broadest possible terms to ensure that resource agencies are given sufficient notice of any oil and gas operations. (852a)

Response: Please see response to comment 338.

341. Comment: § 78.15(f)(1)(iii) – National Natural Landmark – We recommend the notification distance be 1,000 feet from the edge of the well pad. As noted above, at this distance there is a reasonable potential for subsurface impacts from gas migration associated with possible over pressuring of the annulus, as well as potential surface impacts to natural sounds and night skies, wildlife, viewsheds, and other resources. (1062, 1133)

Response: Please see responses to comments 273 and 277.

To the extent that the Commentator suggests that more protections are needed in this rulemaking to ensure protection of water supplies during drilling activities, Chapter 78 and Chapter 78a currently contain requirements that ensure that the well will be constructed and operated to prevent gas, oil, brine, completion and servicing fluids, and other fluids or materials from entering fresh groundwater. These robust well construction standards are coupled with the mechanical integrity assessment requirements which require quarterly inspections to ensure the continued integrity of operating wells. Well construction standards are outside the scope of this rulemaking.

342. Comment: Section 78.15(f)(1)(iii) states that critical communities “means special concern species. “Although neither the term “critical communities” nor “special concern species” are in any way defined in Chapter 78, it seems that the EQB is attempting to inappropriately merge two very different concepts into one for purposes of triggering the notice requirement under § 78.15(f). We suspect that critical communities is intended to refer to critical habitat as that term is defined under the *Endangered Species Act of 1973*, 16 U.S.C. §§ 1531 *et seq.*, and that the reference to special concern species is referring to that term as defined in the DEP’s *Policy for Pennsylvania Natural Diversity Inventory (PNDI) Coordination During Permit Review and Evaluation*. Assuming that is the case, treating PNDI as equivalent to the *Endangered Species Act* is inappropriate as the standards for PNDI are vague, undeveloped and significantly different from the *Endangered Species Act*. It is rather arbitrary for the EQB, absent any direction from the General Assembly and absent vetting the processes, procedures and standards of PNDI through full regulatory review and scrutiny in accordance with the *Regulatory Review Act*, 71 P.S. §§ 745.1 *et seq.*, to take a DEP Policy and make it equivalent to a Federal standard for purposes of state well permit applications. We recommend that

this subparagraph be revised to solely reference impact to a critical habitat or species as defined in the *Endangered Species Act*. (1140)

Response: The Department has determined that the public resource impact screening provisions as outlined in Section 78.15(f)-(g) and 78a.15(f)-(g) are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Please see the response to comment 265.

Under Section 3215(c)(4) of the 2012 Oil and Gas Act, the Department has a legal obligation when reviewing a well permit application to consider the impacts to public resources including “other critical communities.” The phrase “other critical communities” is defined in the final rulemaking to mean species of special concern identified through the Pennsylvania Natural Diversity Inventory (PNDI) consistent with the Department’s past practices and policies. Under Section 3274 of the 2012 Oil and Gas Act, the Environmental Quality Board has the authority to promulgate regulations necessary to implement the statute.

The Department’s well permit application materials and its “Policy for Pennsylvania Natural Diversity Inventory (PNDI) Coordination During Permit Review and Evaluation,” Doc. No. 021-0200-001 establish a process that has been and continues to be in use by well permit applicants to identify and consider species of special concern. The final rulemaking codifies this process and is consistent with the Department’s long-standing use of PNDI to fulfill its responsibility to consider impacts on species of special concern when issuing permits under various environmental statutes.

In response to comments, the final rulemaking amends the definition of “other critical communities” to clarify that this term applies only to those species of special concern that appear on a PNDI receipt. Also in response to comments, the Department removed the provisions in the draft-final rulemaking relating to specific areas within the geographical area occupied by a threatened or endangered species and significant non-species resources. These changes were to ensure that the definition reflects the existing PNDI process.

The process for consideration of public resources in Sections 78.15 and 78a.15 makes appropriate use of information available in the PNDI database from the public resources agencies with the authority, knowledge, and expertise to identify and protect species of special concern. Sections 78.15(f) and 78a.15(f) outlines a reasonable and appropriate process that provides important information to the Department to evaluate potential impacts and to assess the need for additional conditions in the well permit using the criteria in Section 78.15(g) and 78a.15(g).

343. Comment: DEP does not have the authority to protect special concern species in Section 78.15(f)(1)(iv). DEP’s proposed revisions to Section 78.15(f)(1)(iv) would create an expanded, new, open-ended, confusing and unnecessary consultation and administrative determination process for its consideration of well permit conditions to protect public resources, and at the same time would impose new legal obligations, applicable throughout the Commonwealth, on well operators to take actions to protect habitats of hundreds of what the DEP terms “special concern species,” which species are neither threatened nor endangered. With respect to these non-threatened and non-endangered species, the proposal would easily result in the addition of tens of millions, possibly

hundreds of millions, of dollars in unneeded and unjustified survey and mitigation costs for an indeterminate number of species that are neither threatened nor endangered. (1153)

Response: Please see response to comment 342.

344. Comment: Section 78.15(f)(iv) pertaining to “special concern species:” 1) does not conform to the intention of the legislature and 2) the DEP/EQB has not been delegated the statutory authority to promulgate a regulation about the habitat of such a “species”. (1153)

Response: Please see response to comment 342.

345. Comment: § 78.15(f)(1)(iv) Suggested amendatory language: in a location that will impact critical habitats of State or Federal threatened or endangered species. (1147)

Response: Threatened and endangered species and their critical habitat are addressed in §§ 78.15(d) and 78a.15(d).

346. Comment: Commenter states that PADEP’s proposed rule would equate “critical communities” with “special concern” species, which is not supported by fact or law and would have substantial repercussions on well permitting under the Oil and Gas Act. (1153)

Response: Please see response to comment 342.

347. Comment: DEP’s proposed revisions in paragraph (f)(1) would create new and unauthorized obligations related to “special concern species” without an adequate basis in fact or law. DEP and other resource agencies have acknowledged that the term “special concern species,” despite being defined in DEP’s new PNDI Policy, Doc. No. 021-0200-001, has no generally accepted standard definition either by law or in the scientific community. In fact, special concern species are generally understood to mean all categories of species, whether threatened or endangered, which are protected under the Endangered Species Act and comparable state laws, or rare, candidate, and even undetermined species that are simply of interest to the scientific community. DEP cannot recklessly wade into species law without statutory authority or scientific consensus. DEP has no authority or jurisdiction to impose well permit conditions for the protection of species under Act 13 or elsewhere. (1135)

Response: Please see response to comment 342.

348. Comment: The term critical community needs to be better defined. The Pennsylvania Game Commission (PGC) currently lists species of special concern, threatened species, and endangered species which all should be considered critical communities and covered under a Pennsylvania Natural Diversity Inventory (PNDI) review which is already required by DEP for permitting purposes and mentioned in 78.15d. A critical community should also refer to any critical and unique habitats that support threatened and endangered species along with species of special concern or at a minimum the critical communities currently have these species present. (1170)

Response: In response to comments, the final rulemaking amends the definition of “other critical communities” to clarify that this term applies only to those species of special concern that appear on a PNDI receipt. Also in response to comments, the Department removed the provisions in the final rulemaking relating to specific areas within the geographical area occupied by a threatened or endangered species and significant non-species resources. These changes were to ensure that the definition reflects the existing PNDI process.

349. Comment: Section 78.15(f) should be revised to state the following:

(f) An applicant proposing to drill a well at a location listed in paragraph (1) shall notify the applicable resource agency, if any, in accordance with paragraph (2) and provide the information in paragraph (3) to the Department in the well permit application.

(1) This subsection applies if the proposed surface location of the well is located:

(i) in or within 200 feet of a publicly owned park, forest, game land or wildlife area.

(ii) in or within the corridor of a state or national scenic river.

(iii) within 200 feet of a national natural landmark.

(iv) in a location that will impact ~~[other]~~ the critical habitat of state or federal threatened or endangered species.~~[communities]~~

(v) ~~[For the purposes of this section other critical communities means special concern species.]~~

~~[(vi)]~~ within 200 feet of a historical or archeological site listed on the Federal or State list of historic places.

(vi) ~~[(vii)]~~ in the case of an unconventional well, within 1000 feet of a water well, surface water intake, reservoir or other water supply extraction point used by a water purveyor.

(1135)

Response: Please see response to comment 342. Threatened and endangered species and their critical habitat are addressed in §§ 78.15(d) and 78a.15(d).

350. Comment: 78.15(f)(1)(iv) - This should be removed all together as there is generally limited evidence or insufficient data to determine a special concern species and should not fall upon the operator to determine this. (411)

Response: Please see response to comment 342.

351. Comment: Section 78.15(f)(1)(iv)-- It is not the express language or the intent of Act 13 to impose oil and gas development restrictions based on undefined and unknown “other critical communities.” Section 3215(c)(4) refers to habitats of rare and endangered flora and fauna and other critical communities. The Department’s proposal in 78.15(f)(iv) equates other critical communities with special concern species without an adequate basis in fact or law, nor any rational ecological basis for equating “communities” with individual “species.” The first sentence should be revised to properly focus on the well-established concept of critical habitats of threatened and endangered species, and the second sentence should be deleted.

In addition, we have concerns about the selection, listing and public participation process for special concern species.

- The term “special concern species” has no legislative or regulatory definition in Pennsylvania law.
- The Department has no statutory authority with respect to any species, and no authority to define, designate or list any plant or animal as a special concern species.
- No State or Federal agencies have used rulemaking to designate any species as “special concern species” in Pennsylvania.

Suggested amendatory language:

(iv) in a location that will impact critical habitats of State or Federal threatened or endangered species (1057, 1103, 1174)

Response: Please see response to comment 342.

352. Comment: § 78.15(f)(1)(iv) It is not the express language or the intent of Act 13 to impose oil and gas development restrictions based on undefined and unknown “other critical communities.” Section 3215(c)(4) refers to habitats of rare and endangered flora and fauna and other critical communities. The Department’s proposal in 78.15(f)(iv) equates other critical communities with special concern species without an adequate basis in fact or law, nor any rational ecological basis for equating “communities” with individual “species.” The first sentence should be revised to properly focus on the well-established concept of critical habitats of threatened and endangered species, and the second sentence should be deleted. In addition, the commentator has significant concerns about the selection, listing and public participation process for special concern species. The term “special concern species” has no legislative or regulatory definition in Pennsylvania law. The Department has no statutory authority with respect to any species, and no authority to define, designate or list any plant or animal as a special concern species. No State or Federal agencies have used rulemaking to designate any species as “special concern species” in Pennsylvania. The commentator suggests the following amendatory language: “(iv) in a location that will impact critical habitats of State or Federal threatened or endangered species.” (1137)

Response: Please see response to comment 342.

353. Comment: Section 78.15(f)(1)(iv): The Act 13 section, 3215(c)(4), wherein the term “critical communities” appears is unchanged from and carried forward from the 1984 Oil and Gas Act or what was Act 223. Act 223 was signed by the Governor in December 1984. The original inventory itself, the terminology, and the concept of “species of special concern in Pennsylvania” first appeared in 1985 with the publication of a Carnegie Museum of Natural History Special Public, No. 11 Volume titled “*Species of Special Concern in Pennsylvania*.” In short, the Pennsylvania legislature did not intend in 1984 to have a term mean something that did not exist in 1984, and the Department should not pretend that it did. In keeping with other legislative enactments, the reasonable interpretation to the Act 223 phrase is that the legislature intended it to cover the habitat of a properly designated threatened or endangered species and nothing more. (81, 419)

Response: Please see response to comment 342.

354. Comment: § 78.15(f)(1)(iv) - This section requires an operator to notify the applicable resource agency if the well location will impact “other critical communities,” which is then defined to mean “special concern species.” Section 3215 (c)(4) of the Oil and Gas Act of 2012 requires the department to consider the impact of the proposed well on habitats of rare and endangered flora and fauna and “other critical communities,” which is not defined in the statute. There is no legal basis or indication of legislative intent for the department to determine that “other critical communities” equates to “special concern species” nor is there any rational ecological basis for equating “communities” with “individual species.” The term “special concern species” has no legislative or regulatory definition and no state agency has been given legislative authority to designate “special concern species,” or to require that such species be protected through regulation or permit condition. Consequently, it is recommended that the term “special concern species” be removed from this section. If the department feels compelled to define “other critical communities” in the regulation, it is recommended that the last sentence in this subsection be changed to read, “For the purposes of this subparagraph, other critical communities means the habitat of species formally proposed for inclusion on the list of Threatened and Endangered Species.” (866, 124a)

Response: Please see response to comment 342.

355. Comment: § 78.15(f)(1)(iv) – Comments assert that the DEP is without the authority to “designate species or condition well permits based on species apart from the ‘habitat’ of species that have otherwise been properly designated by the governing resource agency.” Unfortunately, this assertion was left unsubstantiated. The allegation seems to be that DEP does not have the authority to regulate animal species, and therefore may not establish well permit application standards that consider the proximity of certain animal species to the proposed well site. This allegation fails to consider that under *Robinson Township*, the ERA applies to “Pennsylvania’s public natural resources,” and these include “not only state-owned lands, waterways, and mineral reserves, but also resources that implicate the public interest, such as ambient air, surface and groundwater, wild flora and fauna (including fish).” *Robinson Township* at 36 [emphasis added]. The DEP’s purpose is to enforce the ERA and other Pennsylvania environmental laws. Regulating “fauna (including fish)” is undoubtedly within the scope of the DEP’s authority. (1070)

Response: The Department acknowledges this comment.

356. Comment: Section 78.15(f)(1)(iv): *References to the Habitat of a “Species of Special Concern” Should be Deleted to Avoid Potential Confusion with “Critical Communities”*

The proposed Section 78.15(f)(1)(iv) attempts to regulate the habitats of “species of special concern” without clearly delineating the meaning of the term. Operators will incur an expanse in time and resources for processing permit applications with the proposed requirements related to the habitats of such species. The board should provide further clarity and distinction between the terms “critical communities” and “species of special concern” (or “special concern species”) to reduce ambiguity in how an operator is to comply with the proposed provision. In maintaining the language from Section 205(c) of the Oil and Gas Act of 1984 (“Act 223”) in the enacted Act 13, which expressly included the term “critical communities,” it appears the Pennsylvania Legislature did not intend for the amended statutory provision, Section 3215(c), to include the term “species of special concern” or “special concern species.” “Critical communities” and “species of special concern” (or “special concern species”) are distinct terms. There is no scientific community or agency consensus or express statutory definition from which to garner a meaning of the term “species of special concern” (or “special concern species”). Without such consensus or an established definition, it is difficult to use the proposed provision as an effective compliance tool. The regulated community is left with substantial questions as to how any such list is generated, what criteria are used to generate such a list, and no insight into how the Department will manage the list as it relates to permit conditions. The Board should continue its commitment to requiring operators to evaluate potential impacts to “critical communities” as a permit application requirement, set forth in Section 3215 of Act 13. The proposed Section 78.15(f)(iv) should be modified by deleting the reference to “special concern species.” (1085, 1164)

Response: Please see response to comment 342.

The Department disagrees that coordination with public resource agencies to consider impacts to other critical communities will impose an economic hardship on oil and gas operators. These operators are currently required to identify the habitats of special concern species where the proposed well site or access road will be located and describe measures proposed to be taken to avoid or mitigate impacts to special concern species. The applicant must provide a PNDI receipt with the well permit application and, if a potential impact is identified, the applicant must notify the applicable public resource agency. The applicant should also be consulting with the agency to identify appropriate avoidance and/or mitigation measures. As this is an existing well permit application component necessary to comply with applicable constitutional

and the statutory requirements, this final rulemaking does not impose any new financial burden.

357. Comment: 78.15(f)(1)(iv) requires applicants to notify certain parties if the proposed surface location of the well is located in a location that will impact “other critical communities.” For the purposes of this subparagraph, “other critical communities” means “species of special concern.” What is EQB’s authority to define “other critical communities” as “species of special concern”? In addition, it is unclear what the scope of species of special concern can be, how a species becomes a species of special concern, how this provision will be implemented, and the costs associated with complying with this provision. For these reasons, we ask EQB to provide a more detailed explanation of the rationale for this subparagraph, why it is needed, how it will be implemented, why it is legal, and why it is consistent with the intent of the General Assembly and Act 13. (1099)

Response: Please see response to comments 342 and 356.

358. Comment: 78.15(f): We have significant concerns about this section. Act 13 did not include language or express intent to impose oil and gas development restrictions based on undefined and unknown “other critical communities.” The Department’s proposal in 78.15(f)(iv) equates other critical communities with special concern species without an adequate basis in fact or law, nor any ecological basis for equating “communities” with individual “species.” In addition, the term “special concern species” has no legislative or regulatory definition in Pennsylvania law; the Department has no statutory authority to define, designate or list any plant or animal as a special concern species; and lastly, no State or Federal agencies have used rulemaking to designate any species as “special concern species” in Pennsylvania. As such, the language should be modified to focus on the well-established concept of critical habitats of threatened and endangered species. We support the suggested MSC’s suggested amendatory language: “(iv) in a location that will impact critical habitats of State or Federal threatened or endangered species.” (1071)

Response: The Department has determined that the public resource impact screening provisions as outlined in Section 78.15(f)-(g) and 78a.15(f)-(g) are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Please see the response to comment 265.

Please see response to comment 342.

359. Comment: Proposed regulation Section 78.15(f)(iv) pertaining to “species of special concern” (i) does not conform to the intention of the legislature and (ii) the DEP/EQB has not been delegated the statutory authority to promulgate a regulation about the habitat of such species.

Additionally, there is no consensus in the scientific community, or even among the Pennsylvania agencies responsible for the protection of species, as to the definition or criteria by which any species would be considered to be of “special concern.” Proposed regulation Section 78.15(f)(iv) pertaining to “species of special concern” (i) does not conform to the intention of the legislature and (ii) the DEP/EQB has not been delegated the statutory authority to promulgate a regulation about the habitat of such species. (634)

Response: Please see response to comment 342.

360. Comment: Section 78.15(f)(1)(i)-(iv): *Further Clarification on Phrases Used for Notification Requirements Would be Helpful*

The proposed language regarding notifications operators must issue under § 3211(b)(2) of Act 13 could benefit from further clarification. The proposed language of § 78.15(f)(1)(i)-(vi) maintains that if an operator is drilling in or within 200 feet of a publicly owned park, forest, game land or wildlife area; in or within the corridor of a state or national scenic river; within 200 feet of a national natural landmark; in a location that will impact other critical communities (meaning special concern species); within 200 feet of a historical or archeological site listed on the federal or state list of historic places; or, within the case of an unconventional well, within 1,000 feet of a water well, surface water intake, reservoir or other water supply extraction point used by a water purveyor it must provide additional notifications. To ensure proper understanding of these requirements, we recommend the Board provide a definition or additional clarifying language for the phrase “corridor of a state or national scenic river.” We further recommend revising the first sentence and deleting the second sentence of § 78.15(f)(1)(iv) to align the regulation with the language in Act 13, § 3215(c)(4), which refers to habitats of rare and endangered flora and fauna and other critical communities. To create such alignment, it is suggested that the reference to special concern species be deleted from 78.15(f)(iv). See the following comment on “special concern species.” (1085)

Response: The Department declines to define the term at this time. The term “corridor of a state or federal national scenic river” is a term that is currently a component of the well permit application process. As part of the current well permit application process applicants must identify whether the proposed well is within the corridor of state or national scenic river. This is a detailed process that requires looking at maps developed by the Department of Conservation and National Resources and the National Park Service. For these reasons, it is more appropriate to develop guidance in policy. Accordingly, to the extent that more guidance is needed beyond what is already provided in the well permit application materials, the Department will provide any needed guidance.

In response to the commentator comment of special concern species, please see response to comment 342.

361. How would any such list be generated? Will environmental special interests be effectively making it up for DEP by challenging every application with form letter objections based on the possible existence of some relatively rare but non-threatened plant? What criteria will be used to determine whether there is an impact to these species and to mitigate it? This is a recipe for unending uncertainty, which is what is killing New York. I urge you to revise the proposed regulations to eliminate this and other unwarranted extensions of legislative authority. (196, 866)

Response: Please see response to comment 342.

362. Comment: DEP has way overstepped its boundaries with reference to public resources and special concern species. Act 13 and the Oil & Gas Act of 1984 both addressed “critical communities,” yet DEP has attempted to equate those to “Species of Special Concern.” That is a false equivalency in that there is no true regulatory definition of species of special concern, a term first coined in a Carnegie Museum book of 297 species. The PA Natural Heritage Program uses this loose term to list 1,616 “species” (some are communities, landforms and geologic features). Clearly DEP has unilaterally expanded the intent, maybe by a factor of 5.5.(404)

Response: Please see response to comment 342.

363. Comment: The obligations related to “special concern species” result in a process which could be never ending, costly, and possibly without authority or benefit. The electronic notifications, submittals, and reporting creates a burden for small producers which do not have access for such transactions. Hard copy submittals need to be permitted and over time most producers at their own discretion can choose to submit information electronically. (998)

Response: Please see responses to comments 342 and 356.

364. Comment: Currently, in the Commonwealth of Pennsylvania both federal and state listed threatened and endangered species are fully protected. We are very much committed to our public resources and environment and will continue to support this standard. However, establishing the term “special concern species” in well permitting has no basis. There is no legislative or regulatory definition for such a species category in the Commonwealth and there never has been, which raises questions about how any such list is generated, what criteria are used to determine whether there is an impact to these species and how DEP proposes to mitigate impacts to such species. The proposed rule creates tremendous uncertainty about a permit applicant’s obligations. (1145)

Response: Please see response to comment 342.

365. Comment: We support the Department’s inclusion of Species of Special Concern in the consideration of “other critical communities,” and also recommend adding “Rare and Significant Ecological Features” to this review (as referenced in the Department’s Policy for Pennsylvania Natural Diversity Inventory Coordination During Permit Review and Evaluation). (997a)

Response: The Department acknowledges this comment. Please see response to comment 342.

366. Comment: Section 78.15(f) proposes to equate “critical communities” with “special concern species” without an adequate basis in fact or law. That term is undefined by state or federal statute or regulation. No federal or state agencies have utilized the rulemaking process to designate any species as “special concern,” and there is no rational ecological basis for equating the term “communities” to “species.” This raises substantial questions about how any such list is generated, what criteria are used to determine whether there is an impact to these species, and why/how the DEP would develop well permit conditions to mitigate impacts to such species. To the extent the term is intended to refer to certain species on the Pennsylvania Natural Diversity Inventory (PNDI) database, such designation is not done by rulemaking. Accordingly, DEP is seeking to create a binding regulatory requirement in excess of its statutory authority and jurisdiction without following required rulemaking procedures. The proposed rule creates tremendous uncertainty about a permit applicant’s obligations with regard to an ever-changing and undefined list, to which there is no public access. The provision places Pennsylvania at a serious competitive disadvantage with respect to other states. The reference to “special concern species” should be eliminated. (1174)

Response: Please see response to comment 342.

367. Comment: The introduction of new terms and conditions for the protection of some species and habitats that have not been fully vetted and formally listed is inappropriate. Although the intentions are good, the Department is overstepping its bounds in this section. (606, 606a)

Response: Please see response to comment 342.

- 368.** Comment: DEP’s proposed addition to consider and mitigate impacts to “special concern species” during the well permit process raises both legal and practical concerns because: 1) those species have never been designated as such under rulemaking by any government agency; 2) the number of such species in the PNDI database is three times as many as the threatened and endangered species combined; and 3) DEP’s proposal would instantly elevate protections for hundreds of such species to the status of threatened and endangered species without any opportunity for public review.

This proposal defies all principles of administrative law and rule making protections and is beyond DEP’s statutory authorization under Act 13. (413a)

Response: Please see response to comment 342.

- 369.** Comment: The language related to the protection of public resources, including the definition of a species of special concern is ambiguous and should be revised to clarify what constitutes a public resource and what activities may be considered a harmful impact. (1113, 1118, 1120, 1115a, 1176-1188)

Response: The Department added a definition of “other critical communities” in the final rulemaking. Additionally, the Department clarified the criteria it will consider when deciding whether to impose well permit conditions in §§ 78.15(g) and 78a.15(g).

- 370.** Comment; Requiring industry to potentially gain clearance for **Species of Special Concern** may significantly limit our development opportunities and/or create costly mitigation solutions which would be in conflict with Section 3215(e) as it pertains to ensuring oil and gas development and property owner rights. If the Department’s goal is to protect the Commonwealth’s resources as they specifically relate to Threatened, Endangered or Species of Special Concern, then Industry has the right to know the locations of such resources in order to avoid or mitigate any potential impacts.(123, 123a, 883a, 940)

Response: Please see responses to comments 342 and 356.

- 371.** Comment: Special concern species. Act 13 (section 3215(c)) limits the Department’s authority to consider impacts only to “habitats of rare and endangered flora and fauna and other critical communities” when reviewing well permit applications. However, section 78.15(f)(iv) of the Chapter 78 revisions equates the term “critical communities” to a much broader category of “special concern species,” which the Department’s May 25, 2013 PNDI policy defines as those that are not listed as threatened or endangered. Proposed section 78.15 complicates rather than clarifies the well permit application review by ignoring the limitation on the Department’s Act 13 authority. And the proposal exceeds the Department’s statutory authority because special concern species are not critical communities because, by definition, special concern species cannot be included in other classifications due to limited evidence and insufficient data. (1172)

Response: Please see response to comment 342.

- 372.** Comment: 78.15(f)(1)(v) “...within 1000 feet of a water well...water supply extraction point used by a water purveyor”. -- It is suggested that the language be revised to state within a 1000 feet of a [public (non-residential/non-private)] water well and [public (non-residential/non-private)] water purveyor to clarify that this section refers to community water sources. (1057)

Response: The Department has determined that the public resource impact screening provisions as outlined in Section 78.15(f)-(g) and 78a.15(f)-(g) are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Please see the response to comment 265.

Under Section 3215(c)(4) of the 2012 Oil and Gas Act, the Department has a legal obligation when reviewing a well permit application for an unconventional well to consider the impacts to public resources including “sources used for public drinking water supplies” Section 3215(a) provides that public drinking water supplies include water wells, surface water intakes, reservoirs, or other water supply extraction points used by a water purveyor. Section 3213 of the 2012 defines “water purveyor” as the owner or operator of a public water system as defined in the Pennsylvania Safe Drinking Water Act or any person subject to the Water Rights Law. Accordingly, the Department has a statutory obligation to consider the impacts of a proposed well of public drinking water supplies used by water purveyors as that term is defined in the 2012 Oil and Gas Act.

The language and requirements outlined in §§ 78.15 and 78a.15 the Department mirrors these statutory obligations. Any change to these provisions should be to the 2012 Oil and Gas Act.

Because this is not a statutory requirement when reviewing a conventional well permit the Department has amended the definition of “public resource agency” in 78.1 and deleted the reference to water purveyors.

373. Comment: § 78.15(f)(1)(v) – Historical or archaeological site - We believe the notification distance should be greater than 200 feet. Five hundred feet is likely not a great enough distance when there are vibration and other construction effects that may disturb or undermine the structural integrity, and historic and visual character of such a site. For purposes of notification we again recommend 1,000 feet for these and the reasons cited in our comment above at § 78.15 (f)(1)(i). (1062, 1133)

Response: Please see response to comment 273.

374. Comment: Known as chapter 78 of PA code Act 13, the Oil and Gas law passed in 2012. There are no provisions in the oil and Gas act to protect any Archaeological and Historical sites. The drilling companies should hire a certified archaeologist to do surveying before any well pads, compressor stations, impoundment ponds, pipelines and roads leading to the well pads to determine that they are not destroying any archaeological sites and historical sites.

I recommend a provision be adopted in the Oil and Gas act to protect these sites for myself and all the people in PA. All well pads, compressor stations, impoundment ponds, pipelines and roads leading to well pads be a minimum of 500 ft near sites. (988)

Response: The Department has determined that the public resource impact screening provisions as outlined in Section 78.15(f)-(g) and 78a.15(f)-(g) are reasonable, appropriate and necessary to ensure that the Department has complied with its obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Please see the response to comment 265.

Section 3215(c) of the 2012 Oil and Gas Act requires the Department to consider the impacts to public resources when making a decision on a well permit, including historical and archeological sites. In §§ 78.15(f) and 78a.15(f), these sites are listed as public resources that trigger additional consideration as part of the well permit review process.

To the extent that the commentator suggests that these provisions apply to all oil and gas operations, please see the response to comment 266.

375. Comment: Section 78.15(f)(1)(vi) - This should be removed all together as this notification is already required under Act 13. (411)

Response: Please see response to comment 372.

376. Comment: I would like to see more regulations and changes concerning liability with the distance from a gas pad to water wells being increased to 1 mile from the 2500' present limit. I am seeing more water issues farther than 2500' that can possibly be attributed to gas drilling/fracking. And I would like to see more studies showing that any kind of methane migration, whether background, shallow, biogenic, thermo genic may be moved into the aquifer after the disturbances of gas drilling and fracking. (9)

Response: Section 3218(c) of the 2012 Oil and Gas Act provides the area for presumptive liability. To the extent that the commentator suggests extending that presumptive area, that change should be a legislative change to the 2012 Oil and Gas Act. Moreover, the presumption of liability provisions are outside the scope of this rulemaking.

377. Comment: DEP's proposed revisions in paragraph (f)(2) would result in significant costs related to operations on public lands because the revisions do not comply with Pennsylvania law and do not contain a process for respecting private property rights of oil and gas owners. In contrast to the process established under Pennsylvania property law rights, the proposed regulations create a burdensome and open-ended process in which discussion (due regard) is abandoned. Instead the process bypasses that discussion in favor of vesting in the DEP the unilateral right to impose operating conditions. Specifically, the regulations allow the surface owner to simply communicate its concerns to the DEP. The give and take of the established due regard process is eradicated because, under the proposed regulations, the DEP becomes the judge of what the operating conditions should be on public lands. Not only is this a remarkable usurpation of private property rights in the face of the legislature's express protection of same, but the proposed regulations are without any limit as to what concerns the resource agencies might submit, what constitutes a "harmful impact" under the regulations, or what the limits of mitigation might be. The proposed regulations are not even tied to the standard of "reasonable use" which has been a part of Pennsylvania Common Law for over 100 years and which, by virtue of extensive practice in the conventional oil and gas fields, is marked by established practices. The following amendments are suggested to section (f)(2):

(1)The applicant shall notify the public resource agency responsible for managing the public resource identified in paragraph (1), if any. The applicant shall forward by certified mail a copy of the plat identifying the proposed location of the well, well site and access road and information in paragraph (3) to the public resource agency at least 15 days prior to submitting its well permit application to the Department.

(a) With respect to surface landowners who are also the public resource agency to be notified, the notification required by Section 3211 (b.1.), provided it includes the information

prescribed by this subsection, satisfies the notification requirements of this subsection. With respect to subsection (f) (vi) above, the notification requirements of this paragraph only apply if the applicant has not previously notified the applicable resource agency pursuant to the applicant's use of the PNDI process. The applicant shall submit proof of notification with the well permit application.

(b) From the date of notification, the public resource agency shall have 15 days to provide written comments to the Department and the applicant regarding [on the functions and uses of the public resource and] the measures, if any, that the public resource agency recommends the Department consider to avoid or minimize probable harmful impacts to the public resource where the well, well site and access road is located. Any such comments shall include a statement to the Department verifying that the resource agency, where it is the surface owner, has consulted with the applicant with respect to any proposed mitigation measures prior to the submission of such comments to the Department. Public resource agencies shall also provide the Department with relevant portions of underlying instruments or agreements that reflect operational constraints to which the parties have agreed for the mitigation of impacts to public resources. The applicant may provide a response to the Department to any such comments.

(3) The applicant shall include the following information in the well permit application on forms provided by the Department:

- (i) an identification of the public resource.
- (ii) [a description of the functions and uses of the public resource;]
- [(iii)] a description of the measures proposed to be taken to avoid or mitigate impacts, if any.

(4) The information required in paragraph 3 shall be limited to the discrete area of the public resource that may be affected by the well, well site and access road. (1135)

Response: The “due regard process” does not apply to these provisions. The “due regard process” pertains to the relationship between surface and subsurface owners. The Department has constitutional and statutory obligations to consider and protect public resources that are separate and unrelated to the property issues between surface and subsurface owners. The provisions in §§ 78.15 and 78a.15 establish a process for the Department to consider and protect public resources from the impacts of a proposed well and coordinate with public resource agencies to fulfill these obligations. These provisions function to provide the Department with information necessary to enable the Department to conduct its evaluation of potential impacts and to review the information in the context of the criteria outlined in §§ 78.15(g) and 78a.15(g), and to determine whether permit conditions are necessary to prevent a probable harmful impact.

The Department has considered the suggested amendments and declines to make those changes to these provisions.

378. Comment: Subsection (f): This section provides applicable jurisdictional agencies the opportunity to submit comments to the Department, including any recommendations to avoid or minimize impacts, during a 15-day time frame. It should be recognized by the PA DEP that “public resources” include those lands as defined by the term, “Submerged Lands on the Commonwealth” which are Commonwealth Property under waterways designated by the PA State Legislature as Public Highways. The PA DEP has issued and continues to issue Permits to drill non-vertical wells through such Commonwealth lands and to Hydraulically fracture those lands without first determining if the

applicant has either obtained a Submerged Lands License Agreement for a drilled pipe to develop a non-vertical well or determining if the applicant has obtained a valid lease to Hydraulically Fracture this Commonwealth Property.

All lands under waterways declared to be “Public Highways” are Commonwealth Property. In Lycoming County, for example, such waterways include Beaver Run, Cedar Run, Harris Run, Larry’s Creek, Little Pine Creek, Loyalsock Creek, Lycoming Creek, Mill Creek, Mill Run, Muncy Creek, Otter Run, Pine Creek, Plunketts Creek, Susquehanna River, Tombs Run, Trout Run, Upper Pine Bottom Run, and Wallis Run. These Commonwealth lands might consist of thousands of acres in individual counties—for example, the six waterways in Bradford County designated as “Public Highways” are very large waterways and the acreage of Commonwealth land in the beds of these waterways is estimated to be greater than 25,000 acres. At the normal lease payment of Commonwealth land of \$4,000.00 per acre, the lands under the waterways in Bradford County alone might produce 100 million dollars in revenue from leasing of these lands.

It is recommended that the regulations mandate that:

1) The PA DEP revoke all drilling permits issued that authorize drilling a non-vertical well through or hydraulic fracturing of commonwealth lands under waterways designated as “Public Highways”.

2) The PA DEP shall not accept any permit application to drill a non-vertical well through or to Hydraulic Fracture lands under waterways designated as “Public Highways” until the applicant leases such lands or obtains a Submerged Lands License Agreement. (92)

Response: To the extent that the commentator suggests adding submerged lands of the commonwealth to the list of public resources in §§ 78.15(f)(1) and 78a.15(f)(1), the Department declines to make that change because protection of this property is achieved through other provisions implemented by the Department.

To the extent that the commentator suggests amendments to the permitting provisions, those comments are outside the scope of this rulemaking. Also please note that the well permit does not convey any property rights. Further, the well permit is conditioned on the permittee’s compliance with all applicable law.

379. Comment: The proposed regulations allow for a public resource agency to receive notice of, and submit comments about, a proposed well permit that would affect its resources. The regulations, however, do not require the DEP to respond to those comments. To ensure that comments are adequately considered and that public resources are fully protected, the regulations should require the DEP to respond to comments submitted by public resource agencies. (19, 21, 23, 26, 90, 142, 165, 189, 192, 391, 938, 946, 958, 1005, 938a)

Response: The Department has considered this comment and declines to require Department response in this rulemaking.

380. Comment: The DEP should respond to comments received about a permit that may affect an important public resource. (Section 78.15(d)). (19, 21, 23, 26, 90, 142, 165, 180, 189, 192, 391, 429a, 609, 843, 851, 938, 946, 951, 958, 1005, 1019, 1089, 938a, 1229)

Response: The Department has considered this comment and declines to require Department response in this rulemaking.

- 381.** Comment: In regard to section 78.15 Application Requirements, the mandatory notification by those seeking well permits within close proximity of public resources to the appropriate agency is an important first step. (1098)

Response: The Department acknowledges this comment.

- 382.** Comment: Extending the 15-day period for the public resource agency recommendations to the department. This is an inadequate timeframe for a comprehensive review, analysis, and response. The national park review should be the minimum standard used to protect Pennsylvania's public sites. [78.15 (f) (2)] (15, 867)

Response: The Department has amended §§ 78.15(f)(2) and 78a.15(f)(2) in the final rulemaking to allow public resource agencies 30 days to comment on the impacts to public resources.

- 383.** Comment: § 78.15(f)(2) The Commentator recommends that the Department revise this paragraph to reflect the situation where a public resource agency is also the surface landowner. Additionally, the Commentator recommends that the Department clarify that the public resource agency shall have 15 calendar days to provide written comments to the Department and the applicant.

The Commentator suggests the following amendatory language:

(2) The applicant shall notify the public resource agency responsible for managing the public resource identified in paragraph (1), if any. The applicant shall forward by certified mail a copy of the plat identifying the proposed location of the well, well site and access road and information in paragraph (3) to the public resource agency at least 15 days prior to submitting its well permit application to the Department. The applicant shall submit proof of notification with the well permit application. From the date of notification, the public resource agency shall have 15 calendar days to provide written comments to the Department and the applicant on the functions and uses of the public resource and the measures, if any, that the public resource agency recommends the Department consider to avoid or minimize probable harmful impacts to the public resource where the well, well site and access road is located. The public resource agency shall also provide the relevant portions of any records indicating pre-existing agreements, whether leases, surface use agreements or others, between the agency and the applicant that reflect mitigation measures already adopted for the protection of public resources that may be affected by the proposed well. The applicant may provide a response to the Department to any such comments. With respect to surface landowners who are also a public resource agency to be notified, the notification contained in Section 3211(b)(1), provided it includes the information required by this subsection, satisfies the notification requirements of this subsection. (1137, 1147)

Response: The Department considered this comment and declines to make the suggested amendments to these provisions. Any agreements between well permit applicants and public resource agencies made prior to the submission of the well permit application may be provided as part of this process. Further, the timeframes apply to calendar days in this section.

- 384.** Comment: 78:15 Subsection (f)(2) should extend the comment period for resources agencies, and require that the Department respond to those comments.

Subsection (f)(2) should not limit the resource agency's response to the proposal to recommending mitigation measures. Subsection (f)(2) appears to limit the resource agency's mitigation measures to

locational comments – that is, comments on “where the well, wells site and access road is located.” The resource agency’s comments should not be limited in this manner. Depending on the aspect of the resource threatened, there may be other considerations that are more effective mitigation measures other than locational changes, such as limiting when operations occur during the year, altering hours the operation, erecting noise barriers, limiting light pollution, altering truck routes, etc. The resource agencies should, and one could argue must, be able to submit comments as necessary to propose mitigation of any impact to public trust resources under its jurisdiction.

In addition, as recognized by the National Environmental Policy Act, any legitimate consideration of options to prevent or mitigate harm to the environment and public health and welfare by a proposed government action (issuance of a permit) must entail consideration of a “no action” alternative. In the case of public resources held in trust by public agencies, there may be occasions where the attributes of the resource are so valuable that the responsible agency would be compelled to recommend a “no action” alternative to protect the resource, that is, permit denial. Subsection (f)(2) should recognize this potential by expressly providing, or at the very least not limiting, what comments the resource agency provides to the Department in order to minimize or avoid harm to the resource.

Subsection (f)(2) allows the permit applicant to respond to any mitigation measures recommended by the resource agency, but imposes no obligation on the agency responsible for making the decision that will allow the impact. Subsection (f)(2) should require, in this particular circumstance where public resources are at risk, that the Department document its response to the resource agency’s comments. Such a requirement will not only ensure that the Department has considered the resource agency’s comments, but will enhance transparency in the Department’s decision making by allowing the public to understand why the Department did or did not concur with the resource agency’s concerns. (852a)

Response: The Department agrees that the public resource agency’s comments should include recommendations for the Department to consider that will avoid, minimize or otherwise mitigate impacts to the public resource. The Department disagrees that the language in this section limits public resource agencies’ ability to comment in the manner described by the commentator. Further, the Department declines to make the suggested amendment requiring the Department’s response to comments.

385. Comment: 78.15(f)(2). Application Requirements. - The 15 day comment period does not provide public resource agencies a sufficient timeframe for adequate consideration of the public resource and to provide a sufficient response. Municipal governments that may have a municipal park located within the notification range may not have adequate time to respond within the 15 day period. Many municipal governments only meet on a monthly basis to discuss business and determine actions. For example, in the small rural communities located within the Shale region, many Supervisors are only part time and some may only be at the municipal office to review mail at the monthly meeting. 15 days may afford inadequate time in every case to read the letter or formulate sufficient response. Some of the small rural county governments only rely on a small planning staff under whose purview this review and response would be generated. Some counties only have a county planner and no support staff. A 15 day comment period does not permit enough time with the on-going work load to provide for adequate attention and a sufficient response. Finally, with current workloads, the 15 day comment period does not provide state resource agencies such as DCNR with an adequate review period to the depth that would be sufficient to appropriately respond.

78.15(f)(2). 15 Day Public Resource Written Comments – Revised

The applicant shall notify the public resources agency responsible for managing the public resource identified in paragraph (1), if any. The applicant shall notify the appropriate county planning department/s regarding any possible well pad, pipeline or facility that potentially may be sited within locations of scenic vistas/viewsheds. The applicant shall forward by certified mail a copy of the plat identifying the proposed location of the well, well site and access road and information in paragraph (3) to the public resource agency or county planning department at least 30 days prior to submitting its well permit application to the Department. The applicant shall submit proof of notification with the well permit application. From the date of notification, the public resource agency or county planning department shall have 30 days to provide written comments to the Department and the applicant on the functions and uses of the public resource and the measures, if any, that the public resource agency or county planning department recommends the Department consider to avoid or minimize probable harmful impacts to the public resource where the well, well site and access road is located. The applicant may provide a response to the Department to any such comments. The Department needs to consider these impacts and mitigation suggestions when evaluating and issuing the permit. The Department needs to respond to the comments made by the public resource agency or county planning department. (660a)

Response: The Department has amended §§ 78.15(f)(2) and 78a.15(f)(2) in the final rulemaking to allow public resource agencies 30 days to comment on the impacts to public resources.

To the extent that the commentator suggests extending this requirement beyond the well site and access road, please see response to comment 266.

To the extent that the commentator suggests notice to county planning departments, the Department declines to make this amendment as municipalities receive notice under Section 3211(b)(2) of the 2012 Oil and Gas Act and these provisions ensure that applicable public resource agencies receive notice. The Department suggests that municipalities coordinate with county planning department if the county is not the applicable public resource agency.

- 386.** Comment: § 78.15(f)(2) - We are concerned that the “15 day” notification time period outlined in item #3 is insufficient for public resource agencies to provide written comments to the Department. We recommend the language be changed to the following, *“From the date of notification, the public resource agency shall have 30 days to provide written comments to the Department.”* We are concerned that with the sheer number of well permit applications that are likely, our limited staff would be overwhelmed with the complex issues needing evaluation in order to ensure that we fulfill our responsibilities to avoid adverse impacts. Additionally, we suggest the revised regulations read (in bold italics), “The applicant shall forward by certified mail, *return receipt requested...*” The U.S. Postal Service “return receipt requested” card would ensure applicants meet the required proof of notification stipulation in the regulations. (137,188, 660a, 1062, 1133, 1098, 1099, 997a, 1170)

Response: The Department has amended §§ 78.15(f)(2) and 78a.15(f)(2) in the final rulemaking to allow public resource agencies 30 days to comment on the impacts to public resources. Sections 78.15(2) and 78a.15(2) requires notice to be provided by certified mail and the applicant must provide proof of notification. The Department added a new definition of “certified mail” in §§ 78.1 and 78a.1 in the final rulemaking. Accordingly, requiring return receipt requested would not be appropriate.

- 387.** Comment: Section 78.15(f)(2): Consultation with Commonwealth Agencies Managing Public Resources Prior to Submitting a Permit Does Not Address Expedited Permit Process
The proposed provision does not take into account the need for an accelerated permit. Section 78.16

of the current Chapter 78 regulation states: “[I]n cases of hardship, an operator may request an accelerated review of a well permit application.” If the proposed unconventional well for which an operator was seeking a permit was near or on a public resource, the new provision would appear to preclude the operator from being able to request expedited permit review. If the need for an expedited permit review were present, waiting the additional days to reach the Commonwealth would be cumbersome and unnecessary. We ask the Board to revise the proposed language to include a practical method for addressing accelerated permits. Additionally, we suggest that the Board clarify that the public resource agency shall have 15 calendar days to provide written comments to the Department and the applicant. (1085)

Response: The requirements in this section have no impact on an applicant’s ability to request an accelerated review. These provisions require applicants to notify public resources agencies at least 30 days prior to submitting its well permit application to the Department and gives the public resources agency 30 days after receipt of this notification to provide comments. It is the applicant’s responsibility to ensure that this process is timely. To the extent that immediate action is necessary to protect public health or safety, to control pollution or affect other environmental or safety measures, and extraordinary circumstances, the Department will make the appropriate considerations on a case-by-case basis while ensuring compliance with the Department’s constitutional and statutory obligations to protect public resources.

Based on comments received, the Department has amended §§ 78.15(f)(2) and 78a.15(f)(2) in the final rulemaking to allow public resource agencies 30 calendar days to comment on the impacts to public resources.

- 388.** Comment: 78.15(f)(2) includes the phrase “probable harmful impacts,” and 78.15(g) includes the phrase “probable harmful impact.” These phrases are vague. As written, we question if this standard adequately protects this Commonwealth’s natural resources. We suggest that the final- form regulation include criteria that will allow the regulated community to know how the Department will determine if an application poses a probable harmful impact. (1099)

Response: Sections 78.15(g) and 78a.15(g) have been amended to clarify the criteria the Department will consider when deciding whether to condition an oil or gas well permit based on impacts to public resources.

- 389.** Comment: Section 78.15(f)(2) we recommend that the Department revise this paragraph to reflect the situation where a public resource agency is also the surface landowner. Additionally, we recommend that the Department clarify that the public resource agency shall have 15 calendar days to provide written comments to the Department and the applicant.

Suggested amendatory language:

(2) The applicant shall notify the public resource agency responsible for managing the public resource identified in paragraph (1), if any. The applicant shall forward by certified mail a copy of the plat identifying the proposed location of the well, well site and access road and information in paragraph (3) to the public resource agency at least 15 days prior to submitting its well permit application to the Department. The applicant shall submit proof of notification with the well permit application. From the date of notification, the public resource agency shall have 15 calendar days to provide written comments to the Department and the applicant on the functions and uses of the public resource and the measures, if any, that the public resource agency recommends the Department consider to avoid or minimize probable harmful impacts to the public resource where

the well, well site and access road is located. The public resource agency shall also provide the relevant portions of any records indicating pre-existing agreements, whether leases, surface use agreements or others, between the agency and the applicant that reflect mitigation measures already adopted for the protection of public resources that may be affected by the proposed well. The applicant may provide a response to the Department to any such comments. With respect to surface landowners who are also a public resource agency to be notified, the notification contained in Section 3211(b)(1), provided it includes the information required by this subsection, satisfies the notification requirements of this subsection. (1103)

Response: The Department has considered this comment and declines to make the suggested amendment to this rulemaking. Any agreements between well permit applicants and public resource agencies made prior to the submission of the well permit application may be provided as part of this process. Based on comments received, the Department has amended §§ 78.15(f)(2) and 78a.15(f)(2) in the final rulemaking to allow public resource agencies 30 calendar days to comment on the impacts to public resources.

390. Comment: 78.15(f)(2) The 15-day review period is not adequate for jurisdictional resource agencies to develop and provide written comments to the Department regarding possible affects to sensitive and protected public resources in proximity to proposed well sites or access roads. Thirty (30) days is a reasonable time frame for such reviews and is consistent with review times applied to industries other than oil and gas. (1134)

Response: The Department has amended §§ 78.15(f)(2) and 78a.15(f)(2) in the final rulemaking to allow public resource agencies 30 calendar days to comment on the impacts to public resources.

391. Comment: According to § 78.15(f), an applicant proposing to drill a well at a location in or within 200 feet of a publicly owned park, forest, game land or wildlife area, must take additional steps in the application to ensure protection of the public resources. The applicant must provide notice to the appropriate public resource agency responsible for managing the public resource, upon which the resource agency has 15 days to provide written comments to the applicant and DEP on the functions and uses of the public resource and recommended measures to avoid or minimize probable harmful impacts to the public resource where the well, well site, and access areas is located. By hastening the timeframe by which the public resource agency has to provide feedback, the proposed amendments will have the effect of limiting input from public resource agencies and thus limiting the recommendations to mitigate or avoid impacts. We recommend clarifying whether the public resource agency feedback timeframe is based upon business days or calendar days, and increasing the overall length of time available to the public resource agency to prepare recommendations for avoidance or mitigation to at least 30 business days. This will allow the public resource agency sufficient time to evaluate the potential impacts on the resource and provide meaningful recommendations to the applicant and DEP. (1006, 1156, 1157)

Response: The Department has amended §§ 78.15(f)(2) and 78a.15(f)(2) in the final rulemaking to allow public resource agencies 30 calendar days to comment on the impacts to public resources.

392. Comment: § 78.15(f): The Department is required to consider the impacts to public resources when making a determination on a well permit. Jurisdictional Agencies have the opportunity to submit comments to DEP during a 15-day time frame to avoid or minimize impacts. If a jurisdictional agency (JA) believes the impact is so significant to public resources and recommends denial (and not mitigation via special conditions) of the permit, can the Department deny the action directly while

leaving in place the operators appeal process? Suppose the JA needs more time to assess impacts and may require for example, Habitat Evaluation Procedures be applied to assess potential damage, will an extension be automatically granted? We recommend extension language be incorporated into the regulations. What is the threshold test between the operator's *property rights to ensure optimal development of the resources* (§ 321(e) of 58 Pa.C.S.) vs. protection of public resources? This standard cannot be subject to arbitrary and capricious criteria, and certainly not political influence. If protection of public resources is indeed the primary focus of this section, the regulations must include both qualitative and quantitative protocols that will be used in making this permit determination when conflicts are presented to the Department. These criteria and process steps must be incorporated into these revisions. (1063)

Response: To the extent that the commenter suggests that this provision include language that gives the Department the authority to deny a well permit based on the comments submitted by a public resource agency, the Department has discretion to deny a permit to drill or operate a well in only limited circumstances outlined in Section 3211(e.1) of the 2012 Oil and Gas Act. That change should be made to the 2012 Oil and Gas Act.

To the extent that the commenter suggests these provisions provide for an extension, the Department has considered that comment and declines to make that suggested amendment.

In response to the commenter's comment about the criteria considered, §§ 78.15(g) and 78a.15(g) have been amended to clarify the criteria the Department will consider when deciding whether to condition an oil or gas well permit based on impacts to public resources.

- 393.** Comment: There are additional sections of the Chapter 78 regulations which need to be modified to better protect fresh groundwater aquifers and surface sources of public water supplies. The provision in Section 78.15 (f) for a 15 day notification of public water suppliers and requirement for the public water supplier to respond with comments in 15 days is woefully inadequate and places an undue burden of responsibility on the public water supplier. In addition to an increase in the notification periods to at least 30 days, the Department, with or without notice from the public water supplier, needs to proactively identify applicable sensitive delineated SWPZs to the well permit applicant and require the applicant to address any necessary appropriate measures of additional protection. Public water suppliers would need at least 60 days to review and comment on the Department's determinations as provided for in Section 78.15 (g) once made. (852a, 137)

Response: The Department has amended §§ 78.15(f)(2) and 78a.15(f)(2) in the final rulemaking to allow public resource agencies 30 calendar days to comment on the impacts to public resources.

The Department has considered the remainder of this comment and declines to make the suggested changes. The process outlined in this provision is reasonable and appropriate.

- 394.** Comment: In regards to the notification zone and comment period, we have concerns. Many townships function with part time employees and supervisors. In the case of needing to evaluate a public resource in the event of a nearby well site, 15 days is totally inadequate. A minimum reasonable time would possibly be 30 days. A 200' notification zone is inadequate based industry truck traffic alone. We recommend that the PNHP process stand as proposed and that the notification zone and comment period be revised to a more workable solution based on the information provided. (846, 1035)

Response: The Department has amended §§ 78.15(f)(2) and 78a.15(f)(2) in the final

rulemaking to allow public resource agencies 30 calendar days to comment on the impacts to public resources.

To the extent that the commentator suggests extending the distances provided in §§ 78.15(f)(1) and 78a.15(f)(1), please see the response to comment 273.

395. Comment: Increase the time period for public water suppliers to respond with comments to at least 30 and better 60 days after receipt of notices from the Department. (951,1019)

Response: The Department has amended §§ 78.15(f)(2) and 78a.15(f)(2) in the final rulemaking to allow public resource agencies 30 calendar days to comment on the impacts to public resources.

396. Comment: § 78.15(f) – The EQB proposes a process at § 78.15(f) for the DEP to consider the impacts to public resources when making a determination on a well permit. Proposed § 78.15(f) establishes a 15-day timeframe for applicable jurisdictional agencies to provide comment on projects that come within certain distances of certain public resources.

We support the proposal to provide public resource agencies with an opportunity comment on any proposed well permit application to ensure public resources are protected. However, the comment period is too short, the potential impact radius proposed around public resources is too small, and the list of public resources is incomplete. We also recommend notice to the government of each locality in which the resources are located. In addition, the requirements of this provision should apply not only to Oil and Gas Operations associated with unconventional wells (shale gas wells drilled below the Elk Sandstone) but also to those associated with conventional wells.

Under § 78.15(f)(2), resource agencies should be given a minimum of 30 business days for comment on permit applications. (1143)

Response: The Department has amended §§ 78.15(f)(2) and 78a.15(f)(2) in the final rulemaking to allow public resource agencies 30 calendar days to comment on the impacts to public resources.

397. Comment: Allow the public - not the applicant –to determine a description of the function and uses of the public resource required by the permit application. [17.15 (f) (3) (ii)] (1098)

Response: The Department has considered this comment and declines to include this suggested amendment in this rulemaking. Sections 78.15(f) and 78a.15(f) establish a process for the applicant to provide certain information in the permit application and to provide appropriate public resource agencies the opportunity to comment regarding potential impacts to public resources from the proposed oil or gas well drilling. This process ensures that the Department has sufficient information to evaluate whether permit conditions are necessary using the criteria in Sections 78.15(g) and 78a.15(g).

398. Comment: In the case of oil and gas development, we strongly encourage sponsors of oil and gas development proposals to coordinate as early as possible with the Commonwealth's LWCF State Liaison Officer at DCNR to determine the degree to which Section 6(f)(3) restricted property will be involved in any way. This early coordination among all parties will ensure that the required federal compliance process will be followed so that compliance is not conducted as an after-thought by occurring too late in the implementation of the proposals. Early coordination will help to avoid unnecessary delays in securing any required federal approvals if a conversion approval and/or other

federal decisions are required. The NPS and/or PA DCNR may be contacted for more information on the LWCF State and Local Assistance Program (www.nps.gov/lwcf). (1062)

Response: The Department acknowledges this comment.

399. Comment: Section 78.15(f)(3) - Identify and prepare the forms prior to the establishment of this section for review. (411)

Response: The Department plans to have all necessary forms, guidance documents, and procedures available at the effective date of the rule making.

400. Comment: § 78.15(f)(3)(i) & (ii) The Commentator suggests the following amendatory language: “(i) an identification of the public resource, which may include a description of the functions and uses of the public resource. (ii) a description of the measures proposed to be taken to avoid or mitigate impacts, if any. (1137, 1147)

Response: The Department considered this comment and declines to make the suggested amendment. Information related to the functions and uses of the public resources is required as part of the permit application in §§ 78.15(f)(3)(ii) and 78a.15(f)(3)(ii) because this information is necessary for the Department to consider the potential impacts of the proposed well on the public resource and to determine whether permit conditions are necessary using the criteria in §§ 78.15(g) and 78a.15(g).

401. Comment: Section 78.15(f)(3)(ii) -The operator should not be responsible for the determination and functions of public resources. (411)

Response: Please see response to comment 400.

402. Comment: Section 78.15(f)(3) requires the applicant to provide information to the DEP, including (i) identification of the public resources, (ii) a description of the functions and uses of the public resource, and (iii) a description of the measures proposed to be taken to avoid or mitigate impacts. Subsection (4) goes on to limit the required information to the discrete area of the public resource that may be affected by the well, well site access road. “Discrete” is not defined in this section, nor is it defined in § 78.1. If the term is intended to cover only the disturbed area, then the proposed amendment falls far short of protecting the quality of the recreational experience on public lands—which is one of the stated intentions for including this section. (1157)

Response: To the extent that the commentator suggests defining “discrete area”, the Department declines to define that term at this time. If the need for further clarification becomes apparent during implementation of this provision, the Department will develop guidance to address any issues identified.

403. Comment: Recreational uses—such as fishing in a wilderness stream—that are occurring in areas adjacent to the actual well pad should be required to be reported in the application, and to the appropriate public resource agency, so that suitable mitigation measures can be recommended to support the continued use of those recreational resources. We recommend clarifying the geographic area for which an applicant must submit required information under § 78.15(f)(3) and (4), to ensure adequate buffers to protect existing recreational uses. (1157)

Response: Please see response to comment 402.

404. Comment: 78.15(f)(3) should, in addition to the three items listed in the proposed regulation, require that the applicant certify that it has met with any affected public resource agency to discuss the scope of oil and gas operations at least ten days before the public resource agency's deadline for submitting comments about proposed mitigation measure. Such a requirement would ensure that the public resource agency has had an opportunity to become informed about the scope of the proposed oil and gas operations with sufficient time to participate meaningfully in the comment process established by § 78.15(f)(2). It will also ensure an opportunity for discussion between the applicant and resource agency, so that each can share their views on how the operation may affect the resource and what mitigation measures may be appropriate. (852a)

Response: The Department has considered this comment and declines to make the suggested amendment to this rulemaking. Sections 78.15(f)(2) and 78a.15(f)(2) have been revised to increase the time provided to public resource agencies to provide comments to the Department on the impacts to public resources from 15 days to 30 days. This additional time allows municipalities that only meet on a monthly basis the opportunity to respond to a request from an applicant. The additional time also provides public resource agencies with a greater ability to review and to provide meaningful comments and recommendations to the applicant without unduly delaying the permitting process.

405. Comment: Allowing the public, not the applicant, to determine a description of the function and uses of the public resource required by the permit application. [17.15 (f) (3) (ii)] (15, 867)

Response: The Department has considered this comment and declines to make the suggested amendment to this rulemaking. Information related to the functions and uses of the public resources is required as part of the permit application in §§ 78.15(f)(3)(ii) and 78a.15(f)(3)(ii) because this information is necessary for the Department to consider the potential impacts of the proposed well on the public resource and to determine whether permit conditions are necessary using the criteria in §§ 78.15(g) and 78a.15(g). This is in addition to any comments received from the public or applicable public resource agencies during the well permit review process.

406. Comment: 78.15(f)(3)(i)+(ii) - We believe that public resource agencies are in a much better position to provide this information. Suggested language: (i) *An identification of the public resource, which may include a description of the functions and uses of the public resource.* (1174)

Response: Please see responses to comments 400 and 405.

407. Comment: 78.15(f)(4) - We recommend the Department add clarifying language regarding “discrete area.” Suggested Language: (4) The information required in paragraph (3) shall be limited to the discrete and physically separate and distinct area of the public resource that may be affected by the well, well site and access road.(1174)

Response: Please see response to comment 402.

408. Comment: 78.15(f)(4) should not limit the information required under § 78.15(f)(3) to the “discrete area of the public resource that may be affected by the well, well site and access road.” The regulation implies that the only area “affected” by the oil and gas operations is that area directly occupied by the well, well site, and access road. In fact, particularly with public resources, the resources that may be affected by the oil and gas operations could be much broader, especially in the case of public game lands and water wells. The effects of oil and gas operations on wildlife habitat and groundwater aquifers extend well beyond the immediate footprint of the well site and access

road. As such, we request that the Department revise § 78.15(f)(4) to make clear that the permit applicant must submit information about mitigation for all effects of oil and gas operations on public resources. (852a)

Response: The Department has considered this comment and declines to make the suggested amendment to this rulemaking. To the extent that the commentator suggests the public resource consideration provision should apply to all oil and gas operations, §§ 78.15 and 78a.15 establish the well permit application process and are limited to activities associated with well construction and development. The requirements of these sections are designed to address the impacts within the limit of disturbance of the well site. Other activities associated with the oil and gas operations are regulated through various other provisions in Chapters 78 and 78a, or other laws implemented by the Department.

- 409.** Comment: § 78.15(f)(4) The Commentator recommends the Department add clarifying language regarding the term “discrete area”. The Commentator suggests the following amendatory language: “(4) The information required in paragraph (3) shall be limited to the discrete, physically separate and distinct area of the public resource that may be affected by the well, well site and access road.” (1137, 1147)

Response: Please see response to comment 402.

- 410.** Comment: Section 78.15(f)(4) uses the phrase “discrete area” to describe the information required in a well permit application regarding public resources “...that may be affected by the well, well site and access road.” The phrase “discrete area” is an undefined term which should be further explained and quantified. Determination of the “discrete area” must rest with either the Department or a designated resource protection agency and not the applicant. Similarly, in Section 78.15 (g) of the proposed regulations, the language should clearly indicate that the Department has sole authority to condition or deny a permit if it determines that there will be “probable harmful impact” to a public resource. (1142, 997a)

Response: Please see response to comment 402.

To the extent that the commentator suggests that clarifying language is needed to explain that “the Department has the sole authority to condition or deny a permit”, please see response to comment 280.

- 411.** Comment: § 78.15(f)(4) - Regarding the language “The information required in paragraph 3 shall be limited to the discrete area of the public resource that may be affected by the well, well site and access road”, the term “discrete area” is not defined, and is ambiguous. As we note above, the term should be defined in § 78.1. This language does not specify who makes the determination of the area that may be affected by the well, well site and access road. We suggest that the resource agency involved that is most familiar with its resources, should have input as to the area, specific resources and functions that may be affected by the well, well site and access road, and into the measures proposed to avoid or mitigate impacts. We would welcome dialogue with developers to define specific areas of potential impact and seek mutually agreeable measures to avoid or mitigate those impacts. (1062, 1133)

Response: Please see response to comment 402. Also, please note that §§ 78.15(f)(2) and 78a.15(f)(2) specify that public resource agencies may provide comments on the functions and uses of the public resource.

- 412.** Comment: Section 78.15(f)(4). - Paragraph (3) the “discrete area” we are interpreting to be the “limit of disturbance” for lack of a corresponding definition. Based on our interpretation, the applicant’s attention to only the “discrete area” is myopic at best. We’ve had significant experience now to know that the “discrete area” is not the only area of impact near any natural gas well pad, pipeline or facility.

For purposes of public resources, primarily due to the fact that we have plenty to base our experience on private land impacts, we can say with most certainty, limiting the information provided to the “discrete area” is dramatically insufficient. Well pads fluctuate with traffic from low to high volume. The operator’s schedules may coincide with the public’s seasonal visitation frequency with the public resource, thus the operator needs to take this into account and provide for adequate public safety measures. The impact of noise and dust issues beyond well pads and facilities can affect the functions and uses of the public resource for an area hundreds of feet away from the “discrete area”, especially in view of camping. Lookout points for vistas/view sheds can be greatly impacted by well pads, pipelines and other facilities greatly affecting the functions and uses along with enjoyment, greatly beyond the “discrete area.” Namely, a well pad sited [permit# 113-20208] along the Loyalsock Trail along with hikers from our region reporting impacts along the Midstate Trail, strongly indicate reasons for the operator to consider the functions and uses of trails beyond this “discrete area.” Additionally, previously forested, now cleared areas considerably increase the incidence of blow downs in the forest perhaps as much as 100 feet from the “discrete area” which adds to the corresponding fragmentation issues. The applicant needs to indicate what ongoing mitigation efforts will be made to address the additional loss of trees beyond the “discrete area”.

In summary, § 78.15(f) needs to be revised to increase the 200’ notification zone to 600’; create another notification zone of one mile for vistas, viewsheds and within or in one mile for certain trail locations; create a new provision for buffer zones and unique buffer zones; increase the comment period from 15 days to 30 days and include county planning departments, and define the “discrete area” along with expanding the application § 78.15(f)(4) to ensure an adequate detail of submitted information. These revisions provide for opportunities to properly mitigate and avoid siting problems in the future. We recommend these revisions to § 78.15(f). (660a)

Response: To the extent that the commentator suggest extending the distances in §§ 78.15(f)(a) and 78a.15(f)(1), please see response to comment 273.

To the extent that the commentator suggests extending the timeframe for public resource agency comment, the Department is extending this time from 15 to 30 calendar days in §§ 78.15(f)(2) and 78a.15(f)(2).

The Department declines to add notice to county planning departments. The Department declines to make this amendment as municipalities receive notice under Section 3211(b)(2) of the 2012 Oil and Gas Act and these provisions ensure that applicable public resource agencies receive notice. The Department suggests that municipalities coordinate with county planning departments if the county is not the applicable public resource agency.

To the extent that the commentator suggests defining “discrete area”, please see response to comment 402.

- 413.** Comment: Section 3215(e) of Act 13 requires the Department to develop regulatory criteria to condition permits to protect public resources while ensuring optimal oil and gas resource development, and respecting oil and gas owner property rights. However, the proposed regulations in

Chapter 78, Section 78.15 do not adequately implement or address these requirements – the regulatory criteria for conditioning a permit have not been provided, and the draft regulations only frame the Department’s authority to implement the conditions – essentially, “putting the cart before the horse.” If industry is required to avoid or mitigate potential impacts to these resources, the criteria used to assess impacts must be established and provided. (1153)

Response: Sections 78.15(g) and 78a.15(g) have been amended to clarify the criteria the Department will consider when deciding whether to condition an oil or gas well permit based on impacts to public resources.

- 414.** Comment: Act 13 of 2012, Section 3215, limited rather than expanded DEP’s authority to condition well permits for the mitigation of probable harmful impacts to public resources for the following reasons: (1) The list of public resources identified in Act 13 was unchanged from the 1984 Act it replaced with the single exception that it added “sources used for public drinking supplies” as a new public resource. However, Act 13, unlike the 1984 Act, includes the express requirement for the EQB to “develop criteria” in three distinct categories for DEP to utilize and satisfy (a) for conditioning a permit with respect to the resources “identified” in Act 13 based on its impact, (b) for ensuring optimal development of the resource and (c) for respecting property rights of oil and gas owners before it may place a condition on any well permit, and (2) Also, in the public resource protection section of Act 13 the new “Applicability” sub-section 3215(g) states that “Nothing in this section shall alter or abridge the terms of any contract ... or other agreement entered into prior to the effective date...” of the section.

DEP’s proposed rule does not identify any criteria for any of the three required categories and makes no provision to respect pre-existing (pre-2012) contracts and agreements such as deeds, leases, and surface use and coordination agreements between public land surface owners and oil and gas owners. Commentator contends that the proposed regulations are not in conformity with legislative intent and DEP has no authority to promulgate regulations that do not identify and articulate required criteria and that do not make provision for pre-existing contracts and agreements. (1153)

Response: Please see response to comment 413. Any agreements between well permit applicants and public resource agencies made prior to the submission of the well permit application may be provided as part of the well permit application process.

Section 78.15(f) and 78a.15(f) establish a process for the applicant to obtain information from an appropriate public resource agency regarding potential impacts to public resources from the proposed oil or gas well drilling. This process ensures that the Department has sufficient information to evaluate whether permit conditions are necessary using the criteria in Sections 78.15(g) and 78a.15(g).

- 415.** Comment: DEP’s proposed subsection (g) does not implement the requirement of Act 13, Section 3215(e) because it does not provide criteria to allow the DEP to balance the three interests stated in that section of the Act. Suggested amendment to address this comment:

(g) If the proposed well, well site or access road poses a probable harmful impact to a public resource, the Department may include conditions in the well permit to avoid or mitigate those impacts to the public resource’s current functions and uses. The Department shall consider the impact of any potential permit condition on the applicant’s ability to exercise its property rights with regard to the development of oil and gas resources and the degree to which any potential condition may impact or impede the optimal development of the oil and gas resources. The issuance of a permit containing conditions imposed by the Department

~~pursuant to this subsection shall be an action that is appealable to the Environmental Hearing Board. The Department shall have the burden of proving that the conditions were necessary to protect against a probable harmful impact of the public resource.~~ The presence of well sites and the conduct of oil and gas operations on or in the vicinity of Public Resources, as listed in Section 3215 (c), are not in and of themselves an impact or harm requiring or authorizing the imposition of any well permit conditions under Section 3215 (e). Because Section 3215 (e) expressly requires the Department to ensure optimal development of oil and gas resources and directs the Department to respect the property interests of oil and gas owners, mere inconvenience to users of Public Resources will not be the type of harm that may be mitigated by a condition placed on a well permit. When considering conditions to be imposed on well permits, necessary for the protection against probable harm to Public Resources, the Department will take the following steps.

(1) Describe the Public Resource from the list in Section 3215 (c) being considered for protection, as provided by the applicant in response to the question on the permit application and submission of the “Coordination of Well Location with Public Resources.”

Standard of Harm:

(2) Determine if there is clear and convincing evidence to demonstrate that:

(i) there will be permanent or long term (10 or more years) physical harm to the Public Resource from operations authorized by the permit,

(ii) the harm is clearly in excess of the reasonable use standard and

(iii) the harm is more likely than not.

If the harmful impact meets the above criteria, proceed to steps 3 through 5.

Standard of protection:

(3) Consider the minimum necessary measures to mitigate harm, in consultation with the applicant and after consideration of pre-existing agreements between the parties.

(i) Propose the minimum necessary mitigation as a permit condition only if existing mitigations will not address the circumstances.

(ii) Ensure the optimal development of the resource and protection of oil and gas property rights by conducting a thorough analysis of the costs of compliance with any recommended permit condition and the necessity to avoid waste of oil and gas resources through inappropriate locational constraints.

(iv) The issuance of a permit containing conditions imposed by the Department pursuant to this subsection shall be an action that is appealable to the Environmental Hearing Board. The Department shall have the burden of proving that the conditions were necessary to protect against a probable harmful impact of the public resource and that without the permit condition, the activity would not be a reasonable use of the surface.

(1135)

Response: The Department has considered this comment and declines to make the suggested amendment to this rulemaking. Sections 78.15(g) and 78a.15(g) have been amended to clarify the criteria the Department will consider when deciding whether to condition an oil or gas well permit based on impacts to public resources. The Department disagrees that clear and convincing is the applicable standard.

- 416.** Comment: DEP should not be required to consider the rights of the applicants: DEP’s mission is to uphold citizens’ constitutional right to a clean environment. Abrogating these rights through consideration of the rights of applicants would be unconstitutional. (153)

Response: The Department does not agree that considering the rights of applicants abrogates citizens’ rights. Nonetheless, sections 78.15(g) and 78a.15(g) have been amended to clarify the

criteria the Department will consider when deciding whether to condition an oil or gas well permit based on impacts to public resources.

The process outlined in §§ 78.15(f) and 78a.15(f) and the consideration of the criteria outlined in §§ 78.15(g) and 78a.15(g) ensures that the Department fulfills its constitutional and statutory obligations.

417. Comment: We are concerned that in this section the Department created an open-ended process, which lacks clear standards for implementation, and does not properly balance the cost of permit conditions to protect public resources against the benefits of these provisions. We believe that the cost of consultation and mitigation will be orders of magnitude higher than the Department estimates and must be reconsidered. (1071)

Response: Sections 78.15(g) and 78a.15(g) have been amended to clarify the criteria the Department will consider when deciding whether to condition an oil or gas well permit based on impacts to public resources.

Please see the RAF for the final rulemaking to see how the Department considered cost of permit conditions against the benefits of these provisions.

418. Comment: Given the ruling of the Supreme Court, the Department should expressly state in § 78.15(g) that it has the authority and responsibility to condition or deny a permit if it makes a determination that there will be “probable harmful impact” to a public resource. (997a)

Response: In response to the applicability of the Supreme Court’s decision, please see response to comment 265. Please see responses to comments 280 and 392.

419. Comment: The DEP should not compromise its obligation to protect the environment by balancing the citizens’ constitutionally guaranteed right against private interests in oil and gas. These draft regulations do not give proper weight to the DEP’s constitutional obligation to protect the environment s. (Section 78.15(g)) This regulation inappropriately places DEP, whose mission is supposed to be to protect and conserve Pennsylvania’s environment, in the position of balancing protection of important public resources against individual property rights. This is unacceptable. (19, 21, 23, 26, 90, 142, 165, 180, 189, 192, 391, 429a, 609, 843, 851, 938, 946, 951, 958, 1005, 1019, 938a,)

Response: Please see response to comments 2580, 2910, 416 and 418. Additionally, Sections 78.15(g) and 78a.15(g) have been amended to clarify the criteria the Department will consider when deciding whether to condition an oil or gas well permit based on impacts to public resources.

Further, the provisions in §§ 78.15 and 78a.15 establish a process for the Department to consider the potential impact of a proposed well on public resource and to establish whether well permit conditions are necessary using the criteria in §§ 78.15(g) and 78a.15(g) in order to fulfill the Department’s constitutional and statutory obligations.

420. Comment: 78.15(g) – The EQB proposes a process at § 78.15(g) for the PADEP to consider the impacts to public resources when making a determination on a well permit. The proposed regulation at § 78.15(g) authorizes the PADEP to include conditions in the well permit to avoid or mitigate impacts.

We support the PADEP'S ability to include conditions in the well permit to avoid or mitigate harmful impacts to public resources. However, the PADEP should be required to include permit conditions to avoid potentially adverse impacts, and if avoidance is not possible, to mitigate such impacts on the public resource. If adequate avoidance or mitigation cannot be implemented, the PADEP should deny the permit application as authorized under 58 Pa.C.S. § 3211(e.1)(1).

The regulation should take into account the full footprint of the proposed development (including, but not limited to the proposed well site, waste handling facilities, processing facilities, pipeline routes, storage areas, and access road), using the newly defined term "Oil and Gas Operations."

The proposed regulation socializes costs while privatizing profits by imposing the burden of proof on the PADEP to justify permit conditions. The applicant should have the burden of proof in any proceeding challenging either permit conditions imposed by the PADEP in an effort to avoid or mitigate adverse impacts on public natural resources or the denial of a permit.

We recommend the following proposed revision to § 78.15(g).

§ 78.15 Application Requirements

(g) If any portion of the proposed footprint of a new or expanded Oil and Gas Operation poses a potentially significant harmful impact to a public resource, the Department shall include conditions in the well permit to avoid or mitigate those impacts to the public resource's current functions and uses and shall deny the permit if necessary to assure compliance with any law administered by the Department. The Department will consider the impact of any potential permit condition on the applicant's ability to exercise its property rights with regard to the development of oil and gas resources and the degree to which any potential condition may impact or impede the optimal development of the oil and gas resources. However, the Department shall not approve permits without conditions reasonably calculated to avoid or mitigate potentially significant harmful impacts on public resources.

The issuance of a permit containing conditions imposed by the Department under this subsection is an action that is appealable to the Environmental Hearing Board. The applicant has the burden of proving that the Department's decision to impose conditions to protect against a probable harmful impact on the public resource or to deny a permit was arbitrary and capricious, an abuse of discretion, or contrary to law. (1143)

Response: To the extent that the commenter suggests that this provision include language that gives the Department the authority to deny a well permit based on the comments submitted by a public resource agency, please see response to comment 392.

To the extent that the commenter suggests that these provisions apply to all oil and gas operations, please see response to comment 266.

In response to the burden of proof, please see response to comment 418.

421. Comment: 78.15(g) - Who determines the probable harmful impact to a public resource, the Department or the public resource agency? (411)

Response: The Department has an obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste

Management Act and other statutes. Sections 78.15 and 78a.15 establish a process for the Department to identify, consider and protection public resources from the potential impacts of a proposed well and to coordinate with applicable public resource agencies.

422. Comment: § 78.15(g) - If Act 13 Sections 3215(c) and (e) have not been invalidated by the Pennsylvania Supreme Court's decision in *Robinson Twp. et al. v. Commonwealth of Pennsylvania et al.*, and if the EQB may proceed with rulemaking to implement that section, BOCI offers the comments below with respect to regulations that would implement those sections of Act 13. Suggested amendatory language:

(g) Subject to satisfying and complying with the criteria prescribed in subsections (1)-(3), the Department may include conditions in the well permit to avoid or mitigate impacts to the public resource. As prescribed in Section 3215(e)(1) of the act, in determining whether to impose a condition, the Department shall utilize the following three sets of criteria:

1. Criteria for the Department to use for conditioning a well permit based on its impact to public resources identified in § 78.15(f):
 - (i) The permit condition is necessary to protect against probable harm.
 - (ii) As shown by clear and convincing evidence, the harm to the public resource is probable, as opposed to merely possible or speculative.
 - (iii) No permit condition may be more restrictive or limiting with respect to a well, well site or access road than the set-back prescriptions contained in Act 13 unless it is shown by clear and convincing evidence that the existing protections of Act 13, the Clean Streams Law and other applicable statutes are insufficient to protect against the specified harm or unless the applicant consents in writing to the condition.
 - (iv) No permit condition may be more restrictive or limiting with respect to a well, well site, or access road, or activities incident thereto, than the existing measures and protections established and required under Chapter 78, Act 13 or any other applicable statute or regulation unless it is shown by clear and convincing evidence that the existing measures and protections are insufficient to protect against the specified harm or unless the applicant consents in writing to the condition.
 - (v) The nature of the harm to be avoided or mitigated by the permit condition must be clearly described in the terms of a permit condition and permit condition terms must include a description of the expected duration of the probable harm and the duration of the permit condition. Physical construction or site-specific actions required of an applicant as a condition within a permit shall not extend beyond the discrete area or location of the well, well site, or access road unless the applicant consents in writing.
2. Criteria for the Department to use in addition to those in paragraph (1), to ensure optimal development of oil and gas resources:
 - (i) No condition implicating surface activities or operations that results in a commercially unreasonable burden on an applicant may be imposed.
 - (ii) For purposes of conservation and avoiding the waste of recoverable oil and gas resources, no condition that results in alterations to the well design in a way that will reduce the anticipated volume of recoverable gas or oil resources may be imposed.

3. Criteria for the Department to use in addition to those in paragraphs (1) and (2) above, to protect private property rights of oil and gas owners:
- (i) In accordance with subsection 3215(g)(2) of the act, no permit condition where the proposed condition itself alters or abridges the terms of any lease, deed, surface use agreement or similar contract or agreement between a surface owner and subsurface oil and gas owner, or to which they are subject as signatories or successors in interest, may be imposed.
 - (ii) Denial of a well permit is not a prevention, avoidance, or mitigation measure authorized by this section.
 - (iii) No permit condition may be imposed if the effect would deprive the owner of the oil and gas rights of the right to produce or share in the oil or gas underlying a surface tract.
- (h) A decision to impose or not to impose a condition is non-precedential and does not bind the Department or applicant or require either party to adhere to or include the same condition or conditions addressing the same subject matter in any subsequent permits.
- (i) The issuance of a permit containing conditions imposed by the Department pursuant to this subsection shall be an action that is appealable to the Environmental Hearing Board.
- (j) In accordance with subsection 3215(g)(1) of the act, § 78.15(d), (f), & (g) are not applicable to a well proposed to be drilled on an existing well site for which at least one well permit has been issued prior to [effective date]. (1147)

Response: The Department has considered this comment and declines to make the suggested amendments to this rulemaking. Please note that Sections 78.15(g) and 78a.15(g) have been amended to clarify the criteria the Department will consider when deciding whether to condition an oil or gas well permit based on impacts to public resources. Additionally, Sections 78.15(g) and 78a.15(g) have been revised to remove the language regarding the Department's burden of proof upon appeal of a condition necessary to protect a public resource. Section 3215(e) of the 2012 Oil and Gas Act states that the Department has the burden of proving that a well permit condition imposed to protect a public resource is necessary to protect against a probable harmful impact of the public resource. The Department disagrees that clear and convincing is the applicable standard. The revisions to §§ 78.15(g) and 78a.15(g) ensure that the Department meets its constitutional and statutory obligations to protect public resources.

423. Comment: Section 78.15(g) requires the operator to protect public resources, but the regulations do not provide the criteria for protecting the public resources. (639)

Response: Please see response to comment 413.

424. Comment: 78.15(g) Application requirement – Since this provision is codifying Act 13, we only reiterate that the Department needs to place conditions on the well permit as necessary to adequately provide for avoidance or mitigation of impacts to public resources guaranteeing the public's access and enjoyment to the pre-development functions and uses. Consideration needs to include the time period of the operator's Marcellus experience along with their compliance record being relevant aspects for such permit conditions. (660a)

Response: Sections 78.15(g) and 78a.15(g) have been amended to clarify the criteria the Department will consider when deciding whether to condition an oil or gas well permit based on impacts to public resources. One such criteria is compliance with all applicable statutes and regulations.

425. Comment: Section 78.15(g) is written in such a way as to require the Department to consider the impact of permit conditions on the applicant's ability to exercise its property rights to ensure optimal development of resources even if the Department determines that the well or access road will have an adverse impact on a public resource. This may result in the Department being unable to impose conditions to prevent or mitigate harm. The places the Department directly in opposition to its mission, "to protect Pennsylvania's air, land, and water from pollution and to provide for the health and safety of its citizens through a cleaner environment". As long as DEP's conditions do not constitute a taking of private property, the agency is obligated to condition permits in a manner that protects public resources, optimal development for the public, not the operator. This distinction needs to be made clear from the outset to avoid legal parsing of the intent of the regulation by operators. (846, 1109)

Response: Please see responses to comments 413, 416, 418 and 419.

426. Comment: § 78.15(g) If Act 13 Sections 3215(c) and (e) have not been invalidated by the Pennsylvania Supreme Court's decision in Robinson Twp. et al. v. Commonwealth of Pennsylvania et al., and if the EQB may proceed with rulemaking to implement that section, MSC offers the comments below with respect to regulations that would implement those sections of Act 13.

The proposed language of this section does not include any criteria, as required by Section 3215(e) of Act 13, for the Department to utilize in the imposition of permit conditions to protect public resources. The quality of the evidence required for the Department to determine that harm to a public resource is probable and impose a condition in the permit should be clear and convincing evidence.

The Commentator suggests the following amendatory language:

"(g) Subject to satisfying and complying with the criteria prescribed in subsections (1)-(3), the Department may include conditions in the well permit to avoid or mitigate impacts to the public resource. As prescribed in Section 3215(e)(1) of the act, in determining whether to impose a condition, the Department shall utilize the following three sets of criteria:

(1) Criteria for the Department to use for conditioning a well permit based on its impact to public resources identified in § 78.15(f):

(i) The permit condition is necessary to protect against probable harm.

(ii) As shown by clear and convincing evidence, the harm to the public resource is probable, as opposed to merely possible or speculative.

(iii) No permit condition may be more restrictive or limiting with respect to a well, well site or access road than the set-back prescriptions contained in Act 13 unless it is shown by clear and convincing evidence that the existing protections of Act 13, the Clean Streams Law and other applicable statutes are insufficient to protect against the specified harm or unless the applicant consents in writing to the condition.

(iv) No permit condition may be more restrictive or limiting with respect to a well, well site, or access road, or activities incident thereto, than the existing measures and protections established and required under Chapter 78, Act 13 or any other applicable statute or regulation unless it is shown by clear and convincing evidence that the existing measures and protections are insufficient to protect against the specified harm or unless the applicant consents in writing to the condition.

(v) The nature of the harm to be avoided or mitigated by the permit condition must be clearly described in the terms of a permit condition and permit condition terms must include a description of the expected duration of the probable harm and the duration of the permit condition. Physical construction or site-specific actions required of an applicant as a condition within a permit shall not extend beyond the discrete area or location of the well, well site, or access road unless the applicant consents in writing.

(2) Criteria for the Department to use in addition to those in paragraph (1), to ensure optimal development of oil and gas resources:

(i) No condition implicating surface activities or operations that results in a commercially unreasonable burden on an applicant may be imposed.

(ii) For purposes of conservation and avoiding the waste of recoverable oil and gas resources, no condition that results in alterations to the well design in a way that will reduce the anticipated volume of recoverable gas or oil resources may be imposed.

(3) Criteria for the Department to use in addition to those in paragraphs (1) and (2) above, to protect private property rights of oil and gas owners:

(i) In accordance with subsection 3215(g)(2) of the act, no permit condition where the proposed condition itself alters or abridges the terms of any lease, deed, surface use agreement or similar contract or agreement between a surface owner and subsurface oil and gas owner, or to which they are subject as signatories or successors in interest, may be imposed.

(ii) Denial of a well permit is not a prevention, avoidance, or mitigation measure authorized by this section.

(iii) No permit condition may be imposed if the effect would deprive the owner of the oil and gas rights of the right to produce or share in the oil or gas underlying a surface tract.

(h) A decision to impose or not to impose a condition is non-precedential and does not bind the Department or applicant or require either party to adhere to or include the same condition or conditions addressing the same subject matter in any subsequent permits.

(i) The issuance of a permit containing conditions imposed by the Department pursuant to this subsection shall be an action that is appealable to the Environmental Hearing Board.

(j) In accordance with subsection 3215(g)(1) of the act, § 78.15(d), (f), & (g) are not applicable to a well proposed to be drilled on an existing well site for which at least one well permit has been issued prior to [effective date].”(1137)

Response: See response to comment 422.

427. Comment: 78.15(g) – The proposed regulations in Chapter 78 Section 15 do not establish the criteria

for conditioning a permit and simply allocate authority to implement changes to the Department. This counteracts Section 3215(e) of Act 13 which requires the Department to establish criteria to guard public resources while protecting oil and gas resource development and respecting oil and gas owner property rights.

Act 13 already establishes the standard for the disturbance of critical communities and habitat for rare and endangered flora and fauna. An attempt is being made to equate rare and endangered species with special concern species; however the nature of the special concern species is such that there is insufficient data to identify it as critical. The industry is obligated to protect endangered and threatened species as identified by the Department. Requiring an additional consultation through the Pennsylvania Natural Heritage Program, adds a redundant step that inhibits the progress of the application process. Protection is already established through Act 13 and this proposed regulation does nothing more than to put an additional burden on the industry without improving the current practice or increasing environmental protection. The applicant shall demonstrate due diligence by submitting proof of notification and consultation with any resource demonstrating the investigation of the presence of threatened or endangered species and their habitat. If it is determined that the construction of a well site or access road will have a negative impact on the species or their habitat, a plan should be required outlining the measures that will be taken to prevent or minimize the effect on the species and or habitat.

Given the nature of oil and gas operations, activity may take place on or near public resources. The Department should follow Section 3215(e)(1) when determining whether to impose a condition on the permit. A condition may not be imposed unless the Department can provide evidence of probable harm to a public resource and can demonstrate that existing measures are insufficient to prevent harm. In order to ensure optimal development of an oil or gas resource, a condition may not be imposed if it causes excessive financial burden, and or reduces the anticipated recoverable resources. The condition may not be imposed if it in any way alters the terms of any lease, deed, surface use agreement, or similar contract between a surface owner and subsurface oil and gas owner. (1103)

Response: Please see responses to comments 413, 416, 418 and 419.

428. Comment: 78.15(g): The proposed language of this section does not include any criteria, as required by Section 3215(e) of Act 13, for the Department to utilize in the imposition of permit conditions to protect public resources. The quality of the evidence required for the Department to determine that harm to a public resource is probable and impose a condition in the permit must be clear and convincing. As such, Commentator supports MSC's suggested amendatory language for this section. (1071)

Response: Please see responses to comments 413, 416, 418 and 419. The Department disagrees that clear and convincing is the applicable standard.

429. Comment: 78.15(g) – Commentator has concerns about how the Department will determine and adopt compensatory mitigation for loss of public resources. We recommend that the Department be required to consult with the state or federal agencies that oversee the specific public resource in question. For national wildlife refuges, the Service must determine the mitigation, whereas the National Park Service should be consulted for national parks and scenic rivers. (1134)

Response: Sections 78.15(f) and 78a.15(f) establish a process for well applicants to notify applicable state and federal public resources agencies and provide those public resource agencies the opportunity to submit comments to the Department on functions and uses of the

applicable public resources and any mitigation measures recommended to avoid, minimize or otherwise mitigate probable harmful impacts.

430. Comment: 78.15(g): Requiring the Department to consider the impact of its permit on “*optimal*” development of the oil and gas resources is profoundly improper. The requirement for optimality turns the Department into the agent of the applicant. How is the Department supposed to evaluate what is “optimal” for the applicant? What is the standard for “optimality”? Is the Department required by this provision of the rule to simply take the well operator’s word for what is “optimal”? The word ‘optimal’ must be stricken. (869a)

Response: Please see response to comment 413. Use of the term “optimal development” comes from Section 3215(e) of the 2012 Oil and Gas Act and remains one of the 5 criteria the Department will consider prior to conditioning a well permit when there is the potential for impacts to public resources. The Department declines to define “optimal development of the resources” in the rulemaking. If the need for further clarification becomes apparent during implementation of this provision, the Department will develop guidance to address any issue identified. There are additional revisions to this section of the rulemaking to ensure that the Department meets its statutory and constitutional obligations related to protection of public natural resources.

431. Comment: In subsection (g) and elsewhere throughout these regulations, the Department has developed what appears to be a new standard for when an applicant must propose mitigation measures: when the proposed action poses a “probable harmful impact.” In other contexts, applicants must propose to mitigate harm to public resources when the proposed action “may cause harm” to the resource. As the Department is aware, the difference between the two standards is material. In the first instance under the new standard, the Department and public would not be able to insist on mitigation unless the harm was considered “probable” before the permit decisions has been made. In the second instance, the more cautionary term “may” would impose the burden on the applicant to minimize impacts of its action by incorporating mitigation measures into its planning process, and make it easier for the agency to impose conditions that will protect vulnerable public resources. The commentator strongly urges the agency to cease what seems to be a constant effort to shift burdens off of the industry and onto the Department and public when it comes to conservation of our public resources. The applicant should be required to propose mitigation when its development “may pose a harmful impact” on public resources.

Further, subsection (g) should be revised to require that the Department consider the potential long-term impacts of oil and gas activities on public resources alongside the property rights of permit applicants. Although Act 13 requires the Department to consider the effects of any permit conditions on the applicant’s property rights, the Pennsylvania Constitution requires that the Commonwealth “conserve and maintain” Pennsylvania’s public natural resources. Pa. Const. Art. I, § 27. As written, the regulation creates the risk that the Department will place undue emphasis on the desires of permit applicants and insufficient weight on the constitutionally guaranteed environmental rights of Pennsylvania’s citizens, including those of “generations yet to come.” Pa. Const. Art. I, § 27. If the Department deems it necessary to repeat in its regulations what is already a legislative requirement by explicitly referencing private property interests, then the Department should also explicitly reference its constitutional obligations under Pa. Const. Art. I, § 27 as trustee for Pennsylvania’s public resources. (852a)

Response: Sections 78.15(f)(3)(iii) and 78a.15(f)(3)(iii) require well permit applicants to include a description of any measures to be taken to avoid, minimize or otherwise mitigate impacts to public resources. Applicants should coordinate with applicable public resource

agencies prior to submitting well permit applications to address and resolve any potential impacts that may occur during drilling activities at the well site or access road. Any resolutions should be included in the well permit application.

Under these provisions, the Department must consider the impact of a proposed well on public resources based on information provided during the application review process from the applicant and any applicable public resource agencies. The Department has the authority to include permit conditions after consideration of the criteria in §§ 78.15(g) and 78a.15(g) in order to meet its constitutional and statutory obligations to protect public resources.

Please also see response to comments 418 and 421.

- 432.** Comment: The well permit applicants should not be given permits where threatened or endangered species grow, live, or thrive. The oil and gas operators should have already been consulting with the Pennsylvania Natural Heritage Program as well as any other agency that regulates the protection of our ecosystem. Taking further and even more restricted steps to protecting our ecosystem is an absolute necessity as the violations that the operators are incurring have not been a rare occurrence in our State.

The DEP is required by the Pennsylvania Constitution to protect the public's right to a clean environment. The proposed regulations provide that even though the DEP determines that a proposed well will have a probable adverse impact on a public resource, the DEP still cannot impose conditions that will prevent or mitigate that harm without first considering the impact of the condition on the individual mineral right owner's ability to "optimally" develop his or her oil and gas rights. This regulation inappropriately places the DEP, whose mission is supposed to be to protect and conserve Pennsylvania's environment, in the position of balancing protection of important public resources against individual property rights. Furthermore, it inappropriately, and potentially illegally, elevates the "optimal" development of oil and gas over the protection of important public resources against likely adverse impacts. These draft regulations do not give proper weight to the DEP's constitutional obligation to protect the environment. So long as the DEP's actions do not affect a taking of private property, the DEP should be obligated to take whatever actions are necessary to condition permits in a manner that protects important public resources. (19, 21, 23, 26, 90, 142, 165, 189, 192, 391, 938, 946, 958, 1005, 938a)

Response: Please see responses to comments 2580, 2910, 413, 416, 418, 419, 430 and 432.

- 433.** Comment: Requiring that operators consider the impact of a well site on public resources (Section 78.15 f, g) is a step in the right direction. When Consol Energy applied for permits to drill unconventional wells at the Beaver Run Reservoir site, the Municipal Authority of Westmoreland County (MAWC) did not have "the opportunity to submit comments to the Department (of Environmental Protection), including any recommendations to avoid or minimize impacts" Under the threat of a lawsuit, MAWC allowed Consol Energy to exercise mineral rights granted in a prior lease for conventional oil and gas extraction. And judging from the photo to the right, the Pennsylvania Department of Environmental Protection (DEP) imposed few if any conditions on the placement of well pads and impoundments. Even with the proposed pre-permitting requirement, Kurt Klapkowski explained in a Webinar on the proposed standards presented in December, 2013 (referring to Section 3215(e) of 58 Pa.C.S.) that a "balancing test" must be applied "to consider the rights of the operator to actually access the resource." He added, "Conditions cannot be so difficult, expensive or stringent to eliminate all rights of access to the resource."



Others have disagreed with the need to *balance* the rights of the public and the rights of the gas industry in the case of public water sources and their arguments may carry more weight now that the PA Supreme Court has handed down a decision on 58 Pa.C.S. (Act 13)---especially since the decision was based on the Environmental Rights Amendment of the Constitution of the Commonwealth of Pennsylvania which guarantees among other rights, the right of the public to pure water.

Rather than a ‘balancing test,’ I urge DEP to consider the following advice offered in 2010 in “Pre-Permitting and Site Assessment Consideration –Developing the Marcellus Shale,” by the Pennsylvania Environmental Council:

“Special consideration should be given to well operations that occur in proximity to water bodies (natural or man-made) that are utilized for drinking water (e.g. reservoirs and lakes) where even one individual adverse impact can have tremendous, perhaps irreparable, economic and social cost. Concepts used in other regulatory programs such as the Surface Mining Conservation and Reclamation Act, where areas are deemed unsuitable of extraction when in proximity to large scale water supplies, may be appropriate for oil and gas controls.” Appealing to common sense, I call on PA DEP to institute pre-permitting consideration of impacts on public water resources which will ensure that the right of the public to pure water outweighs the industry’s right of access to a resource that is clearly not as necessary for life as clean drinking water. (402)

Response: The Department has amended § 78a.15(f)(1) to include zones 1 or 2 of a wellhead protection area as part of a wellhead protection program approved under § 109.713 as well as public water supplies within 1000 feet. Wellhead protection areas were added because these resources are similar in nature to those included in Section 3215(c). Wellhead protection areas are associated with sources used for public drinking supplies, another listed resource. These provisions function to provide the Department with information necessary to enable the Department to conduct its evaluation of the impacts, to review the information in the context of the criteria outlined in Section 78.15(g) and 78a.15(g), and to determine whether permit conditions are necessary to ensure compliance with the Department’s constitutional and statutory obligations. Please see responses to comments 2580, 2910, 413, 416, 418, 419, 430 and 432.

434. Comment: Including conditions in the permit for cumulative as well as site specific modifications to avoid and mitigate impacts to public resources. The Constitutional rights of Pennsylvanians should take precedence over the optimal development of oil and gas resources. It should not be the Department's burden of proving that the conditions were necessary to protect against a probably harmful impact of the public resource. It should be the industry's responsibility to prove their actions will not be harmful and their executives should be held them financial and criminally responsible for damages to public resources. 78.15 (g) (15, 867)

Response: Please see responses to comments 2580, 2910, 413, 416, 418, 419, 430 and 432.

435. The DEP should modify the proposed regulation in order to take into account the current state of the law, notably the Pennsylvania Supreme Court's decision of December 2013, based on the application of the Environmental Rights Amendment.

Under the proposed language in § 78.15 (g), the DEP cannot impose conditions to preserve a public resource without considering the impact of the operator's ability to "optimally" develop his or her oil and gas rights. This provision is directly at odds with the recent decision of the Pennsylvania Supreme Court's case "Robinson Township" of December 2013. Perversely, this provision does not allow the State to accomplish its duty to protect public resources, as a trustee, in violation of the Environmental Rights Amendment.

Moreover, during an appeal, this proposed section states that the DEP has the burden of proving that the conditions were necessary to protect against a probable harmful impact of the public resource. This provision also violates the Environmental Rights Amendment. The Pennsylvania Supreme Court highlighted the fact that this type of provision would invite the DEP to articulate necessary conditions as minimal standards that an applicant would accept without litigation. The Court specifically stated that "viewed in terms of the constitutional mandates, this is topsy-turvy." Thus, the DEP must modify this section, as was stated during the webinar of January 3rd, 2014, in order to reverse the burden of proof during such appeals. Additionally, municipalities and residents should be able to introduce these appeals in order to take into account the "local interest". (1161)

Response: Please see responses to comments 413, 416, 418, 419, 430 and 432.

436. Comment: Section 78.15(g): This clause does not identify the quality of the evidence that would be required to determine if an impact amounted to a probable harmful impact or not. A requirement that the quality of the evidence should be clear and convincing should be made part of any rule. If the Department adopts and applies such an evidentiary standard or criteria it will have gone a long way in satisfying the requirements to respect private property rights and allowing for the optimal development of the oil and gas resources. Decisions will likely be well considered and reasoned. It should be remembered that responsible regulation includes measures to conserve or use, and not waste, mineral resources. Moreover, appeals of determinations using such an exacting standard by either operators or others would likely be reduced and reversal of such determinations on appeal even less likely. (81, 419)

Response: The Department disagrees that a clear and convincing standard is appropriate. Sections 78.15(f) and 78a.15(f) establish a process for the applicant to provide information in the well permit application about the public resource and any avoidance, mitigation or minimization measure and for the public resource to provide comments. This process ensures that the Department has sufficient information to evaluate whether permit conditions are necessary using the criteria in Sections 78.15(g) and 78a.15(g).

Please also see responses to comments 413, 416, 418, and 419.

437. Comment: Section 78.15 discusses the actions that must be taken if the well will be located in an area which will impact endangered species, or will pose a “probable harmful impact to a public resource.” The actions, which include submitting a plan that shows how the impact will be lessened or mitigated, are unacceptable. No permit should be given to an operator who is proposing to install a well in these sensitive areas. I find it especially egregious that section 78.15 (g) contains the following wording: “The Department shall consider the impact of any potential permit condition on the applicant’s ability to exercise its property rights with regard to the development of oil and gas resources and the degree to which any potential condition may impact or impede the optimal development of the oil and gas resources.” The DEP’s mandate should be to protect the environment. It is in no way obligated to “be fair” to the landowner/operator, and requiring it to be so would cause a conflict of interest. (108)

Response: Regarding protection for threatened and endangered species, please see previous responses to comments generally relating to §§ 78.15(d) and 78a.15(d). The revisions to §§ 78.15(g) and 78a.15(g) in the final rulemaking ensure that the Department meets its constitutional and statutory obligations to protect public resources. Please also see responses to comments 413, 416, 418, 419 and 430.

438. Comment: If the proposed well, well site or access road poses a probable harmful impact to a public resource, the Department may include conditions in the well permit to avoid or mitigate those impacts to the public resource’s current functions and uses to protect against a probable harmful impact of the public resource.

Recommendation: Long term probable harms of pipelines and pipeline infrastructure caused by deforestation and ROW maintenance may pose a more permanent probable harm than access roads. Pipelines should be included for their probable harmful impact. (118)

Response: To the extent the commentator suggests extending these provisions to pipelines, please see response to comment 266.

439. Comment: § 78.15(g) – This section fails satisfy the legislative intent of Section 3215 (e) of the Oil and Gas Act of 2012. The statute required the development of criteria for the purposes of conditioning permits, ensuring optimal development of oil and gas resources, and respecting property rights of oil and gas owners. No such criteria are proposed. It is recommended that this section be deleted from the rulemaking until the department develops, through the formal rulemaking process, criteria that meet the intent of the statute. (124a)

Response: Sections 78.15(g) and 78a.15(g) have been revised to include criteria related to conditioning permits in the final rulemaking to ensure that the Department meets its constitutional and statutory obligations to protect public resources. Please also see responses to comments 413, 416, 418, 419 and 430.

440. Comment: § 78.15(g) – we have concerns about how DEP will decide mitigation for impacts to public resources? We recommend that the Department be required to consult with the agency that oversees the public resource in question. (1006)

Response: Sections 78.15(f) and 78a.15(f) establish a process for well applicants to notify applicable state and federal public resources agencies and provide those public resource agencies the opportunity to submit comments to the Department on functions and uses of the applicable public resources and any mitigation measures recommended to avoid, minimize or

otherwise mitigate probable harmful impacts. Please see responses to comments 413, 416, 419, 430 and 431.

- 441.** Comment: Include conditions in the permit for cumulative as well as site specific modifications to avoid and mitigate impacts to public resources. The Constitutional rights of Pennsylvanians should take precedence over the optimal development of oil and gas resources. It should not be the Department's burden of proving that the conditions were necessary to protect against a probably harmful impact of the public resource. It should be the industry's responsibility to prove their actions will not be harmful and their executives should be held financially and criminally responsible for damages to public resources. **78.15(g)** (1098)

Response: Please see responses to comments 413, 416, 418, 419, 430 and 431.

- 442.** Comment: I applaud the addition of the proposed Subsection (g). This addition will help maintain the integrity of Act 13 Section 3215(e), which directs the Board to promulgate regulations for the Department to condition a well permit based on its impact to public resources. The only part of this proposed change I see fault with is the potential for the well permit applicant to under-identify public resource impacts. Hopefully, all applicable jurisdictional agencies provide the needed amount of oversight to curtail potential under-identification of public resource impacts submitted by an applicant. (625)

Response: The Department acknowledges the comment.

- 443.** Comment: Initially, Section 3215(e) of Act 13 requires the Department to develop regulatory criteria that protect public resources while ensuring optimal oil and gas resource development and respecting oil and gas owner property rights. However, the proposed regulations in Chapter 78 Section 15 do not adequately implement/address these requirements - the regulatory criteria for conditioning a permit has not been provided and the draft regulations only frame the Department's authority to implement the conditions. If industry is required to avoid or mitigate potential impacts to these resources, the criteria used to assess impacts must be established and provided.

In addition, requiring industry to potentially gain clearance for Species of Special Concern may significantly limit our development opportunities and/or create costly mitigation solutions which would be in conflict with Section 3215(e) as it pertains to ensuring oil and gas development and property owner rights. If the Department's goal is to protect the Commonwealth's resources as they specifically relate to Threatened, Endangered or Species of Special Concern, then Industry has the right to know the locations of such resources in order to avoid or mitigate any potential impacts. (638, 638a, 798)

Response: Please see responses to comments 413, 416, 418, 419. In response to the comments relating to special concern species, please see responses to comments on §§ 78.15(f)(1)(iv) and 78a.15(f)(1)(iv). Specifically, please see response to comment 342.

- 444.** Comment: DEP's PNDI Policy and proposed changes to Chapter 78 for the consideration of well permit conditions to mitigate impacts to public resources ignore the status of the oil and gas mineral owner as the holder of the dominant estate.

The "public resources" provision in Act 13 was already adopted by the legislature (in the Oil and Gas Act of 1984) at the time of the PA Supreme Court's decision in *Belden & Blake Corp. v. DCNR* in 2009. In that case, the Pennsylvania Supreme Court affirmed the concept that any reconciliation of surface owner disputes, whether a private person or public entity, is through

negotiation. Belden & Blake makes clear that a public surface owner cannot unilaterally impose conditions on the oil and gas operator.

In contradiction of Belden & Blake, the last paragraph of 78.15 would allow the state to unilaterally impose permit conditions foregoing negotiation between the dominant tenant and the public surface owner. Regardless of its authority under Act 13 to “consider” impacts to public resources, DEP does not have unbounded authority to disregard well-established principles of Pennsylvania property law. Accordingly, DEP may not create a rule that allows public agencies to circumvent their limitations under the guise of protecting public resources.

The Pennsylvania Supreme Court has already spoken to this precise question:

A subsurface owner’s rights cannot be diminished because the surface comes to be owned by the government, or any other party with statutory obligations, regardless of their salutary nature. That is, whatever its admirable obligations to the public, as concerns the owner of private property, the government and its agencies must be held to the same standard as any other surface owner. DCNR may seek additional conditions because of its mandate, but it has no authority to impose them unilaterally without compensation. Case 969 A.3d at 532-33.

Chapter 78 may not be used to create a permitting process that directly undermines these principles. (413a)

Response: The principles discussed by the commentator do not apply to these provisions. These principles pertain to the relationship between surface and subsurface owners. The Department has constitutional and statutory obligations to consider and protect public resources that are separate and unrelated to the property issues between surface and subsurface owners. The provisions in §§ 78.15 and 78a.15 establish a process for the Department to consider and protect public resources from the impacts of a proposed well and coordinate with public resource agencies to fulfill these obligations. These provisions function to provide the Department with information necessary to enable the Department to conduct its evaluation of potential impacts and to review the information in the context of the criteria outlined in §§ 78.15(g) and 78a.15(g), and to determine whether permit conditions are necessary to prevent a probable harmful impact.

445. Comment: The DEP is required by the Pennsylvania Constitution to protect the public’s right to a clean environment. The proposed regulations provide that even though the DEP determines that a proposed well will have a probable adverse impact on a public resource, the DEP still cannot impose conditions that will prevent or mitigate that harm without first considering the impact of the condition on the individual mineral right owner’s ability to “optimally” develop his or her oil and gas rights. This outrageous regulation inappropriately places the DEP, whose mission is supposed to be to protect and conserve Pennsylvania’s environment, in the position of balancing protection of important public resources against individual property rights. Furthermore, it inappropriately, and potentially illegally, elevates the “optimal” development of oil and gas over the protection of important public resources against likely adverse impacts. These draft regulations do not give proper weight to the DEP’s constitutional obligation to protect the environment. So long as the DEP’s actions do not affect a taking of private property, the DEP should be obligated to take whatever actions are necessary to condition permits in a manner that protects important public resources.

There must be sweeping changes in staffing, regulations, and enforcement in order to protect Pennsylvania’s citizens from future harmful effects of unconventional drilling. It is recommended that protective, strong rules must have enforcement mechanisms like a DEP staff that is big enough

to do its job. The DEP staff regulating the gas industry is at least 105 positions too small. Instead of subsidizing a multibillion-dollar profitable industry, the money should be used to enforce strict rules and regulations that are needed to protect people and the natural environment. (810)

Response: Please see responses to comments 2580, 2910, 413, 416, 418, 419 and 430.

446. Comment: Requiring the department to consider the impact of its permit on “*optimal*” development of the oil and gas resources is profoundly improper. This turns the department into the agent of the applicant. How is the department supposed to evaluate what is “optimal” for the applicant? The word “optimal” must be stricken. (869)

Response: Please see responses to comments 413, 416, 418, 419 and 430.

447. Comment: The current permitting process imposes the burden of proof on PADEP. This is an upside down approach. This burden should be borne by the applicant, those who stand to gain the profit from the venture. The current system requires significant investment by PA taxpayers who have nothing to gain and much to lose as the industry moves onto public lands and into rural neighborhoods. The applicant must have the burden of proof in any challenge of PADEP decisions, and all permit decisions made by PADEP must place public interest over corporate profits. (1078)

Response: Please see responses to comments 413, 416, 418, 419.

448. Comment: The DEP should frame its response as conditions to mitigate the impacts rather than giving priority to the mineral rights owner’s ability to “optimally” develop his rights. To not do so will be a failure of the DEP to perform its duty to protect the public’s constitutional right to a clean environment and protection of resources for future generations. (1089, 1229)

Response: Please see responses to comments 413, 416, 418, 419 and 430.

449. Comment: The majority State Game Lands (SGLs) were purchased by sportsmen for hunting, trapping, and fur taking opportunities which mineral development activities could represent a recreational loss, especially during the hunting seasons. Specific wildlife and associated habitats are maintained on SGLs to promote wildlife use, by both game and non-game species. Would the Department consider impacts to sportsmen during the hunting seasons from mineral extraction activities? (1170)

Response: Sections 78.15(f)(1)(i) and 78a.15(f)(1)(i) include game lands as a public resource that triggers additional review during the well permit application process. Through the process outlined in these provisions the Department must consider the impacts of the proposed well on the functions and uses of such game lands which would include the impacts to sportsmen during hunting season.

450. Comment: 78.15(g) - The proposed language of this section does not include any criteria as required by Section 32.15(e) of Act 13 for the Department to utilize in the imposition of permit conditions to protect public resources. The quality of the evidence required for the Department to determine that harm to a public resource is probable and impose a condition in the permit should be clear and convincing evidence. Suggested Language: (g) Subject to satisfying and complying with the criteria prescribed in subsections (1)-(3), the Department may include conditions in the well permit to avoid or mitigate impacts to the public resource. As prescribed in Section 3215(e)(1) of the act, in determining whether to impose a condition, the Department shall utilize the following three sets of criteria: (1) Criteria for the Department to use for conditioning a well permit based on its impact to

public resources identified in § 78.15(f): (i) - The permit condition is necessary to protect against probable harm. (ii) - As shown by clear and convincing evidence, the harm to the public resource is probable, as opposed to merely possible or speculative. (iii) - No permit condition may be more restrictive or limiting with respect to a well, well site or access road than the set-back prescriptions contained in Act 13 unless it is shown by clear and convincing evidence that the existing protections of Act 13, the Clean Streams Law and other applicable statutes are insufficient to protect against the specified harm or unless the applicant consents in writing to the condition. (iv) - No permit condition may be more restrictive or limiting with respect to a well, well site, or access road, or activities incident thereto, than the existing measures and protections established and required under Chapter 78, Act 13 or any other applicable statute or regulation unless it is shown by clear and convincing evidence that the existing measures and protections are insufficient to protect against the specified harm or unless the applicant consents in writing to the condition. (v) - The nature of the harm to be avoided or mitigated by the permit condition must be clearly described in the terms of a permit condition and permit condition terms must include a description of the expected duration of the probable harm and the duration of the permit condition. Physical construction or site-specific actions required of an applicant as a condition within a permit shall not extend beyond the discrete area or location of the well, well site, or access road unless the applicant consents in writing. (2) Criteria, additional to those in paragraph (1), to ensure optimal development of oil and gas resources: (i) - No condition implicating surface activities or operations that result s in a commercially unreasonable burden on an applicant may be imposed. (ii) - For purposes of conservation and avoiding the waste of recoverable oil and gas resources, no condition that results in alterations to the well design in a way that will reduce the anticipated volume of recoverable gas or oil resources may be imposed. (3) Criteria, in addition to those in paragraphs (1) and (2) above, to use for respecting private property rights of oil and gas owners: (i) - In accordance with subsection 3215 (g) (2) of the Act, no condition on well permits where the proposed condition itself alters or abridges the terms of any lease, deed, surface use agreement or similar contract or agreement between a surface owner and subsurface oil and gas owner or to which they are subject as signatories or successors in interest may be imposed. (ii) - Denial of a well permit is not a prevention, avoidance, or mitigation measure authorized by this section.(iii) - No permit condition may be imposed if the effect would deprive the owner of the oil and gas rights of the right to produce or share in the oil or gas underlying a surface tract. (h) A decision to impose or not to impose a condition is non-precedential and does not bind the Department or applicant or require either party to adhere to or include the same condition or conditions addressing the same subject matter in any subsequent permits. (i) The issuance of a permit containing conditions imposed by the Department pursuant to this subsection shall be an action that is appealable to the Environmental Hearing Board. (j) In accordance with subsection 3215(g)(1) of the act, § 78.15(d), (f), & (g) are not applicable to a well proposed to be drilled on an existing well site for which at least one well permit has been issued prior to [effective date]. (1174)

Response: The Department has considered this comment and declines to make the suggested amendments to this rulemaking. Please note that Sections 78.15(g) and 78a.15(g) have been amended to clarify the criteria the Department will consider when deciding whether to condition an oil or gas well permit based on impacts to public resources. Additionally, Sections 78.15(g) and 78a.15(g) have been revised to remove the language regarding the Department’s burden of proof upon appeal of a condition necessary to protect a public resource. Section 3215(e) of the Oil and Gas Act of 2012 states that the Department has the burden of proving that a well permit condition imposed to protect a public resource is necessary to protect against a probable harmful impact of the public resource. The revisions to §§ 78.15(g) and 78a.15(g) ensure that the Department meets its constitutional and statutory obligations to protect public resources.

451. Comment: 78.15 - Section 78.15(g) replicates, in part, the language of Act 13 Section 3215(e) which

recognizes the oil and gas owners' property rights to develop the oil and gas resources. However, Section 3215(e) also requires the EQB to develop criteria for the DEP to utilize in the imposition of any permit conditions to protect public resources while respecting those property rights and ensuring optimal development of those resources. DEP has not proposed any such criteria. The rule thus fails to comply with Act13, which requires the EQB develop these criteria in this rulemaking. (1174)

Response: Please see response to comments 413, 419, 430 and 431.

452. Comment: Regarding Chapter 78 Section 15 Regulations: Initially, Section 3215(e) of Act 13 requires the Department to develop regulatory criteria that protect public resources while ensuring optimal oil and gas resource development and respecting oil and gas owner property rights. However, the proposed regulations in Chapter 78 Section 15 do not adequately implement/address these requirements - the regulatory criteria for conditioning a permit has not been provided and the draft regulations only frame the Department's authority to implement the conditions. If industry is required to avoid or mitigate potential impacts to these resources, the criteria used to assess impacts must be established and provided. (123, 123a, 883a, 940)

Response: Please see response to comments 413, 419, 430 and 431.

453. Comment: Harrisburg Area Clean Water Action represents over 120,000 different people in PA and one of the conveners of the PA Campaign for Clean Water, which is 140 different organizations in PA.

This presentation emphasis on what is right and wrong, what people have called morality. In the past five years, I have gotten to know many people in shale country in Pennsylvania. More and more families have lost their drinking water to shale gas drilling in Pennsylvania.

We have the hardest time here in Pennsylvania even getting the Department at Environmental Protection to keep track of how many families have lost their water because of shale gas drilling. Eventually hard work and the journalism of Laura Legere eventually told us there was over families that have totally lost their water.

There's a basic situation here. Who is the government Supposed to be protecting? Is it supposed to be protecting the Interests of the industry to develop or is it supposed to be protecting the interests of the people?

The way the regulations are many times designed, one could say that the interests of industry are being served. The DEP should not compromise its obligation to protect the environment by balancing the citizens' constitutionally guaranteed right for Clean Water against the private interests of oil and gas. The DEP is required by the Pennsylvania Constitution to protect the public's right to a clean environment.

The proposed regulations provide even though the DEP determines that a proposed well will have a probable adverse impact on a public resource, the DEP still cannot impose conditions that will prevent or mitigate that harm without first considering the impact of the condition on the individual mineral right owner's ability to optimally develop his or her oil and gas rights. This regulation inappropriately places DEP, whose mission is supposed to be to protect conserve Pennsylvania's environment in the position of balancing projection of important public resources against individual Property rights.

Furthermore, it inappropriately and potentially illegally elevates the optimal development of oil and

gas over the protection of important public resources against likely adverse impacts. These draft regulations do not give proper weight to the DEP's constitutional obligation to protect the environment. So long as the DEP's actions do not affect a taking of private property, DEP should be obligated to take whatever actions are necessary to condition permits in a manner that protects important public resources. (1000)

Response: Please see responses to comments 2580, 2910, 413, 416, 418, 419 and 430.

- 454.** Comment: Standard for reviewing well permit applications: According to Act 13, Section 3215(e)(1), the EQB must develop regulatory criteria for conditioning well permits based on impacts to public resources and to ensure optimal development of oil and gas resources and respecting the property rights of oil and gas owners. The Chapter 78 revision, while creating a burdensome and open-ended process by which applicants must consult with other Commonwealth agencies before well permits will be issued, nevertheless fails to propose any regulatory criteria for the eventual imposition of permit conditions that might be imposed as a result of this process. The proposed rule must clearly articulate the standards and criteria for imposing such conditions on well permits.

Section 3215(e)(2) of Act 13 requires the Department to prove that any conditions it imposes in well permits are necessary to protect against a "probable harmful impact of the public resources." The rule, however, fails to implement this requirement of Act 13, because it does not establish a clear and convincing evidentiary standard that the Department must meet to condition a well permit to protect against probable harm to public resources.

An operator's application for a permit for a well that may affect public resources will require resolution of the above issues and related complicated problems including obtaining clearance letters from resource agencies such as the Pennsylvania Fish and Boat Commission and the Pennsylvania Game Commission. This process is time consuming and costly. Section 78.15 will have far reaching impacts and significant public interest. EQB will not have met its obligation under Act 13 if it proposes this preliminary draft as written. (1172)

Response: Please see responses to comments 413, 416, 418, 419, 422, 430 and 431.

To the extent that the commentator suggests that the process of coordinating with public resource agencies and resolving potential impacts prior to submitting an application is costly, this process adds few additional costs from the process that currently exists as part of the existing well permit process.

§ 78.17 Permit expiration and renewal

- 455.** Comment: In regard to 78.17, we recommend that permit renewals be electronically posted for public access consistent with the recommendation for all permit applications. (15, 1098)

Response: Permit renewals are currently posted on the Department's website.

- 456.** Comment: It is recommended to extend the life of a permit from one year to two or preferably three years. (606, 606a, 1113, 1118, 1120, 1167, 1115a, 1176-1188)

Response: In accordance with 58 Pa.C.S. § 3211(i), well permits issued for drilling wells under this chapter shall expire one year after issuance unless operations for drilling the well are commenced within the period and pursued with due diligence or unless the permit is renewed

in accordance with the regulations of the Department. The Department does not have explicit authority to extend the initial permit beyond the one year statutory limit without a permit renewal application filed by the applicant. Therefore, the proposed one-year initial permit term followed by a potential two-year permit renewal term is retained in the final-form rulemaking. The Department believes that three years from the time of permit issuance is an adequate time limit for drilling a well.

457. Comment: 78.17. Permit renewal - We support the provision to notify all entities as required to be notified pursuant to section 3211(b)(2) of the Act. Since permits are not always renewed the nearby residents have no other way of knowing the operator's intentions. Circumstances may change such that a resident may want to contact the operator with questions or DEP regarding specific concerns regarding the permit. Therefore, the residents as stipulated by the Act need to be notified accordingly. We fully support this provision as written and recommend its adoption. (660a)

Response: The Department acknowledges the comment.

458. Comment: We propose that the Environmental Quality Board (EQB) add language to the proposed text of Chapter 78 to allow oil and gas owners/operators to amend PADEP-approved drilling permits by lengthening laterals without having to restart the permitting process. Assuming no other deviations from the approved permit would occur; owners/operators could continue to pursue unleased properties after receiving a permit to drill from the PADEP. Such a permitting mechanism to lengthen a horizontal gas well lateral would allow owners/operators to maximize the ability to remove as much of the oil and gas resources as possible from a single well pad, thereby minimizing the environmental footprint on the surface. In addition, such a permitting mechanism would reduce the permitting burden on PADEP permitting staff resources. The envisioned permitting mechanism would simply be administrative in nature. (1167)

Response: A mechanism currently exists to permit the lengthening of lateral wellbores. Operators may submit a permit application to "Deepen" a permitted well. Because the deepening/lengthening of a wellbore meets the definition of an "Alteration" pursuant to 58 Pa.C.S. § 3203, specific statutory requirements such as submission of a plat and notification of interested parties are required.

§ 78.18 Disposal and enhanced recovery well permits

459. Comment: We support the addition of 78.18 - Disposal and enhanced recover well permits to the proposed regulations. However, we suggest these relatively new hazards be examined with greater scrutiny consistent with environmental impact studies of the National Environmental Policy Act (NEPA). (15, 1098)

Response: The Department acknowledges the comment. Section 78.18(d) of the final-form rulemaking makes the well site requirements for surface facilities explicitly applicable to underground injection control (UIC) well sites. Section 78a.18 of the final-form rulemaking contains a cross-reference to section 78.18, as injection wells are "conventional wells" by definition under the 2012 Oil and Gas Act.

Subsurface concerns with UIC wells are beyond the scope of this rulemaking. Further, the Department notes that the Commonwealth does not have primacy for the UIC program in Pennsylvania; that authority lies with EPA Region III. The EPA program regulations are authorized by the Safe Drinking Water Act and are designed to protect all underground sources of drinking water from all waste injection activities. Any suggestion that UIC wells be

subject to the authority of the National Environmental Policy Act, a federal statute, should be directed to EPA.

- 460.** Comment: Prohibit use of disposal injection wells in PA due to the history of abandoned gas and oil wells. (475)

Response: Subsurface concerns with UIC wells are beyond the scope of this rulemaking. Further, the Department notes that the Commonwealth does not have primacy for the UIC program in Pennsylvania; that authority lies with EPA Region III. The EPA program regulations are authorized by the Safe Drinking Water Act and are designed to protect all underground sources of drinking water from all waste injection activities.

- 461.** Comment: 78.18. Disposal and enhanced recovery well permits - Presently, the Commonwealth has a limited number of such wells. However, the EPA is moving forward with the issuing of a number of UIC permits. It is true the industry is having water disposal issues. We do need to be able to dispose of concentrated un-recyclable flowback and produced waters in the best methods that are respectful of the environment. Such methods will require containment and perhaps even on-site processing. The Department needs to be anticipating more UICs and have appropriate environmental measures and safeguards in place. We therefore, support this provision and recommend its adoption as written. (660a)

Response: The Department acknowledges the comment. Section 78.18(d) of the final-form rulemaking makes the well site requirements for surface facilities explicitly applicable to underground injection control (UIC) well sites. Section 78a.18 of the final-form rulemaking contains a cross-reference to section 78.18, as injection wells are “conventional wells” by definition under the 2012 Oil and Gas Act.

Subsurface concerns with UIC wells are beyond the scope of this rulemaking. Further, the Department notes that the Commonwealth does not have primacy for the UIC program in Pennsylvania; that authority lies with EPA Region III. The EPA program regulations are authorized by the Safe Drinking Water Act and are designed to protect all underground sources of drinking water from all waste injection activities.

- 462.** Comment: These laws and regulations need to cover Class II Disposal Injection wells also. As unconventional Marcellus drilling increases in PA, there will be more need to disposal of frac flowback, produced fluids, liquid from drill cuttings and other liquid waste from oil and gas operations.

Very few of the rules provide protection to citizens who must live near disposal injection wells, as the rules already partially protect those living near Marcellus drilling operations. (1064, 1101)

Response: The Department acknowledges the comment. Section 78.18(d) of the final-form rulemaking makes the well site requirements for surface facilities explicitly applicable to underground injection control (UIC) well sites. Section 78a.18 of the final-form rulemaking contains a cross-reference to section 78.18, as injection wells are “conventional wells” by definition under the 2012 Oil and Gas Act.

Subsurface concerns with UIC wells are beyond the scope of this rulemaking. Further, the Department notes that the Commonwealth does not have primacy for the UIC program in Pennsylvania; that authority lies with EPA Region III. The EPA program regulations are

authorized by the Safe Drinking Water Act and are designed to protect all underground sources of drinking water from all waste injection activities.

463. Comment: Disposal injection wells will cause high pressure underground for many years, unlike unconventional gas drilling operations using fracking that takes place during a matter of days or weeks. Because Class II Disposal injection wells will operate for many years, people living near injection wells need even MORE protection than those living near Marcellus wells. An injection well operates at high pressure for a long time. Marcellus wells are fracked under high pressure for only a short period of time. The injection well's high pressure for years means a longer time frame when water contamination or other damages are likely to occur. Language that will provide protections and rights for those living near Class II Disposal injection wells needs to be incorporated into the regulations and laws. (1064, 1101)

Response: The Department acknowledges the comment. Subsurface concerns with UIC wells are beyond the scope of this rulemaking. Further, the Department notes that the Commonwealth does not have primacy for the UIC program in Pennsylvania; that authority lies with EPA Region III. The EPA program regulations are authorized by the Safe Drinking Water Act and are designed to protect all underground sources of drinking water from all waste injection activities.

464. Comment: Since Class II Disposal injection wells operate for many years, the setback distance needs to be larger than for unconventional horizontal gas wells. The Area of Review for those wells should not extend beyond the boundary of the surface tract on which the well operator has permission to construct the disposal well. Owners of drinking water wells within 1 mile of the disposal injection well should receive notice of well construction. (1064, 1101)

Response: The Department acknowledges the comment. The amendments to the UIC well provisions of Chapter 78 were not intended to represent a sweeping overhaul of the UIC program in Pennsylvania but rather to clarify that all containment practices and onsite processing associated with disposal and enhanced recovery wells had to comply with the requirements of Chapter 78. For that reason, broad amendments to the current UIC program are beyond the scope of the current rulemaking.

The Department also notes that the Commonwealth does not have primacy for the UIC program in Pennsylvania; that authority lies with EPA Region III. The EPA program regulations are authorized by the Safe Drinking Water Act and are designed to protect all underground sources of drinking water from all waste injection activities.

465. Comment: Since I once worked for Schlumberger Well Services I have some insight into this industry.

We in our neighborhood are presently involved in fighting a Class II-D injection well for hazardous frac waste within 100's of feet of our homes and private water supplies. My first recommendation would be for setbacks similar to a Class I disposal well. We all know that frac fluid should be considered a hazardous waste and not a residual waste. "HazMat", (Hazardous Materials), has to respond to clean up any spills or accidents. Words on paper do not make this toxic, possibly radioactive stew benign (Halliburton Loophole). Not only does this through us into an industrial zone, but also threatens our water, air, quality of life, property values, as well as the Counties tax base on our homes. Having this toxic brew flowing under our properties without our permission should be illegal. Living in a "Brown Zone", not by our own choice, is not only alarming but renders our properties worthless as well. How can this be legal?

Physical location of all wells, Marcellus and injection, should be a strong point in the consideration of the new regulations. Water sources, loss of air quality and property values all hinge on the particular location of a Marcellus or injection well.

Areas of review for injection wells should reside solely within the property lines of the property owner/lessee reaping the moneys from said well.

Monitoring wells should be a requirement for all injection wells so as to monitor fluid flow and pressure in the confinement zone. (1072)

Response: The Department acknowledges the comment. The amendments to the UIC well provisions of Chapter 78 were not intended to represent a sweeping overhaul of the UIC program in Pennsylvania but rather to clarify that all containment practices and onsite processing associated with disposal and enhanced recovery wells had to comply with the requirements of Chapter 78. For that reason, broad amendments to the current UIC program are beyond the scope of the current rulemaking.

The Department also notes that the Commonwealth does not have primacy for the UIC program in Pennsylvania; that authority lies with EPA Region III. The EPA program regulations are authorized by the Safe Drinking Water Act and are designed to protect all underground sources of drinking water from all waste injection activities.

§ 78.19 Permit application fee schedule

- 466.** Comment: 78.19 – The PADEP’s application fee schedule for conventional wells varies based on well depth, from \$250 to \$1,950 for conventional wells and \$900 to \$3,000 for unconventional wells. The proposed fee schedules, and explanatory information preceding the proposed rule do not explain how the EQB developed the fee amounts, or how these amounts bear a reasonable relationship to the cost of administering § 78 permits as required by the statute (58 Pa.C.S. § 3211(d)).

(58 Pa.C.S. § 3211(d)) Permit fee.--Each application for a well permit shall be accompanied by a permit fee, established by the Environmental Quality Board, which bears a reasonable relationship to the cost of administering this chapter.

We request that the EQB provide justification for each fee schedule to ensure that there are sufficient funds to hire and retain qualified professional staff to process the permits, hire experts, conduct site inspections, and ensure compliance. More specifically, we request that the EQB provide information to show the number of full time equivalent (FTE) professionals (by discipline) needed to carefully review each permit application, hire experts when needed, and cover the cost of pre-application site visits, and ensure compliance once the permit is issued. The cost of that review should be divided by the average number of permits processed each year.

The process and cost to amend a permit should be clarified.

Please also explain if the permit processing fee includes funds for inspection and enforcement, or how those funds are provided to ensure adequate funds and personnel are in place to implement the compliance program. By comparison, in 2009, the BLM increased its well permit application fee from \$4,000 per well to \$6,500 per well after reviewing the cost just to review and issue A Permit to Drill (APD). (USDOJ, BLM, *BLM Will Collect \$6,500 Processing Fee for Each New Oil and Gas Drilling Permit Application* (Nov. 4, 2009),

http://www.blm.gov/wo/st/en/info/newsroom/2009/november/NR_11_04_2009.html (press release). (1143)

Response: In accordance with section 78.19(f), the Department recently prepared and presented to the Board a 3-Year Regulatory Fee and Program Cost Analysis Report (Report). The Report served as the basis for a final-form rulemaking, published in the *Pennsylvania Bulletin* and effective on June 14, 2014. (44 Pa.B. 3517). That rulemaking raised the permit fee for an unconventional vertical well to \$4,200 and for an unconventional non-vertical well to \$5,000. These permit fees, along with impact fee money from Act 13 of 2012 fund the entire operation of the Office of Oil and Gas Management, which is responsible for Statewide oil and gas conservation and environmental programs to facilitate the safe exploration, development and recovery of oil and gas reservoirs in this Commonwealth in a manner that will protect this Commonwealth's natural resources, the environment and public health, safety and welfare.

467. Comment: Impact Fees and Royalties: Increase permits fees and create an escrow account to protect against damages, e.g., two times the value of a home to owners whose wells are damaged by drilling activities. In addition, implementing a fair royalty structure could supply needed funds for:
- a. Much needed increase in staffing at DEP for enforcement of regulations, continuing to identify and map abandoned wells, and making well location and fracturing chemical information available on the DEP website.
 - b. Research funding—To investigate:
 - i. What are the impacts of water is taken out the ecosystem through fracking?
 - ii. What are the cumulative effects of gas and oil drilling, including public health, biodiversity conservation, and ecosystem function?
 - iii. What technologies can improve environmental protection and public health in the fracing process?
 - a. Site remediation in instances of land and water contamination where drillers cannot pay or cease operations. (140)

Response: Well permit fee increases are beyond the scope of this rulemaking.

468. Comment: The permit application fee schedule (78.19) is inadequate and should be significantly increased. They should be based not only on depth of the well bore, but the number and length of horizontal bores from each vertical bore. [17.19 (a)] Consider additional fees for multiple fracking of a well given increased risk and the inclusion of premium fees related to evolving technologies such as “super fracking.” (855, 1098)

Response: See response to comment 466.

§ 78.21 Opportunity for objections and conferences; surface landowners

469. Comment: Section 78.21: This section references Section 3215 of Act 13 of 2012. Section 3215 was recently struck down by the PA Supreme Court. In light of the court's decision, the proposed regulations need to be adjusted accordingly? Also, the reference to Section 3215 appears in other places in the proposed regulations, and as such the same question applies. (415)

Response: The Pennsylvania Supreme Court enjoined the application and enforcement of

only certain subsections and paragraphs of Section 3215 of the Oil and Gas Act. The remainder of Section 3215 is valid under the Court’s ruling. The Department has amended this rulemaking to reflect the Court’s holding. See response to comment 265.

§ 78.51 Protection of water supplies

- 470.** Comment: **78.51(c)** – The presumption for liability exclusion in 78.51(c) for pollution related to developing the well pad should be removed. The presumption for water contamination liability should apply to the entire well development process including the well pad development. This exclusion would make an opening for disagreement on what part of the process caused the problem which could shift the burden of proof unfairly back onto the surface rights owner. (167)

Response: Section 3218(c) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(c)) establishes the presumption of liability. The presumption encompasses situations in which the water supply is within 1,000 feet of a conventional well or 2,500 feet of the unconventional well bore, and the pollution takes place within six months for a conventional well or twelve months for an unconventional well from the later of several listed activities, not including well pad development or well site construction activities. The Board does not have authority to expand the scope of the statutory presumption to include these activities.

- 471.** Comment: The proposed amendments states, “That the presumption of liability established in 58 PA C.S. § 3218(c) (relating to protection of water supplies) does not apply to pollution resulting from well site construction activities.” This revision gives the oil and gas industry special treatment. Also, far too many actions can be hidden under the phrase of “well site construction activities.”

Operations on and near a well pad occur in a mix of actions and timing before during and after well sites are built before during and after drilling and fracking. Furthermore, sites are often modified during and after tracking. No one can separate the effects of “construction activities” from other effects. Also, separating out construction allows one company to attempt to blame another for harm associated with a well operation. This delays and may make it impossible for a harmed citizen to seek redress. (938, 938a)

Response: See response to comment 470.

- 472.** Comment: **78.51** – We support regulatory improvements for water supply protection; however, we are concerned that the proposed regulatory language is insufficient to protect the health of residents who may be adversely affected by contamination of water supplies and that the proposed regulation conflicts with the statute at 58 Pa.C.S. §3218.

58 Pa.C.S. §3218 Protection of Water Supplies requires the operator to restore water quality at least to the standards established under the Pennsylvania Safe Drinking Water Act, or to a higher standard if the water quality exceeded the Pennsylvania Safe Drinking Water Act standards before the pollution occurred:

(a) General rule. --In addition to the requirements of subsection (c.1), a well operator who affects a public or private water supply by pollution or diminution shall restore or replace the affected supply with an alternate source of water adequate in quantity or quality for the purposes served by the supply. The department shall ensure that the quality of a restored or replaced water supply meets the standards established under the act of May 1, 1984 (P.L.206, No.43), known as the Pennsylvania Safe Drinking Water Act, or is comparable to the quality of the water supply before it was affected by the operator if that water supply exceeded those standards. The

Environmental Quality Board shall promulgate regulations necessary to meet the requirements of this subsection. [emphasis added].

Under no circumstances should the PADEP allow an operator to restore a water supply to a drinking water quality that does not meet the Pennsylvania Safe Drinking Water Act standards. Furthermore, the majority of documented water quality violations are related to PADEP or Conservation District issued notices related to erosion and sediment control. There is no basis to exempt these construction activities from requirements to protect water supply.

We recommend the following proposed revisions to § 78.51(c) and (d):

§ 78.51. Protection of water supplies.

* * * * *

(c) Within 10 calendar days of the receipt of the investigation request, the Department will investigate the claim and will, within 45 calendar days of receipt of the request, make a determination. If the Department finds that pollution or diminution was caused by the well site construction, drilling, alteration or operation activities or if it presumes the well operator responsible for polluting the water supply of the landowner or water purveyor under section 3218(c) of the act (relating to protection of water supplies), the Department will issue orders to the well operator necessary to assure compliance with this section.

(d) A restored or replaced water supply includes any well, spring, public water system or other water supply approved by the Department, which meets the criteria for adequacy as follows:

* * * * *

(2) Quality. The quality of a restored or replaced water supply will be deemed adequate if it meets the standards established under the Pennsylvania Safe Drinking Water Act (35 P. S. §§ 721.1—721.17). If, prior to pollution, a water supply was of a higher quality than required under Pennsylvania Safe Drinking Water Act standards, the restored or replaced water supply shall meet the pre-pollution quality of the water. In no case shall the quality of the water supplied for restoration or replacement of water polluted by the operator fall below the quality of the water supply that existed before the pollution occurred. (1143)

Response: Regarding erosion and sediment control violations, Section 78.51 does not exempt such activities from regulation. However, these activities are not included within the statutory presumption under the 2012 Oil and Gas Act. See response to comment 470. Also, the Department does not agree with the suggested language provided by the commentator but has revised §§ 78.51(d) and 78a.51(d) to provide clarification and greater consistency with the 2012 Oil and Gas Act.

473. Comment: Perhaps the most damaging of all the newly proposed revisions to the rules under Chapter 78 is the section that requires developers to improve the water quality in areas on which they operate. To force by law a company to improve the water quality to drinking water standards regardless of the pre-activity condition of the water is unprecedented in any other industry, anywhere in the country.

Mandating such a requirement would without a doubt turn off the vast majority of investment dollars and seriously jeopardize the potential future growth within the Commonwealth. I am certain that the DEP is aware that ground water conditions are impacted by a number of factors. Both legacy and current actions or operations in each instance combine to create the pre-drilling conditions of the ground and well water. Insisting that oil and gas companies concede to correct all water quality issues from all sources in an attempt to leave each area they wish to work in at drinking water cleanliness levels is truly unreasonable and will as a result greatly limit the areas in which any developer will target to drill. The DEP's attempt to implement such rules does so to the

detriment of the citizens of the State and by extension the entire nation as it relates to its economic and security health. Leaving water quality the same or better as it was prior to the drilling activity MUST remain the standard and is the only reasonable path forward. (433)

Response: The only operators required to restore or replace a water supply are those who the Department has found to have affected the water supply “by pollution or diminution.” See 58 Pa.C.S. § 3218(a). Should an operator be found liable for “pollution or diminution” based on the statutory presumption under subsection 3218(c), subsections 3218(d)(1)(i) (conventional wells) and (2)(i) (unconventional wells) allow operators to rebut the presumption of liability where “the pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration survey....” For this reason, the Department encourages operators to conduct predrill surveys for all water supplies within the presumption of liability area for a wide-ranging set of compounds and elements. In many instances, operators are able to show that the water supply was not impacted by drilling, alteration, or operation of a well through such surveys.

Where the Department makes a positive water supply impact determination, the Department would be derelict in its duties if it allowed operators to provide replacement drinking water that by its own standards is not fit to drink simply because the pre-existing water supply was poor. Given the need to provide replacement water based on the positive impact determination, the additional cost borne by operators is limited to the incremental cost of providing Pennsylvania Safe Drinking Water Act standards water as compared to the previous poor quality, not the difference between providing no water at all and meeting the previous poor quality.

474. Comment: With regard to the RAF, it fails to address the cost and impact of the DEP’s proposed interpretation with regard to Subsection 78.51(d)(2) that operators would be required to restore a water supply to a minimum of SDWA standards. RAF (19). The estimated costs for the oil and gas industry to treat private water supplies to comply with such a stringent restoration requirement could be enormous since many private water supplies do not meet SDWA standards for reasons unrelated to oil and gas industry operations. (1137)

Response: The Department would be derelict in its duties if it allowed operators to provide replacement drinking water that by its own standards is not fit to drink simply because the pre-existing water supply was poor. Given the need to provide replacement water based on the positive impact determination, the additional cost borne by operators is limited to the incremental cost of providing Pennsylvania Safe Drinking Water Act standards water as compared to the previous poor quality, not the difference between providing no water at all and meeting the previous poor quality.

The Department encourages operators to conduct predrill surveys for all water supplies within the presumption of liability area for a wide-ranging set of compounds and elements. In many instances, operators are able to show that the water supply was not impacted by drilling, alteration, or operation of a well through such surveys.

475. Comment: Requiring an operator to restore an affected water supply to Pennsylvania Safe Drinking Water Act standards is reasonable and opponents of this requirement have not offered any evidence that such a requirement would be unduly burdensome on industry operators. The Board must include this requirement in the final rulemaking.

Section 3218(a) of Act 13 states that when a “well operator affects a public or private water supply by pollution or diminution” the well operator “shall restore or replace the affected water supply with an alternate source of water adequate in quantity and quality for the purposes served by the water supply,” and the Department must “ensure that the quality of a restored or replaced water supply meets the standards established under...the Safe Drinking Water Act.” The Board is required to promulgate the regulations necessary to meet this requirement. (1152)

Response: The Department acknowledges the comment.

476. Comment: We urge the board to amend Chapter 78 to require oil and gas operators to similarly describe the extent to which their operations might pollute or diminish nearby underground or surface water sources and also identify how the well operator will replace a water supply if pollution or diminution does occur. This permit application requirement would allow the Department to fulfill its obligation to protect groundwater and surface water by denying permits or augmenting permits with special conditions for drilling activity that may be likely to cause water pollution and ensure that well operators are able to meet their duty to provide a replacement water supply where pollution or diminution does occur. (1152)

Response: The statutory language in 58 Pa.C.S. § 3218(c) alleviates the need for an operator to describe how they may pollute or diminish a water supply because the well operator is automatically presumed responsible for pollution or diminution of a water supply within a prescribed distance and time frame from well development activities. Operators are also required to post bonds to ensure compliance with the drilling, water supply replacement, restoration, and plugging requirements contained in the 2012 Oil and Gas Act. Additionally, the Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

477. Comment: The proposed revisions to Sections 78.51(b) and 78.51(c) are fundamentally flawed. We commend the Department and the Board for amending Section 78.51(d)(2) to require an operator to provide a replacement water supply that meets Safe Drinking Water Act Standards. However, this requirement is only as effective as the Department’s duty to investigate water supply claims and it’s authority to require the operator to replace an affected water supply. Therefore, Section 78.51(b) and Section 78.51(c) must be amended to include all of the activities listed in the proposed definition of oil and gas operations. (1152)

Response: The Department agrees and has amended the regulatory language to include oil and gas operations in Sections 78.51(b), 78.51(c), 78a.51(b) and 78a.51(c).

478. Comment: 78.51(b) and (c) include “well site construction” in the list of activities which trigger the reporting and investigation activities set forth in Section 3218(b) of Act 13. However, Section 3218(b) does not include “well site construction” as a cause of pollution or diminution of water supply. Some commentators question EQB’s authority to expand the list to include “well site construction,” and other commentators recommend that EQB expand the list to include all activities under the proposed definition of “oil and gas operations.” We ask EQB to provide its authority for expanding the list, and to explain why the activities included in the list adequately protects the environment. (1099)

Response: The Department has broad authority to investigate pollution and require remediation of impacted water supplies under Section 5 of The Clean Streams Law, 35 P.S. § 691.5. The Department has amended the regulatory language to include well site

construction and oil and gas operations in §§ 78.51(b), 78.51(c), 78a.51(b) and 78a.51(c).

479. Comment: The current language in Chapter 78 for the quality of restored water supplies is “did not meet” Safe Drinking Water Act standards, which provides clear guidance to Department staff, operators and the public. The restoration obligation in this section should be clarified that water can be restored to drinking water standards as the maximum, or to below those standards if the water did not meet the standard before drilling activities. Many water supplies are not used for drinking and need not meet the SDWA standard. The new language potentially raises the floor for water quality to at least SDWA, even where water did not meet that standard before drilling operations. This requirement would be unreasonable, costly, potentially impossible to meet, and more stringent than is required of other industries in Pennsylvania.

The following revisions include protections for conventional operators, and to restore the existing and only reasonable standard for the replacement of impacted water supplies. Absent agreement with water supply owners, DEP’s authority to require restored water quality standards is limited to SDWA standards or those standards that the water supply met before being impacted, where those supplies did not meet SDWA standards.

(c) Within 10 calendar days of the receipt of the investigation request, the Department will provide notice to any well owners whose wells are within the area of presumed impact, investigate the claim and will, within 45 calendar days of receipt of the request, make a determination. If the water supply owner and operator reach an agreement with respect to the water supply, the Department is under no further obligation to investigate. If the Department investigates and finds that pollution or diminution was caused by the well site construction, drilling, alteration or operation activities or if it presumes the well operator responsible for polluting the water supply of the landowner or water purveyor under section [208(c)] 3218(c) of the act [(58 P. S. § 601.208(c))] (58 Pa.C.S. § 3218(c)), the Department will issue orders to the well operator necessary to assure compliance with this section. The presumption established by 58 Pa.C.S. § 3218(c) is not applicable to pollution resulting from well site construction.

(d) A restored or replaced water supply includes any well, spring, public water system or other water supply approved by the Department, which meeting the criteria for adequacy as follows:
* * *

(2) *Quality.* The quality of a restored or replaced water supply will be deemed adequate if it meets the standards established under the Pennsylvania Safe Drinking Water Act (35 P.S. §§ 721.1—721.17), or is comparable to the quality of the water supply before it was affected by the operator if that water supply ~~[exceeded those]~~ did not meet these standards, or is subject to an agreement between the operator and the water supply owner.
* * *

(g) If the well operator and the water supply owner ~~[user]~~ are unable to reach agreement on the means for restoring or replacing the water supply, the Department or either party may request a conference under section [501] 3251 of the act [(58 P. S. § 601.501)] (58 Pa.C.S. § 3251).

(h) A well operator who receives notice from a landowner, water purveyor or affected person that a water supply has been affected by pollution or diminution, shall report receipt of notice from an affected person to the Department within 24 hours of receiving the notice. Notice shall be provided either electronically through the Department’s website or by telephone by registered Small Businesses. (1135)

Response: Section 3218(a) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(a)) establishes a well operator who affects a public or private water supply by pollution or diminution shall restore or replace the affected supply. An agreement between the operator and water supply

owner may not properly address the environmental, health and safety issues created by a water supply being impacted oil and gas operations. The Department is obligated to investigate pollution to the waters of the Commonwealth under the Clean Streams Law (35 P.S. §§ 691.1 *et seq.*. Requiring electronic submission by an operator of a notice they received of an affected water supply will ensure it is properly documented and is routed through the proper channels in a timely manner. Regarding Safe Drinking Water Act standards, please see response to comment 474. Regarding electronic submission of reports and notifications, please see response to comment 219.

- 480.** Comment: We appreciate DEP’s recognition in § 78.51 (b) that well site construction, and related sedimentation pollution, can have serious impacts on water resources, including water supplies. However, the effect of this acknowledgement is diminished by § 78.51(c)—which explicitly exempts pollution resulting from well site construction from the rebuttable presumption established in 58 Pa.C.S. § 3218(c). We understand that there are many sources of sedimentation pollution, and that establishing that sedimentation resulting from a particular well site is the cause of contamination in a water supply may be difficult at times. However, as written, the proposed amendments leave no recourse or remedy for the landowner, water purveyor or affected person suffering pollution or diminution of a water supply as a result of well site construction. We strongly recommend that DEP revisit this section, and clearly state the remedies that are available to the landowner, water purveyor or affected person, if sedimentation from a well site is found to have contaminated a water supply. (1157)

Response: The Department has revised §§ 78.51(b) and 78a.51(b) to include all oil and gas operations as activities which may compel the Department to investigate impacts from said activities. Additionally, section 3218(c) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(c)) establishes the presumption of liability. The Department does not have regulatory authority to expand the scope of the statutory presumption to include well site construction. The Department does have the authority to require an operator to replace or restore a water supply impacted by well site construction or other oil and gas operations under The Clean Streams Law (35 P.S. §§641.1-691.1001), The Hazardous Sites Cleanup Act 108 (35 P.S. §6020.101) and The Land Recycling and Environmental Remediation Standards Act 2 (35 P.S. §6026.101 *et seq.*).

- 481.** Comment: The term “operating activities” is undefined and is used here improperly to expand this section beyond the scope of Section 3218 of Act 13, which is limited by Section 3218(b) to “pollution or diminution of a water supply as a result of the drilling, alteration or operation of an oil or gas well.” The term “oil and gas activities” is used throughout the proposed regulations and should be evaluated in each context for the appropriate term. For this section, Commentator believes the first sentence of this provision should remain as it currently stands.

Suggested amendatory language:

(b) A landowner, water purveyor or affected person suffering pollution or diminution of a water supply as a result of the drilling, alteration or operation of an oil or gas well may so notify the Department and request that an investigation be conducted. Such notices should be made to the appropriate Department regional office or by calling the Department’s state wide toll free number 1-800-541-2050. The notice and request must include the following: (1153)

Response: For clarification, a definition for “oil and gas operations” has been included in §§ 78.1 and 78a.1 of the rulemaking. The Department has the authority to investigate pollution of impacted water supplies under Section 5 of The Clean Streams Law (35 P.S.

§§ 691.1-691.1001) regardless of the source or associated activity.

- 482.** Comment: The proposed regulation adds “well site construction” to the list of activities enumerated in §3218(b) of Act 13 that trigger the reporting and investigation activities set forth in §3218(b). The Department has no authority to amend the statutory language and this addition should be stricken.

Suggested amendatory language:

(c) Within 10 calendar days of the receipt of the investigation request, the Department will investigate the claim and will, within 45 calendar days of receipt of the request, make a determination. If the Department’s investigation finds that pollution or diminution was caused by the drilling, alteration or operation activities or if it presumes the well operator(s) responsible under section 3218(c) of the Act, the Department will issue orders to the well operator necessary to assure compliance with this section. The presumption established by 58 Pa.C.S. § 3218(c) is not applicable to pollution resulting from well site construction. (1153)

Response: The Department has the authority to require an operator to replace or restore a water supply impacted by well site construction or other oil and gas operations under The Clean Streams Law (35 P.S. §§ 691.1-691.1001), The Hazardous Sites Cleanup Act 108 (35 P.S. § 6020.101 et seq.) and The Land Recycling and Environmental Remediation Standards Act 2 (35 P.S. § 6026.101 et seq.).

- 483.** Comment: Section 3218(a) of Act 13 requires an operator to restore an affected water supply to Pennsylvania Safe Drinking Water Act standards or “comparable to the quality of the water supply before it was affected by the operator if the water supply exceeded those [water quality] standards (emphasis added).” This language clearly provides two standards, but the Department has correctly recognized only one. While proposed Section 78.51(d)(2) uses the statutory word “exceeded,” the Department has suggested that it is interpreting Act 13 through this regulatory section to require an operator to restore a water supply to a minimum of SDWA standards or to a higher standard if the water supply was better than SDWA standards before drilling – interpreting the word “exceeded” in this context to mean that a particular constituent of the pre-drill water quality was lower than the maximum SDWA standard for that constituent, e.g., pre-drilling level of 1 ppm when the level determined to be safe by SDWA standards is 5 ppm. The Department’s interpretation means that operators would be required to restore the water supply quality to the 1 ppm level rather than the SDWA level.

The Department’s suggested position, that a water source that does not meet the SDWA standard before drilling – i.e., the water quality is worse than the standard – will not be considered “restored” by industry until it meets those standards or better after drilling, is a dramatic departure from current law and is contrary to the accepted and current meaning of the statutory term “exceeded.” In this context, “exceeded” means that a particular constituent of the pre-drill water quality was higher than the SDWA standard for that constituent. The statutory requirement therefore is that operators that impact water supplies must restore those supplies to a maximum of SDWA standards or to the quality of the supply if it did not meet those standards before drilling activities. The existing obligation makes sense because many water supplies do not meet SDWA standards in areas not served by public water utilities and many water supplies are not used for drinking, and restoring water supplies to particular constituent levels lower than those determined to be safe by SDWA standards may not even be possible or, if possible, may be prohibitively expensive.

It is unreasonable to require the oil and gas industry to upgrade private water supply quality, at industry expense, beyond the quality that existed pre-drilling. No other industry is required to do

this, and there is no legal requirement for a Pennsylvania homeowner to treat or upgrade his or her private water supply to SDWA standards. The current language in Chapter 78 provides clear guidance to Department staff, operators and the public and should be retained and, significantly, is consistent with the accepted and current meaning of the term “exceeded” in this context. Nothing in Section 3218(a) demonstrates a legislative intent to change the accepted and current meaning of the term “exceeded.”

Suggested amendatory language:

(2) Quality. The quality of a restored or replaced water supply will be deemed adequate if it meets the standards established under the Pennsylvania Safe Drinking Water Act (35 P.S. §§ 721.1 — 721.17), or is comparable to the quality of the water supply before it was affected by the operator if that water supply did not meet these standards. (1153)

Response: The Department disagrees but has revised the §§ 78.51(d)(2) and 78a.51(d)(2) for added clarity and to improve consistency with the 2012 Oil and Gas Act. If a water supply’s quality was better than Pennsylvania Safe Drinking Water Act standards prior to oil and gas operations, then it needs to be returned to its previous state, *i.e.*, its state prior to being impacted by oil and gas operations. Otherwise, the Department would be allowing operators to degrade a natural resource relied upon as a water supply resource. In regards to water supplies that did not meet Pennsylvania Safe Drinking Water Act standards prior to being impacted by oil and gas operations, the Department would be derelict in its duties if it allowed operators to provide replacement drinking water that by its own standards is not fit to drink simply because the pre-existing water supply was poor. Given the need to provide replacement water based on the positive impact determination, the additional cost borne by operators is limited to the incremental cost of providing Pennsylvania Safe Drinking Water Act standards water as compared to the previous poor quality, not the difference between providing no water at all and meeting the previous poor quality.

484. Comment: Water supplies need greater protection. Rules have to be put into place in order to protect those because water supplies have been impacted (649)

Response: The Department acknowledges the comment.

485. Comment: Commenter supports proposed water quality requirements in Section 78.51 concerning the replacement of water supplies affected by gas drilling. (907)

Response: The Department acknowledges the comment.

486. Comment: In Sections 78.51 (b) and (c), PADEP has added well site construction to the list of oil and gas activities for which persons can claim a diminution of water quality. The commentator notes that the authority to include well site construction is not specified in the statutory language; *i.e.*, the legislature did not direct PADEP to develop regulations to include well site construction. The commentator recommends that the addition of well site construction should be stricken from the proposed regulations. (954)

Response: The Department has determined that well site construction needs to be included because the activity of constructing a well site may cause pollution or diminution to water supplies. The Department has the authority to investigate and require restoration or replacement of water supplies impacted by well site construction or other oil and gas activities under The Clean Streams Law (35 P.S. §§ 691.1-691.1001), The Hazardous Sites Cleanup Act

108 (35 P.S. § 6020.101 et seq.) and The Land Recycling and Environmental Remediation Standards Act 2 (35 P.S. § 6026.101 et seq.). The Department did not include well site construction as an activity that falls under the presumption clause in Section 3218(c) of the 2012 Oil and Gas Act. Section 3218(c) has a defined list of activities subject to the presumption and the Department does not have the authority to expand the scope of the statutory presumption through rulemaking.

- 487.** Comment: 78.51(b) -What is the definition of “operating activities”? 78.51(c) - This should read ‘diminution was caused by the well site construction, well drilling, alteration, etc. to remain consistent with revisions in 78.51(b). 78.51(d)(2) - Clarification needs to be made that if an affected water supply did not meet Pennsylvania Drinking Water Act standards as determined by a pre-drill sample, the replaced water supply must only meet the pre-drill water quality and nothing more stringent. (411)

Response: For clarification, a definition for oil and gas operations has been included in §§ 78.1 and 78a.1 of the rulemaking which replaces the term operating activities. If a water supply’s quality was better than Pennsylvania Safe Drinking Water Act standards prior to oil and gas operations, then it needs to be returned to its previous state, i.e., its state prior to being impacted by oil and gas operations. Otherwise, the Department will be allowing operators to degrade a natural resource relied upon as a water supply resource.

- 488.** Comment: § 78.51 Protection of Water Supplies: § 78.51(b) – We are concerned that units of the National Park System may fall within a category not specifically identified in the draft regulations. The definition of a “water purveyor” appears to only apply to large, municipal-type water suppliers. However, in some units the NPS is responsible for supplying or at least providing water to our visitors and staff. We suggest that this section be revised to refer to all “potable water supplies” rather than limiting the definition to either “well owners” or “water purveyors.” Additionally, we suggest that pollution or diminution of water supplies by any well site activities, including temporary water or other fluid storage, gathering lines or pipelines be included in this section. (1062, 1133)

Response: The definition of Water Purveyor has been revised to include:

- **The owner or operator of a public water system as defined in section 3 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.3).**
- **Any person subject to the act of June 24, 1939 (P.L. 842, No. 365), known as the Water Rights Law.**

This definition of water purveyor is consistent with the 2012 Oil and Gas Act.

Language in sections 78.51(b) and 78a.51(b) of the final-form rulemaking have been revised to include well site construction and other oil and gas operations.

- 489.** Comment: Include e-mail notification procedures. [78.51 (b)] (1098)

Response: The Department does not exclude e-mail notification of an investigation request; therefore it is an acceptable means of notification to use. However, the Department recommends calling a Department regional office or statewide phone number to ensure that the request for a water supply investigation gets to the appropriate person in a timely manner.

490. Comment: Regarding 78.51(b), a commentator suggests that neighboring land owners and land management agencies be notified of claims of pollution. Another suggests including e-mail notification procedures. EQB should explain in the Preamble and RAF of the final-form regulation the reasonableness of the notification procedures in this subsection, and explain how the procedures adequately protect public health and safety. (1099)

Response: The Department has explained the reasonableness of the notification procedures in §§ 78.51(b) and 78a.51(b) in the Preamble and RAF of the final form regulation.

491. Comment: We urge the Board to amend Section 78.51(c) to require the Department to investigate reports that drinking water supplies have been adversely affected by oil and gas operations within three days of the Department's receipt of a complaint and make a determination within fifteen (15) days. (1152)

Response: Section 3218(b) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(b)) establishes the time frames in which the Department must act upon a request to investigate a water supply complaint. The Board does not have regulatory authority to change the scope of the statutory requirements thus the regulations must reflect what is required by law. However, the Department has developed a policy that does narrow the time frames staff should act upon once receiving notification for a water supply investigation request. The policy language can be found in the document titled "Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations" (Document number 820-4000-001 Revised January 17, 2015).

492. Comment: The proposed legislation adds that the presumption of liability does not apply to pollution resulting from well site construction activities. As pollution often results from well site construction activities, notably by the escape of methane and other contaminants from the well bore into groundwater, and the long-term migration of contaminants under-ground, the presumption of liability during the construction phase of drilling should not be excluded. (845, 1161)

Response: The escape of methane and other contaminants from the well bore into groundwater would not be caused by well site construction activities since well site construction activities occur on the surface and preclude the well development activities included in the statutory presumption clause found in Section 3218(c) of the 2012 Oil and Gas Act. The Department does not have regulatory authority to expand the scope of the statutory presumption to include well site construction.

493. Comment: The DEP's duty to investigate water pollution should extend to all oil and gas activities. (Section 78.51(c)). (19, 21, 26, 69, 55, 165, 192, 391, 843, 851, 938, 946, 958, 1005, 938a)

Response: The Department agrees and has added language in §§ 78.51(c) and 78a.51(c) of the final-form rulemaking to include "oil and gas operations" as potential causes of water supply impacts that the Department will investigate.

494. Comment: § 78.51(b)-(c) -- Sections 78.51 (b) and (c) implement Subsection 3218(b) of Act 13; however, the proposed regulation adds "well site construction" to the list of activities enumerated in Act 13 that trigger the reporting and investigation activities set forth in Subsection 3218(b). The Department has no authority to amend the statutory language and this addition should be stricken. No one doubts that the Department can investigate complaints regarding water supplies but this rulemaking should not engraft new language onto the legislative language.

Additionally, as this section of the draft regulations is currently written, it appears that the Department is taking a “guilty until proven innocent” approach. The section should be revised as indicated as suggested below.

The Commentator suggests the following amendatory language:

“(b) A landowner, water purveyor or affected person claiming pollution or diminution of a water supply as a result of drilling, altering or operating oil or gas well may so notify the Department and request that an investigation be conducted. Such notices shall be made to the appropriate Department regional office or by calling the Department’s statewide toll free number (800) 541-2050. The notice and request must include the following:

- (1) The name, address and telephone number of the person requesting the investigation.
- (2) The type, location and use of the water supply.
- (3) Available background quality and quantity data regarding the water supply, if known.
- (4) Well depth, pump setting and water level, if known.
- (5) A description of the pollution or diminution.

(c) Within 10 calendar days of the receipt of the investigation request, the Department will investigate the claim and will, within 45 calendar days of receipt of the request, make a determination. If the Department’s investigation finds that pollution or diminution was caused by the drilling, alteration or operation activities or if it presumes the well operator(s) responsible under section 3218(c) of the act, the Department will issue orders to the well operator necessary to assure compliance with this section. The presumption established by section 3218(c) of the act is not applicable to pollution resulting from well site construction. (1137, 1174, 1147)

Response: See response to comment 486. The Department disagrees with the “guilty until proven innocent” statement. The rulemaking in §§ 78.51(b)-(c) and 78a.51(b)-(c) clearly states the Department’s authority to issue orders necessary to ensure compliance when a determination has been made that an impact to a water supply has occurred as a result of oil and gas operations after an investigation was conducted by the Department or when presumption applies. Furthermore, the presumption in Section 3218(c) of the 2012 Oil and Gas Act does hold the operator responsible for pollution or diminution of a water supply under specifically defined criteria, unless the operator rebuts it in accordance to the defenses provided to the operator in Section 3218(d) of the 2012 Oil and Gas Act.

- 495.** Comment: The Chapter 78 regulations require the DEP to investigate instances of water pollution that occur near oil and gas wells. As part of its investigation, the DEP may determine that water pollution was caused by the “well site construction, drilling, alteration or operation activities.” This set of activities is much more limited than the list of activities defined as “oil and gas activities” in Act 13. To ensure maximum protection of water resources, the DEP’s investigation should extend to all oil and gas activities. (19, 21, 23, 26, 90, 142, 165, 192, 391, 843, 938, 946, 951, 958, 1005, 938a, 1019)

Response: See response to comment 486.

- 496.** Comment: § 78.51(c) – We suggest that this section also include a requirement that the Department specifically notify, neighboring land owners and/or land management agencies (such as NPS) if a claim of water pollution or diminution has been made so that area water supplies can be checked for similar issues and public health and safety can be maintained. (1062, 1133)

Response: The Department investigates the specific request for a water supply investigation made by the owner or user of the water supply. The Department may expand the scope of the investigation to include neighboring water supplies based upon its determination of the initial investigation. Notifying neighboring land owners and/or land management agencies of all water supply investigation requests received by the Department prior to conducting a scientific study and making a determination based upon the data generated could create unnecessary concern in the community.

497. Comment: EQB amends 78.51(c) to clarify that the presumption of liability established in Section 3218(c) of Act 13 does not apply to pollution resulting from well site construction activities. Some commentators state that the presumption of liability should extend to well site construction activities. We ask EQB to explain how this amendment is consistent with Section 3218(c) of Act 13, and explain why pollution from well site construction should be exempt from the presumption of liability as established in Section 3218(c) of Act 13. (1099)

Response: See response to comment 470.

498. Comment: § 78.51(c): Exclusion of “well site construction” from the rebuttable presumption of liability for contaminating a water supply is an outrageous loophole which must be stricken. This is contrary to the intent of the statute, and the Environmental Quality Board is both exceeding its authority and making new (and profoundly unfortunate) law with this provision. Who determines whether “well site construction” or some other aspect of oil & gas operations was responsible for contaminating a water supply? What exactly is the boundary between “well site construction” and “well construction”? This provision is simply outrageous and must be stricken. A property owner whose water supply has been contaminated by oil & gas operations does not know or care what the precise boundary is between “well site construction”, “well construction”, “drilling”, “well completion”, or any other of the myriad activities that occur at a well site. There is no sensible reason for excluding any of these activities from a consideration of liability. (869, 869a)

Response: See response to comment 470.

499. Comment: 78.51(c) -- The Department does not have the authority to change that statutory language and should remove “well site construction” from the list of activities that require reporting and investigation. (1103)

Response: See response to comment 486.

500. Comment: Water Supply Restoration Criterion - The language in the proposed changes to 78.51 conceivably requires that an operator restore an affected water supply to an improved quality above that of the pre-drill survey with “the standards established under the Pennsylvania Safe Drinking Water Act.” This is an unreasonable expectation. The mandated restoration criterion for water quality should continue to be the “floor” established by the pre-drill survey. This proposed revision should be tabled in favor of further consideration. (12)

Response: If a water supply’s quality was better than Pennsylvania Safe Drinking Water Act standards prior to oil and gas operations, then it needs to be returned to its previous state, i.e., its state prior to being impacted by oil and gas operations. Otherwise, the Department would be allowing operators to degrade a natural resource relied upon as a water supply resource. In regards to water supplies that did not meet Pennsylvania Safe Drinking Water Act standards prior to being impacted by oil and gas operations, the Department would be derelict in its duties if it allowed operators to provide replacement drinking water that by its

own standards is not fit to drink simply because the pre-existing water supply was poor. Given the need to provide replacement water based on the positive impact determination, the additional cost borne by operators is limited to the incremental cost of providing Pennsylvania Safe Drinking Water Act standards water as compared to the previous poor quality, not the difference between providing no water at all and meeting the previous poor quality.

- 501.** Comment: Operators should be required to restore contaminated drinking water to a quality that meets Safe Drinking Water Act standards, no matter what the quality of the water prior to drilling. If the quality of a water supply prior to drilling was above these standards, the operator must restore the water to that higher standard; otherwise, good water supplies will be degraded. (5936-6089)

Comment: See response to comment 500.

- 502.** Comment: All water supplies need to match or exceed Safe Drinking Water Act standards. (16, 62, 912)

Response: The Department acknowledges the comment. See response to comment 500.

- 503.** Comment: Pre-drill water testing and the restoration and replacement of contaminated water supplies (Sections 78.51 and 78.52). We learned through DEP’s determination letters that natural gas drilling operations have impacted at least 161 water supplies statewide. The natural gas industry has fought to have water restored to only pre-contamination conditions—even if it is not safe to drink. In addition, DEP leaves it up to the driller to decide when, where, and how to conduct water quality tests before drilling starts. (17, 18, 19a, 72, 73, 79, 100, 102, 125, 160, 161, 162, 169, 402, 475, 477, 564, 565, 609, 632, 635, 787, 843, 865, 884, 886, 891, 912, 919, 930, 938, 943, 947, 492a, 1030, 1030a, 1039, 1064, 1066, 1068, 1073-1077, 1079-1082, 1084, 1101, 1102, 938a, 1168, 1142, 1148, 1158, 7521 – 8362, 4582 - 5484)

Response: See response to comment 500.

- 504.** Comment: DEP should require: Operators to restore contaminated drinking water to a quality that meets Safe Drinking Water Act standards, no matter what the quality of the water prior to drilling. If the quality of a water supply prior to drilling was above these standards, the operator must restore the water to that higher standard; otherwise, good water supplies will be degraded. (17, 18, 19a, 72, 73, 79, 100, 102, 125, 160, 161, 162, 169, 402, 475, 477, 564, 565, 609, 632, 635, 787, 842, 843, 865, 884, 886, 891, 912, 919, 930, 938, 943, 947, 492a, 1030, 1030a, 1039, 1064, 1066, 1068, 1073-1077, 1079-1082, 1084, 1101, 1102, 938a, 1161, 1168, 1142, 1158, 4582 – 4584, 4584 – 4650)

Response: See response to comment 500.

- 505.** Comment: **“Better than Standard”:** I agree with the DEP’s Technical Advisory Board, which states that it is “unreasonable to require the oil and gas industry to upgrade private water supplies, at industry expense, beyond that which existed pre-drilling.” Nonetheless, this is precisely what was proposed under Act 13 and in DEP’s newly-published regulations. Such an unnecessary double-standard, which only applies to the oil and gas industry, would prove prohibitively costly and will hamstring our industry’s ability to continue strong development in the Commonwealth. (196)

Response: See response to comment 500.

- 506.** Comment: When water supplies are adversely impacted and municipal water is available, it must be

provided and paid for by the operator responsible for the impacts. (1168)

Response: All options for the restoration or replacement of a water supply should be available for consideration by the Department, property owner and the operator.

507. Comment: Drillers, at their own expense, must restore water supplies to safe drinking standards. (845, 886, 1106, 1146, 4744 – 5668, 5782 – 5785)

Response: See response to comment 500.

508. Comment: § 78.51(d)(2) - Suggested amendatory language: *Quality*. The quality of a restored or replaced water supply will be deemed adequate if it meets the standards established under the Pennsylvania Safe Drinking Water Act (35 P. S. §§ 721.1—721.17), or is comparable to the quality of the water supply before it was affected by the operator if that water supply did not meet those standards. (1147)

Response: The Department does not agree with the suggested language provided by the commenter but has revised §§ 78.51(d) and 78a.51(d) to provide clarification and greater consistency with the 2012 Oil and Gas Act.

509. Comment: 78.51(d)(2). Protection of Water Supplies - We support the interpretation as based on Act 13, guaranteeing those with private water supplies, whom had pre-drill tests which were superior to the Safe Drinking Water Act Standards that in the event they are subject to a replaced or restored water supply that the water supply must be comparable to the quality of that superior pre-drill water supply. We support that those water supplies, as guaranteed by Act 13 which failed to meet SDWAS that those water supplies are to be replaced or restored to SDWAS. Homeowners of superior private water supplies whom to no fault of their own had their water quality impacted by the industry should not be further penalized with an inferior restored or replaced water supply as compared to their pre-drill test. The inconvenience, worry and additional stress placed on a family necessitates that they be justly compensated with the same superior water quality their pre-drill test reveals. Much in the same way, the inconvenience, worry, and additional stress placed on a family, requires that those water supplies that did not meet SDWAS, as just recompense for the inconvenience need to be restored or replaced to SDWAS. The operator is addressing the water supply; therefore, it is the responsible action to do so entirely.

Obviously, there are some considerations that need to be made in regards to the restored or replacement supply. First, we recommend that the Department assign a key person to assist the family. The affected homeowner ideally, will interact with this key person rather than the Operator. This person may act as either an Ombudsman or a Liaison between all parties and assist the affected homeowner. The reason for this key person is to ease homeowner stress and eliminate an adversarial situation that may have resulted from the water quality impairment. The idea is to assist the homeowner, advocate on behalf of the homeowner and have the situation resolved as quickly and as free from stress as possible. This person needs to have knowledge of water standards and treatments and be able to understand the homeowner's budgetary and other concerns.

In regards to superior supplies that are restored with a water treatment system, the homeowner needs to have input into the treatment methods employed. The Ombudsman or Liaison needs to be able to communicate the pros and cons of each treatment method made available. Some treatment methods, such as those that add salt to the treatment process may be a health concern with some and thus, a potassium treatment may be preferred. The homeowner needs to have direct input through the Ombudsman or Liaison as to what their preferences may need to be. Any reasonable preference

shall be deemed acceptable. The homeowner has been inconvenienced enough, through no fault of their own. They previously had a superior water supply. Operators state that it is the rare event that water supplies are impacted. Therefore, as compared to the costs of drilling a gas well, the costs involved with providing a treatment system in a home is a reasonable expense that must be borne by the Operator. In the case of the home treatment system, it is the Operator's responsibility to bear all installation, operation and maintenance expenses associated with the meeting the pre-drill superior water supply quality. Additionally, a separate electric meter needs to be placed on the home as the Operator needs to be responsible for any additional electricity consumed due to the home treatment plant.

In regards to a homeowner with a superior pre-drill water supply who happened to have a home treatment system already employed, it is the responsibility for the Operator to maintain and operate any additional treatment to what they may have had pre-drill. For example, perhaps the homeowner had a pre-drill sediment filter on their home treatment system. Should the homeowner determine they will continue with the sediment filter, operational and maintenance expenses will be borne by the homeowner? However, if their previous water system was damaged or is not compatible with the new treatment plant, it is the Operator's responsibility to bear the costs of installation. Regardless of the system particulars regarding what options the homeowner may be responsible due to pre-drill treatment; it remains to be the responsibility of the Operator to bear the entire amount of any additional electricity consumed by a home treatment plant.

In regards to a homeowner with a superior pre-drill water supply that is placed on a public water supply, the Ombudsman or Liaison needs to be able to communicate effectively with the affected homeowner regarding any concerns they may have regarding the public supply. There are folks that may have allergies/immune system issues with chlorine in a water supply. There are several ways that this may be addressed in a home. The Ombudsman or Liaison needs to be able to listen to the suggestions from the homeowner since when folks have such health issues they are acquainted with what may be needful and more than likely will consult their medical doctor or specialist. The Ombudsman or Liaison needs to be able to communicate to the Operator that the certain device/s are needed and that this additional expense will also be borne by the Operator due to a present health condition. The Ombudsman or Liaison needs to be able to communicate with the affected homeowner and provide information as to the new water supply and how the connection will occur. The Operator is responsible for all costs incurred with connection and the purveyor's monthly or quarterly billings.

In regards to a homeowner's water supply that failed to meet SDWAS pre-drill, the Ombudsman or Liaison needs to explain the pre-drill deficiency to the homeowner. Educational materials shall be provided. The homeowner needs to be able to understand what the health effects are that may be attributed to such water quality. The homeowner needs to be provided with materials that explain the manner in which that particular deficiency may be addressed through treatment, the costs involved with that particular treatment and the maintenance costs involved. The Ombudsman or Liaison needs to determine whether the homeowner may be able to afford the treatment for the pre-drill deficiency. The Operator is responsible for the installation of the pre-drill deficiency corrective measure. The homeowner is responsible for supplies and maintenance of the corrective measure. For example, if the pre-drill test reveals coliform in the water supply and the homeowner chose an ultraviolet light as treatment, the costs of the future light replacement is borne by the homeowner. The original light is the responsibility of the Operator. Often there are a variety of treatment options available to the homeowner. The homeowner needs to determine which treatment they prefer, but they also have to indicate to the Ombudsman or Liaison that they understand the maintenance schedule and can afford it. Once the Ombudsman or Liaison has indicated that the homeowner can afford the selected treatment method, then the operator needs to address the remaining deficiencies

with treatment. The Operator is responsible for the entire system installation and only the maintenance and operational expenses of those deficiencies caused by the Operator's impact to the supply. The homeowner is responsible for the maintenance and operational expenses related to any pre-drill deficiency. Regardless of the system particulars regarding what options the homeowner may be responsible; it remains to be the responsibility of the Operator to bear the entire amount of any additional electricity consumed by a home treatment plant.

In regards to a water supply that did not meet SDWAS and is being replaced by a public water supply, the Ombudsman or Liaison needs to be able to explain the deficiencies in the pre-drill supply and the manner in which the public supply is superior. The Ombudsman or Liaison needs to be able to communicate with the affected homeowner and provide information as to the new water supply and how the connection will occur. The Operator is responsible for all costs incurred with connection and the purveyor's monthly or quarterly billings.

Finally, the Operator is responsible for the maintenance and operation of a home treatment plant indefinitely, forever. These treatment plants are very involved when the water has been very impacted. Expenses involve monthly electric, maintenance and other operational expenses. Such an expensive system may deter a potential buyer of the home in the future, which will result in the present owner losing money on perhaps their largest investment and due to no fault of their own. Thus, the Operator is responsible for these expenses for as long as the home shall stand and be inhabited.

In the case of the home that is connected to a public water system, the Operator needs to be responsible for these monthly or quarterly costs for as long as the home is owned by the affected homeowner or an immediate member of their family.

Any homeowner that enters into an agreement with the Operator outside of this process must provide a written statement to the Department as provided by their attorney verifying that they have entered into an agreement with the Operator outside of this process and they have used a privately contracted attorney. This is to ensure that no homeowner is unreasonably coerced into waiving their right to their water quality as guaranteed by Act 13. The Department shall retain this letter in the respective determination file.

When private water supplies are affected by an Operator, the affected homeowner's water supply must be restored or replaced to SDWAS or to the superior supply they had previously enjoyed. That is the spirit of Act 13's guarantee to the homeowners. The letter of the law needs to comply with that spirit. With consideration of these particulars C.O.G.E.N.T. recommends this provision whereby our water supplies restored or replaced supplies meet the objectives as defined by Act 13. (660a)

Response: Sections 78.51(d)(1) and 78a.51(d)(1) state the operators' obligations with regard to the reliability, cost, maintenance, and control of the restored or replaced water supply. The Department does assign specific staff to a water supply investigation based upon assigned territories and the nature of the request. Department staff will investigate the water supply and relay their findings to the water supply user/owner and provide all relevant materials to them. Those personnel are responsible for ensuring that the laws and regulations of the Department under their jurisdiction are applied and enforced. They will also answer any questions fielded to them that are relevant to the investigation.

However, it is not the role of Department field staff to act in the capacity of ombudsman or a liaison between all parties. The Department always advises affected parties to hire an

environmental consultant and/or lawyer whose expertise is in environmental law to represent them on their behalf if they do not understand the circumstances involving their case and the potential consequences.

510. Comment: The DEP should require drilling company operators to restore contaminated drinking water to a quality that meets Safe Drinking Water Act standards, no matter what the quality of the water prior to drilling. (37, 51, 70, 99, 102, 148, 193, 199, 200-385, 405, 406, 488, 494, 560, 595, 596, 909, 916, 956, 1033, 1047, 1058, 1083, 1088, 1102, 7521 – 8362)

Response: See response to comment 500.

511. Comment: Drillers must mitigate any wells contaminated within a reasonable distance of any drilling operation. Drillers should be responsible for land and stream cleanup caused by any of their water transporting needs. (40)

Response: The Department acknowledges the comment. The presumption of liability in section 3218(c) of the 2012 Oil and Gas Act does hold the operator responsible for pollution or diminution of a water supply under specifically defined criteria, including within a reasonable distance, unless the operator rebuts it in accordance to the defenses provided to the operator in section 3218(d) of the 2012 Oil and Gas Act. All parties, including oil and gas operators, are responsible for remediating any pollution to the environment as a result of their activities.

512. Comment: Drilling operators must be required to restore the water they use to condition it was in before they used it. (41, 46)

Response: See response to comment 500.

513. Comment: 78.51(d)(2) – The quality of the restored or replaced water supply will be deemed adequate if it meets the standards established under Pennsylvania Safe Drinking Water Act or is comparable to the quality of the water supply before it was affected by the operator if the water supply exceeded (did not meet these) standards. My comment is related to pollutants that are determined to be a nuisance and are detected above background concentrations and for which there are no drinking water standards. If a pollutant does not have a standard to be exceeded but is detected in the water supply above background and it is considered a nuisance then the background concentration of this pollutant should be the level to which it is restored to. This commentator recommends this section read “The quality of restored or replaced water supply will be deemed adequate if it meets the standards established under the Pennsylvania Safe Drinking Water Act or is comparable to the quality of water supply before it was affected by the operator if the water supply exceeded these standards or exceeded the background concentration and is determined to be a nuisance under the Clean Streams Law.” It could further be edited to include “and/or affects the aesthetic quality of the water supply.” (74)

Response: The rulemaking requires that at a minimum Pennsylvania Safe Drinking Water Act standards have to be met. Most nuisance contaminants are considered secondary contaminants which do have maximum contaminant levels established under the Pennsylvania Safe Drinking Water Act. The Department does reserve the right to use other recognized drinking water standards that may not be listed in the Pennsylvania Safe Drinking Water Act, including but not limited to the Pennsylvania Statewide health standards found in 25 Pa. Code Chapter 250 and also the United States Environmental Protection Agency’s Health Advisories for drinking water. In these circumstances the Department needs to prove that these contaminants are a result of oil and gas operations to require operators to restore

said contaminants to the chosen standard. Therefore, the Department does recommend that homeowners take their own predrill water samples and have them analyzed by a Pennsylvania-accredited independent laboratory if they wish to bolster a claim that their water has been impacted by oil and gas operations.

514. Comment: § 78.15(d)(2) – We agree with TAB’s interpretation that “exceeded”, as the term is used in Section 3218(a) of Act 13 and used by the DEP in its proposed Section 78.51(d)(2), refers to an operator’s requirement to restore an affected water supply to its pre-drilling conditions, when that water supply did not meet Safe Drinking Water Act standards (SDWA) prior to drilling. The DEP’s proposed contrary interpretation that operators would be required to improve each and every water supply to a minimum of SDWA standards is unreasonable since it is well documented that many private water supplies do not meet SDWA standards for water quality parameters for reasons unrelated to oil and gas industry operations. It is also impractical to require operators to restore an affected water supply to pre-drilling conditions for individual parameters that were better than SDWA standards. In some cases the private water well will have had no pre-drilling samples taken or in other cases the pre-drilling sample may not be sufficient to reflect natural variability in water quality. The cost to implement treatment technologies to achieve such uncertain pre-drilling conditions for individual parameters, even if possible, may be prohibitively expensive. Such a requirement has not been imposed upon any other industry and it would be unfair to impose it solely upon the oil and gas industry. We accept the responsibility to address impacts to water supplies that may have been caused, but it is unreasonable for the DEP to require that the oil and gas industry address contamination in water supplies unrelated to oil and gas industry operations, as no other industry in Pennsylvania has been held to such a standard.

We suggest the following amendatory language:

“(2) Quality. The quality of a restored or replaced water supply will be deemed adequate if it meets the standards established under the Pennsylvania Safe Drinking Water Act (35 P. S. §§ 721.1—721.17), or is comparable to the quality of the water supply before it was affected by the operator if that water supply did not meet those standards.” (1103, 1137, 1147, 1174)

Response: See response to comment 483.

515. Comment: § 78.51(d)(2) should be clarified to read that replacement for water supplies shall meet the greater of the two applicable standards. (997a)

Response: See response to comment 500.

516. Comment: My biggest concern is how do we know that § 78.51 - Protection of water supplies will be enforced? What we’ve seen so far is that it hasn’t in part because of the influence of the gas companies themselves. (98)

Response: All legitimate requests for a water supply investigation are acted upon by the Department and based upon the investigation’s determination; all applicable laws are enforced by the Department.

517. Comment: Tainted water wells are restored to meet the Safe Drinking Water Act standards. (104)

Response: See response to comment 500.

518. Comment: Damaged water supplies must be restored to minimum safe drinking water standards.

(Section 78.51) This has not always been done in upstate Pennsylvania and many residents have moved away from towns with severely polluted water. Many others have lost their health permanently, unable to leave their houses. People cannot live without reliable water. Not only do they need this for drinking and cooking but also for bathing and laundry. The regulation for restoring and replacing safe drinking water supplies is Act 13 (the new Oil and Gas Act). This regulation provides that the replaced water should be at or above the standard of the previous water supply and not be watered down by changes. (111)

Response: See response to comment 500.

519. Comment: Well water in the area of drilling should be tested before industry drilling. Any water source which is altered should be restored to the highest drinking standard. All data should be easily available publicly in one place and all data must be standardized. I know what I think “freshwater” is, but you must define it. (114)

Response: Section 3218(c) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(c)) establishes the presumption of liability for water pollution onto an operator. The presumption encompasses situations in which the water supply is within 1,000 feet of a conventional well or 2,500 feet of the unconventional well bore, and the pollution takes place within six months for a conventional well or twelve months for an unconventional well for certain well development activities. While the Department does not mandate a predrill survey of water supplies, presumption incentivizes an operator to conduct predrill water supply surveys, so they may have a defense to rebut presumed responsibility. If an operator chooses not to take a predrill water supply sample, they will not have a defense against presumption or, if presumption does not apply, they will not be able to refute the Department’s sample results that show contaminants at levels higher than the maximum contaminant limits allowed by the Pennsylvania Safe Drinking Water Act standards. The Department only provides redacted private water supply data to protect the privacy and rights of the property owners. The Department defines the terms fresh groundwater, well development impoundments and water sources for water that is not characterized as wastewater being utilized by the industry for well development.

520. Comment: Since I rely on well water, Section 78.51 is of great concern to me. A family whose water supply has been affected by drilling should receive water they can safely drink. Providing safe drinking water is the minimum that regulation should provide and should not be watered down by changes. Getting drilling companies to take responsibility for this has been a challenge. I know people who are on their third year without drinkable water, and the companies have been absolved of responsibility by DEP. (129)

Response: See response to comment 500.

521. Comment: The main concern is the DEP proposing the industry “replace” a water supply to Safe Drinking Water Act (SDWA) Standards, or better, even when the results of Pre-Drill testing of the water supply show the water did not meet these standards in the first place. There are many challenges in the Commonwealth in regards to private water wells - especially the lack of construction standards. Our experience with pre-drill testing and several studies independent of natural gas development demonstrate that a large number of private water wells are poorly constructed, many contain iron, manganese, coliform and methane, and many do not meet the criteria of the Safe Drinking Water Act. Until such time as the Pennsylvania legislature passes legislation to require property owners to properly construct private water wells, and ensure they meet the Safe Drinking Water Act, it is unreasonable for the DEP to require the industry to restore a

private water supply to better standards than originally existed. We are requesting that if the operator impacts a water supply, the DEP requires replacing the water supply to the pre-drill test results. (123, 123a, 123b, 638, 638a, 798, 883, 940)

Response: See response to comment 483.

522. Comment: I've been very disappointed to learn about situations like Dimock where DEP and federal regulators have done such a poor job of protecting our citizens from the devastating effects of poorly controlled resource extraction. As such I strongly feel that DEP should require industry to restore contaminated drinking water to federal clean water standards and bypass the obvious delaying/obfuscating tactics by industry when they argue for previously degraded standards. Also, when a local drinking water supply is compromised, the industry responsible SHOULD be required to pay for trucking in safe water, as had originally been approved for places such as Dimock. (135)

Response: See response to comment 500.

523. Comment: Please keep PA's waterways safe for wildlife and people. Mandate the restoration of water to PA drinking water standards. (149)

Response: See response to comment 500.

524. Comment: Our water should meet Safe Drinking Water standards--period. Exempting drilling companies makes no sense. Neither does injecting known poisons into the ground! (185)

Response: See response to comment 500.

525. Comment: DEP must stipulate that water supplies be restored to PA Safe Drinking Water standards or higher if the water quality was higher prior to drilling - as established in ACT 13. In the interim, residents whose water supplies have been affected by drilling must receive water they can drink and use for household tasks, safely. (399, 470)

Response: See response to comment 500.

526. Comment: Companies must be required to restore water to drinking water standards, if their operations contaminate water supplies. Fines must be increased and imposed more readily. (400, 401)

Response: See response to comment 500. The Department's enforcement policy can be found on the Department's website in the document titled "Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations" (Document number 820-4000-001) (Revised January 17, 2015).

527. Comment: Our Organization has always made great strides to preserve and protect surrounding water supplies and over the past 39 years have had minimal issues. The proposed rule would actually require producers to do the impossible and restore any affected water supplies to better quality (meeting or exceeding standards established under Pennsylvania's Safe Drinking Water Act) than the areas water courses are capable of providing. Most rural residents in South Western PA obtain their water from wells which straight out of the ground and before treatment do not meet the minimum standards. 78.51 will prove to be an unbearable burden on both conventional and unconventional producers by requiring them to implement and forever bear the cost of water treatment systems for affected water purveyors.

This rule will also place producers on the defensive; it could serve as incentive for fraudulent water claims on behalf of purveyors who are discontented with the quality of their existing water supply. The net effect of the way this rule is currently written will be unnecessary and unethical exposure of the producer to bogus claims. It makes it possible for a producer to be held liable for simply developing in an area where the water table does not meet the minimum of the PA safe Drinking Water Act. Previous regulation required a producer to restore water in like quantity and like quality which has served Pennsylvania's residents flawlessly throughout the years. How can the Department expect a producer to restore a water source in any given area better than existed prior to site development? In many Pennsylvania water wells iron is a very prevalent mineral which is not the result of Oil and Gas drilling but the Coal industry. (416, 418)

Response: See response to comment 483.

528. Comment: The proposed amendments clarify that the presumption of liability established in 58 Pa.C.S. § 3218(c) (relating to protection of water supplies) does not apply to pollution resulting from well site construction activities.

Act 13 established a new provision that specifies a restored or replaced water supplies must meet the standards in the Pennsylvania Safe Drinking Water Act (35 P. S. §§ 721.1-721.17) or be comparable to the quality of the water supply before it was affected if that water was of a higher quality than those standards. This section is proposed to be amended to reflect this statutory language.

It is appreciated that PA DEP has clarified that well site development was added to the language under presumption of liability. The District would also like to encourage PA DEP to establish standard pre-drill water testing parameters and reporting to landowners. (566)

Response: The Department acknowledges the comment. Section 3218(c) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(c)) establishes the presumption of liability. The Department does not have regulatory authority to expand the scope of the statutory presumption to include well site construction. The Department does have the authority to require an operator to replace or restore a water supply impacted by well site construction or other oil and gas operations under The Clean Streams Law (35 P.S. §§641.1-691.1001), The Hazardous Sites Cleanup Act 108 (35 P.S. §6020.101) and The Land Recycling and Environmental Remediation Standards Act 2 (35 P.S. §6026.101 et seq.) which is reflected in the rulemaking in § 78.51(c) with the following language, "If the Department finds that pollution or diminution was caused by oil and gas operations... the Department will issue orders to the well operator necessary to assure compliance with this section." The Department has a fact sheet of recommended parameters for pre-drill water samples and can be found on it's website in the document titled, "PA-DEP Recommended Basic Oil and Gas Pre-Drill Parameters" (Document number 8000-FS-DEP4300 Revised 4/2014). The Department outlines its sample reporting to landowners in the document titled "Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations" (Document number 820-4000-001 Revised January 17, 2015).

529. Comment: The requirement to replace water to a condition better than it was prior to drilling is punitive, unfair and open to miss-use. This is an example where overregulation can hurt our ability to compete with other regions of the country. (606, 606a)

Response: See response to comment 483.

530. Comment: The waters sources surrounding my hunting camp in Howe Township, Forest County were polluted with benzene as a result of fracking an O&G well 990 feet away. No letters were sent to property owners by the driller prior to drilling. Despite the “presumption”, DEP was ineffectual in getting replacement water. When asked about suing the driller, the response was “we don’t have the budget.” A replacement water well was drilled for six camps. After a few months, the driller cut off the power supply. DEP should require drillers to post a bond, assuring a permanent supply of water that meets Safe Drinking Water Standards. (631)

Response: Section 3218(a) of the 2012 Oil and Gas Act establishes a well operator who affects a public or private water supply by pollution or diminution shall restore or replace the affected supply. Section 3218(c) of the 2012 Oil and Gas Act establishes the conditions for presumption. Sections 78.51(d) and 78a.51(d) establish the responsibilities of an operator who impacts a water supply: to provide restored or replaced water that is reliable; at no additional cost; that can be easily maintained and with as much control and accessibility as exercised over the previous water supply. Section 3225 of the 2012 Oil and Gas Act conditions the bonds of oil and gas operators upon “faithful performance of all drilling, water supply replacement, restoration, and plugging requirements of this chapter.”

531. Comment: Section 78.51(2) Quality - the quality of a restored or replaced water supply will be deemed adequate if it meets the standards established under the Pennsylvania Safe Drinking Water Act (35 P.S. Sections 721.1-721.17) or is comparable to the quality of the water supply before it was affected by the operator if that water supply exceeded those standards.

We agree that if an operator impacts water quality, the operator is responsible for restoring or replacing the water supply. However, the operator should only be responsible for restoring or replacing an impacted water supply to the quality of the water supply before it was affected by the operator. (639)

Response: See response to comment 483.

532. Comment: Section 78.51(2) should be changed to say: “The quality of a restored or replaced water supply will be deemed adequate if it meets the standards established under the Pennsylvania Safe Drinking Water Act and is comparable to the quality of the water supply before it was affected by the operator if that water supply exceeded those standards.” (846, 1109)

Response: See response to comment 483.

533. Comment: Section 78.51 - DEP has confirmed that drilling has caused at least 160 cases of water contamination. Yet a lack of testing and data allow operators to maintain that pollution does not exist, or that they did not cause it. Homeowners are often left not only to bear the burden of proof, but also to fend for themselves in securing safe drinking water. Pollution or degradation caused by well site construction should not be given an exception from the presumption of liability; soil erosion, sedimentation, and chemical and fuel leaks can all degrade water quality. (853)

Response: See response to comment 480

534. Comment: I understand this section to mean if my private water supply was a superior supply to the safe drinking water standards predrill then it needs to be returned to that superior level, not just safe. By means of example, if my pre-drill chloride level is at 100 mg/l, and safe drinking water standard level of chloride is 250 mg/l, and my post drilling water supply chloride levels rise to 600 mg/l, I expect that this section will require the industry to return my water supply back to a chloride level of

100 mg/l, not 250 mg/l. If something happens to the quality of my water as a result of drilling, it is only fair and just that the quality of my water be put back to the same high quality that existed before drilling. If the industry or environmental groups feel this language is ambiguous as written, then the DEP needs to make it clearer in its language perhaps by listing examples as given above. (870)

Response: See response to comment 500.

535. Comment: Protection of water supplies - As a professional geologist, I have conducted hundreds of investigations relating to the development and use of residential, industrial and community water supplies within the Commonwealth of Pennsylvania. This state is one of the few in the United States that has no drilling and construction standards for new and existing residential water supplies. Past proposed legislation in Pennsylvania has not been successful in affording the residents of the Commonwealth assurance that proper practices and guidelines are followed to minimize the risk of drinking water contaminants. Without this legislation in place, it is unreasonable for the Department to expect industry to be obligated to restore water supplies back to applicable safe drinking water standards if the supply did not previously meet these standards or possibly an improved water quality. The proposed restoration standards should be made to meet “pre-drilling” or “baseline” water quality. (880)

Response: See response to comment 483.

536. Comment: Private water supplies in Wyoming County, as well as, the Northern Tier Region have experienced gas migration issues. We support the interpretation as based on Act 13, guaranteeing those with private water supplies, whom had pre - drill tests which were superior to the Safe Drinking Water Act Standards [SDWS] that in the event they are subject to a replaced or restored water supply that the water supply must be comparable to the quality of that superior pre-drill water supply. We support water supplies, as guaranteed by Act 13, which failed to meet SDWS that those water supplies are to be replaced or restored to SDWS. The inconvenience, worry and additional stress placed on a family necessitates that they be justly compensated with the same superior water quality their pre-drill test reveals or when deficient to the SDWS accordingly. The operator is addressing the water supply; therefore, it is the responsible action to do so entirely. (660a)

Response: The Department acknowledges the comment.

537. Comment: Another glaring deficiency in the proposed regulation relates to the Department’s duty to investigate water pollution. The proposed chapter 78 regulations require the Department to investigate a claim and determine whether the pollution or a diminution of a water supply was “caused by well site construction, drilling, alteration, or operation activities.” This is particularly alarming because this set of activities is much more limited than the activities included in the definition of oil and gas operations in the proposed regulations. The Department wants to define Oil and Gas operations to include: well location assessment, seismic, operations, construction, drilling, hydraulic fracturing, completion, production, operation, alteration, plugging, site restoration, water withdrawals, residual waste processing, water and other fluid management and storage used exclusively for the development of oil and gas wells; construction, installation, use, maintenance and repair of oil and gas pipelines, natural gas compressor stations, and natural gas processing plants or facilities performing equivalent functions; construction, installation, use, maintenance and repair of all equipment directly associated with activities; and finally earth disturbance associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities.

Despite the fact that all of the activities included in the definition of Oil and Gas may be relevant to the Department’s investigation or have the potential to cause or contribute to the pollution of a

water supply, the Department wants to limit its investigation to only 4 of those activities. This proposed revision is fundamentally flawed and must be revised to include all of the activities included in the definition of Oil and Gas Operations. (887)

Response: The Department has revised §§ 78.51(b) and 78a.51(b) to include all oil and gas operations as activities which may compel the Department to investigate impacts from said activities under this Chapter. The Department also has the authority to conduct investigations for pollution for any oil and gas activity under the Air Pollution Control Act (35 P.S. §§ 4001 et seq.), The Clean Streams Law (35 P.S. §§ 691.1 et seq.), The Hazardous Sites Cleanup Act (35 P.S. § 6020.101 et seq.), the Solid Waste Management Act (35 P. S. §§ 6018.101 et seq.) and The Land Recycling and Environmental Remediation Standards Act 2 (35 P.S. § 6026.101 et seq.). The Department believes that the final rulemaking addresses the commenters concerns.

538. Comment: Require the toxic waste water be restored by the driller to Safe Drinking Water Act standards. DO NOT leave the water testing time and place in the hands of the drillers. (865)

Response: Wastewater treatment standards are determined by the disposal facilities' permit and the rules and regulations of the Department governing the activity.

539. Comment: Section 78.51(2) Quality - the quality of a restored or replaced water supply will be deemed adequate if it meets the standards established under the Pennsylvania Safe Drinking Water Act (35 P.S. Sections 721.1-721.17) or is comparable to the quality of the water supply before it was affected by the operator if that water supply exceeded those standards. We agree that if an operator impacts water quality, the operator is responsible for restoring or replacing the water supply. However, the operator should only be responsible for restoring or replacing an impacted water supply to the quality of the water supply before it was affected by the operator. (908)

Response: See response to comment 483.

540. Comment: 78.51 The proposed amendments state, “That the presumption of liability established in 58 Pa.C.S. § 3218(c) (relating to protection of water supplies) does not apply to pollution resulting from well site construction activities.” Presumption should apply to site construction activities. Over 161 letters of determination have been sent out by the DEP indicating that water sources were contaminated by fracking. In just 2 years, from 2008 to 2010, the DEP recorded 241 violations of environmental regulations at well sites within 2 miles of day care centers and 40 violations within 2 miles of schools. “States are playing roulette with public health”. According to Nadia Steinzor of Earthworks Fererar et al. of the University Of Pittsburgh School Of Public Health noted that, “Fracking doesn’t only impact health when mistakes are made, it also impacts health when everything goes right. The results are alarming. Community members reported 59 health impacts and 13 stressors from the Marcellus Shale development. They complained of rashes and sores, headaches, and changes in vision, diarrhea, and nausea, shortness of breath, and loss of sleep.” And yet, instead of proposing meaningful regulation that would provide some small measure of increased protection for human health, we see minor changes in detail that will be of little real benefit to the public. (912)

Response: See response to comment 470.

541. Comment: 78.51 Subsection (c) should not limit the presumption of liability in Section 3218 of Act 13.

Subsection (c) of the regulation states that “The presumption established by 58 Pa.C.S. § 3218(c) is

not applicable to pollution resulting from well site construction.” We urge the Department to eliminate this narrow interpretation of a provision intended to favor protection of public resources.

The Department’s interpretation is not consistent with the statutory language in subsection (c), which does not expressly exclude activities related to well site construction. The presumption of liability in subsection (c) holds the well operator liable for pollution of private water supplies based on two and only two events: that the pollution occurred a set distance from an oil or gas well, and within a specified period of time from well drilling or alteration operations. The statutory provision does not also contain a requirement that the presumption only applies to a limited set of well-related activities.

We recognize that Section 3218 as a whole contains some ambiguities. Subsection (a), for example, states the “general rule” that a well operator shall be liable for restoration or replacement of a water supply that has been “affected” by pollution or diminution. This provision does not contain any limits on what well-related activities for which the operator may be held liable. Presumably, a well operator or his contractors may engage in a wide range of well-related activities that could result in pollution and, thereby, would cause the operator to incur liability under subsection (a). In comparison, subsection (b), relating to the Department’s obligation to investigate, makes reference to pollution resulting from “drilling, alteration or operation” of a well. While the language obligating the Department to investigate appears narrower than the language imposing liability on the operator, that same section goes on to provide two independent bases for Department to issue a corrective order: that the pollution was caused by drilling, alteration or operation of a well, *or* that the presumption under subsection (d) applies. Considering that the general rule on liability is more expansive than the events that necessarily trigger a Department investigation, it is reasonable for the Department to conclude that the presumption was not intended to be limited only to drilling, alteration or operation of a well, particularly when the plain language of subsection (d) does not so limit the presumption of liability.

As a matter of public policy, the Department should seek to interpret the provision broadly and not narrowly. The Department must recognize that individual property owners will always be at a disadvantage in these circumstances. They will rarely have the money to compete with the resources wielded by multi-national oil and gas companies. The General Assembly recognized that by enacting a provision intended to protect the public, and not the industry engaged in mineral development. As an agency obligated to protect the environment and public health and safety, the Department should strive to give effect to that protection and not narrow it by imposing through regulation a limit on the protection afforded drinking water supplies.

We urge the Department to take the side of groundwater and the public by deleting its proposed language narrowly interpreting the presumption of liability in Section 3218 of Act 13. (852a)

Response: See response to comment 470 regarding expansion of the presumptive liability conditions. See response to comment 480 regarding the provisions addressing water supply replacements.

542. Comment: To take a company at their insistence of operating “in good faith” and “being a good neighbor” is not enforceable by either the Department or the water consumer, and the track record of every single operator’s actions in Pennsylvania shows these statements are distractions and have no factual basis. I again use the example of WPX’s contamination in Donegal Twp. For over a year the company has taken no steps to find a permanent solution for the well water they contaminated and has in public meetings obfuscated the truth by saying there has never been a case of water contamination because of fracking, an irrelevant statement in this case. I regularly see similar

examples of unethical behavior. I will highlight the operator Chevron in Redstone, Springhill and Dunbar townships in Fayette County. Additionally, in my attendance of meetings I REGULARLY listen to gas drilling companies use false information as points of pressure. For example, at a meeting in Delmont Twp., Westmoreland County, a Huntley and Huntley landsman told a room of prospective lessors that if they did not sign a lease to fill out Huntley and Huntley's units they would take the gas anyway. The Commonwealth does not have forced pooling in the Marcellus formation, making this point not only misleading and coercive but also downright intimidation. These are just a few examples of the behavior exhibited by companies profiting from this extraction. Clearly, public health is not a priority. (919, 943)

Response: The Department acknowledges the comment.

543. Comment: Water quality is closely tied to property value and a homeowner with better than average water should have a right to maintain that quality of the property. Also, water quality standards are always being revised; a property with better quality water will more likely meet the new standards. This advantage should not be lost through the fault of the oil or gas facility operator. (938, 938a)

Response: See response to comment 500.

544. Comment: Please continue to protect our drinking water use, be diligent to the effects of natural gas drilling. If fracking is determined to be a safe energy solution, gas company operators should be required to restore any contaminated drinking water supply to safe standards. (1013)

Response: The Department acknowledges the comment.

545. Comment: Where municipal water is available, this must be provided and paid for by the operator if there is issue of water contamination. (1030, 1030a)

Response: See response to comment 506.

546. Comment: Act 13 guarantees us that our water supplies in the event of an impact are permanently replaced at either the superior pre-drill water quality we had, or in case of a supply not meeting SDWAS that the supply is restored to SDWAS. (1035, 1037, 1048)

Response: See response to comment 500.

547. Comment: § 78.51. Protection of Water Supplies: Act 13 specifies a restored or replaced water supplies must meet the standards in the PA Safe Drinking Water Act (35 P.S. §§ 721.1- 721.17) or be comparable to the quality of the water supply before it was affected if that water was of a higher quality than those standards.

The proposed regulations indicate that remediated or replaced water supplies must meet all mandates of PA Safe Drinking Water Act. However, if a public water supply routinely provided drinking water which exceeded MCL's values prior to any drilling or landscape altering practices, these enhanced drinking water conditions must be fully maintained at the same level of measurement with all costs incurred by the operators that altered the existing quality of drinking water. In addition, water quality parameters for which no MCL's exist but which are documented by the water purveyor before drilling activities must also be maintained with all costs incurred by the operators that altered the existing quality of drinking water. Leaving this door open to discussion by operators will lead to a debate regarding treatment level requirements and unanticipated associated costs. Clearly the burden-of-proof and costs should be placed on the operator to achieve pre-existing conditions with no additional cost incurred by the supplier and

users of the public water supply Failure to achieve pre-drilling drinking water conditions may represent an increased public health risk for residents and special populations within the community. (1063)

Response: See response to comment 500.

- 548.** Comment: The Proposed Regulations should establish stronger protections of water supplies: § 78.51 of the Proposed Regulations address protection for water supplies. § 78.51(d)(2) provides that “the quality of a restored or replaced water supply will be deemed adequate if it meets Pennsylvania Safe Drinking Water [standards]... or is comparable to the quality of the water supply before it was affected by the operator if that water supply [did not initially meet the Pennsylvania Safe Drinking Water standards].” Dozens of commentators have offered the view that well operators should be required to restore *all* contaminated water supplies to Pennsylvania Safe Drinking Water Act standards. For example, on January 9, 2014, Carol J. Ward of Ardmore, PA submitted comments in support of this view, and described the devastating effects brought about by industry-related water contamination. Furthermore, the Duke University Nicholas School of the Environment has published a series of peer-reviewed studies which suggest that the problem of water contamination caused by hydraulic fracturing operations in northeastern Pennsylvania is far more commonplace and widespread than had been known previously. I support Ms. Ward’s comments, as well as the many other comments that were consistent with her comments in this regard. Previously contaminated water supplies, are legacy costs of the industrial exploitation that the ERA was adopted to address. Seeking the assistance of industrial actors such as drilling operators to manage them is a reasonable exercise of the DEP’s authority. (1070)

Response: See response to comment 500.

- 549.** Comment: Operators should restore or replace water supplies they affect; however. We believe the oil and gas industry should not be tasked with addressing water well contamination unrelated to oil and gas activities. It appears that the proposed language in 78.51(d)(2) deviates from the existing Chapter 78 language and the Department’s long-standing position that an operator has to restore affected water supplies to meet the Pennsylvania Safe Drinking Water Act (“PSDWA”) standards or to a quality that is comparable to the quality of the water supply before it was affected by the operator, if that water supply did not meet those standards (*See* 25 Pa. Code 78.51(d)(2)). Many Pennsylvania water supplies do not currently and have not historically met the PSDWA standards (Pennsylvania does not provide private water well drinking standards).

We agree with TAB’s interpretation of the word “exceeded” in Act 13, § 3218(a). This interpretation is that “exceeded” refers to an operator’s requirement to restore an affected water supply to its pre-drilling conditions when that water supply did not previously meet PSDWA standards prior to drilling. Further, § 3218(a) of Act 13 requires the Department to assure any restored or replaced water supply meets PSDWA standards or is “comparable to the quality of the water supply before it was affected by the operator if the water supply exceeded those standards.” (58 P.S. § 3218) The word “comparable,” meaning capable of or suitable for comparison, assures operators and landowners have the flexibility to derive at an approximate equivalent for the affected water supply when that supply did not meet PSDWA standards prior to drilling. The use of this term infers sufficient flexibility is required of the supporting regulation. To help achieve this flexibility and align with Act 13, we proposes the Board rewrite the provision to state: “The quality of a restored or replaced water supply will be deemed adequate if it meets the standards established under the Pennsylvania Safe Drinking Water Act (35 P. S. §§ 721.1-721.17), or is comparable to the quality of the water supply before it was affected by the operator.” (1085)

Response: See response to comment 483.

550. Comment: Under 78.51 Protection of Water Supplies, a “restored or replaced” water supply should meet PA Safe Drinking Water Act standards, despite industry lobbying for otherwise. And it should certainly match the quality of water prior if it exceeded those standards (78.51(2)). (1089, 1229)

Response: The Department acknowledges the comment.

551. Comment: Given the significant threat and consequences of water contamination, investigate incidents as soon as possible within the 10-day period following a request. Applicability should include well site construction given the consistently documented problems related to improper casing and regulatory needs delineated by STRONGER. [78.51 (c)] (855, 1098)

Response: The Department has developed a policy that does narrow the time frames staff should act upon once receiving notification for a water supply investigation request. The policy language can be found in the document titled “Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations” (Document number 820-4000-001 Revised January 17, 2015).

552. Comment: 78.51(d)(2) implements a new provision provided in Act 13 that specifies that a restored or replaced water supply must meet the standard in the Pennsylvania Safe Drinking Water Act (35P.S. §§ 721.1-721.17) or be comparable to the quality of the water supply before it was affected if that water exceeded than those standards. We raise concerns regarding the reasonableness and cost of such requirements, and question whether the proposed regulation goes beyond what was envisioned by the General Assembly. We ask EQB to explain how it will enforce this requirement to conform to the intent of the General Assembly and Act 13. (1099)

Response: The Department has revised the §§ 78.51(d)(2) and 78a.51(d)(2) for added clarity and to improve consistency with the 2012 Oil and Gas Act. If a water supply’s quality was better than Pennsylvania Safe Drinking Water Act standards prior to oil and gas operations, then it needs to be returned to its previous state, i.e., its state prior to being impacted by oil and gas operations. Otherwise, the Department would be allowing operators to degrade a natural resource relied upon as a water supply resource. In regards to water supplies that did not meet Pennsylvania Safe Drinking Water Act standards prior to being impacted by oil and gas operations, the Department would be derelict in its duties if it allowed operators to provide replacement drinking water that by its own standards is not fit to drink simply because the pre-existing water supply was poor. Given the need to provide replacement water based on the positive impact determination, the additional cost borne by operators is limited to the incremental cost of providing Pennsylvania Safe Drinking Water Act standards water as compared to the previous poor quality, not the difference between providing no water at all and meeting the previous poor quality.

553. Comment: I’m very concerned about water as well as the air. Because we all live downstream, and there is no way that this cannot impact all of us in such an inherently negative way. We can see what’s happening in some other countries where clean water has to be purchased and it is considered a commodity that is restricted as opposed to something that belongs to everybody. It’s a very disturbing future for the state of PA unless something is really happened. It is not possible to reclaim the contaminated water. It can be stored. It can be done in a closed-loop system, but it cannot be restored to clean water. The truth is we don’t have a lot of water. We don’t have enough water to do that for any length of time.

So we people have to use common sense. One of the principles that are very important is the precautionary principle. That means the person who says that there is no problem with this should prove that there is no problem. (1127)

Response: The Department acknowledges the comment.

554. Comment: The language should be revised to require a water supply affected by an operator to be restored or replaced to meet the quality and quantity of water that existed prior to well development activities. (1113, 1118, 1120, 1115a, 1176-1188)

Response: The Department disagrees but has revised the §§ 78.51(d)(2) and 78a.51(d)(2) for added clarity and to improve consistency with the 2012 Oil and Gas Act. If a water supply's quality was better than Pennsylvania Safe Drinking Water Act standards prior to oil and gas operations, then it needs to be returned to its previous state, i.e., its state prior to being impacted by oil and gas operations. Otherwise, the Department would be allowing operators to degrade a natural resource relied upon as a water supply resource. In regards to water supplies that did not meet Pennsylvania Safe Drinking Water Act standards prior to being impacted by oil and gas operations, the Department would be derelict in its duties if it allowed operators to provide replacement drinking water that by its own standards is not fit to drink simply because the pre-existing water supply was poor. Given the need to provide replacement water based on the positive impact determination, the additional cost borne by operators is limited to the incremental cost of providing Pennsylvania Safe Drinking Water Act standards water as compared to the previous poor quality, not the difference between providing no water at all and meeting the previous poor quality.

555. Comment: In the past DEP's Technical Advisory Board correctly stated it is "unreasonable to require the oil and gas industry to upgrade private water supplies, at industry expense, beyond that which existed pre-drilling." Yet this is precisely what has been proposed by the DEP in these Chapter 78 amendments. This double standard only applies to the oil and gas industry and would prove costly and be a detriment to the industry. If the DEP were to collectively analyze pre-drill water results it would be aware that in a large number of instances water has historically contained increased levels of metals, methane and other constituents. This has nothing to do with the oil and gas industry; however, it would be obligated to correct the problem. (1145)

Response: See response to comment 483.

556. Comment: We support the water supply restoration standard in subsection 78.51(d)(2).

We support the Department's revision to § 78.51(d)(2), which requires that water supplies be restored either to Pennsylvania Safe Drinking Water Act standards, or if applicable, to a higher quality if such higher quality existed prior to oil and gas operations. If oil and gas operations cause deterioration of an individual's water quality, the responsible companies that profit from extraction of the resource that led to the pollution are properly responsible for ensuring that all residents who were harmed by the diminished water quality have water that meets government safety standards. Consequently, we support the Department's application of Safe Drinking Water Act standards to water supplies adversely affected by oil and gas operations. We also support, as a matter of policy and fundamental fairness, the Department's position that persons who had water quality that exceeded drinking water standards have a right to expect that water quality will be maintained and not adversely affected by oil and gas operations. Among other things, such a policy recognizes the economic value of a clean, drinkable water supply to persons who are fortunate enough to have

such a water supply on their property.

We do suggest one small change in the wording of § 78.51(d)(2) to eliminate ambiguity. We suggest revising this section to read,

“The quality of a restored or replaced water supply will be deemed adequate if it meets the standards established under the Pennsylvania Safe Drinking Water Act (35 P. S. §§ 721.1—721.17), or is comparable to the quality of the water supply before it was affected by the operator if the quality of that water supply exceeded Pennsylvania Safe Drinking Water Act standards.” (852a)

Response: The Department has revised the §§ 78.51(d)(2) and 78a.51(d)(2) for added clarity and to improve consistency with the 2012 Oil and Gas Act.

557. Comment: The Proposed Rulemaking would revise Section 78.51(d) to provide that a restored or replaced water supply that “exceeded” Pennsylvania Safe Drinking Water Act standards even before the supply was impacted by gas drilling would be adequate if it is “comparable” in quality to the pre-drilling water supply. In this context, the term “exceeded” is unclear: it could mean either that the water was better in quality (presumably, meaning that it contained fewer mineral salts and/or other contaminants) than water meeting the minimums established by the Safe Drinking Water Act, or it could mean that the levels of contaminants in that water are greater than those specified by that Act. An earlier proposal to revise Section 78.51(d), which used the term “did not meet” in place of “exceeded,” was significantly less ambiguous. (1159)

Response: See response to comment 556.

558. Comment: 78.51(d)(2) - The proposed change in § 78.51(d)(2) sets a standard that is impossible to achieve in many cases. Act 13 provides at Section 3218(a) that: “The department shall ensure that the quality of a restored or replaced water supply meets the standards established under the act of May 1, 1984 (P.L.206, No.43), known as the Pennsylvania Safe Drinking Water Act, or is comparable to the quality of the water supply before it was affected by the operator if that water supply exceeded those standards.” It is unclear how the term “exceeded” is to be applied in this context. The long-standing policy of the Department has been to require that a replacement water supply meet only those PSDWA quality standards that the water supply met prior to being impacted. This policy is only logical, as in many areas of the Commonwealth; naturally occurring groundwater simply does not meet all secondary MCLs. An alternate interpretation of the term “exceeded” might require a replacement water supply to meet criteria that were better than (i.e., a lower concentration) PSDWA criteria, if that condition existed prior to the water supply being impacted. As an illustration of the problem with this alternate interpretation, consider a situation where an oil and gas operator impacts the water quantity from a water supply spring because of ground disturbance related to site construction. A groundwater well that is drilled to replace the spring supply meets all PSDWA primary and secondary standards but a number of dissolved constituents (calcium, magnesium, alkalinity, sulfate and potassium) have higher levels than the spring water previously utilized. It is very unlikely that water produced from a water supply well will ever have the low levels of many dissolved constituents that are found in spring water. Groundwater from deeper rocks generally contains higher levels of minerals than water found at shallower depths. In many cases, even replacing a spring water supply with public water would not meet the proposed standard under this alternate interpretation, as many public water supplies have higher levels of certain dissolved minerals than many spring water sources. Using this alternate interpretation of the term “exceeded” cases would create situations where replacement of an unreliable and unhealthy spring water source with a more reliable and safer groundwater or public water source would not be permitted. We believe it is essential that the Department clarify through regulation that it intends to interpret the

statutory language in a manner consistent with its past practice. Suggested language: The problem discussed above can be solved by simply eliminating the proposed change to Subsection 78.51(d)(2) and using the current regulatory language. (1174)

Response: See response to comment 483.

559. Comment: Do the current changes mean that the water quality prior to drilling exceeded the standards of the PA Safe Drinking Water Act that the supply would have to be restored or replaced to the standards that exceeded the Act? If that is the case, I am in agreement, but if it means that the industry can come in and replace or restore my water to something less than what I had before, I am not in agreement. (1228)

Response: See response to comment 500.

560. Comment: Presumption of Liability - Presumption should apply to not only site construction but all oil and gas activities. (609)

Response: See response to comment 470.

561. Comment: The use of “lab error”, “naturally occurring”, “migration from preexisting salt or coal mines or vertical wells” by the DEP in their findings must be followed up by no less than three hydrogeologic tests that are tier 3. (806)

Response: The Department acknowledges the comment.

562. Comment: Water supply restoration standards - Section 78.51(d)(2). Section 3218 of Act 13 requires an operator to restore an affected water supply to Pennsylvania Safe Drinking Water Act standards or “comparable to the quality of the water supply before it was affected by the operator if the water supply exceeded those standards” (emphasis added). Section 78.51(d)(2) adopts the statutory word “exceeded.” The Department has suggested that it is interpreting Act 13 and this regulatory section to require an operator to restore a water supply to a minimum of SDWA standards.

The Department’s position is a dramatic departure from current law, which simply requires operators to restore affected water supplies to their pre-drilling condition. Many water supplies do not meet SDWA standards in areas not served by public water utilities because there is no legal requirement for a Pennsylvania homeowner to treat his or her private water supply to SDWA standards. We believe it is unreasonable to require the oil and gas industry to upgrade private water supplies, at industry expense, beyond that which existed pre-drilling. No other industry is required to do this. (1172)

Response: See response to comment 483.

563. Comment: Under Section 78.51, I would suggest that Tier 3 quality water be required for water replacement. On that same subject, it is well known that there is widespread damage caused by the gas industry to water supplies in Pennsylvania. At least 161 such incidents have already been identified. The reason there isn’t more information about this problem is because of the industry’s common practice of forcing residents to sign non-disclosure agreements before reparations are made. It is also known that industry and the DEP have taken away water replacements without the consent of affected residents. These practices must stop. The new regulations must require industry to replace water supplies in perpetuity or end replacement only with the consent of the affected residents. (823)

Response: See response to comment 500.

564. Comment: Notification must be given to all drinking water supply owners between 30 days and 60 days before the date a well is spudded, so that they can conduct their own pre-drilling certified water testing. (1064, 1101)

Response: The Department acknowledges the comment.

§ 78.52 Predrilling or prealteration survey

565. Comment: The DEP should establish standards to protect people in drilling areas with mandatory Pre-drilling and After Drilling regulations throughout the state of PA. (13, 976, 976a)

Response: Section 3218(c) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(c)) establishes the presumption of liability for water pollution onto an operator. The presumption encompasses situations in which the water supply is within 1,000 feet of a conventional well or 2,500 feet of the unconventional well bore, and the pollution takes place within six months for a conventional well or twelve months for an unconventional well for certain well development activities. While the Department does not mandate a predrill survey of water supplies, the presumption incentivizes an operator to conduct predrill water supply surveys so they may have a defense to rebut presumed responsibility. If an operator chooses not to take a predrill water supply sample, they will not have a defense against presumption or, if presumption does not apply, they will not be able to refute the Department's sample results that show contaminates at levels higher than the maximum contaminate limits allowed by the Pennsylvania Safe Drinking Water Act standards.

566. Comment: 78.52 – We support regulatory improvements for water supply protection, sampling, and notification. However, we are concerned that while the proposed regulation at § 78.52 requires a predrilling or prealteration survey (water sampling) and testing by an independent Pennsylvania-accredited laboratory, it does not specify what tests must be run by the lab. The regulation also does not specify a minimum radius of investigation for the survey work.

We recommend that the proposed regulation be revised to include a comprehensive, specific list of tests to be performed in order to collect the data needed to verify if contamination from Oil and Gas Operations occurred. The regulation should also make it clear that the PADEP will follow the same recommendations issued to operators when it conducts testing in response to homeowner complaints and subsequent investigations. We recommend that the lab test for specific common oil and gas operational chemicals and pollutants, for the additives planned for use in hydraulic fracturing fluids, toxic volatiles (benzene, toluene, xylenes), the components of natural gas (e.g., methane, ethane) and toxic volatiles from the formation water (benzene, toluene, xylenes), salts and relevant inorganic contaminants. (If the EQB rejects this recommendation, we ask that the EQB respond to the request set forth in Appendix A with respect to Abandoned and Orphaned Well Identification.)

Table 1 below compares the list of contaminants potentially linked to hydraulic fracturing found in groundwater near Pavillion Wyoming, (D.C. DiGiulio, et al., USEPA, Office of Research and Development, *DRAFT: Investigation of Ground Water Contamination near Pavillion, Wyoming., Ada, OK* (2011)) with test parameters recommended by the Colorado Oil and Gas Association (COGA) (Colorado Oil and Gas Association (COGA), *Voluntary Baseline Groundwater Quality Sampling Program, Example Sampling and Analysis Plan* (2011) (developed in cooperation with

the Colorado Oil and Gas Conservation Commission)), and test parameters recommended by the New York State Department of Environmental Conservation (NYSDEC) in their proposed regulations at 6 NYCRR § 560.5(d)(1). Each of the parameters listed on the following page should be mandatory minimum testing requirements.

Table 1: The three columns indicate whether the constituent was either elevated or detected at Pavillion WY (DiGuilio et al 2011), recommended for sampling by COGA (2011), or recommended by NYSDEC in proposed 6 NYCRR § 560.5(d)(1).			
Constituent	Elevated concentration or detectable at Pavillion	COGA Listed	NYSDEC
pH	X	X	X
Specific conductance	X	X	X
Total Dissolved Solids		X	X
Alkalinity	X	X	
Bromide		X	
Barium			X (2)
Chloride		X	X
Sulfate		X	
Nitrate and nitrite (N)		X	
Phosphorus		X	
Arsenic	(1)		(2)
Boron		X	
Calcium		X	
Iron		X	X
Magnesium		X	
Manganese		X	X
Potassium	X	X	
Selenium		X	
Sodium		X	X
Strontium		X	
Gross alpha/beta			X
Methane	X	X	X
Ethane	X	X	X
Propane	X	X	
Benzene	X	X	X
Toluene	X	X	X
Ethylbenzene	X	X	X
Xylene	X	X	X
Trimethylbenzenes	X		
Isopropanol	X		
Diethylene glycol	X		
Triethylene glycol	X		
Tert-butyl alcohol	X		
Gasoline range organics	X		
Diesel range organics	X		
Naphthalene	X		
(1) Arsenic was noted in drilling fluids at Pavillion and was detected but not an exceedance in groundwater.			
(2) Arsenic and barium were found in wells at Dimock, PA ²⁴			

Sampling measured exclusively from the vertical portion of the well does not account for the potential for contamination from the horizontal wellbore. For example, significantly higher methane concentrations have been found in water wells within a kilometer (0.62 miles) from Marcellus wells. (S.G. Osborn, et al., *Methane Contamination of Drinking Water Accompanying Gas-Well Drilling and Hydraulic Fracturing*, Proc. of the Nat'l Academy of Sciences pnas:1100682108 (2011)). Additionally, vertical movement of fluids is possible from the area of the shale that receives a hydraulic fracturing treatment, and eventually, all wells that lie above developed gas plays may have a potential for contamination.

Therefore, we recommend that the operator sample all wells and springs within at least one mile from the edge of the well pad or a minimum of 1,000' from any point along the horizontal wellbore, whichever is greater. The analysis must account for the movement of gas as well as fluids. Although these distances exceed the 2,500' distance for purposes of applying the statutory presumption, the additional sampling is essential to building scientific understanding of affected resources in oil and gas development areas and to inform future statutory changes to pre-drilling requirements, particularly as emerging research indicates that contaminants move greater distances than previously assumed.

We recommend the following proposed revision to § 78.52(c).

§ 78.52. Predrilling or prealteration survey.

* * * * *

(c) The survey shall be conducted by an independent [certified] Pennsylvania-accredited laboratory. A person independent of the well owner or well operator, other than an employee of the accredited laboratory, may collect the sample and document the condition of the water supply, if the accredited laboratory affirms that the sampling and documentation is performed in accordance with the laboratory's approved sample collection, preservation and handling procedure and chain of custody.

(1) The following list of sample data must be collected and laboratory test parameters must be evaluated by a Pennsylvania-accredited laboratory: static water level (when possible) pH, specific conductance, total dissolved solids (TDS), alkalinity, bromide, barium, chloride, sulfate, nitrate and nitrite (N), phosphorus, arsenic, boron, calcium, iron, magnesium, manganese, potassium, selenium, sodium, strontium, gross alpha/beta, methane, ethane, propane, benzene, toluene, ethylbenzene, xylene, trimethylbenzenes, Isopropanol, diethylene glycol, triethylene glycol, tert-butyl alcohol, gasoline range organics, diesel range organics, naphthalene and other polycyclic aromatic hydrocarbons (PAHs), and all other chemicals planned to be used in hydraulic fracturing operations or drilling. The Department may require additional sample data to be collected and additional lab tests to be run. The Department shall follow these survey requirements when conducting follow up testing in response to complaints of diminution of water quality or quantity and in its subsequent investigations.

(2) Prior to site disturbance for a new well or new spud for an existing Oil and Gas Operation, the owner or operator must make all reasonable attempts, with the landowner's permission, to sample and test, at the owner's or operator's expense, all water wells, domestic supply springs, and water wells and springs that are used as water supply for livestock or crops, that are within one mile from the edge of the well pad or a minimum of 1,000' from any point along the horizontal wellbore, whichever is greater. (1143)

Response: Section 3218 of the 2012 Oil and Gas Act establishes the requirements for pre-drill water supply surveys. Subsection (c) establishes a presumption of liability for an operator who impacts a water supply located within a certain distance from the wellbore and within a certain timeframe. Subsection (d) allows an operator to rebut the presumption by proving that “the pollution existed prior to the drilling, stimulation or alteration activity as determined by a predrilling or prealteration survey...”

The Department believes that the General Assembly chose to place the risk of not conducting a predrill survey on operators, who might not be able to rebut a presumption of liability if a water supply is not sampled prior to drilling or a particular substance is not tested for in the samples the operator takes. By failing to establish predrill water quality, the operator opens itself up to liability for any failure to meet drinking water standards in any water supply located within the presumption’s radius for any substance found in the water supply.

567. Comment: The response times for DEP to investigate claims of pollution are too long. DEP should conduct investigations within 15 days. Affected persons should be provided with mechanisms for submitting their own evidence. (153)

Response: The Department has developed a policy that narrows the time frames staff should act upon once receiving notification for a water supply investigation request. The policy language can be found in the document titled “Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations” (Document number 820-4000-001 Revised January 17, 2015).

568. Comment: The Department should still accept hard copies or electronic means for the sample results submittal to accommodate small, conventional operators. In addition, the language still needs to be clear that results are not due into Department until the operator has received every laboratory analysis completed as part of the site survey.

Suggested amendatory language:

(d) An operator electing to preserve its defenses under sections 3218(d)(1)(i) and 3218(d)(2)(i) of the act shall provide a copy of all the sample results taken as part of the complete well site survey to the Department by electronic means or other approved format determined by the Department within 10 business days of receipt of all sample results taken as part of the all samples taken as part of the survey for that well site. The operator shall provide a copy of any sample results to the landowner or water purveyor within 10 business days of receipt of the sample results. Survey results not received by the Department within 10 business days, including those submitted as described above with regard to batch submissions, may not be used to preserve the operator’s defenses under sections 3218(d)(1)(i) and 3218(d)(2)(i) of the act. (1153)

Response: The Department believes that requiring electronic submission of the survey results is the only way to efficiently store and manage large volumes of water sample data it receives on a daily basis. The Department did change the rulemaking language to say survey results.

Changes to the statutory language are outside the scope of this rulemaking.

569. Comment: The proposed regulation does not specify the parameters for the pre drill testing of a resident’s water quality. All drillers should have to use a consistent list of parameters for pre-drill water testing, which the DEP must establish before the proposed regulatory changes are adopted.

Accredited laboratories should have clear guidelines regarding the parameters of testing in order to avoid different results. Standards of testing should be clearly articulated. The present wording could lead drillers to conduct testing without including all the contaminants for which a resident should be concerned. The parameters should be as comprehensive as possible, but at a minimum, match what the DEP uses when it conducts full contamination investigations and to ensure that complete baseline data is available. (1161, 1168)

Response: The Department believes that the General Assembly chose to place the risk of not conducting a predrill survey on operators, who might not be able to rebut a presumption of liability if a water supply is not sampled prior to drilling or a particular substance is not tested for in the samples the operator takes. By failing to establish predrill water quality, the operator opens itself up to liability for any failure to meet drinking water standards in any water supply located within the presumption's radius for any substance found in the water supply.

570. Comment: Comprehensive predrilling testing of nearby water supplies should be required by the drillers and made public. (10, 99, 102, 104, 470, 494, 560, 461, 949, 1030, 1030a, 1047, 1148, 1161, 7521 – 8362)

Response: See response to comment 566.

571. Comment: It is important that the provisions in 78.52 dealing with pre-drill water testing ensure that affected homeowners are treated fairly and that they and DEP have enough information to determine whether operators are responsible for any changes in water quality. A lack of data on contaminants like methane, ethane and benzene means that responsibility for contamination can be avoided and left unaddressed, as evidenced by the resolution to some of the 161 water contamination cases. (886)

Response: The Department acknowledges the comment.

572. Comment: The Department should provide landowners with the option to conduct their own predrilling survey, within a reasonable timeframe and subject to the same constituent parameter and laboratory accreditation requirements applicable to well operators, for submission to the Department. Any such survey provided it meets the Department's applicable guidelines and demonstrates that that pollution did not exist prior to drilling or alteration activity, should maintain the presumption established by 58 Pa.C.S. § 3218(c) except if the presumption is rebutted pursuant to 58 Pa.C.S. § 3218(d) (1)(ii through (v) and (d)(2)(ii) through (v). (997a)

Response: Property owners are encouraged to take their own predrill surveys. The Department has a Fact Sheet titled, "PA-DEP Recommended Basic Oil and Gas Pre-Drill Parameters" (Document Number 8000-FS-DEP4300, Rev. 4/2014) for property owners. Operators have to take predrill samples if they wish to use them to rebut presumption.

573. Comment: DEP must strictly regulate and control how pre-drill data and testing is done on water supplies. All pre-drill water supply data should be available to the public through an online platform, while protecting property owner's privacy. (16, 62, 912, 1168)

Response: The Department requires a qualified third party to collect the samples and Department accredited laboratories to perform the analysis. The Department only provides redacted private water supply data to protect the privacy and rights of the property owners.

574. Comment: There should be more transparency surrounding pre-drilling water testing. The public should be able to access the pre-drill water testing data (perhaps online to protect privacy) and the DEP's parameters for testing. (24)

Response: The Department only provides redacted private water supply data to protect the privacy and rights of the property owners. The Department has a Fact Sheet titled, "PA-DEP Recommended Basic Oil and Gas Pre-Drill Parameters" (Document Number 8000-FS-DEP4300, Rev. 4/2014) for homeowners. DEP's testing parameters are available to the public.

575. Comment: I have repeatedly tried to have baseline regional ground and surface water testing done before drilling in order to establish a reference point. To date this hasn't been done and it must be done. Also, the testing of ground and surface water for purposes of restoring it to its prior condition needs to include testing for emerging contaminants which are done by the USGS. The intent is to protect PA's current and future residents. (68)

Response: Property owners are welcome to take their own predrill surveys. The Department has a Fact Sheet titled, "PA-DEP Recommended Basic Oil and Gas Pre-Drill Parameters" (Document Number 8000-FS-DEP4300, Rev. 4/2014). Emerging contaminants are not related to oil and gas well development activities.

576. Comment: Consistent, intensive pre-drill water tests should be required by all drilling companies according to requirements stringently outlined by the DEP. Pre-drill data should be made public as should the chemicals used in the gas drilling process. This would facilitate the medical community in the treatment of gas related emergency contaminations and illnesses. (104)

Response: Section 3218(c) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(c)) establishes the presumption of liability for water pollution onto an operator. The presumption encompasses situations in which the water supply is within 1,000 feet of a conventional well or 2,500 feet of the unconventional well bore, and the pollution takes place within six months for a conventional well or twelve months for an unconventional well for certain well development activities. Presumption incentivizes an operator to take predrill water samples so they may have a defense to rebut presumed responsibility. The Department does not provide predrill data to the public, unless all identifying information is redacted, in order to protect the privacy and rights of the property owners. Chemicals used to stimulate unconventional wells are available on FracFocus' website www.fracfocus.org/

577. Comment: Section 78.52, Pre-drilling water testing is another concern I have. We need consistent baseline testing with comprehensive standards established by DEP. It should not be up to the drilling company to decide. These standards should contain contaminants that often indicate that drilling is responsible for water contamination: dissolved methane, BTEX, barium, chloride, strontium, etc. This baseline testing is so critical if those of us on wells have water contamination after drilling begins. (129, 635, 930)

Response: See response to comment 565.

578. Comment: When a homeowner's water is impacted, baseline monitoring should be required. It should be done prior to drilling. It should be made available to the general public so that we can adequately have our well water tested to ensure that there is no contamination because of the fracking process. So the monitoring should be done in advance. It should be done by certified labs. It should include no trade secrets and it should include no contaminants that we've seen in other

people's drinking waters like methane, methane benzenes, a full range, which will be in our technical comments. It should identify existing and working wells in advance prior to drilling and fracking. (845)

Response: Property owners are encouraged to take their own predrill surveys. The Department has a Fact Sheet titled, "PA-DEP Recommended Basic Oil and Gas Pre-Drill Parameters" (Document Number 8000-FS-DEP4300, Rev. 4/2014).

579. Comment: All drillers to use a consistent list of parameters for pre-drill water testing, which DEP must establish before the proposed regulatory changes are adopted. The parameters should be as comprehensive as possible, but at a minimum match what DEP uses when it conducts full contamination investigations and to ensure that complete baseline data is available.

All drillers make pre-drill data available to the public, while protecting individual homeowners' privacy, through an online platform, which DEP must establish before the proposed regulatory changes are adopted. (17, 18, 19a, 72, 73, 79, 100, 102, 125, 148, 160, 161, 162, 169, 193, 199, 402, 405, 406, 471, 475, 564, 565, 626, 787, 843, 853, 865, 884, 886, 891, 922, 947, 492a, 1030, 1030a, 1039 1058, 1064, 1068, 1073-1077, 1079-1082, 1083, 1084, 1089, 1101, 1102, 1158, 4582 - 4584, 4584 – 4650, 1229)

Response: Section 3218(c) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(c)) establishes the presumption of liability for water pollution onto an operator. The presumption encompasses situations in which the water supply is within 1,000 feet of a conventional well or 2,500 feet of the unconventional well bore, and the pollution takes place within six months for a conventional well or twelve months for a unconventional well for certain well development activities. The presumption incentivizes an operator to take predrill water samples so they may have a defense to rebut presumed responsibility. The Department does not provide predrill data to the public, unless all identifying information is redacted, in order to protect the privacy and rights of the property owners.

580. Comment: All drillers should be required to use a consistent list of parameters for pre-drill water testing. The parameters should be as comprehensive as possible, but at a minimum match what DEP uses when it conducts full contamination investigations and to ensure that complete baseline data is available. All drillers must make pre-drill data available to the public, while protecting individual homeowners' privacy, through an online platform, which DEP must establish immediately. (5936-6089)

Response: See response to comment 579.

581. Comment: Subsection 78.52(c) should be revised to clarify that the laboratory does not need to conduct the survey itself, but simply analyze the samples collected. This section could be misinterpreted as stating that only laboratory employees can perform the survey.

We suggest the following amendatory language:

(c) The analyses of a pre-drill sample of the water supply shall be completed by an independent Pennsylvania accredited laboratory. A person independent of the well owner or well operator, other than an employee of the accredited laboratory, may collect the sample and document the condition of the water supply, if the accredited laboratory affirms that the sampling and documentation is performed in accordance with the laboratory's approved sample collection, preservation and handling procedure and chain of custody. (1137, 1147, 1174)

Response: The language is clear that someone independent of the operator and laboratory may collect the water samples provided they are qualified to do so.

582. Comment: Any well driller who conducts a pre-drilling drinking water supply survey to protect himself should have to include a test for methane. (1064, 1101)

Response: There are no required parameters for water sampling because a predrill sample is not required to be taken by the operator. If the operator chooses not to take predrill samples, they are severely limiting a defense against presumption.

583. Comment: I'm concerned about adequate water testing. The EPA should establish a comprehensive list of pre-drill water testing parameters that match what will be used in a contamination investigation. The data from this testing should be made available online to the public. (163)

Response: The Department cannot respond to comments directed towards the EPA.

584. Comment: DEP should proactively establish standards for pre-drill testing (185, 187, 400, 401, 595)

Response: Title 25 Chapter 78 Section 52 does establish standards for predrill testing for when an operator chooses to conduct a predrill survey as a defense against presumption.

585. Comment: DEP must stipulate that pre-drill testing be comprehensive and that the standards for pre-drill testing include dissolved methane, barium, bromide, strontium, chloride, and BTEX. Water is our most precious resource. When we contaminate it, it is lost for decades. Results must be available to the owner and public. It happens every time. When a resident is pictured and quoted in a newspaper story with a brown glass of water insisting they had not been having/using this kind of water prior to drilling, we have come to know the next line from the company, "There is no certainty that this is from drilling." (399)

Response: See response to comment 565.

586. Comment: EQB's proposals for water testing and the restoration and replacement of contaminated water supplies (Sections 78.51 and 78.52) are inadequate. Concerning water testing to determine pre-drill baseline data for water quality of private and public water sources, I call on DEP to establish a consistent and comprehensive list of parameters -- comprehensive enough to match with what DEP uses when it investigates contamination -- and to make that data available to the public through an online platform that protects individual homeowners' privacy. Since 2011, we have employed a third party to assess the water quality of Beaver Run Reservoir. That testing is useful only to the extent that the parameters tested for are comprehensive enough to establish the absence of pollutants produced in shale gas extraction activities. (402)

Response: Section 3218(c) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(c)) establishes the presumption of liability for water pollution onto an operator. The operator is presumed to be responsible for any impacts to a water supply within a prescribed distance and timeframe of drilling activities. Unless the operator can provide a defense provided under Section 3218(d) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(d)) to rebut the presumption of liability, they are responsible for the restoration or replacement of the impacted water supply. An extensive predrill water supply survey is the best defense an operator can have to rebut presumption or an investigation by the Department. Operators have the option on how much money they wish to spend conducting predrill surveys. A lack of data is not a defense for operators. The

Department does not provide predrill data to the public, unless all identifying information is redacted, in order to protect the privacy and rights of the property owners.

587. Comment: 78.52(e)(1) – This also needs to include a person representing surface landowner/water supply owner, such as a tenant or caretaker. A general question is why can't a valid water survey/sample be used/taken to preserve an operator's defense up until the point of the beginning of operations? There is no scientific basis for a time frame to be put on the validity of water sample results and should be based on when the sample was taken, not when results have been received (We are aware the 10 day standard has been set in Act 13). A suggestion would be to require the test results to be sent to the Department and landowner within 10 business days but should still be allowed to preserve an operator's defense based on sample date. (411)

Response: The Department has changed the rulemaking language to allow all sample results pertaining to the well of concern to be submitted to the Department by the operator 10 days prior to commencement of drilling of the well. The Department believes that this change allows this portion of the regulation to strike an appropriate balance between being reasonable and protective of public health and safety and the environment. The Department does not believe that it is appropriate to accept sample results as predrill samples after oil and gas activity has begun.

588. Comment: The language in b, c, d, and f seems to indicate that the survey is for a singular water supply. Although we understand that DEP intends to allow batch reporting (submission of all sampling of water supplies done per well pad at one time) it is not clear in the regulation that submitting a single survey with the complete batch of sample results preserves the presumption.

Suggested amendatory language:

(d) An operator electing to preserve its defenses under sections 3218(d)(1)(i) and 3218(d)(2)(i) of the act shall provide a copy of all the sample results taken as part of the survey to the Department, and may submit those results in one batch submission per well pad by electronic means in a commonly utilized format determined by the Department within 10 business days of receipt of all the sample results taken as part of the survey for a particular well pad. The operator shall provide a copy of any sample results to the landowner or water purveyor within 10- business days of receipt of the sample results. Surveys received by the Department within 10 business days, including surveys submitted as described above with regard to batch submissions, may be used to preserve the operator's defenses under sections [208(d)(1)] 3218(d)(1)(i) and 3218(d)(2)(i) of the act. (1135, 1137, 1174)

Response: The Department agrees. The language to the rulemaking has been amended to allow for an entire survey to be submitted at once.

589. Comment: Mandatory pre-testing of water of all springs or wells in or near drilling areas prior to drilling. Mandatory explanation of the water testing results that are given to the landowner with total explanation of said results with safe drinking water parameters fully explained to the property owner and residence on said tract of land being drilled. (492)

Response: The Department does not mandate predrill water supply sampling. The Department will explain any results of samples the Department has taken.

590. Comment: Pre-drilling testing should be conducted by non-industry associated labs and should include testing for Bromides, Toluene, Benzene, Salt Levels, and Arsenic, Methane both Biogenic and Thermogenic, Bacteria, Styrene, Strontium, Barium, Glycol, Phenol, and Cadmium. (843, 1068)

Response: The Department requires that an independent Pennsylvania-accredited laboratory be used for surveys when an operator chooses to conduct a predrill water supply survey. See response to comment 565.

591. Comment: 78.52(f)-(g) The rule should provide for a time frame for response and action by the landowner once notice has been provided, so that operators may proceed with operations knowing that access was refused.

Suggested amendatory language:

(g) Refusal shall be presumed if the operator does not receive a response within 30 business days of confirmed receipt. (1137, 1147, 1153, 1174)

Response: The Department disagrees with the proposed change to the regulatory language, as there may be a number of reasons why a property owner is unresponsive and it is not appropriate to presume in all cases that it signifies access refusal. The Department does believe it is acceptable for operators to document their efforts to secure access and make decisions on how to proceed based on the best available information, but attempting to codify this process is not consistent with the intent of this section of the regulations.

592. Comment: I highly urge the DEP to make all drillers conduct pre-drill water testing and air testing at sites and not at the cost of the property owners or those living within the area. I highly recommend this testing be completed by a neutral 3rd party that has no ties to the gas industry or even the DEP. If water should become contaminated after drilling has occurred it should be up to the driller to pay the costs to return the water quality to the highest standards available for drinking water. (848, 909)

Response: Section 3218(c) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(c)) establishes the presumption of liability for water pollution onto an operator. The presumption encompasses situations in which the water supply is within 1,000 feet of a conventional well or 2,500 feet of the unconventional well bore, and the pollution takes place within six months for a conventional well or twelve months for an unconventional well for certain well development activities. While the Department does not mandate a predrill survey of water supplies, presumption incentivizes an operator to conduct predrill water supplies surveys, so they may have a defense to rebut presumed responsibility. The Department requires that an independent Pennsylvania-accredited laboratory be used for surveys when an operator chooses to conduct a predrill water supply survey. The operator is responsible to pay all costs to replace or restore water supplies, if found to be liable under presumption or the Department determines that the operator is responsible for the impact.

593. Comment: I am here to submit comment as an investigative journalist for the nonprofit news organization Public Herald, and as the co-director of the documentary on fracking, *Triple Divide*.

My comments today will focus on section § 78.52 of the proposed rulemaking regarding pre-drill testing or pre-alteration surveys.

On February 23rd, 2012 a resident of Windham Township in Wyoming County called in a water complaint to DEP stating their drinking water had changed since drilling occurred. The call is

documented in DEP water complaint files under the number 287194. A month later, DEP responded, conducting post-drill tests of the water supply.

During the testing the resident voiced concern to DEP about drinking their water. DEP field staff stated in the complaint file, “I further explained [to the property owner] I am not making an assessment whether the water is safe to drink. I explained that sampling I will conduct is an attempt to determine if changes were the result of drilling activity.”

Post-drilling test results by DEP found elevated levels of iron, Manganese, and Aluminum. Arsenic tested at 0.463mg/L per liter, 46 times above the safe level for human consumption.

The investigation notes stated that pre-drill test results found no detectable levels of methane in the drinking water. Whereas, post-drill tests found methane above DEP’s alert levels and in some cases at 14,000ug/L per liter, approaching explosive levels for a home.

These tests all proved the drinking water supply had changed from pre-drilling conditions. However, DEP concluded that natural gas drilling did not impact this drinking water supply.

This story is not uncommon. So far, there have been over 60 fracking complaints in Wyoming County submitted to DEP. Here’s what happened in a few of them: Complaint number 282615 found explosive levels of methane at 30.6 mg/L; Complaint number 297422 saw contamination after fracking; Complaint number 282558 found methane at 25.8mg/L after fracking. Yet these complaints with legitimate pre-drill data were poorly investigated by DEP in Wyoming County and received non-impact determination letters.

In *Triple Divide* we spend nearly 15 minutes to show how DEP mishandled pre-drill testing.

In April 2011, Chesapeake energy experienced a blowout at the Atgas 2h well in Leroy Township, Bradford County. Chesapeake hired SAIC who studied 7 residential water wells near the blowout, which included pre-drill water tests for each well.

In October 2011, SAIC sent DEP their conclusions which showed water well named RW04, 1,200 feet directly downhill from the blowout, had a tenfold increase in methane, and other contaminants; and ethane and arsenic that were not found in the pre-drill tests showed up in post-drill tests.

Regarding this well’s significant change in water quality after the blowout, Chesapeake concluded that their own pre-drill water test did not reveal the well’s true water quality and that the water quality was always this way, before the drilling.

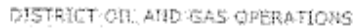
In the final consent order, DEP neglected to address the failed pre-drill test scenario and allowed Chesapeake Energy to go unquestioned.

A decision like this not only changes the water quality history of the state, but it establishes pre-existing conditions that can be used by industry in other cases.

For multiple predrill tests to go through a DEP certified lab, and later be discarded by the industry draws into question the validity baseline data as a whole.

Scott Perry has been aware of these cases long before these hearings were scheduled, he’s aware of the pre-drill scandal, yet has done nothing in these updates to correct it at DEP.

In conclusion, based on science available to DEP and to the EQB board, section § 78.52 on pre-drill testing is a failure to both the resources of Pennsylvania, and to the Americans who have protected these resources for decades prior to fracking. If you do not change this section by including specific testing parameters, and exactly how many pre-drill tests represent a drinking water supply, more Pennsylvania residents will go unprotected not by the result of failed science, but by a criminal negligence on your part to establish comprehensive laws based on available data. In essence, your lack of action is forcing more residents to drink contaminated water by no fault of their own. Use the science, study the data, and change this section to protect Pennsylvania drinking water resources for generations to come.



Complaint Information

EP DOGO NCDO Dstr Off

Complint Id:	287194	Related Complint Id:	None
Municipality:	Windham Township	County:	Wyoming
Entered By:	RUTH E PRIESTER	Confidential(Y/N):	Y
Source:	Phone Call	ER Related (Y/N):	N
Date Received:	02/23/2012	After Hours Ind (Y/N):	N
Date Acknowledged:	--		
Abbrev. Description:	water has changed since drilling occurred		
Long Description:	Water has changed since drilling occurred. Complainant's independent test results are different than the pre-drill test results that were conducted on 12/20/2011. Methane is elevated to 1.41 mg/L when it was previously not detected. Chesapeake sent along information that well needs to be vented because of detected level. Water supply cannot be sampled until April when they return from South Carolina.		
Site Location:	--		

Responsible Party Information

Name:	ERIC HASKINS		
Home Phone:	--	Work Phone:	570-888-6564
Company Name:	CHESAPEAKE APPALACHIA		
Address:	101 NORTH MAIN STREET		
	TOWANDA, PA 18848		
	Mobile Phone:	--	
	Permit#:	--	
Municipality:	County:	Bradford	

Response Information

Priority:	2		
Program:	Oil & Gas		
Complaint Type:	Water Supply		
Date Resp Assigned:	02/23/2012		
Date Response Due:	03/08/2012		
Date First Response:	02/23/2012		
Date Resolved:	07/27/2012		
Date Referred:	--		
Referred To:	--		
Comments:	--		
Inspector:	MATTHEW P SHOPE	Supervisor:	MICHAEL T O'DONNELL

Investigation Information

Date Investn Assigned:	02/23/2012	Date Investigated:	02/23/2012	Type:	Phone Call
Inspector:	MATTHEW P SHOPE	Violation(Y/N):	No		
eFACTS Inspection Id:		Investigation Id:	287133		
Investigation Description:	The complainant called the District Office and I returned the call. The complainant is concerned with their pre-drill test results. They had an independant consultant advise them to immediately contact the Department because the Methane Level had increased to 1.41 mg/L from non-detect. I requested the pre-drill results to review from Chesapeake Appalachia.				

(849)

Response: See response to comment 566.

594. Comment: We would like all current and future water quality tests to be done by an independent lab to include the required certification as well. We do not think it is appropriate to have the lab of

choice be selected by the operator; therefore we'd like to see the DEP put a halt to this policy. (862)

Response: The Department requires that an independent Pennsylvania-accredited laboratory be used for surveys when an operator chooses to conduct a predrill water supply survey.

595. Comment: A pre-drilling test is necessary to determine that water quality has not been affected by drilling. (886, 891, 4744 – 5668)

Response: See response to comment 565.

596. Comment: The DEP must be required to proactively establish standards for pre-drill testing of the water in impacted areas using impact fees with cost burdens to be the responsibility of the drilling company. A fund needs to be established to handle future problems that may be generated by the driller. (916)

Response: See response to comment 565. Also, operators are required to bond their operations to ensure, among other things, water supply replacement.

597. Comment: A more complete suite of parameters must be established for baseline testing in order to protect the health of Pennsylvania residents; this suite should be the standard used by all drilling companies across the Commonwealth. A pre-drill test for e-coli and coliform will give the water user important data, but is not testing for parameters that would indicate contamination from industrial activity. Instead, testing for radioactivity, barium, strontium, and commonly used chemicals in the drilling, hydraulic fracturing and completion processes of a well is critical for accountability and for the protection of public health. In a November 2013 meeting with Department of Environmental Protection's (DEP) Oil and Gas staff in Harrisburg, DEP acknowledged water contamination cases are the most serious issue the Department faces. It is also a massive public health risk and as such, DEP should require operators to obtain ample baseline data in order to protect water supplies and public health. (919, 943)

Response: See response to comment 565.

598. Comment: Pre-drill Water Testing --All pre-drill water quality testing should be conducted by a certified third-party professional operator, and made available to the landowner.

Testing should be conducted a minimum of 3 times for of water quantity and quality during low, high and average hydrological conditions.

A consistent list of parameters including at least the following measures: Analyte (Inorganic)
Analyte (Trace Metal) Analyte (Organic)
Alkalinity,
Barium
Chloride Calcium
Conductivity Iron
Hardness Magnesium Analyte
Hydrocarbons (benzene, ethane, methane)
Microbiology (Total Coliform/E.coli)
Oil and Grease Manganese,
pH

Potassium
Radionucleotides (alpha and beta)
Residue - Filterable and Non Filterable
Sulfate Sodium
Strontium
Total Dissolved Solids
Total Suspended Solids

The above list of items for the test is from the document, “PA-DEP Recommended Basic Oil & Gas Pre-Drill Parameters” (<http://elibrary.dep.state.pa.us/dsweb/Get/Document-91717/8000-FS-DEP4300.pdf>).

Note that DEP water resource specialists such as Swistock and advisors from Local County and the USDA consistently recommend 3 water tests to represent high, low and average conditions because in PA, the water table and chemistry can change greatly. Also, 3 water tests are needed to stand up in court. The short time of presumed liability makes it easy for a company to avoid responsibility for damage to a water supply because forces that impact water take time to emerge. In such cases, a court case is likely to require at least 3 sample times to prove good water quality existed prior to operations. Families have lost cases in court because they did not have 3 tests; the drilling company paid for only one test. The necessary battery of tests is too expensive for the average homeowner, but 3 water tests per home is a small cost for a multimillion dollar well operation. (938, 938a)

Response: See response to comment 565.

- 599.** Comment: In the section on pre-drilling or pre-alteration survey, it should indicate that testing and analysis should be done for the full array of drilling chemicals, heavy metals and other substances from below the surface, both for the predrilling water tests and for subsequent water tests. The full and complete results of these predrilling and subsequent tests should become public knowledge in general, and shall certainly be provided to the residents living on the properties under consideration within 30 days. (945)

Response: See response to comment 565.

- 600.** Comment: § 78.52 (c): It is our opinion that clarification is needed regarding the role of the certified laboratory. “Report” and “survey” should be stricken from any reference to the lab so that it can’t be misconstrued that the laboratory is required to prepare the summary report, which in our case is prepared by a consultant. We also take issue with the caveat that a third-party consultant (“person independent of the well owner or well operator”) must be vetted by an accredited laboratory to collect water samples. It is the laboratories primary function to analyze the samples, not to collect the samples, and especially not to conduct a site investigation and document environmental conditions. Those functions are a necessary part of the “survey” and are best left to professional environmental consultants. Sub-section 78.52(c) should be revised to clarify that the laboratory does not need to conduct the survey itself, but simply analyze the samples collected. This section could be misinterpreted as stating that only laboratory employees can perform the surveys.

Our suggested amendatory language:

The analysis of pre-drill samples shall be completed by an independent accredited laboratory. The sample may be collected by either a technician employed by the accredited laboratory or an independent third-party consultant/contractor. Sample collection, preservation, and documentation must be performed in accordance with approved and recognized protocol

developed with the cooperation and approval of the accredited laboratory. (952)

Response: The rulemaking language states that a person independent from the well operator and not employed by the laboratory may collect the samples and do a site assessment of the water supply. It also states the third party person collecting the sample must comply with the laboratory's approved sample collection, preservation, and handling procedure and chain of custody, which is mandated by the Pennsylvania Safe Drinking Water Act requirements. There is no requirement for the third party person to be vetted by the laboratory. If the third party person collecting and submitting the samples to the accredited laboratory fails to follow the laboratory's approved sampling and documentation protocol, the laboratory must reject the samples. The Department does the analysis of the survey results as part of their investigation whenever the operator provides water supply samples as a defense.

601. Comment: § 78.52 (d): We support the open and transparent exchange of drinking water quality information among the property owners and the Department. With that being said, we suggest that the 10-day report requirement for pre-drill analytical data should be reconsidered since this timeframe could potentially impair the quality and completeness of the submitted data. We also take issue with the cross-reference of "sample results" and "survey results"....these are two distinct products. Providing sample (analytical) results to the Department within the 10-day timeframe is possible but will not provide the Department with a full set of data relative to site conditions. Providing a full survey report, inclusive of the laboratory sample results and the consultants observations and conclusions, within the 10-day timeframe is much more difficult to achieve given the amount of work and the degree of detail that goes into preparing a summary / survey report. It would be better to either restrict the 10-day reporting requirement specifically to laboratory analytical reports / results or to propose language wherein the operators are required to provide full summary reports to the property owner within 10-days of receiving them from the consultant (or lab, if so capable) and to the Department upon request after receiving a complaint. (952)

Response: The Department has changed the rulemaking language to specify that all the samples results must be submitted within the required 10 business day time frame.

602. Comment: § 78.52 (e): Relative to the above comments, there is an abrupt change in language whereas "sample results," "survey results," and "report" are used interchangeably. This creates uncertainty in what exactly is to be provided to the Department and to the property owner in the prescribed time frame. (952)

Response: See response to comment 601.

603. Comment: All drillers make predrill available data to the public along with the placement of well pads, compressor stations and where the pipelines are going to be placed. (988)

Response: The Department does not provide predrill data to the public, unless all identifying information is redacted, in order to protect the privacy and rights of the property owners.

604. Comment: Before drillers begin drilling, they should be required to do baseline testing (with results released to the DEP and to the public) of the surrounding water supplies, so that they cannot later wrongly claim that water contamination was probably there before they drilled. (1033)

Response: See response to comment number 565.

605. Comment: This regulation needs to be clearer about what "a predrilling or pre-alteration survey" is.

For example, is it one test? Two or maybe four tests conducted during different seasons, given that seasonal high groundwater tables fluctuate? I spent two years interviewing Pennsylvanian's whose water has been contaminated since nearby oil and gas drilling. I did so professionally. As a journalist, for an investigation that led to the documentary Triple Divide. Evidence from our findings, also in the film, deal with all of the key provisions of this proposed regulation. Here's what we found regarding predrill testing and surface water protection:

Predrill tests conducted on private water supplies by operators before drilling and tracking have been allowed to be dismissed during water contamination investigations by the state. The documentary Triple Divide covers two such cases, but in our investigations we found others. In one case, a predrill test was dismissed because it was a "one-time" test rather than a series of tests. Another predrill test failed to protect a water supply owner because her complaint came six months after the new well was drilled.

The industry has been allowed to provide an alternate source of water for some impacted homeowners 'off the books.' DEP makes the determination that the company "is not responsible" for the polluted water supply and the case is not counted as part of the total number of water contamination cases in the state - even though they have a predrill test that shows their water was clean before drilling.

Predrill testing is all the documentation there is to protect Pennsylvania water supplies, and the proposed regulations under section 78.52 need to be made more specific and robust.

As your summary for these regulations aptly points out, "Pennsylvania has more water resources than any other state except Alaska." That's right! We do! I mean, we don't learn that in school and I can't remember where I first heard that - but Pennsylvania has more freshwater resources than another other state...except Alaska. America is rapidly losing its fresh water sources as demonstrated by California Gov. Jerry Brown's drought emergency declaration just days ago, and the chemical spill in Charleston, West Virginia that's contaminating its way to the Gulf of Mexico. We live in a time when water has become the reason for wars across the world. And here, in Pennsylvania, pristine, fresh water bubbles out of the ground all over this state, so much that we take it for granted.

The summary regulation stats: "One focus of this regulation is to protect the vast water resources throughout Pennsylvania." But in my opinion, this regulation no more protects the vast water resources throughout our Commonwealth than a "heavy-duty" cardboard box will protect donuts from a black bear.

And I can't leave without failing to mention that right now, DEP and the administration of this state are fighting to prevent citizens from deciding where oil and gas drilling and fracking happen in their own communities. The state is literally trying to usurp our right to regulate development where we live. This is the worst abomination of all - a totalitarian attempt to limit the freedom, democracy and independence that was fought for and drafted into the United States Constitution right here in Pennsylvania. And to that, all I can say is, "Citizens, it's time to rewrite the Constitution of this Commonwealth to include the inalienable rights of all communities to govern themselves and to establish the rights of Nature herself, without whom we would not exist." (977a)

Response: See response to comment 566.

- 606.** Comment: 78.52(d) – "...shall provide a copy of the results...within 10-business days of receipt of the results". -- It is suggested that the language be revised to allow for the submittal of the results

within 30-days after the spud date of the first well on the pad to allow for all the pre-drill samples to be as a single package.

(g) – “The operator of an unconventional well must provide written notice to the landowner or water purveyor indicating that the presumption established under section 3218(c) of the act (58 Pa.C.S. § 3218(c) -- The proposed language is taken verbatim from Act 13. Either referencing the appropriate sections or deleting it would make it simpler and easier to read. (1057)

Response: In regards to § 78.52(d), the Department disagrees and has changed the rulemaking language to require all sample results to be submitted within 10 business days prior to commencement of drilling of the well. In regards to § 78.52(g), the Department believes that the new requirement for unconventional operators to provide written notice to a landowner or water purveyor that their rights under presumptions may be void, if they refuse an operator’s request for a predrill survey, is important enough to include it in the new rulemaking language.

607. Comment: § 78.52 We suggest that item (f) in this section be clarified to stipulate that well owner(s) are potentially refusing access to their property by a certified lab and not a well operator as currently stated in 78.52(f). This clarification would make the section consistent with requirements set forth in 78.52(c) requiring surveys by a PA accredited lab. Operators would need a Scientific Research and Collecting Permit should testing in National Park System units be desired or required. The regulatory language should specify that federal permits would be needed if public resources need to be tested. (1062, 133)

Response: The rulemaking language is appropriate because operators decide if predrill samples are to be taken and the accredited laboratory is a representative of the operator by being contracted to perform the work on the operator’s behalf. The federal government needs to decide if federal permits are required to perform work under their jurisdiction.

608. Comment: Owners of drinking water wells should be notified no less than 30 days before well spudding and not more than 60 days before well spudding so that they have time to have their own certified water tests. (1064, 1101)

Response: The 2012 Oil and Gas Act §§ 3211(b-b.1) requires operators to notify owners of water supplies within 1,000 feet of the proposed conventional well location or within 3,000 feet from the proposed vertical well bore of an unconventional well prior to submitting a well permit application to the Department. Proof of notification must be part of the well permit application. The Department has 45 days to approve the permit.

609. Comment: The pre-drilling or pre-alteration survey (78.52) should have consistent parameters for testing, as defined by the DEP. In Bradford County, there has been variability in different operators’ pre-drill testing parameters. As a result, some landowners’ water has been impacted without satisfactory determination of liability due to lack of specific testing to establish a proper baseline. While protecting the privacy of the landowner and referring to the general locales where testing has been done, these test results should be made available to the public through a searchable online database. (1066, 1089, 1229)

Response: Section 3218(c) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(c)) establishes the presumption of liability for water pollution onto an operator. The presumption encompasses situations in which the water supply is within 1,000 feet of a conventional well or 2,500 feet of the unconventional well bore, and the pollution takes place within six months for a

conventional well or twelve months for a unconventional well for certain well development activities. While the Department does not mandate a predrill survey of water supplies, presumption incentivizes an operator to conduct predrill water supplies surveys, so they may have a defense to rebut presumed responsibility. If an operator chooses not to take a predrill water supply sample, they will not have a defense against presumption or, if presumption does not apply, they will not be able to refute the Department's sample results that show contaminants at levels higher than the maximum contaminant limits allowed by the Pennsylvania Safe Drinking Water Act standards. Lack of predrill samples is not a defense.

The Department does not provide predrill data to the public, unless all identifying information is redacted, in order to protect the privacy and rights of the property owners.

610. Comment: 78.52(d): The 10-day requirement is too short and will force additional unnecessary costs and that may actually decrease the reliability of the results. Typically these tests take two weeks for lab to run the necessary analysis, notwithstanding the time en route back and forth from the operator and then to the Department. In order for a prudent operator insure compliance with the deadline, it would be forced to have survey analyses "rushed," which typically increases the cost by a magnitude of four and tends to increase the number of lab errors and sample errors as well. Additionally, an unconventional operator would require at least one dedicated Full Time Employee (FTE) to manage this process within the required time frame, and possibly more. The language should be altered to say "10 business days upon receipt of results." In that case, additional language could be added clarifying that an operator cannot break ground until we have confirmed receipt that landowner received the results. (1071)

Response: The rulemaking language has been changed to 10 business days prior to commencement of drilling of the well that is the subject of the survey. The required 10-day prior to commencement of well drilling time frame only requires predrill samples to be taken at an earlier date and not for samples to require expedited analysis by the laboratory.

611. Comment: 78.52(d): Though the Commentator agrees with the concept of informing the Department and the applicable water users, it believes the Board should clearly state an operator has 10 business days from the receipt of the *last* sample result to mail the completed packet of sample results to applicable users. The proposed amendments to subsection (d) establish a new process for submitting predrill sample results to the Department and applicable water users. Under this proposed process, an operator electing to preserve its defenses under 58 P.S. § 3218(d)(1)(i) and (2)(i) shall submit all sample results taken as part of a survey to the Department within 10 business days of receipt of all the sample results taken as part of that survey.

An operator must send a copy of sample results to water users within 10 business days of receipt of such results. Clarifying that operators have 10 days from receipt of the last sample result will allow operators to make one submission while avoiding unnecessary confusion, opportunities for mistaken completeness, and unnecessary expense with no added environmental benefit. (1085)

Response: The Department allows for the operator to submit all sample results taken as part of the survey to the Department within 10 business days of commencement of drilling the well of concern. The Department believes it is prudent for the operator to provide a copy of any sample results to the landowner or water purveyor within 10-business days of receipt of the sample results to ensure that the landowner or water purveyor is informed as quickly as possible to the quality of their water supply as the sample results are made available.

612. Comment: 78.52.(d) Predrilling or pre-alteration survey - Due to the manner in which former farmland has been subdivided, on occasion there are landowners whose private water supplies may be located on adjacent properties. This may happen in the case of both springs and water wells. Generally, the water rights are spelled out in the corresponding deeds. There have been instances where the operator missed sampling a water supply. There have been instances where the owner of the private water supply as stipulated in the corresponding deeds were not provided with the sample results, but rather their neighbor whom owns the property where the private water supply is located was provided the results. There needs to be a mechanism that would provide the owner of the private water supply whose source is on another's property as specified in the deed for them to receive a copy of the sample results. (660a)

Response: The owner of the water supply is responsible to disseminate any information to the water supply's users.

613. Comment: 78.52(g): In order to avoid undue delays from non-responsive landowners, the rule should provide a time frame by which a landowner must respond to an operator's notification of the desire conduct water sampling. The commentator would recommend that a language be added specifying that a landowner must act within 7 days of receipt of intent by certified mail after which, refusal shall be presumed. (1071)

Response: Section 78.52(g) has been stricken because this provision in the 2102 Oil and Gas Act pertains only to unconventional well owners. Section 78a.52(g) does state that "Proof of written notice will be presumed if provided in accordance with section 3212(a) of the act." The Department will accept that the operator has made a good faith effort to provide notification to the property owner if, "Receipt of notice by the surface owner shall be presumed to have occurred 15 days from the date of the certified mailing when the well operator submits a copy of the certified mail receipt sent to the surface owner and an affidavit certifying that the address of the surface owner to which notice was sent is the same as the address listed in the assessment books in the county where the property is located."

614. Comment:

- Expand water testing parameters to petroleum distillates, heavy metals, and radioactivity.
- Designate that costs incurred by individuals to document pre-drilling water quality (as specified by an independent accredited laboratory) are to be passed on to the operator.
- Require all written correspondence related to potential contamination and testing be sent by registered mail. (855, 1098)

Response: The Department does not require predrill testing to be taken by operators. Since the Department does not regulate private water supply, owners of the private water supplies are encouraged to test their own water supply at their own expense. The operator chooses their carrier service provider when corresponding with property owners.

615. Comment: 78.52(g) incorporates Act 13 requirements that unconventional well operators provide written notice to water supply owners that the presumption established in Section 3218(c) of Act 13 may be voided if the landowner or water purveyor refuses to allow the operator access to conduct predrilling or prealteration surveys, provided that the operator submits proof of the notice to the Department. Commentators question how this subsection will be implemented. We believe the clarity of the provision would be improved if a timeframe for a response by the land owner or water purveyor to the written notice was included in the regulation. The regulation should also clarify when a landowner or water purveyor is deemed to have refused access for survey purposes. (1099)

Response: Section 78.52(g) has been stricken because this provision in the 2102 Oil and Gas Act pertains only to unconventional well owners. Section 78a.52(g) does state that “Proof of written notice will be presumed if provided in accordance with section 3212(a) of the act.” The Department will accept that the operator has made a good faith effort to provide notification to the property owner if, “Receipt of notice by the surface owner shall be presumed to have occurred 15 days from the date of the certified mailing when the well operator submits a copy of the certified mail receipt sent to the surface owner and an affidavit certifying that the address of the surface owner to which notice was sent is the same as the address listed in the assessment books in the county where the property is located.”

616. Comment: Include standards for pre-drill water quality baseline testing. (1106)

Response: See response to comment 565.

617. Comment: The Department should establish a minimum list of parameters that a well operator must test for when performing a predrilling or prealteration survey of water supplies to preserve defenses under 58 Pa.C.S. §§ 3218(d)(1)(i) and 3218(d)(2)(i).

Section 78.52 establishes conditions for an operator that conducts predrilling or prealteration surveys of drinking water supplies, including the use of state certified laboratories. The regulation does not address any minimum list of parameters for which the water samples must be analyzed. Establishing a minimum list of parameters has merit. First, and most importantly, it would assist the Department in making a causation determination by providing analysis of the same parameters that the Department uses after a complaint of pollution has been made. Second, it would provide a level of consistency across Pennsylvania, which is a principle generally supported by the industry. Third, it would allow the data to be used for other educational purposes such as compiling a picture of groundwater quality throughout Pennsylvania. Finally, it would eliminate uncertainty for drinking water supply owners. PennFuture recommends that the Department establish a minimum list of parameters that a well operator must test for when performing predrilling or prealteration surveys of water supplies similar to the parameters that the Department tests for when it investigates allegations that oil and gas operations have polluted a water supply. (852a)

Response: See response to comment 565.

618. Comment: Ground, surface, and well water in proposed drilled areas must be tested prior to drilling, using consistent, comprehensive parameters established before these regulations are adopted. The entire report of any water analysis must be available to landowners and the general public: no tested elements can be excluded from a report. Testing of the water should be continued long after the drilling process is completed. The reasoning behind this is that Pennsylvania continues to suffer from adverse water conditions due to fractured rock of the coal mining era. (1146)

Response: See response to comment 565.

619. Comment: The accredited laboratory often times does not oversee the environmental technicians collecting the samples. The commentator does not believe the accredited laboratory can truly affirm that the sampling was performed in accordance with the laboratory’s approved procedures. Cabot suggests this requirement be struck from Chapter 78. (1167)

Response: It is the obligation of those individuals taking the samples to meet the laboratory’s standards for sample collection, preservation, and chain-of custody and to prove it through documentation.

620. Comment: Tier -3 testing of water wells and streams on private property must be done before, during, and after production of a well. The testing must be done for every homeowner within no less of a one mile radius for the entire length of each and every horizontal well bore. The hydrogeological test company must be the choice of these homeowners, and the entire fee must be paid by the oil and gas company. All results must be delivered first to the homeowners without exception. (806)

Response: See response to comment 565.

621. Comment: Under § 78.52(c), EQB proposes to require predrill or prealteration surveys to be performed by independent “Pennsylvania accredited” laboratories. The existing language only requires that the laboratory be “certified.” Notably, 58 Pa.C.S. § 3218(e) states that an operator seeking to preserve its defenses under the section needs to “retain an independent certified laboratory to conduct a predrilling or prealteration survey of the water supply.” The General Assembly clearly did not seek to restrict survey work to solely Pennsylvania certified laboratories. Although the EQB does not define the term “accredited” it is presumably attempting to grant some element of control/discretion to DEP to grant official authorization or status to laboratories that perform this work. The Proposed Regulation does not describe the process for getting such an accreditation or what standards will apply. It is unclear why the EQB is attempting to impose this new standard that inappropriately creates a higher standard than that required by the statute for routine work that can be performed by numerous laboratories all across the United States. (1140)

Response: Pa. Code Title 25 Chapter 252 are the regulations for laboratory accreditation and requires that laboratories be accredited under the Chapter to generate data and perform analysis used to comply with an environmental statute listed in § 252.3, which includes the Oil and Gas Act. There are out of state laboratories accredited under Chapter 252 that may be used by an operator.

622. Comment: Existing and proposed § 78.52(d) require that predrilling or prealteration surveys be submitted to the DEP within 10 business days of receiving the results or the survey may not be used to preserve the operator’s defense that it is not responsible for the pollution. This strict bright-line rule is both arbitrary and unnecessarily punitive, especially considering that the statute does not expressly or impliedly impose such a harsh evidentiary rule. Without any rational or legal basis, DEP’s rule requires it to totally disregard valid direct evidence of pre-existing conditions on what can only be described as a “technicality.” Facts are facts and they should not be deemed inadmissible before a complaint is even submitted to the DEP. This prejudicial rule is totally inconsistent with well-established rules of evidence and should be modified.

What does the DEP do with all of these surveys? Where does DEP store them? How does DEP log them to guarantee that an administrative error on their part in receiving, documenting or storing a survey does not unjustifiably prejudice an operator who properly submitted a survey? Why should DEP manage and maintain all of this paperwork for complaints that will never be submitted?

We are not suggesting that operators should not provide a copy of survey results within a reasonable time frame to the landowner or water purveyor as that is important to maintaining good relations at the local level and to minimize complaints at the outset. Also, given the tight timeframes set forth in 58 Pa.C.S. § 3218(b) for the DEP to perform its investigation after a complaint is submitted to it by a landowner or water purveyor, Seneca would agree that operators should have a firm timeframe of 10 days after receiving notice of the complaint from DEP to send a copy of the applicable survey and other relevant evidence to the DEP. However, Commenter does not see the value in providing survey information to DEP in advance of a complaint being submitted, and commenter does not understand

the legal justification for DEP to maintain a procedural rule that requires it to reject sound, valid, relevant, and well-documented evidence simply because it did not receive a copy days, months or even years before a complaint is submitted. Seneca recommends that this rule be modified to require operators to submit surveys to DEP after receiving a demand for the same from DEP in response to a landowner or water purveyor complaint. This change would bring this regulation in line with established evidentiary practices, reduce administrative burdens on the DEP, and appropriately place the record-keeping burden for surveys on the operators, thereby avoiding the potential scenario where an operator is needlessly and unduly prejudiced as the result of an unintended administrative record-keeping error by DEP. (1140)

Response: See response to comment 587. The Department believes that the revisions address the commenters concern.

623. Comment: I'm not familiar to open frack pits. I'm not completely opposed to extracting natural Gas. Given the conditions of natural gas produce less contaminant than Oil or coal. Our need for energy and to eliminate our need for foreign energy, clean energy sources such as solar and wind must be developed and can help with our energy supply. A requirement of predrill testing and the restoration of drinking water supplies to safe and /or improve standards. This should not be a financial burden to the gas industry. (1009)

Response: The Department acknowledges the comment.

624. Comment: Any well driller who conducts a pre-drilling drinking water supply survey to protect himself should have to include a test for methane. A majority of well water contamination that results from drilling is caused by methane. (1064, 1101)

Response: The Department acknowledges the comment.

§ 78.52a Area of review

625. Comment: 78.52a(a) – The new language of this section sets forth requirements related to identification of abandoned and orphaned wells and has generated significant interest from the regulated community. Subsection (a) requires operators to identify orphaned and abandoned wells in proximity to the vertical and horizontal well bore prior to hydraulically fracturing a well. While some commentators suggest that this requirement should apply to all new wells, not just those that are hydraulically fractured, others believe that EQB lacks statutory authority under Act 13 to impose the requirements of this section on operators. We ask EQB to provide its authority for this requirement and explain how the requirement aligns with the intent of the General Assembly and Act 13. We also ask EQB to explain in the Preamble and RAF of the final-form regulation why this new section is reasonable, how it protects public health and the environment, and how the benefits outweigh any costs. (1099)

Response: The Department disagrees that it lacks statutory authority for the requirements in this section. Importantly, Chapters 78 and 78a are promulgated under the authority of both the 2012 Oil and Gas Act and the Clean Streams Law as well as several other environmental laws. Please see the response to comment 2464.

Sections 78.52a and 78.52a address potential communication between existing wells and hydraulic fracturing activities. Communication events pose a substantial threat to waters of the Commonwealth and pose a risk to public health, safety and the environment.

Under section 401 of the Clean Streams Law, it is considered unlawful for any person or municipality to put or place into any of the waters of the Commonwealth, or allow or permit to be discharged from property owned or occupied by such person or municipality into any of the waters of the Commonwealth, any substance of any kind or character resulting in pollution. Any such discharge is declared to be a nuisance. Section 402 of the Clean Streams Law authorizes the promulgation of regulations that are necessary to avoid such pollution.

Under the 2012 Oil and Gas Act, Section 3202 of Act 13 expresses the General Assembly's intent to permit development of oil and gas resources "consistent with protection of the health, safety, environment and property of Pennsylvania citizens." Under section 3217 (relating to protection of fresh groundwater and casing requirements), a well operator must control brines produced from drilling to aid in protection of fresh groundwater. This section is also concerned with preventing the migration of gas or fluids into sources of fresh groundwater. Section 3259 (relating to unlawful conduct) states that it shall be unlawful for any person to conduct an activity related to drilling for or production of oil and gas in any manner as to adversely affect public health, safety, welfare or the environment. Finally, section 3274 provides the authority for the EQB to promulgate regulations to implement this chapter.

Accordingly, both the Clean Streams Law and the 2012 Oil and Gas Act provide the Department the statutory authority for these provisions to minimize the impacts of hydraulic fracturing activities communicating with existing wells.

The final rulemaking requires operators to document due diligence either prior to drilling, stimulation, or with the permit application, dependent upon the anticipated timing of stimulation activities, and offers a procedure for doing so. Additionally, specified monitoring of the highest-risk well sites (potential conduits) will allow identification of communication incidents and greatly curtail the potential for environmental degradation. Addressing this particular issue has been supported by STRONGER, and comports with the Act, which intends that oil and gas wells be constructed in such a way to prevent gas and other fluids from entering sources of fresh groundwater.

When communication incidents are not observed immediately, the extent of the environmental impacts may be more severe. Remediation activities are costly and may require operators to finance projects over the course of several years. Depending on when the incident is noted, future wells may be drilled that are not considerate of open communication pathways - these wells may have to be abandoned prematurely or certain frac stages may have to remain unstimulated, thus reducing the economic value of the new well and the efficiency of resource recovery. The final rulemaking strikes a reasonable balance between the costs of conducting surveys and monitoring abandoned wells and the benefit associated with avoiding communication incidents.

- 626.** Comment: The abandoned and orphaned well identification requirement in this section is an unreasonable administrative and operational burden that is disproportionate to any perceived benefit. Thousands of conventional and unconventional wells have been hydraulically fractured over the years without Department-mandated abandoned well identification procedures and without significant environmental impact. Operators have conducted their own due diligence over the years to ensure precautions were taken to avoid potential well communication issues. Operating companies have relied upon both private and public databases as well as best management practices to aid in the identification and location of abandoned wells. PIOGA is not aware that an increase in horizontal drilling and associated high rate/volume stimulation has led to an increased number of cases of

communication with abandoned and orphaned wells. This rule is unnecessary, without any clear environmental benefit, and outside the scope of Act 13.

If a registered well has not been operated in a year and if the well has an inactive status, the well is considered abandoned and the operator must plug the well. Where no responsible party is identified for abandoned or orphan wells, they are plugged utilizing the surcharges from the orphan and abandoned plugging funds through the Well Plugging Program. Although the Commonwealth contracts for the plugging, Pennsylvania's oil and gas industry pays for the work through surcharges over and above the permit fees paid to the Department. Act 13 (Oil and Gas Act, Section 3271) continued the provision for surcharges. The orphan surcharge is \$200 for a gas well or \$100 for an oil well. The abandoned well surcharge is \$50.

The action of permitting, drilling and completing a new conventional or unconventional oil or gas well does not, in and of itself change the status of any orphan or abandoned wells in the vicinity. The Department lacks the statutory authority to shift its responsibility to manage orphan and abandoned to the present day industry.

Operators should have options about when to complete the outlined identification process – whether before permitting the well or before hydraulic fracturing – to allow more operational flexibility.

A landowner questionnaire will create problems. Many landowners will not answer questions or allow access to their properties, especially if they do not benefit from the prospective well. Keep in mind that large production units common in the unconventional industry are not nearly as common in conventional operations, so the obligations and cooperation from adjacent landowners will likely be problematic. In addition, there is a great deal of difference in the scale of drilling and hydraulic fracturing activities between conventional and unconventional operations regarding water usage, downhole pressures and quantities of materials used in the hydraulic fracturing process.

The use of a database that includes active, inactive, orphaned and abandoned wells will rely heavily on the accuracy of the data. If the accuracy of the data (location, well details, etc.) is questionable, then the operator is penalized by assessing inaccurate data, which could potentially significantly change drilling and completion plans for each well. The completion phases of well development should not be interrupted if abandoned and orphaned wells cannot be precisely located or if coordinates cannot be assigned to them. Lastly, to our knowledge the Department generated questionnaire forms have not been made available for review, therefore accurate and complete comments cannot be made on this section. Chapter 78.52a(b)(3) should be completely removed, or at a minimum postponed until the public has an ample opportunity to review and critique the contents of the questionnaire.

Suggested amendatory language:

§ 78.52a. Abandoned and orphaned well identification.

(a) Prior to hydraulically fracturing a conventional oil or gas well, the operator shall identify the location of inactive, orphaned or abandoned wells within 500 feet measured horizontally from the vertical well bore, whose total depth is known or reasonably expected to be less than 500 feet above the shallowest vertical depth to be stimulated as part of the hydraulic fracturing process. Prior to hydraulically fracturing an unconventional oil or gas well, the operator shall identify the location of inactive, orphaned or abandoned wells within 1,000 feet measured horizontally from the vertical well bore, whose total depth is known or reasonably expected to be less than 1,500 feet above the shallowest vertical depth to be stimulated as part of the hydraulic fracturing process. For the

purposes of this section, a gas well is a well which is producing or capable of producing marketable quantities of gas or of gas and oil with a gas-oil ratio of more than 100 MCF per bbl. of oil.

(b) Identification shall be deemed to have been satisfied by conducting the following:

- (1) A review the Department's inactive, orphaned and abandoned well database;
- (2) A review of applicable farm line maps, where accessible.

(c) Prior to hydraulically fracturing a well, the operator shall submit a plat to the Department showing the location and if possible, the GPS coordinates of wells identified pursuant to subsection (b), whose total depth is known to be less than 500 feet for a conventional well and less than 1,500 feet for an unconventional well above the shallowest vertical depth to be stimulated by hydraulic fracturing. The operator may identify on the plat those wells that are identified in the Department's database, but field verification of the identified well has not been confirmed utilizing reasonable investigatory efforts.

(1153)

Response: For an explanation of why the regulation is reasonable, please see response to comment 625.

For matters related to how the benefits of the rulemaking outweigh the costs, please see response to comment 625.

For matters related to the statutory authority of the regulation, please see response to comment 625.

Without an area of review protocol in place, it is not possible to definitively declare how many stimulations have taken place in the state without significant impact. The regulation will require observation at identified, high-risk well sites, thus putting in place some mechanism by which this statement can be considered and possibly applied with a reasonable level of certainty.

The regulation requires operators to document due diligence prior to either drilling, stimulation or with the permit application, dependent upon the anticipated timing of stimulation activities, and offers a procedure for doing so.

Communication with improperly abandoned wells during stimulation has been noted in association with both conventional and unconventional well operations. The incidents have been costly and challenging to resolve and pose risks to both the environment and the public. The threshold of applying a "statistical significance" test is not appropriate in cases where gas and other fluids escape the wellbore and pose such significant risks.

For matters related to protection of public health and the environment, please see response to comment 625.

Under the Clean Streams Law, it is considered unlawful for any person or municipality to put or place into any of the waters of the Commonwealth, or allow or permit to be discharged from property owned or occupied by such person or municipality into any of the waters of the Commonwealth, any substance of any kind or character resulting in pollution as herein defined. Any such discharge is hereby declared to be a nuisance. Oil and gas wells must be constructed, completed, and operated in a way that does not violate the Clean Streams Law.

The proposed “area of review” requirements are considerate of the differences between conventional and unconventional operations. Further modifications have been made to the final-form rulemaking accentuating the contrasts between the two sides of the industry.

The Department acknowledges the existence of uncertainty related to well location and surficial evidence of legacy well sites. The proposed landowner survey is one mechanism that may be beneficial for resolving such uncertainties, as landowners may be aware of the location of such sites on their property. Further, there is no additional expectation for operators to attempt to find and monitor sites that are not in the general vicinity of mapped locations.

The Department disagrees that the landowner survey will not yield valuable information in support of this regulation. However, the Department does acknowledge that clarification is needed and has agreed to make forms and guidance available prior to adoption of the final rule in order to address this concern. Specifically, this issue will be addressed in an area of review guidance document discussing the components of a suitable monitoring plan and the expectations for completing the landowner survey.

The Department acknowledges that clarifying language is necessary regarding acceptable vertical buffer distances between the stimulated interval and identified well sites and has modified the final-form rulemaking language to account for this concern. Out-of-zone fracture growth has been observed and there are implications for the rule that have been considered. Available studies were referenced to develop amended language.

Frac communication risks exist along the entire length of the lateral, but the precise pathway may not be recognized until after an incident. For example, some operators have chosen not to stimulate certain stages after noting communication with a nearby abandoned well. For this reason, the rule requires that well sites within a specified buffer be identified along the entire length of the lateral.

The regulation requires that “GPS” coordinates be provided for all wells identified on the plat. This does not suggest that coordinate data must be surveyed in the field for all locations. For example, only those sites requiring monitoring per the proposed requirements of Section 78.73 for which access has been granted and field identification accomplished must be surveyed in accordance with Section 3211(b) of the 2012 Oil and Gas Act. Acquisition of locational information for other well sites can be accomplished through scanning and digitizing the source map or using existing coordinate data on the source map to approximate the position of the well.

The Department acknowledges that it is important to include other well types in the area of review survey and has revised the final-form rulemaking language to include active, inactive and plugged and abandoned wells.

627. Comment: 78.52a(a). We recommend revising the area of review. Tioga County experienced a serious situation [Guindon – Butters Wells] with an abandoned well issue due to a hydraulic fracturing communication.

(Perilous Pathways: Abandoned Wells Don’t Factor into Pennsylvania’s Permitting Process: <https://stateimpact.npr.org/pennsylvania/2012/10/12/perilous-pathways-abandoned-wells-dont-factor-into-pennsylvanias-permitting-process/>)

This incident caused environmental harm and cost the operator a great deal of time and money.

After the well is spud, the operator of a gas well or horizontal oil well shall identify the location of active, orphaned or abandoned wells within 1,400 feet measured horizontally from the vertical well bore and 1,400 feet as measured at the surface, the entire length of the horizontal bore in accordance with subsection (b). The assessment needs to be entire subsurface depth of above and below the vertical and horizontal well bore in any gas bearing zone.

We realize that this area of review may indeed cover a greater depth than may be at risk by the operator in relationship to the formation in which they are working. However, there is a social responsibility of industry to help identify all wells as it was this industry in general, who created the largely estimated 300,000 orphaned and abandoned wells inventory.

The STRONGER September, 2013 Review [page 51] encouraged the Department to “consider regulations to require operators to evaluate and mitigate potential risk of hydraulic fracturing communication with active, abandoned or orphan wells and other potential conduits that penetrate target formation or confining formations above.” (STRONGER Guidelines Section 9.2.1) Our recommendations, albeit with detailed suggestions align with the STRONGER recommendations.

Additionally, unconventional drillers are not the only drillers utilizing horizontal drilling technology now. During the August, 2013, TAB subcommittee meetings public comment period in State College, a representative from Penneco made comment that his company is now utilizing horizontal drilling in shallow formations. Further review of this idea brings attention to this news article in September, 2013.

<http://www.post-courier.com/business/news/2013/09/22/Horizontal-drilling-fracking-begins-in-old-shallow-oil-and-gas-fields/stories/201309220115>

**Horizontal drilling, fracking begins in old,
shallow oil and gas fields
September 22, 2013 4:00 AM**

As Excerpted:

The newer business, Horizontal Exploration, was designed to profit from technology and services that followed Marcellus operators into Pennsylvania in recent years. Horizontal Exploration has drilled three horizontal, or lateral, wells so far and has permits for another eight in Pennsylvania. It fracked the first well this month and is awaiting results. The wells are about 2,000 feet deep and extend between 3,300 feet and 5,300 feet horizontally. "We think you should be able to do these for \$800,000 to \$900,000 [per well]," Mr. Thompson said. But at the moment, the company is spending about \$1.3 million a pop. It's still toward the bottom of the learning curve, he explained. A Marcellus well, by contrast, can run anywhere from \$4 million to \$10 million. It needs, on average, 5 million gallons of water for fracking. Horizontal Exploration is using only about 120,000 gallons of fluid to frack its shallow wells. The conventional laterals will never produce anywhere near the amount of oil and gas coming out of the deeper Marcellus wells, but

Mr. Thompson is hoping for at least 10 times the bounty of a vertical shallow well and a quicker payback period -- about 18 months, compared to four years.

The Upper Devonian sandstones are thinner than the Marcellus. Some are only 20 feet thick compared with the Marcellus' average thickness of 70 feet or more, said Dan Billman, president of Mars-based Billman Geologic Consultants Inc., which helps companies identify suitable spots to sink both conventional and unconventional wells.

While shale rock is tight and relatively impermeable, sandstone is porous and oil and gas easily flow through its tunnels.

That means the pressure needed to frack it is a fraction of what's required for a deep shale well. And some conventional horizontal wells are designed not to be fracked at all, Mr. Billman said.

One of the earliest horizontal shallow wells in Pennsylvania, with advice from Mr. Billman, was drilled by Freeport-based Phoenix Energy Productions in 2010.

Since then, the company has drilled two more horizontal wells in Washington County and hasn't fracked any of them.

Penneco Oil Company Inc. in Delmont, on the other hand, has been fracking horizontal shallow wells for several years now. It perforates the casing at more than a dozen stages and pumps "off-the-shelf" frack fluid additives into oil and gas formations about 3,200 feet under Greene, Westmoreland and Allegheny counties with

great success, according to Penneco's COO Ben Wallace.

"We hear this from a lot of drillers -- they get called because oil and gas companies look up our completion reports," Mr. Wallace said. Penneco's sandstone wells cost "several million" dollars to complete, Mr. Wallace said, and the company plans to drill about 10 horizontals a year.

Several other companies, such as Warren County-based Pennsylvania General Energy and South Side-based Catalyst Energy have secured permits from the Department of Environmental Protection to drill horizontally in shallow reservoirs.

Shallow, or conventional, drillers report their production annually, not every six months as Marcellus operators must, so the results of these efforts won't be available until next year.

We advocate that the assessment be done after the well is spud as the spud indicates a clear intent that the operator is going to drill that well. Doing the assessment at that point, allows sufficient time to alter their drilling plans if need be [should their plans be within AOR of an active, orphaned or abandoned well]. Rather than incurring the expense of drilling a well they may not be able to safely fracture, they can amend their drilling permit for a modified horizontal well bore.

Let's not forget the goal here, which is to identify active, orphaned and abandoned wells and avoid/prevent an environmental incident. The Operator would only be required to plug the well/s that has been deemed at risk by their hydraulic fracturing operation. The remaining identified wells are to be placed in the DEP inventory of orphaned and abandoned wells waiting plugging. We see this process in a threefold manner; 1- identify the active, orphaned and abandoned wells, 2 – perform a proper risk assessment to determine whether or not the identified active, orphaned and abandoned wells may cause a communication event, 3 – advise the Department of the all wells and plug at risk wells accordingly. The Operator upon identifying at risk well/s could determine to abandon their plans to hydraulically fracture the well and not be responsible for the at risk well/s that would be deemed necessary for plugging. The Operator also has the option of amending the permit for a modification.

All drillers, both conventional and unconventional need to complete the active, abandoned and orphaned well identification process. With some conventional drillers transitioning into the horizontal drilling method, it is even more imperative that the conventional drillers complete an adequate assessment to avoid future environmental impacts. (660a)

Response: Although it acknowledges exceptions may exist, the Department has retained the proposed distances in the final-form rulemaking. These distances are generally considerate of development spacing in the state and the known differences between the area of the reservoir stimulated and the well's effective drainage area.

For matters related to which well sites must be monitored because of vertical proximity to the stimulated interval, please see response to comment 626.

For matters related to the inclusion of other well types in the area of review survey, please see response to comment 626.

The Department acknowledges the comment and has modified the regulatory language to require that the area of review survey take place either prior to drilling, stimulation or permitting, dependent upon the anticipated timing of stimulation activities. This change will allow for avoidance measures to be implemented in an effort to mitigate risk.

Plugging an identified well is a potential risk mitigation strategy available to an operator and this practice has been applied historically. However, assuming that all identified wells in the survey have not been plugged or pose equivalent risks, and mobilizing plugging equipment to

each site to re-enter wells is beyond the scope of a reasonable regulation aimed at suitably addressing risk. By monitoring well sites appropriately, an assessment can be made regarding the potential for environmental impact and corrective actions employed should an unanticipated communication event occur.

628. Comment: The location coordinates for a large number of wells that may exist in the Department's database are likely derived from sources other than field GPS coordinates. Some coordinates may have been derived from old maps. For a variety of reasons, a well with latitude/longitude coordinates in the Department's database may not be visible on the ground, perhaps because the coordinates are inaccurate, or possibly because the well does not exist.

It seems appropriate that any wells which appear on the Department's database should be identified, provided their total depth extends below the interval that could reasonably be influenced by hydraulic fracturing. A vertical isolation distance of 1,500 feet above the zone to be perforated or isolated for hydraulic fracturing in an unconventional well and 500 feet above the zone to be perforated or isolated for hydraulic fracturing in any other well is a reasonable isolation distance that exceeds the normally expected vertical growth of induced fractures.

A requirement to consult "applicable farm line maps, where accessible" in order to identify wells lacks the clarity required for a regulation. There are many sources of information on old wells in Pennsylvania, including many reports by state agencies, as well as privately owned maps and records maintained by various operators. If the Department's database could be sufficiently enhanced, a review of the database should be an adequate obligation for well identification. A partnership effort between industry and state government seems an appropriate method of compiling available data on historical oil and gas wells.

Because of the generally higher rate, volume and pressure used in hydraulic fracturing of the Marcellus and other deep shale, constructing a more comprehensive database of historical deep wells (those that penetrate to a depth at least 1,500 feet above the Marcellus Shale) would be a priority. It is hoped that with good cooperation, this could be accomplished within a few months, as the state's current database for this set of deeper wells is believed to be nearly complete.

Enhancement of the shallow well database will require significantly more work, time and expense, and is likely a multi-year project.

The proposed language in Subsection 78.52a(b)(3) would require submission of a questionnaire to landowners requesting information on orphaned or abandoned wells on forms provided by the Department. It is unclear how responses to such questionnaires would be directed and what obligations might fall on operators to verify information received. There is far too much uncertainty related to this provision to support it as a regulatory requirement. The requirement to use a questionnaire should be eliminated.

Additionally, the oil and gas industry's identification of abandoned and orphaned wells will benefit from further development of the Department's database, and should be postponed until the database and map viewer system is improved. Accordingly, the Department should consider a phased implementation of this new section.

Suggested amendatory language:

§ 78.52a. Well identification prior to hydraulic fracturing

- (a) Prior to hydraulically fracturing an unconventional well, the operator shall identify in accordance with subsection (b) the location of active, inactive, plugged, orphaned or abandoned

wells within 1,000 feet measured horizontally from the surface projection of any portion of the wellbore whose total depth is known or reasonably expected to be less than 1,500 feet above the shallowest vertical depth to be perforated or isolated for hydraulic fracturing. Prior to hydraulically fracturing a conventional well, the operator shall identify the location of active, inactive, plugged, orphaned or abandoned wells within 500 feet of the well bore whose total depth is known or reasonably expected to be less than 500 feet above the shallowest vertical depth to be perforated or isolated for hydraulically fracturing.

(b) Identification shall be deemed to have been satisfied by conducting a review of the Department's database for active, inactive, plugged, orphaned and abandoned wells.

(c) Prior to hydraulically fracturing a well, the operator shall submit a plat to the Department showing the location and GPS coordinates of wells identified pursuant to subsection (b) whose total depth is known or reasonably expected to be less than 1,500 feet, in the case of an unconventional well or 500 feet, in the case of any other well, above the shallowest vertical depth to be perforated or isolated for hydraulic fracturing. The operator may notify the Department of any wells that are identified on the Department's database but which have not been located on the ground using reasonable efforts.

(d) This subsection shall become effective [six months] from final publication in the Pennsylvania Bulletin. (1103, 1137, 1147)

Response: For matters related to well site locational uncertainty, please see response to comment 626.

The Department currently maintains and makes available a list of orphaned and abandoned sites that have not been plugged. The location of plugged wells are available in PA*IRIS/WIS. Existing databases are being expanded upon by the Department as historical analog source maps become available and as time permits. Companies in possession of such maps may share them with the Department, if they so choose, in order to facilitate development of a more comprehensive reference database over time. It should also be noted that the Department has modified the regulatory language to broaden the historical maps and database sources that could be referenced during the area of review survey. However, the revised language recognizes that not all operators may have access to the same sources.

For matters related to which well sites must be monitored because of vertical proximity to the stimulated interval, please see response to comment 626.

For matters related to the value of the landowner questionnaire, please see response to comment 626.

629. Comment: 78.52a(a) -- It seems appropriate that any wells which appear on the Department's database should be identified, provided their total depth extends below the interval that could reasonably be influenced by hydraulic fracturing. A vertical isolation distance of 1,500 feet above the zone to be perforated or isolated for hydraulic fracturing in an unconventional well and 500 feet above the zone to be perforated or isolated for hydraulic fracturing in any other well is a reasonable isolation distance that exceeds the normally expected vertical growth of induced fractures. (1103)

Response: For matters related to which well sites must be monitored because of vertical proximity to the stimulated interval, please see response to comment 626.

For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

630. Comment: Delete the requirement in 78.52a(a) for operators of vertical oil wells to conduct a survey prior to stimulation of the vertical oil well. (1135)

Response: The "area of review" requirements are considerate of the differences between conventional and unconventional operations. Further modifications have also been proposed accentuating the contrasts between both sides of the industry.

631. Comment: § 78.52a(a) - It is suggested that language is added to include a 6 month effective date to allow for wells already permitted but not yet completed. (124a)

Response: The survey must be completed prior to either drilling, permitting or stimulation, dependent upon the anticipated timing of stimulation, and will not apply to wells that are partially drilled at the time of promulgation.

632. Comment: The commentator supports a rule that requires reasonable diligence to identify active, inactive, plugged, abandoned, and orphaned wells prior to hydraulic fracturing. The DEP's proposal, however, would lead to open-ended obligations for identifying these wells. (196, 1137)

Response: For matters related to the inclusion of other well types in the area of review survey, please see response to comment 626.

The Department has agreed to make forms and clarifying guidance available prior to adoption of the final rule in order to address this concern. Specifically, this issue will be addressed in an area of review guidance document discussing the components of a suitable monitoring plan and the expectations for completing the landowner survey.

633. Comment: Subsection (a) should be changed to require that the survey be conducted before site construction rather than hydraulic fracturing.

Subsection (a) ties the identification of abandoned and orphaned wells to hydraulic fracturing of the well. We suggest that it would be better to have any abandoned and orphaned wells identified before site construction so as to ensure that well operators have as much advance notice as possible to inform well placement, or prepare mitigation measures should placement appear that it will affect abandoned or orphaned wells. (852a)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

634. Comment: I support the requirement for a survey of orphan and abandoned wells. I would like to express my strong support for the new provisions requiring those constructing an unconventional gas well to do a survey for orphan and abandoned wells. This is long overdue and commendable. The Oil & Gas Industry's opposition to this provision is disgraceful. (869a)

Response: The Department acknowledges the comment.

635. Comment: Onsite identification of old wells should be required and need to be sealed. Any additional precautions must be taken. (10, 16, 46, 62, 67, 163)

Response: For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

636. Comment: § 78.52a needs to be expanded to fully protect human health and safety and stay on par with other oil and gas states. When active drilling activity communicates with abandoned or orphaned wells significant threats to human health and the environment can occur. (1165)

Response: By monitoring the highest risk sites, any environmental impacts and potential health effects can be greatly curtailed and addressed by the operator completing stimulation activities.

637. Comment: Identification of orphaned and abandoned gas and oil wells (Section 78.52a). This is an important change and should be supported. About 200,000 abandoned wells exist statewide. As drilling spreads and intensifies, so does the chance of accidents, blowouts, and pollution from the intersection of new wells with old ones. DEP should expand these changes and require operators to: Identify existing wells before site and well construction and drilling (not just fracking), so that the location of a new well can be changed if needed.

Plug and seal or otherwise appropriately address abandoned and orphaned wells according to state safety standards prior to well site construction. The state lacks funding to address the large number of old wells, so drillers should be responsible for preventing pollution of adjacent water wells and air pollution from accidents when they occur. (17, 18, 19a, 70, 72, 73, 79, 99, 102, 125, 160, 161, 169, 193, 199, 200-385, 406, 471, 475, 492a, 494, 560, 564, 565, 626, 632, 635, 842, 843, 865, 884, 912, 918, 922, 926, 938, 947, 1039, 1058, 1068, 1083, 1088, 1102, 1148, 7521 – 8362, 4582 – 4584)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

638. Comment: Comment: I support the provision in section 78.52a. It is very important to identify the location of existing wells and to plug and seal abandoned/orphaned wells before site and well construction and drilling. This makes drillers responsible for footing the costs of sealing old wells, not the state. (24, 102, 104, 405, 406,)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

639. Comment: Identifying active, inactive, plugged, abandoned and orphaned wells prior to hydraulic fracturing may be something that the industry can work with the DEP, but not to the level of the proposed regulations as that may lead to non-ending obligations on behalf of the industry for wells that are not ours.(123, 638, 638a, 123a, 798, 123b, 883, 940)

Response: For concerns related to the open-ended characterization of the rule, please see response to comment 632.

640. Comment: I live in Southern Butler County, which was heavily drilled in the past. Many abandon wells exist in the area. Unplugged wells and abandon wells are a source of methane migration. A pre-fracking survey needs to occur to identify orphan or abandon wells prior to drilling on any site. The drilling company should be required to plug orphan or abandoned wells before drilling. Unfortunately, this occurred because of lax regulation and oversight in the past. Let's not continue to make the same mistakes. (129)

Response: For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

641. Comment: This is a redundancy and has no relationship to public health, safety, and the environment. These are things that operators have already done and are doing as standard practice when surveyors are sent out to the proposed site. The only thing I can see that would change is, now PADEP would require the operator to identify, through several means, including a questionnaire to the surface owner. The added time in the field for surveying along with the added expense of searching for absent surface owners and all other related administration for this section would drive up the cost of each proposed well. * Only require the GPS shots of the orphaned wells. (145)

Response: For matters related to the current application of due diligence by operators, please see response to comment 626.

642. Comment: Survey for all other nearby (within 1 mile of a planned well, say) wells (oil, gas, water, or other), map them, test their casing and cement for leaks, and put all well information on the web. Forbid new drilling or fracking if there are any wells nearby with faulty casing or cement. (156)

Response: For matters related to the dimensions of the area of review, please see response to comment 627.

Water supply wells are addressed under existing laws and regulations, including the presumptive liability and setback language of the Act.

The Department has modified the regulation to require a visual assessment of each well's integrity. The requirements are consistent with the Department's current requirements for assessing operating wells for mechanical integrity, i.e., visual inspections for escaping gas and fluids, and severe corrosion.

The current regulation requires that altered wells be properly plugged by the operator completing stimulation activities. Until the altered well is adequately addressed, the operator will not be permitted to continue stimulation activities. Existing regulations require quarterly mechanical integrity assessments at all operating wells in the state and annual reporting of any leaks identified. Per the current regulations, gas venting to the atmosphere is not prohibited, but rather must be done safely. Further, gas and any fluids sourced from below the surface casing are not permitted to be discharged into fresh groundwater and defective casing/cement must be addressed.

643. Comment: Abandoned wells near drilling operations should not only be identified but plugged. PA's estimated two hundred thousand abandoned and orphaned wells (and this is a conservative estimate) are inherited from conventional drilling operations. According to DEP's own report on methane migration from oil and gas wells, these old unplugged wells can be conduits for drilling fluids and methane and have been responsible for explosions and loss of life. Such migration is also harmful to soil, water, and air and must be prevented. (182)

Response: For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

644. Comment: 78.52a – For shallow well drillers, this will significantly increase the cost of survey work and site map fees. The survey will now have to include a 72 acre area. The surveyor's time to draw a well site map will increase from one day to as much as a week to collect the info and map 72 acres, raising the cost from \$500 to \$2500. (183)

Response: For matters related to how the benefits of the rulemaking outweigh the costs, please see response to comment 625.

645. Comment: 78.52a – The circular area of 1000 feet of investigation from the well bore is flawed by the science of a shallow well. The hydrofrack zone varies by rock structure, but has not exceeded 250' from the well bore in shallow wells. This is proven by new well spacing of 450' apart from each other. The proposed 1000' distance far exceeds any distance required between shallow wells.

Presently a well developer is already responsible for any pressure communication from their new well with an orphan/abandoned well. This regulation appears to benefit only the DEP database, but it will cost the driller more money for each new well without solving any of their problems. (183)

Response: For matters related to the dimensions of the area of review, please see response to comment 627.

Response: For matters related to the current application of due diligence by operators, please see response to comment 626.

646. Comment: § 78.52, which require drillers to search databases for abandoned wells within 1,000 feet to help build a database of abandoned wells, is also a common-sense proposal. (188)

Response: The Department acknowledges the comment.

647. Comment: The gas and oil operators should be required to identify orphaned or abandoned wells at a distance in which they plan to drill horizontally. They should also take into account the depth of the orphaned or abandoned wells in terms of potential impact to the site specific geology from their proposed drilling in a horizontal direction. In addition to the oil and gas companies consulting with the Department's database, farm line maps, and submitting a questionnaire to surface land owners, the PA DEP needs to investigate independent studies that can and have determined a safe distance from an abandoned and orphaned well to a new drill site. The research must include: pros and cons; health impacts, environmental impacts, complete and concise information pertaining to the risks to the specific geology in that area at the very least. If that research is unable to be obtained then the money from these proposed regulations must also assist with further research to obtain that data, otherwise, we're being reactive rather than proactive. (189)

Response: Generally speaking, due to lithostatic pressure applied by overlying rock layers and the physics constraining fracture mechanics, the most likely pathway to fresh groundwater during hydraulic fracturing is represented by improperly abandoned oil and gas wells. If faults or zones of fracture concentration do play some role in communication, it is by allowing propagated fractures to move out of zone and into an improperly abandoned oil or gas well. However, the Department has modified the regulatory language to include a

provision for monitoring fracture treatment pressures and volumes at the stimulated well site. This provision is intended to allow for the identification of abnormal fracture growth.

The buffer distances in the regulation are generally considerate of well spacing and the difference between the volume of the reservoir stimulated and a well's drainage areas. Although the Department acknowledges exceptions may exist, the regulation is designed to effectively reduce, and not completely eliminate risk.

- 648.** Comment: Compel companies to identify existing wells before new well construction in order to prevent negative impacts on water supplies and the environment. (193, 199, 471, 477, 494, 560, 1161, 1165)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

- 649.** Comment: § 78.52a should require operators to plug all abandoned or orphaned wells, not just those that are 'altered'. (1165)

Response: For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

- 650.** Comment: Surveys for abandoned and orphaned wells should be required for all wells, not just wells that are hydraulically fractured. History has shown that even non-hydraulically fractured wells can cause problems. A smaller identification and monitoring distance could be used for non-hydraulically fractured wells. (1165)

Response: The intent of the regulation is to mitigate risk in association with hydraulic fracturing and, as such, targets wells that will be stimulated using this process. Due to the geology in the state, the vast majority of oil and gas wells are stimulated using this process. Existing laws and regulations address environmental risks associated with the drilling and operation of all wells in the state.

- 651.** Comment: Simplify this section to the following for all wells: Prior to drilling the well, the operator shall make a good faith effort to identify the location of all operating, inactive, orphaned or abandoned wells within 500 feet of the wellbore in accordance with subsection (b). This would cover the general consensus that frac propagation does not exceed 500 feet from the wellbore. The key word is wellbore so by this definition, a standard Upper Devonian conventional well with a total depth of 3500 feet would not have to be identified for a horizontal Marcellus Shale well at a true vertical depth of 6000 feet or more.

It would be more beneficial and practical for the operator to identify these types of wells prior to drilling and during the permitting process. The identified wells could be included on the well location plat and will be more cost effective to collect the locations of said wells while the surveyors are already in the field. The identification of these wells is just a crucial during the drilling phase in the event of a blow out and the associated risk of over pressuring a well that penetrates the same open formation while drilling.

Will the review of the Department's orphaned and abandoned well database require and operator to gain access to the Well Information System (WIS)? I believe this is only accessed through a PAIRIS account. Is the Department willing to give free access this PAIRIS for this well review?

The identification or potential identification of these types of wells has an effect on other aspects of well permitting. For the operator that must deal with coal vs. non-coal determinations, this will affect the outcome of those determinations. With the identification of these abandoned or orphaned wells in a coal area, unless the operator can prove that the well was abandoned prior to November 30, 1955; the operator will have to respect that location for coal spacing. The question that comes into play is that if it's based on the location of the well from an old map, how does the accuracy affect that outcome? Caution must be taken when showing these well locations as some well locations on older maps was simply that, just a proposed location and was never drilled.

The Department needs to provide the forms for review prior to the establishment of this section. What will the Department do if a landowner denies the operator access or fails to respond? What if the operator identifies a well but does not know or cannot find any information about the well such as depth, casing design, etc.? A definition of "precise location" needs to be given for clarity. (411)

Response: For matters related to the dimensions of the area of review, please see response to comment 627.

For matters related to the timing of the area of review survey, please see response to comment 627.

For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

The Department acknowledges the existence of uncertainty related to well location and surficial evidence of legacy well sites. The landowner survey is one mechanism that may be beneficial for resolving such uncertainties, as landowners may be aware of the location of such sites on their property. Further, there is no additional expectation for operators to attempt to find and monitor sites that are not in the general vicinity of mapped locations. This regulation makes no further attempt to clarify coal-spacing requirements, which must be consistently observed in accordance with existing statutes.

For matters related to the value of the landowner questionnaire, please see response to comment 626.

- 652.** Comment: Abandoned and orphaned well identification is very crucial to the development and protection of surrounding resources. We are concerned that these wells could lead to potential risks to the natural resources surrounding areas under deep well drilling development. We encourage the development of reporting these well sites and would like to see monitoring conducted over a period of time within the 1,000ft. and 500ft. ranges that ensures the safety of development activities associated with potential groundwater compromises. A rigorous plugging and sealing of abandoned and orphaned well program should then be implemented by the Department or required of the industry as the wells are identified. (566)

Response: The Department will develop clarifying guidance related to the area of review requirements prior to promulgation of the final rule. Specifically, this issue will be addressed in a guidance document discussing the components of a suitable monitoring plan.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

653. Comment: A search radius of 500 feet is inappropriate for shallow wells drilled on 300 foot centers. For very sound technical reasons and for these types of wells a search radius of 150 feet is appropriate. (606, 606a)

Response: For matters related to the dimensions of the area of review, please see response to comment 627.

654. Comment: I applaud the addition of the proposed 78.52a. With an estimated 250,000 wells that were not properly plugged, this addition will help to identify these wells and encourage mitigation efforts in this regard. The 1,000 foot identification distance should remain as the minimum identification distance. Reduction of this distance should not be approved. Regarding the visual monitoring of identified orphan wells, I would suggest language be added to include required recordkeeping by the operator of such monitoring. As I am not an expert in what parameters should be monitored, I would leave it to the Board to further define the proper required recordkeeping. (625)

Response: The Department acknowledges this comment and has modified the regulatory language to require an area of review report and monitoring plan.

655. Comment: Abandoned and orphaned well identification, proposes that the operator identify the location of orphaned or abandoned wells within 1000 feet measured from the surface above the entire length of a horizontal well bore.

Identifying abandoned and orphan wells is acceptable; however, this requirement must not be open ended. In its current form this regulation is unclear as to what requirements will be placed on industry and has the potential for undue and unnecessary added expense. (639)

Response: For concerns related to the open-ended characterization of the rule, please see response to comment 632.

656. Comment: I agree these wells should be identified but they must be identified before any site disturbance and recorded publicly, plugged and sealed according to state safety standards PRIOR to well site construction and testing of area water wells and intakes should be done by the operator to assess any pollution caused by the orphaned or abandoned well. These wells are a serious safety hazard in Pennsylvania and there should be every precaution taken to find them, avoid communication between new wells and old to avoid blowouts, accidents and well casing failure. These old wells that are pollution threats should be plugged. (649, 787, 1030, 1030a, 1064, 1073-1077, 1079-1082, 1084, 1101, 1158, 1168, 4584 – 4650)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

657. Comment: Section 78.52a, Abandoned and orphaned well identification, is an example of a good start on a rule to address a problem that has occurred in the past. DEP should have operators identify existing wells before wells are spudded, instead of, “prior to hydraulic fracturing” as the language in the section currently reads. (846, 1109)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

658. Comment: Another change that will help insure a more effective survey will be undertaken is to increase the distances measured from the surface above the horizontal well bores to 1,400' from the current language's 1,000'. This recommendation is derived from an explanation given by a representative of the Shell Corporation at the TAB meeting in State College of the maximum distance the energy in a frac operation can penetrate the rock around it, which was stated to be 1,400'. This distance should be derived based on science rather than an arbitrary rounded figure of 1,000'. (846, 1109)

Response: For matters related to the dimensions of the area of review, please see response to comment 627.

659. Comment: 1000 feet is the allowable distance for drillers to drill new wells when the provisions admit that abandoned wells have been known to be altered and contribute to methane migration when new wells are drilled and with horizontal hydraulically fractured wells what difference will 1000 feet make from the initial vertical well bore? And the provisions propose that visual monitoring and plugging is required by the operator of the well drilling and we all know from past experience that that is simply a ridiculous notion on all fronts because the dream of huge amounts of money (which almost never materializes) are far too strong a draw for them to follow regulations and fines are simply tokens and not even a slap on the fingers if they are not followed. Again the solution for this problem is a total ban of this industry in Pennsylvania and actually in this country as a whole. (864)

Response: The Department disagrees that the area surrounding the vertical wellbore should not be assessed for well sites. For example, in situations where fractures communicate with a shallower portion of the well being stimulated, wells surrounding the vertical portion of the stimulated well may serve as conduits to the surface.

The Department disagrees that a ban on oil and gas development is the only way to effectively mitigate risk associated with hydraulic fracturing. See response to comment 2501.

660. Comment: This section proposes that the operator identify the location of orphaned or abandoned wells within 1000 feet measured from the surface above the entire length of a horizontal well bore. Identifying abandoned and orphaned wells is acceptable, however this requirements must not be open ended. In its current form this regulation is unclear as to what requirements will be placed on industry and has the potential for undue and unnecessary added expense. (908)

Response: For concerns related to the open-ended characterization of the rule, please see response to comment 632.

661. Comment: I am supportive of the proposed revisions regarding the documentation of orphaned and abandoned oil and gas wells. The documentation of these wells prior to the commencement of drilling will minimize hazardous incidents. We do, however, encourage DEP to consider expanding the radius for these surveys from 1000' to 2500' from the entire length of the horizontal legs. (919, 943)

Response: For matters related to the dimensions of the area of review, please see response to comment 627.

For matters related to the timing of the area of review survey, please see response to comment 627.

662. Comment: We support the Department’s desire to proactively locate, document, and address abandoned and orphaned oil and gas wells in the stipulated vicinity of a well that will be hydraulically fractured. We propose two (2) changes/clarifications to what has been proposed. Our suggested amendatory language:

- It is recommended that the Department develop similar, but different distance requirements for horizontal and vertical wells; for example:
 - a. Unconventional wells – within 1000 feet measured horizontally from the surface projection of any portion of the wellbore whose true vertical depth is known or reasonably expected to be less than 1,500 feet above the shallowest vertical depth to be perforated or isolated for hydraulic fracturing
 - b. Conventional wells – within 500 feet measured horizontally from the surface projection of the wellbore whose true vertical depth is known or reasonably expected to be less than 500 feet above the shallowest vertical depth to be perforated or isolated for hydraulic fracturing
- We ask that a notification and response period be established to ensure that future operations are not unnecessarily delayed by non-responsive property owners. A property owner will need to complete and return the questionnaire within the specified time frame to have the historic penetration included in the official documentation sent to the Department. (952)

Response: For matters related to which well sites must be monitored because of vertical proximity to the stimulated interval, please see response to comment 626.

The Department will develop a questionnaire and instructions and draft clarifying guidance regarding the area of review requirements, including landowner questionnaires, prior to promulgation of the final rule.

663. Comment: 78.52a – Abandoned and Orphaned Well Identification - (a) – “Prior to hydraulically fracturing the well...”. -- It is suggested that language is added to include a 6 month effective date to allow for wells already permitted but not yet completed. (1057)

Response: For matters related to the implementation schedule of the rule, please see response to comment 631.

664. Comment: Abandoned and orphan well identification (78.52a) should be done by the operator prior to drilling, not just prior to fracking. After all, there have been instances in our Northern Tier Counties of methane migration from drilling prior to fracking, even without the presence of abandoned wells. Since the industry fully acknowledges that unplugged abandoned wells are a prime route for methane migration, it seems logical that there is an even greater risk of pre-fracking problems occurring in their presence. Ideally, these abandoned wells should be plugged prior to drilling rather than just monitoring them after fracking. (1066, 1089, 1229)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

665. Comment: 78.52a: Abandoned and Orphaned Well Identification- Improve Area of Review Based on Sound Horizontal and Vertical fracturing Propagation

The proposed scope of the 1000 feet of the well bore and along the entire length of the horizontal well bore could be enhanced to better reflect sound horizontal and vertical fracturing propagation. The proposed text requires operators to survey for abandoned and orphan wells in the vicinity of their unconventional well prior to fracturing. We share the Department's goal of reducing, if not eliminating, the impacts to health, safety, and the environment that an unidentified abandoned well could pose. Another shared goal is reducing the substantial inventory of known abandoned wells in the Commonwealth. In defining the scope of review, the Board should leverage the expertise derived from the available technology to achieve these goals.

The area of review should be precise and limited to an area based on sound horizontal and vertical fracturing propagation, in our view. It seems appropriate that any wells which appear on the Department's database should be identified, provided their total depth extends below the interval that could reasonably be influenced by hydraulic fracturing. We recommend addressing the vertical isolation distances in the Rule's area of review. To that end, we suggest a vertical isolation distance of 1,500 feet above the zone to be perforated or isolated for hydraulic fracturing in an unconventional well and 500 feet above the zone to be perforated or isolated for hydraulic fracturing in any other well is a reasonable isolation distance that exceeds the normally expected vertical growth of induced fractures. (1085)

Response: For matters related to which well sites must be monitored because of vertical proximity to the stimulated interval, please see response to comment 626.

For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

666. Comment: Those wells must be identified and sealed prior to any gas wells being drilled. Drillers are financially responsible for protecting the waters of Pennsylvania via the identification and plugging process

There are thousands of abandoned wells in PA, increasing the possibility of the migration of methane and other contaminants from fracked wells will move up to abandoned well bores to ground water. (938a)

Response: For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

667. Comment: Because conventional well drilling does not employ the practice of horizontal drilling, a search radius of 150 feet is sufficient to identify abandoned and orphaned wells that may be impacted by the operations. (1113, 1118, 1120, 1115a, 1176-1188)

Response: For matters related to the dimensions of the area of review, please see response to comment 627.

668. Comment: Pennsylvania has thousands of abandoned coal and gas wells, the locations of which are unknown. The driller must locate these wells before drilling, so that the drilling process does not puncture them, contaminating drinking water supplies. (1146)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

669. Comment: The Proposed Rulemaking would add a new Section 78.52a, pertaining to the identification of abandoned and orphaned wells. Section 78.52a(b)(3) would require a well operator to identify abandoned and orphaned wells within 1000 feet of any vertical and horizontal well bores that the operator intends to drill, and requires an operator to send questionnaires (using forms approved by the Department) to nearby landowners seeking information about abandoned and orphaned wells in those 1000 foot zones. An operator would also be required to submit a plat showing the location of any abandoned or orphaned well that the operator's investigation reveals to the Department before the well in question is hydraulically fractured. Abandoned and orphaned wells can cause air, water, and soil contamination. (PENNSYLVANIA DEPT. OF ENVTL. PROT., ABANDONED AND ORPHAN OIL AND GAS WELLS AND THE WELL PLUGGING PROGRAM, Doc. No. 8000-FS-DEP1670 (Nov. 2012), available at <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-91715/8000-FS-DEP1670.pdf>). The requirements that Section 78.52a would impose are thus a good first step towards minimizing the pollution and contamination risks of drilling. But only a first step. Operators should also be required to take steps to prevent or minimize potential contamination resulting from the abandoned and orphaned wells that they identify (by plugging wells that penetrate the confining layer, for example). Such remediation work would help protect well operators, by making them less likely to incur liability for pollution or contamination caused by their drilling activities, and also benefit the public generally, by reducing sources of potential water pollution. (1159)

Response: For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

670. Comment: The proposed regulation would require the operator to identify orphaned or abandoned wells within 1,000 feet measured horizontally from the vertical well bore and 1,000 feet measured from the surface above the entire length of a horizontal well bore for a gas well or horizontal oil well. The proposed regulation should clarify if it applies to any gas well, such as coal bed methane (CBM) wells. (1170)

Response: Coalbed methane wells are a specific subset of gas wells and, as such, are subject to the regulation.

671. Comment: The proposed regulation does not recognize landowner rights. For example, in § 78.52a (b)(3) regarding the questionnaire to determine the locations of orphaned and abandoned wells. In these instances, the operator could certify the lack of cooperation by the landowner. It is recommended that a time limit of 30 days be placed on the landowner for providing to the operator the ability to comply through access or response, or upon certification, the operator be relieved of the duty to comply.

It is suggested that the Department add to this section the length of time operators are going to be required to wait for property owners to complete and return the "questionnaire."
(124a)

Response: For matters related to the landowner questionnaire, please see response to comment 662.

672. Comment: Section 78.52a(b)(3) will potentially slow down the permitting process, allow landowners to submit unverified and unverifiable information and potentially submit false information to prevent operations on their property. The section fails to address how information received from the landowner is to be used or reported, allowing for open ended delays in the completion of the well and delaying final reclamation of well sites. All these will potentially lead to financial hardship for

operators. We propose an exemption for wells of depth less than 3000'. (460)

Response: For matters related to the value of the landowner questionnaire, please see response to comment 626.

For concerns related to the open-ended characterization of the rule, please see response to comment 632.

For matters related to the applicability at conventional well sites, please see response to comment 630.

673. Comment: We are concerned that the Department's database is not presently a reliable source on which a regulatory requirement can be based. The database does not have field GPS location coordinates for a large number of wells, some coordinates have been derived from old maps and are inaccurate. Similarly, a requirement to consult "applicable farm line maps, where accessible" in order to identify wells lacks the clarity required for a regulation. If the Department's database could be sufficiently enhanced, a review of the database should be an adequate obligation for well identification. However, the regulatory obligation should be focused on only those which appear on the Department's database and which have a total depth that extends within 500 feet of the target zone to be perforated or isolated for hydraulic fracturing. Lastly, it is unclear how responses to such questionnaires as proposed language in § 78.52a (b)(3) would be directed and what obligations might fall on operators to verify information received. (1071)

Response: For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

For matters related to which well sites must be monitored because of vertical proximity to the stimulated interval, please see response to comment 626.

For matters related to the landowner questionnaire, please see response to comment 662.

674. Comment: **78.52a(b)(3)** - In our rural areas, property changes hands and thus, it may be very possible that a landowner may be aware of an orphaned or abandoned well/s that may be located on property they formerly owned, or they may be aware of such well/s on their present property. We realize that landowners have an obligation to advise the Department of such wells, but most landowners are not intimately aware of that requirement placed on them. Therefore, we support providing a questionnaire to all the landowners within the area of review and also, requiring a DEP fact sheet on orphaned and abandoned wells is included in the well permit certified mail notification packet that is mailed to landowners advising them of the new well permit.

Based on information shared at the TAB subcommittees this summer, we recommend that DEP not only continue to collect data creating a database, but also that the revised assessment be done after spudding a well. We also recommend both a questionnaire and fact sheet regarding orphaned and abandoned wells be included in the landowner notification certified mailings. (660a)

Response: For matters related to the landowner questionnaire, please see response to comment 662.

The intent of the regulation is to mitigate risks associated with hydraulic fracturing and, thus, the proposed timing for monitoring identified sites is appropriate.

For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

675. Comment: 78.52(b) and (c) address requirements related to identification of abandoned and orphaned wells. Commentators question in Paragraph (b)(2) what is meant by “a review of applicable farm line maps, where accessible.” Other commentators ask for clarification of what is expected from operators regarding submitting the questionnaire to landowners under Paragraph (b)(3) and proof of submitting the questionnaire to landowners under Subsection (c). We agree that it is unclear as to how the regulated community is expected to comply with these provisions. Are there expectations for operators beyond submitting questionnaires to landowners and submitting proof of submitting the questionnaires? Will there be a timeframe for compliance? What proof of notification will EQB require from operators? We ask EQB to clarify the implementation procedures related to these subsections. (1099)

Response: The Department has modified the regulatory language to broaden the sources that may be referenced to complete the area of review and has also introduced flexibility in recognition of the fact that not all companies may have access to the same historical source maps and databases.

For matters related to the landowner questionnaire, please see response to comment 662.

676. Comment: The issuance of drilling permits that will result in a violation of the Oil and Gas Act or the Clean Streams Law would result in the failure to eliminate the threat of pollution and injury to the public. The Department has a duty to prevent adverse impacts to the public health, safety, welfare, and the environment under the Oil and Gas Act, and a duty to prevent pollution of ground water and surface water under the Clean Streams Law. As a result, the Department’s Proposed Rulemaking is inadequate and must be amended to require well operators to identify and evaluate orphaned and improperly abandoned wells at the application stage. (1152)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

677. Comment: The Department cannot issue a permit that would violate the Oil and Gas Act. The Department must deny a well permit if the issuance of the permit will result in a violation of the Oil and Gas Act. Pursuant to the Oil and Gas Act, it is unlawful to “in any manner...adversely affect public health, safety, welfare or the environment.” In order to ensure that authorized activity will not result in a violation of the Oil and Gas Act, the Department must consider improperly abandoned wells in the vicinity of the proposed drilling activity before it issues a drilling permit, not after. (1152)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

678. Comment: The Board’s proposal is unlawfully inadequate. Pollution caused by improperly abandoned wells in Pennsylvania was documented in a 2009 report prepared by the Department. The Department’s report listed 27 cases where improperly abandoned wells have been the source of groundwater contamination. The requirement to identify and evaluate orphaned and improperly abandoned wells must be expanded to include identification and evaluation prior to all oil and gas operations, including but not limited to seismic testing, site disturbance and construction, and drilling. (1152)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

679. Comment: The Department cannot issue a permit that would violate the Clean Streams Law. The Department must also deny a well permit if the issuance of the permit would result in a violation of an applicable law.⁹⁷ The Clean Streams Law is an applicable law and protects against, among other things, the pollution of groundwater.⁹⁸ It is unlawful for any person to discharge industrial wastes into groundwater without the appropriate permit.⁹⁹ The Clean Streams Law even anticipates instances when there mere potential of pollution may trigger the need for a permit.¹⁰⁰ Drilling in the vicinity of orphaned or improperly abandoned wells creates a potential for pollution because it could cause the discharge of industrial wastes and other pollutants into groundwater and even possibly into surface waters. Without knowing the location, depths, and other characteristics of the old abandoned wells within the radius of the most far-reaching lateral wellbores, the Department is unable to issue a well permit that would affirmatively avoid the discharge of industrial waste and other pollutants into waters of the Commonwealth. (1152)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

680. Comment: The Department has neither explained how a well operator must visually monitor abandoned wells during hydraulic fracturing nor what would constitute altering an improperly abandoned well. Therefore, the Department's proposal is not sufficient to fulfill its duty under the Oil and Gas Act. Additionally, the Department's proposal requires operators to take steps to prevent the pollution of waters of the Commonwealth if it alters an improperly abandoned well. Again, by the time an operator notices that an improperly abandoned well has been altered, there is at the very least a reasonable probability that there has already been an unlawful discharge of industrial waste into groundwater. The Board must deny this proposed amendment because the Department has a duty to prevent the pollution or diminution of fresh groundwater. (1152)

Response: The Department will develop clarifying guidance related to the area of review requirements prior to promulgation of the final rule. Specifically, this issue will be addressed in a guidance document discussing the components of a suitable monitoring plan. Any identified frac communication with an identified well site constitutes alteration of that well site.

For matters related to the timing of the area of review survey, please see response to comment 627.

681. Comment: All existing wells abandoned or otherwise must be identified and should be mapped on a publicly available web platform. The state lacks the resources to address the large number of old wells, so drillers should be responsible for preventing pollution of adjacent water wells and air pollution by sealing the old wells.(72, 73, 114, 635)

Response: For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

682. Comment: I support all of the comments Tracy Carluccio made in her statement. I'd like to spend the remainder of my time addressing the issue of orphaned and abandoned wells, specifically.

A study on well-capping out of Carnegie Mellon cites a DEP report issued before Marcellus drilling had come to Pennsylvania that said it would take 160 years, at 2004 funding levels, to cap all of the orphaned and abandoned wells it knew about at the time.; This paper doesn't mention the number of wells DEP had in mind when it calculated that figure. A different paper from the DEP called *Pennsylvania's Plan for Addressing Problem Abandoned Wells and Orphaned Wells* from 2000 says this: In the 140 years since the first oil well was drilled, an unknown number of oil and gas wells have been drilled in Pennsylvania. An estimate by the Independent Petroleum Association of America places that number at approximately 325,000. DEP has records of 88,300 operating wells which it regulates, 44,700 plugged wells, and approximately 8,000 orphaned and abandoned wells. The status of the remaining 184,000 wells is unknown. Many wells were drilled, operated, and plugged at the end of their useful life while others were drilled, operated and abandoned without proper plugging. Some wells were "temporarily abandoned" while the operators waited for the price of oil to rise to a level which would make producing the wells profitable; this sometimes never occurred.

In an article on O&G wells from May 2013 was this quote from Bill [sic] Pine, Chief of the Subsurface Activity Section [sic] of the DEP: Well drilling began in 1859 in Pennsylvania and it's a safe bet the very first well abandoned in Pennsylvania was in 1859. We have thousands of abandoned oil and gas wells in the Commonwealth. I don't think anyone has an accurate record of how many really exist. Later in the DEP document, it says: Since the well plugging program began, 108 wells have been plugged at a cost of over \$2.4 million using funds from the Abandoned Well Plugging Fund, the Orphaned Well Plugging Fund, and a Federal Clean Water Act, Section 319 Non-Point Source (319 NPS) grant.

So there are a number of different funding sources to pay for capping wells. The Section 319 grant was used to cap wells to stop discharges of acid mine drainage. The Abandoned Well Plugging Fund was established in 1984. The Orphaned Well Plugging Fund was established in 1992. In the 16 years that funding was available prior to the publication of this paper, only 108 wells were capped.

Rick Steiner, a retired University of Alaska professor and marine conservation specialist, says "The oil industry has this term 'permanently plugged wells,' but nobody knows what that means over time. They have completely unreliable expectations for some really basic technology. They plug wells with concrete. Just look at your sidewalks. Pour a fresh sidewalk, wait a few years, and it's cracking and heaving. That's what happens to concrete. But nobody wants to admit this could possibly be going on with oil well plugs. And this isn't just a problem here in America. If we have millions of abandoned wells here, just imagine the scope of the problem globally." We have failed to deal with the hundreds of thousands of O&G wells. We're only adding to that sad legacy with the thousands of wells the oil & gas industry has drilled in Pennsylvania since 2003.

The National Petroleum Council's *North American Resource Development Study* from 2011 cites barriers to progress on this issue – lack of research and lack of long-term vision. We have no plan for managing this going forward. We have no idea how we're going to manage all the wells in our state long-term. Priority needs to be given to addressing this issue – to giving the public an honest assessment of the debt we're incurring to allow drillers come here and destroy our natural resources and communities, to researching and implementing the best safety procedures for managing wells long-term, to getting a handle on exactly how many wells are out there and where they are, and to getting the wells properly capped. And if you're going to keep permitting wells in this state, then the industry making a fortune on the backs of Pennsylvanians should be responsible for surveying before they drill, sharing what they find publicly, and capping wells according to the most rigorous safety standards. (115)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

683. Comment: 78.52a. Require identification of existing/abandoned pipeline infrastructure. (118)

Response: The Department does not agree that surface facilities represent a primary risk with respect to communication during hydraulic fracturing, although they may serve as useful reference points for finding abandoned well sites.

684. Comment: We also urge DEP to more adequately address abandoned and orphaned wells in the proposed Chapter 78 revisions. According to DEP estimates, there are an estimated 200,000 abandoned wells in Pennsylvania. Unplugged wells will continue emitting gases such as methane and VOCs over time and DEP has dealt with dozens of situations in which methane reached the earth's surface through abandoned wells. There have also been cases in Pennsylvania in which companies drilled into abandoned wells, one in particular that resulted in a 30 foot methane geyser and required multiple flares over many days to remediate. Some estimates show old wells in our state alone could be emitting tens of thousands of tons per year of methane, an extremely potent greenhouse gas, and VOCs, which include chemicals known or suspected to cause cancer in humans.

It is critical that DEP require companies to identify existing abandoned wells and to appropriately address these wells before site construction and drilling occurs. Drilling companies must be responsible for preventing pollution and accidents from occurring by correctly plugging, sealing, or otherwise remediating potential issues caused by the presence of old wells. This would save a company time and money from removing the risk of potential accidents and subsequent remediation.

In addition, DEP should require companies to search within a quarter mile radius of a proposed drilling site for potential abandoned wells and to also include other pathways for methane in their search, such as major and minor fault lines and fractures. Companies should be required to contact landowners to ask about any known abandoned wells. We urge DEP to update their maps with any new information and make the data available to the public on their website. (119, 242a, 629, 950)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

Plats submitted to the Department identifying wells sites will be done so electronically and are considered public records.

For matters related to the dimensions of the area of review, please see response to comment 627.

Generally speaking, due to lithostatic pressure applied by overlying rock layers and the physics constraining fracture mechanics, the most likely pathway to fresh groundwater during hydraulic fracturing is represented by improperly abandoned oil and gas wells. If faults or zones of fracture concentration do play some role in communication, it is by allowing propagated fractures to move out of zone and into an improperly abandoned oil or gas well. However, the Department has modified the regulatory language to include a provision for monitoring fracture treatment pressures at the stimulated well site. This provision is intended to allow for the identification of abnormal fracture growth.

685. Comment: I do not believe with the past performance of abandoning gas and oil wells and with the shape my area of Pennsylvania has been left in where wells were left to leak oil, polluted water and gas materials, abandoned pipelines and equipment in countless unknown locations (you run across them if you hike or hunt) and with the previous destruction of water tables in this area by the Oil & Gas Industry that these entities have any business with “fracking methods” or injection wells. (158)

Response: The Department does not agree that stopping development is the only way to manage risk. By monitoring the highest risk, any environmental impacts can be greatly curtailed and addressed by the operator completing stimulation activities.

686. Comment: The term “alter” as it is used in § 72.52a should be defined. (1165)

Response: "Alteration" is currently defined in Act 13 and in this case the physical characteristics of the wellbore communicated with are modified through the establishment of a hydraulic connection with a different portion of the reservoir/a new reservoir.

687. Comment: DEP must require on-site inspections and assessments to identify abandoned wells, in addition to the paper/map review, prior to drilling to eliminate potential pathways for fluid movement into groundwater. Record keeping has been inadequate in locating these wells – most of which are undocumented. The applicant should be required to gather full information without limits on sources. (399, 400, 401, 1165)

Response: For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

For matters related to the timing of the area of review survey, please see response to comment 627.

688. Comment: It has always been a long standing procedure to identify all offset wells including orphan and abandoned to the best of our abilities and locate the same on the well plat. Most often, we have to rely on our own records such as historic land line maps and field investigations to locate these old wells. In a lot of instances a well may be depicted on a landline map but is impossible to field verify which makes one question the validity of the map being reviewed. It is also possible, especially in areas where strip mining was prevalent that these wells have simply been removed over time and or covered over by brush and debris preventing field verification. Additionally, it has been common for landowners to remove the top portions of these nonproducing wells to ease their farming. As a result, a producer may make a very diligent effort to find these abandoned wells and never locate them in the field. Some of these pre-act wells have no permit number and may or may not have existed. Often pre-act wells were not surveyed so their locations can vary widely from what is depicted on the old maps.

Our contention with the proposed rule resides under 78.73(d). According to the proposed regulation

should a producer communicate and stimulate into an orphan or abandoned well bore than that producer becomes liable for something from which it received no financial benefit. The quality and or existence of completion reports for these old wells can be quite challenging, plugging operations could become very costly as a producer will truly be operating in the dark with little or no well information. There should be funds available to take care of this issue as a portion of every Well Permit Fee collected from Producers goes toward the Orphan and Abandoned Well plugging fund. This money is to be used by the State to plug these problem wells. Section 78.73(d) places an unjust penalty on Producers and holds them liable for something the State has already addressed through the State Plugging Fund. (416, 418)

Response: For matters related to the current application of due diligence by operators, please see response to comment 626.

For matters related to well site locational uncertainty, please see response to comment 626.

The Department has plugged and continues to plug thousands of wells from which it did not receive any direct economic benefit. Operators are obligated to address violations of the Clean Streams Law, which serves as the foundation of the rule.

- 689.** Comment: I believe the questionnaire and requirement for operators to search for abandoned wells within any radius of a proposed well is unnecessary for conventional well development. In the vast majority of cases, any abandoned wells in a potential area for new development will have the exact target formation as the proposed new wells. Simple economics play a key role in the identification of old wells: conventional well operators stand to drill a dry hole if an abandoned well in the vicinity of a new well is not identified. In addition, current PADEP regulations stating that an operator who affects an abandoned well must plug it is enough deterrence to ensure that operator due diligence is done correctly.

The proposed regulation is vague and offers no process for which unverifiable evidence by landowners can be resolved. I recommend dropping this proposed regulation for conventional operators. (450)

Response: For matters related to the applicability at conventional well sites, please see response to comment 630.

For matters related to the value of the landowner questionnaire, please see response to comment 626.

- 690.** Comment: Section 78.52a(c) fails to define what steps the operator has to take to construct the plat, including whether a licensed surveyor has to provide the plat with GPS information. This could potentially cost the operator \$1000 or more. (460)

Response: All plats must be prepared by a competent engineer or survey in accordance with Section 3211(b) of the 2012 Oil and Gas Act. However, only the well sites requiring monitoring under Section 78.73 must be surveyed.

- 691.** Comment: I have spent much of my 75 years on the Allegheny National Forest lands. I have seen the effect of operators simply walking away from their responsibilities after wells fail to be economical. I have seen hundreds of orphaned and abandoned gas and oil wells on the ANF. Can't you learn from the "Fed's" mistakes? (631)

Response: By monitoring the highest risk sites, any environmental impacts can be greatly curtailed and addressed by the operator completing stimulation activities.

692. Comment: Include stronger provisions to find and plug off the state's 250,000 "orphaned or abandoned" wells. These wells are a danger for methane release and other chemical contamination. (650, 651, 653, 655-658, 205a, 219a, 255a, 278a, 304a, 663-675, 678, 680-684, 687, 688, 692-694, 697, 701, 703-706, 710, 711, 713, 717-723, 726-728, 733, 735-736, 744a, 746, 747, 750-752, 755-757, 759, 762-767, 769, 771, 775, 778-780, 789-791, 796-797, 803, 805, 811, 813, 815-818, 825, 826, 828-830, 834-839, 960-969, 1020-1027, 1096)

Response: For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

693. Comment: DEP reportedly has recorded approximately 128 confirmed stray gas migration cases in Pennsylvania. Only 24 of these have any connection to well integrity issues, and of those, it is not clear whether the wells were operator-owned or orphaned. A failure of 24 wells out of the approximately 135,000 wells operating in the state - a "failure" rate of 0.02% - does not justify the proposed burden to industry generally or the conventional industry specifically. The operating pressure of a conventional well is fundamentally different than that of an unconventional well. Conventional wells typically operate at only hundreds of psi of pressure or less, which means the surface shut-in pressure and surface producing back pressure inside the surface casing does not exceed the 0.433 psi standard set forth in 25 Pa. Code § 78.73(c). (If greater pressure than the 0.433 psi standard is encountered in a conventional well the industry practice is to introduce a second string of casing so that the surface casing is not exposed to that greater pressure.) This in turn means that if a shallow conventional well loses integrity, groundwater would migrate into the well bore, not the other way around where there would be a risk of gas or other fluids migrating from lower formations into fresh groundwater.

Much of the DEP's commentary during the recent MIA meetings and workshops seems not to have fully appreciated this point or the economic impact that new MIA program will have on small businesses.

The impact of the new MIA form is very significant to them. Using DEP's formula, it appears that a minimum of 1 additional employee may be required for every 500 wells. A conservative "all-in" cost to hire an inexperienced, entry-level employee would be approximately \$65,000- \$70,000 a year per 500 wells. Implementing the MIA guidance will be very work-intensive at the outset - educating existing technical staff (or creating a new position requiring additional team members) in inspection imperatives, constructing an inspection template compatible with the MIA form for each technician to use in the field, and training an office position with some knowledge of well mechanics to transfer the data from the field to the electronic MIA form. DEP has not fully considered this significant economic impact. (413a)

Response: For matters related to the applicability at conventional well sites, please see response to comment 630.

694. Comment: § 78.52a. Abandoned and orphaned well identification: This proposed section requires operators to identify orphaned and abandoned wells in proximity to the vertical and horizontal well bore prior to hydraulically fracturing a well. The section outlines how operators shall conduct this identification; including consulting with the Department's database, farm line maps and submitting a questionnaire to surface landowners. The results of this survey shall be provided to the Department.

In addition to the United States Geological Survey (USGS) 'farm line' maps, the Department of Conservation and Natural Resources (DCNR) has been working to digitize their records. These should be consulted also.

Also USGS survey reports and USGS topography maps. Thousands of legacy well locations are identified in these records.

During an appointment with a geologist at the DEP Meadville I obtained copies of maps that identified over a thousand legacy wells in Lawrence County. 16 are listed on the DEP's orphan and abandoned list. Until the PADEP database reconciles their records and maps drilling permits should not be authorized in areas known by the DEP to have large numbers of potential pathways.

IN 2010 STRONGER, State Review of Environmental Regulations recommended: The review team recommends that DEP consider whether there are areas or situations in which wells (active and abandoned) in the vicinity of hydraulic fracturing operations provide pathways for fluid movement into groundwater. In such areas or situations, DEP should require operators to identify and eliminate these potential pathways for fluid movement into groundwater before conducting hydraulic fracturing operations."

The proposal to identify and monitor the wells within 1000 feet does not comport with the recommendation made by STRONGER to the DEP. § 78.52a proposals simply ignores STRONGER recommendations and does nothing to prevent communication between wells.

Shell hired professionals to search for wells on Maggy Henry's farm in Lawrence County. DOZENS are identified on a farm line map and they gave up. They were led to the area and couldn't locate any of the 27 and there were pipes all over the place.

The equipment used for surveys is expensive and takes training. Surveys are not free Surface owners should be provided funding to conduct these surveys and a reasonable amount of time (at least 30 days per acre) to respond to the questionnaire to surface landowners to search for abandoned wells. This would be a good use of the impact fees. If abandoned wells are found, and an operator decides to drill and frac, nearby water sources should be monitored before and after drilling and fracking and the operator should be required to replace the well water to pre- drill standards, if impacted.

In Erie, PA Presque Isle, Hammermill/International Paper injected waste into a well and it migrated over 4 miles and came to the surface through an abandoned wellbore.

Requiring operators to watch unplugged wells within 1000 feet of new wells to see if the flux/ flow of odorless and colorless gas changes, is a gift from the Commonwealth to operator. (844a)

Response: For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

By monitoring the highest risk sites, any environmental impacts can be greatly curtailed and addressed by the operator completing stimulation activities.

For matters related to the landowner questionnaire, please see response to comment 662.

Water supply wells are addressed under existing laws and regulations, including the presumptive liability and setback language of the Act.

The Department will develop clarifying guidance related to the area of review requirements prior to promulgation of the final rule. Specifically, this issue will be addressed in a guidance document discussing the components of a suitable monitoring plan.

695. Comment: We'd like to see the department (DEP) identify spent wells and enter each one into a data base to make for easier identification. We would like any and all spent wells to be capped before any future work begins. (862)

Response: For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

696. Comment: Abandoned and orphaned well identification - the identification procedure in this section of the proposed regulation outlines a very difficult process. Traditionally, the operator has completed its "due-diligence" in order to avoid potential environmental impacts and communication with abandoned wells. The introduction of a map finder identification tool will be helpful. However, the use of a questionnaire with adjacent property owner will likely cause some issues from the standpoint of property access or lack of, or inaccurate knowledge regarding the existence of abandoned wells. (880)

Response: For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

For matters related to the landowner questionnaire, please see response to comment 662.

697. Comment: Pennsylvania is pot-marked by old abandoned wells, some known, and some unknown. The existence of these wells presents a possible migratory pathway for harmful fracturing fluids, drilling fluids, and gas. While we appreciate the Department's effort to address the issue of abandoned wells in Pennsylvania, the proposed regulations do not go far enough to protect citizens and the environment. Section 78.73 does not do enough to prevent a problem. Under the proposed regulations, if an abandoned well is identified within 1000 ft. of the well bore or lateral, and the abandoned well likely penetrates a formation intended to be stimulated, the operator must visually monitor during stimulation activities. If the operator alters the orphaned or abandoned well by fracturing, then it must plug the well.

The Department has neither defined what the operator must do to visually monitor the abandoned well nor what constitutes altering an abandoned well, thereby triggering the requirement that the operator must plug the well. It is conceivable that by the time the operator, by visually monitoring the well, notices it altered the abandoned well - the damage may be done. The Department has a duty to prevent environmental harm. If an abandoned well is located and it is likely that the old well penetrates a formation intended to be fracked, the Department should require the operator to either plug the abandoned well or locate its well pad somewhere else. (887)

Response: For matters related to acceptable monitoring protocols, please see response to comment 694.

"Alteration" is currently defined in Act 13 and in this case the physical characteristics of the wellbore communicated with are modified through the establishment of a hydraulic connection

with a different portion of the reservoir/a new reservoir. By monitoring the highest risk well sites, any environmental impacts can be greatly curtailed and addressed by the operator completing stimulation activities.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

- 698.** Comment: A “paper” review of maps and questionnaires is not sufficient to prevent gas migration in old gas and oil fields with old unplugged and abandoned wells. There must be an on-site inspections and assessment to identify any orphaned or abandoned wells prior to drilling. (891)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

The regulations requires field reconnaissance and monitoring of the highest-risk well sites and is not limited to just a file review.

- 699.** Comment: Potential stray gas migration is also not being addressed by the proposed rules. Stray gas migration has been and continues to be a major problem in the gas fields of Pennsylvania. Old unplugged and abandoned wells are a source of gas which migrates and if and when the concrete casings crack, which is a 50% certainty over a decade even more problems will occur. There must be a means to eliminate potential pathways for fluid movement into groundwater before conducting hydraulic fracturing operations. The proposed rules for pre-fracking surveys must require onsite inspections and assessments for the purposes of identification of orphaned or abandoned wells prior to drilling.

There must be provisions in regulations to require the original driller gas well owner to provide for the capping of all played out wells. (916)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

- 700.** Comment: It is well known that there are hundreds of thousands of orphan and abandoned oil & gas wells spread across the Commonwealth. Each of these wells is a potential conduit for contamination. Before any development should be allowed, the applicant for a permit should be required to conduct an onsite survey extending at least one mile from the edge of the proposed site, one mile radially from any horizontal well bore, and one mile from the end of each well bore to identify orphan and abandoned wells. The permit application must document that such a survey has been performed and any wells identified have been properly plugged. (930)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

For matters related to the dimensions of the area of review, please see response to comment 627.

- 701.** Comment: Abandoned and orphaned well identification: Will this requirement be handled on a “best effort basis”? If operators do not have surface agreements to access private properties to identify

abandoned and orphaned wells, the surface owners may require unreasonable payments, or deny access. If the operator cannot comply with this requirement due to access issues, will the DEP deny the issuance of permit? The distance requirement for identifying these wells should be reduced for conventional well sites. (445a)

Response: For matters related to the dimensions of the area of review, please see response to comment 627.

For matters related to the landowner questionnaire, please see response to comment 662.

702. Comment: We commend the Department for taking the initiative with respect to pre-hydraulic fracturing assessment under Sections 78.52a and 78.73 of the proposal. PEC identified preexisting wells and subsurface hazards as a key issue in our 2010 policy report on shale gas development. We believe these provisions should be strengthened to expand the scope of the operators' analysis of potential fluid conduits in the impacted strata, and to require operators to verify avoidance or mitigation of identified hazards prior to hydraulic fracturing. (997)

Response: Generally speaking, due to lithostatic pressure applied by overlying rock layers and the physics constraining fracture mechanics, the most likely pathway to fresh groundwater during hydraulic fracturing is represented by improperly abandoned oil and gas wells. If faults or zones of fracture concentration do play some role in communication, it is by allowing propagated fractures to move out of zone and into an improperly abandoned oil or gas well. However, the Department has modified the regulatory language to include a provision for monitoring fracture treatment pressures at the stimulated well site. This provision is intended to allow for the identification of abnormal fracture growth.

The Department has modified the final-form rulemaking language to require that the survey be completed prior to drilling, thus allowing risk mitigation through the implementation of avoidance measures.

703. Comment: Before drillers begin drilling, they should be required to do baseline testing (with results released to the DEP and to the public) of the surrounding water supplies, so that they cannot later wrongly claim that water contamination was probably there before they drilled. They should also be required to identify and map old abandoned wells on their site, to cap those that are improperly sealed, and to make sure they don't intersect the old wells in their new drilling. (1033)

Response: Water supply wells are addressed under existing laws and regulations, including the presumptive liability and setback language of the Act.

For matters related to the timing of the area of review survey, please see response to comment 627.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

704. Comment: There are old wells, many not identified within our watershed that actually dates back to 1881 [Report of Progress ...By Geological Survey of Pennsylvania, Pennsylvania. State Geologist (1874-1890), Pennsylvania. Board of Commissioners for the Second Geological Survey http://books.google.com/books?id=XXMMAAAAYAAJ&pg=PA149&dq=mehoopany+oil+company&hl=en&sa=X&ei=iKcgU8yKIM3F0AGZ_4CIBA&ved=0CEUQ6AEwAA#v=onepage&q=Mehoopany%20oil%20company&f=false]. Drilling in our watershed also occurred during the late 1940's-

1950's with the John Sheehan well [Mehoopany Township, Wyoming County] and other wells including one near the environs of the current Chesapeake Energy ROUNDTOP location in Colley Township, Sullivan County. Additional natural gas wells were drilled in North Branch Township, Wyoming County during the 1970's of which the rigging remains in place in the woods and abandoned pipelines run through some of our member's properties. So, we are concerned about possible environmental impacts, especially knowing that some of these older casings have been removed. Therefore, we recommend the area of review be revised to 1,400'. (1035)

Response: For matters related to the dimensions of the area of review, please see response to comment 627.

705. Comment: 78.52a should be rewritten as below:

78.52a. Well identification and evaluation.

(a) Prior to drilling the well, the operator of a horizontal gas or oil well shall make a good faith effort to identify the location of all operating, inactive, orphaned or abandoned wells in accordance with subsection (b) within a rectangular area of investigation that extends:

- (1) Horizontally to a distance, and in the direction of predicted fracture propagation:
- (2) 500 feet beyond both the toe and the heel of a horizontal well in directions parallel to the primary well azimuth: and
- (3) Vertically along the entire lateral length of the well, from the depth of the shallowest well perforation upward to such depth that a predicted barrier to fracture propagation can be documented (above which vertical fracture

Prior to hydraulically fracturing the well, the operator of a vertical oil or gas well shall make a good faith effort to identify the location of all operating, inactive, orphaned or abandoned wells within 500 feet of the well bore in accordance with subsection (b).

(b) Identification shall be accomplished by conducting the following:

- (1) A review of the Department's orphaned and abandoned well database;
- (2) A review of company records, available records of offset operators, public data bases, and other regulatory agency records;
- (3) A review of historical maps (i.e. WPA, USGS, Pennsylvania Geologic Survey, operator "farm sheet" maps), where available;
- (4) A review of historical air photos available on the Pennsylvania State University 'Penn Pilot' website (<http://www.pennpilot.psu.edu/>).

(c) Prior to drilling a well, the operator shall assess the potential risk of hydraulic fracture communication with operating, inactive, abandoned or orphan wells that penetrate the target formation or confining formations above. The assessment shall be accomplished by conducting the following:

(1) A determination of how far away an operating, inactive, abandoned or orphan well is in the subsurface and whether a well is within the path of predicted lateral propagation of fracture stages planned for the well at the targeted reservoir level.

(2) Identification of faults at the reservoir level that may be penetrated by an operating, inactive, abandoned or orphan well or that lies in the path of predicted propagation of fracture stages planned for the well.

(3) An assessment of the condition and quality of the plugging of any abandoned or orphan well, if possible. Such assessment may include a review of available historical well reports, geologic reports and descriptions, wellbore diagrams and construction schematics, plugging and abandonment reports, DEP plugging and abandonment certificates, wireline well logs, cement bond logs or other available information on the

abandoned or orphan well.

(d) Prior to drilling a well, the operator may revise the proposed wellbore path, revise the well completion design, or take other actions to mitigate the risk of potential communication, if the operator determines that hydraulic fracture communication may occur with a well.

(e) Prior to hydraulically fracturing a well, the operator shall submit a plat to the Department showing the location and GPS coordinates of wells penetrating at or below the planned reservoir interval or overlying primary confining layer that have been identified pursuant to subsection (b). (1049)

Response: For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

For matters related to the dimensions of the area of review, please see response to comment 627.

For matters related to the timing of the area of review survey, please see response to comment 627.

For matters related to the inclusion of other well types in the area of review survey, please see response to comment 626.

For matters related to which well sites must be monitored because of vertical proximity to the stimulated interval, please see response to comment 626.

Generally speaking, due to lithostatic pressure applied by overlying rock layers and the physics constraining fracture mechanics, the most likely pathway to fresh groundwater during hydraulic fracturing is represented by improperly abandoned oil and gas wells. If faults or zones of fracture concentration do play some role in communication, it is by allowing propagated fractures to move out of zone and into an improperly abandoned oil or gas well. However, the Department has modified the regulatory language to include a provision for monitoring fracture treatment pressures and volumes at the stimulated well site. This provision is intended to allow for the identification of abnormal fracture growth. The Department has also modified the regulatory language to account for out-of-zone fracture growth and require a visual assessment of the integrity of well sites identified during the area of review survey.

For matters related to avoidance measures, please see response to comment 702.

The final-form regulation requires that all wells be identified on the plat, but that only the highest-risk wells be monitored in the field. There may be instances when wells cannot be located in the field or when unanticipated frac communications take place. By keeping track of all well locations, operators and companies will be better able to respond to incidents that may occur in association with such well locations.

706. Comment: § 78.52a. Abandoned and Orphaned Well Identification

The issue of potential communication between hydraulically fractured wells and existing abandoned or orphaned wells is of paramount importance to the NPS. Reported occurrences of “frack hits” (subsurface well communication) and the resulting environmental and safety hazards

are very concerning to agencies such as the NPS, charged with conserving the environment and serving the visiting public.

When drilling operations are proposed near units of the National Park System and affiliated areas, the NPS would like to work closely with the Department and the specific operator wherein the required orphaned or abandoned well surveys could be completed on National Park System owned or administered lands. Due to the large acreages involved, the NPS does not always have accurate surveys of all wells within park boundaries. A cooperative working agreement between the Department, operators, and the NPS to complete the required surveys would benefit all involved parties and assist the Department in a more efficient permitting process. The NPS would be happy to help the Department craft this cooperative working process for inclusion in draft regulations.

We also suggest that this section include language requiring environmental remediation by the operator if orphaned or abandoned wells not previously located or cataloged are adversely impacted by new operations. We also request that park units within the notification distance required in § 78.15 (f)(1)(i) for publicly owned or administered park lands be notified when an operator reports wellbore annulars have become over pressured to a degree that requires some well remedial action in response to defective casing or insufficient or defective cementing as specified under § 78.86. The condition that an underground blowout or elevated sustained casing pressure was occurring in a nearby well would be an indication of an increased threat of gas migration to nearby properties and alert the NPS to potential subsurface resource impacts (increased methane levels in potable aquifers). Impacts to water supplies from increased methane levels or surface resources may then only become apparent upon further groundwater monitoring or inspection for a surface release (i.e. gas, condensate or other fluid seep). (1062, 1133)

Response: Notifications and other provisions may be most appropriately addressed in the lease agreement between the operator and the appropriate agency. If the federal government does not possess the oil and gas rights for the property, the Department will still coordinate with all surface rights owners if surface impacts occur.

All violations of the Clean Streams Law must be addressed and appropriate remediation standards demonstrated in situations when a frac communication occurs.

The Department made substantive changes to Subchapter D as part of its February 5, 2011 rulemaking. Current changes to the section are intended to address monitoring and actions that must be taken when a frac communication results in alteration of an orphaned or abandoned well, although this comment may be appropriate for future updates to Subchapter D.

707. Comment: We applaud this section of the proposed regulations. This category of wells represents a significant risk to both the environment and citizens of the State. The proposed regulations should also include an extensive monitoring effort for abandoned and orphaned wells to benchmark potential risks from the outset. Unless pre-drilling data is gathered, assessing environmental damage caused by subsequent drilling will be impossible to categorize. The greatest benefit from this amendment is achieved if pre-emptive data is gathered and made available to the DEP and local municipalities. (1063)

Response: The Department acknowledges the comment. For matters related to the timing of the area of review survey, please see response to comment 627

- 708.** Comment: The Proposed Regulations should maintain and enhance the duties they impose on well operators with respect to abandoned and orphaned wells: §§ 78.52a and 78.73 require well operators to identify, inspect, monitor, and in some cases plug abandoned and orphaned wells. This final requirement is triggered only when an operator alters an abandoned or orphaned well during the course of its own hydraulic fracturing operation. I support these sections, along with the comments that offer a concrete enhancement.

On January 22, 2014, the Clear Air Council submitted comments (the “CAC comments”) urging a revision to § 78.52, such that operators would have to identify abandoned and orphaned wells in proximity to the vertical and horizontal well bore prior to site construction, rather than prior to hydraulic fracturing. This is a common-sense change that would benefit operators because it would increase the predictability of site development costs. Some commentators have suggested that these sections impose “open-ended,” unpredictable obligations on well operators. I disagree, because the Proposed Regulations establish a clear process that includes the identification, inspection, and monitoring of orphaned and abandoned wells. The alternative would be to leave Pennsylvania residents and tourists at risk of serious bodily harm and death. As the CAC comments point out, disasters can result when a hydraulic fracturing operation alters an abandoned or orphaned well.

Furthermore, on January 9, 2014, Berks Gas Truth submitted comments (the “Berks comments”), highlighting the Commonwealth’s compelling interest in managing and plugging abandoned and orphan wells. The Berks comments illustrate the scale and significance of the problem by citing numerous expert sources. For example, DEP officials have estimated that of the 325,000 oil and gas wells that have been drilled in Pennsylvania, the status of 184,000 are unknown. A study from Carnegie Mellon University estimated that it would take 160 years for DEP to cap all of the orphaned and abandoned wells at 2004 funding levels. Abandoned and orphaned wells, like previously contaminated water supplies, are legacy costs of previous industrial exploitation. Again, DEP is correct and perhaps even obligated to seek assistance from drilling operators in addressing these costs. (1070)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

- 709.** Comment: There are opportunities for clarifying areas of this section. The State Review of Oil & Natural Gas Environmental Regulations (STRONGER), a national non-profit organization charged with assessing states’ oil and gas regulations, reviewed Pennsylvania’s oil and gas regulatory program in May 2013 at the Department’s request. STRONGER released its report in September 2013 and found that Pennsylvania’s program “is, over all, well-managed, professional and meeting its program objectives.” STRONGER specifically commended the Department for its Orphan and Abandoned Well Program.

Commentator joins STRONGER in commending the Department for furthering the joint efforts of the regulated community, the public, and the Department with some of the new regulations in this area. Successful new regulations are sustainable and based on available technologies. (1085)

Response: The Department acknowledges the comment and will provide clarifying guidance prior to the final rulemaking.

- 710.** Comment: 78.52a: *Abandoned and Orphaned Well Identification- Need for Consolidating Historic Maps and Geographic information on Oil and Gas Activity*
Before promulgating a rule that utilizes such a broad scope of review, Commentator asks that the Department make all available data easily accessible to the industry from one comprehensive

source. Specifically, the Department should first complete and digitize the Farm Line Map Project and other resources to make them easily accessible before implementing a regulation of this type. Without such a comprehensive source of data on orphaned and abandoned wells, assuring a thorough pre-hydraulic fracturing review on a well-by-well basis will be very difficult for the Department and the regulated community. Operators do their best to obtain all information regarding potential orphaned and abandoned wells in the vicinity of a planned unconventional well. However, operators remain without a comprehensive source of best available data from the Commonwealth that would aid in the pre-hydraulic fracturing review. Commentator encourages prompt digitization and accessibility of identification resources prior to implementation of a Rule tasking operators with consultation of the same. (1085)

Response: For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

While the availability of a comprehensive database will make area of review surveys easier, the Department does not believe it is appropriate to delay these important provisions until such time as the database is complete and available for use.

711. Comment: The Board should consult with the Department on the functional status of the Department's GIS mapping database being developed to house the GIS data submitted by several operators. Successful development and implementation of this project could help support the goals of proposed regulations. Identifying abandoned and orphaned wells before hydraulic fracturing is good standard practice; however, the rule as currently proposed does not provide operators with enough clarity and flexibility to properly identify and plan operations for such wells. The GIS mapping database could serve as a key component to the continued success of the Orphan and Abandoned Well Program. (1085)

Response: For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

712. Comment: It is much easier to prevent contamination than to try remediating it. There should be adequate fees imposed for the purpose of plugging more of these abandoned wells.

Along the same area of concern, the bonding requirements for O&G activities are woefully inadequate. If these cannot be increased, there should be rigorous verification by DEP inspection that well sites are properly restored and plugged prior to releasing the operator from liability. (1089, 1229)

Response: The bonding levels were recently updated by amendments to the Oil and Gas Act (now Act 13 of 2012), although levels for conventional well sites reverted back to 1985 amounts through changes to the fiscal code. The Department is planning a study to evaluate the current orphaned and abandoned well surcharges applied during permitting. Finally, permitting fees were recently increased.

Site restoration and post-plugging inspections are currently conducted by the Department. However, the Department acknowledges this comment and notes that additional changes to Subchapter D, including substantial changes to the well plugging regulations, are planned over the course of the next several years.

713. Comment: Because of the potential for serious contamination, include identification of abandoned and orphaned wells through advertisements in local newspapers (3 or more times), posting in

municipal buildings (30-days), specific seismic testing, and on-the-ground surveillance to note pipes, casings, depressions, small sheds and/or pits. [78.52 (b)] (855, 1098)

Response: The information most pertinent to locating well sites exists with property owners or can be referenced through the review of available historical maps and databases. The Department has addressed these information sources through updated language in the rulemaking requiring landowner questionnaires, map reviews, and database searches.

For matters related to acceptable monitoring protocols, please see response to comment 694.

714. Comment: 78.52a (c) --The location coordinates for large number of wells that may exist in the Department's database are likely derived from sources other than field GPS coordinates. Some coordinates may have been derived from old maps. For a variety of reasons, a well with latitude/longitude coordinates in the Department's database may not be visible on the ground, perhaps because the coordinates are inaccurate, or possibly because the well does not exist. (1103)

Response: For matters related to well site locational uncertainty, please see response to comment 626.

715. Comment: Because of the generally higher rate, volume and pressure used in hydraulic fracturing of the Marcellus and other deep shale formations, constructing a more comprehensive database of historical deep wells (those that penetrate to a depth at least 1,500 feet above the Marcellus Shale) would be a priority. It is hoped that with good cooperation, this could be accomplished within a few months, as the state's current database for this set of deeper wells is believed to be nearly complete. Enhancement of the shallow well database will require significantly more work, time and expense, and is likely a multi-year project. Additionally the oil and gas industry's identification of abandoned and orphaned wells will benefit from further development of the Department's database, and should be postponed until the database and map viewer system is improved. Accordingly, the Department should consider a phased implementation of this new section. (1103)

Response: For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

716. Comment: Suggested amendatory language for 78.52a:

§ 78.52a. Well identification prior to hydraulic fracturing

(a) Prior to hydraulically fracturing an unconventional well, the operator shall identify in accordance with subsection (b) the location of active, inactive, plugged, orphaned or abandoned wells within 1,000 feet measured horizontally from the surface projection of any portion of the wellbore whose total depth is known or reasonably expected to be less than 1,500 feet above the shallowest vertical depth to be perforated or isolated for hydraulic fracturing. Prior to hydraulically fracturing a conventional well, the operator shall identify the location of active, inactive, plugged, orphaned or abandoned wells within 500 feet of the wellbore whose total depth is known or reasonably expected to be less than 500 feet above the shallowest vertical depth to be perforated or isolated for hydraulically fracturing.

(b) Identification shall be deemed to have been satisfied by conducting a review of the Department's database for active, inactive, plugged, orphaned and abandoned wells.

(c) Prior to hydraulically fracturing a well, the operator shall submit a plat to the Department

showing the location and GPS coordinates of wells identified pursuant to subsection (b) whose total depth is known or reasonably expected to be less than 1,500 feet, in the case of an unconventional well or 500 feet, in the case of any other well, above the shallowest vertical depth to be perforated or isolated for hydraulic fracturing. The operator may notify the Department of any wells that are identified on the Department's database but which have not been located on the ground using reasonable efforts.

(d) This subsection shall become effective [six months] from final publication in the Pennsylvania Bulletin. (1103)

Response: For matters related to the inclusion of other well types in the area of review survey, please see response to comment 626.

For matters related to which well sites must be monitored because of vertical proximity to the stimulated interval, please see response to comment 626.

For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

For a summary of which wells sites in the area of review must be mapped, please see response to comment 705.

The survey must be completed prior to drilling, permitting or stimulation, dependent upon the anticipated timing of stimulation activities, and will not apply to wells that are partially drilled at the time of promulgation.

717. Comment: Standards should include for highest level of control relative to potential stray gas migration. (1106)

Response: The subject of gas migration is already addressed in various sections of the Act and current regulations. It is acknowledged that communication with an improperly plugged abandoned well during stimulation can and has led to gas migration. Once that occurs, operators are required to follow the appropriate laws and regulations to mitigate gas migration.

718. Comment: **78.52a** – We support the requirement for well operators to identify orphaned and improperly abandoned wells prior to hydraulic fracturing operations. It is estimated that there are approximately 200,000 improperly abandoned or orphaned wells in Pennsylvania. (Scott Detrow, *Perilous Pathways: Behind the Staggering Number of Abandoned Wells in Pennsylvania*, StateImpact (Oct. 10, 2012), <http://stateimpact.npr.org/pennsylvania/2012/10/10/perilous-pathways-behind-the-staggering-number-of-abandonedwells-in-pennsylvania>).

We recommend that the requirement to identify orphaned and improperly abandoned wells be expanded to include identification prior to all oil and gas drilling operations, including but not limited to site disturbance, drilling, and construction.

Improperly abandoned wells include wells that have not been abandoned in compliance with the PADEP's requirements for long-term plugging and abandonment at 25 Pa. Code § 78.91 through § 78.98. An improperly abandoned well could include a well that was plugged and abandoned (P&A'd), but was done so in a manner where the well still poses a risk to the environment (e.g., insufficient barriers or cement used to seal the well). Because operators typically do not monitor the condition of P&A'd wells, improperly abandoned wells often go un-resolved.

Well construction standards, techniques, and technology have improved over time, and it is reasonable to assume that most of these long-term idle wells were not constructed to today's standards, have been subject to mechanical wear and corrosion, and warrant proper abandonment to mitigate risk to protected groundwater resources. To compound problems, many wells that have not been properly abandoned do not have financial security (e.g., bonds) in place, or have insufficient bond amounts set aside, to fund P&A work.

The number of improperly abandoned wells in Pennsylvania is a significant issue as new wells are constructed and existing wells are hydraulically fractured or re-drilled to optimize production. These old wells could provide a vertical conduit for pollutants to reach protected aquifers. Wells drilled and fracture stimulated nearby pose a risk of communicating with the improperly abandoned or orphaned well. For example, a hydraulic fracture treatment can propagate a fracture that, depending on geology, design, and well depths, could pose a risk of intersection with a nearby well (e.g., active producer, abandoned or orphaned well). This type of well-to-well communication is typically referred to in industry publications as a "frac-hit."

Improperly abandoned wells (including improperly abandoned orphaned wells) pose a risk to the environment. Wellbore infrastructure can corrode and erode, failing over time and creating a potential pollutant pathway for hydrocarbons to move vertically through failed casing or cement to groundwater resources. These wells can either leak gas on their own or provide a vertical pollutant pathway to groundwater resources that can be activated by new well activity nearby.

Pollution caused by improperly abandoned wells in Pennsylvania was documented in a 2009 report prepared by the PADEP. The PADEP report listed 27 cases where improperly abandoned wells have been the source of groundwater contamination. (PADEP, Bureau of Oil and Gas Management, Stray Natural Gas Migration Associated with Oil and Gas Wells (Draft Oct. 28, 2009)). In some of the 27 cases the wells were abandoned according to the standard practices of the time, but now leak and need to be re-abandoned using improved materials and techniques. Some of the cases cited by the PADEP include very old well construction techniques, for example, surface casing made out of wood that has rotted away, and wells with no surface casing or cement installed at all. These wells have provided a conduit for gas and other pollutants to reach groundwater through damaged or worn casing, poorly installed cement, or more directly where casing or cement was not initially installed.

The PADEP also identified wells that need to be P&A'd, but have not yet been addressed due to the lack of a responsible party and/or on account of the PADEP resource limitations. (See *id.* Cases include: Independent Valley News Migration, Allegheny County – SWRO – March 2009; Versailles Migration, Versailles, Allegheny County – SWRO – 2007 through 2008; Childers Migration, Washington County – SWRO – June 2005; Groshek Migration, Keating Twp., McKean County – NWRO – 2008; and Skinner Migration, Columbus Twp., Warren County – NWRO).

There were three cases cited by the PADEP where fracture stimulations in an operating well communicated with a nearby abandoned well, causing a gas leak in the abandoned well. (See *id.*) The PADEP's study highlighted the importance of locating orphaned and improperly abandoned wells near new oil and gas developments, and showed the importance of properly abandoning wells before new development proceeds.

A 2011 Duke University study covering Pennsylvania and New York found methane contamination of drinking water associated with shale-gas extraction. The study found that methane concentrations were 17 times higher, on average, in drinking water wells in active drilling

and extraction areas than in wells in nonactive areas. (S.G. Osborn, et al., *Methane Contamination of Drinking Water Accompanying Gas Well Drilling and Hydraulic Fracturing*, Proc. of the National Academy of Sciences, U.S.A.; DOI: 10.1073/pnas.1100682108, p.2 (2011)). Clearly, the higher incidence rate of methane contamination in drinking water wells in shale gas extraction areas is not a coincidence, but is an indicator of shale gas drilling and completion operations mobilizing gas from the shale gas reservoir into protected aquifers. One of the most likely pathways for leaking of gas mobilized by a hydraulic fracture treatment is a nearby existing well that either was improperly constructed or improperly plugged. Given their failed cement, corroded casing, or lack of casing or cement, such improperly abandoned wells present vertical pathways to aquifers and drinking water resources.

Mechanical failure, human error, and engineering design flaws do occur in the construction and operation of wells. Indeed, groundwater contamination has been attributed to operational failures at various Marcellus Shale gas development operations in Pennsylvania, including operations by Cabot Oil & Gas Corporation, Catalyst Energy, Inc., and Chesapeake Energy Corporation.

Pennsylvania has found that significant planning, research, and field work is needed to identify orphaned and improperly abandoned wells before drilling nearby wells; such aspects must be integrated into the proposed regulations to guide operator identification of abandoned wells. At a 2009 Stray Gas Workshop in Pennsylvania, Garrett Velosi, from the National Energy Technology Laboratory, pointed out that one of the main problems with stray gas leaks from abandoned wells is verifying the location of improperly abandoned wells. Records on older wells are often limited or non-existent. Mr. Velosi presented methods for locating unmarked abandoned wells. They include the use of historic photos, ground magnetic surveys, and airborne surveys (equipped with magnetometers and methane detectors). (G. Veloski, National Energy Technology Laboratory, *Methods for Locating Wells in Urban Areas – A Summary of Case Studies* (Nov. 2009) (Pennsylvania Stray Gas Workshop)).

Additionally, we are concerned that the proposed radius of investigation for locating improperly abandoned wells is too small, and that action is not required to properly abandon a well that could be intersected by a hydraulic fracture treatment.

The EQB proposed a radius of investigation of 1,000 feet for all gas wells (that produce marketable quantities of gas or a gas/oil ratio of more than 100 Mcf/bbl). The EQB did not explain how it determined a 1,000 feet threshold to be sufficient and protective of ground water resources. Nor did the EQB explain why it proposes to exempt all gas wells that do not produce marketable quantities of gas or a gas/oil ratio of less than 100 Mcf/bbl from the operator's obligation to identify orphaned and abandoned wells prior to hydraulic fracturing operations.

The amount of gas a well can actually produce will depend on the success of the hydraulic fracture treatment. This information will not be known until after the hydraulic fracture treatment is completed. Therefore, decision criteria based on data that will not be available at the time the decision is made are not good criteria to use to determine whether abandoned and orphaned wells must be identified prior to a hydraulic fracture treatment.

We are also concerned that, in addition to gas that may be mobilized with the hydraulic fracture treatment, that the chemicals contained in the hydraulic fracture treatment itself have the potential to intersect an abandoned or orphaned well and result in ground water contamination. Therefore, the need to identify abandoned or orphaned in the hydraulic fracture treatment radius is independent of the gas flow rate.

The EQB proposed a radius of investigation of 1,000 feet for all horizontally drilled oil wells and 500 feet for vertically drilled oil wells. The EQB did not explain how it determined the 500 and 1,000 feet thresholds to be sufficient and protective of ground water resources.

As proposed by the EQB, there is no variability in the impact radii to account for hydraulic fracture treatment type or size variation. Fracture zones can propagate at considerable distances from the wellbore, and the EQB should require operators to identify abandoned wells within the potential zone of impact, with an additional margin of safety.

We recommend that operators be required to identify any improperly abandoned wells within 2,500 feet of the furthest fracture zone extent measured along the entire wellbore. This method will ensure a larger radius of investigation is completed for larger hydraulic fracture treatments with larger radii of impact.

Additionally, we recommend that operators that have not properly P&A'd all their wells in Pennsylvania be required to complete that work before being issued permits to drill and hydraulically fracture new wells. It is not acceptable for operators to continue to drill new wells without taking responsibility for remedying existing problem wells. Pennsylvania law provides the PADEP with the authority to deny a permit if issuance of the permit would result in a violation of applicable law. 58 Pa.C.S. § 3211(e)(1). Failure to plug and abandon wells would be a violation of applicable law 58 Pa.C.S. § 3220.

Additionally, regulations should clarify that operators applying for a permit to drill a new well nearby an improperly P&A'd or orphaned well must either: (1) locate the well's owner and arrange for the well to be P&A'd consistent with the PADEP's regulations; (2) work with the PADEP to use the PADEP's Well Plugging Funds (58 Pa.C.S. § 3271) to properly P&A each improperly abandoned well identified; or (3) if the PADEP has insufficient funds to complete this work on the time schedule and the operator wants to implement its project at a faster pace, the operator should be required P&A the improperly abandoned well before the PADEP issues any site construction or drilling permits.

New wells drilled and hydraulically fractured near improperly P&A'd wells can result in groundwater contamination. It is not acceptable to defer resolution of improperly P&A'd wells to a future, yet-to-be determined process with an unknown outcome, and proceed with approval of new wells, when those defective wells are located within the potential hydraulic fracture treatment zone of impact. (In its 2010 Pennsylvania Hydraulic Fracturing Review, STRONGER recommended that the Department take action to "eliminate potential pathways for fluid movement into groundwater..." and consider situations in which active and abandoned wells located near fracking operations will "...provide pathways for fluid movement into groundwater," with a goal of preventing communication between wells).

We also recommend that where current and accurate records are not available, that the operator be required to conduct aeromagnetic and ground magnetic surveys and use methane detectors to identify those wells, consistent with abandoned well location method recommendations from the U.S. Geological Survey (USGS). (U.S. Geological Survey (USGS), Fact Sheet 163-95, Magnetic Surveys for Locating Abandoned Wells, <http://pubs.usgs.gov/fs/fs-0163-95/FS163-95.html>)

A report of these investigations shall be filed with the PADEP within 7 days and the PADEP shall make this information available on a publicly available database.

We recommend the following proposed revision to §78.52a(a)-(c):

§ 78.52a. Abandoned and orphaned well identification.

(a) Prior to site construction and drilling or hydraulically fracturing a the well, the operator of a gas well or horizontal oil well shall identify the location of orphaned or abandoned wells or improperly abandoned wells within 1,000 feet measured within 2,500 feet of the vertical wellbore, measured horizontally, and within 2,500 feet of the horizontal wellbore, measured from the surface directly above its entire length, or in in the case that the well is hydraulically fractured, within 2,500 feet of the furthest predicted fracture zone extent measured along the length of a horizontal the entire well bore in accordance with subsection (b). Prior to hydraulically fracturing the well, the operator of a vertical oil well shall identify the location of orphaned or abandoned wells within 500 feet of the well bore in accordance with subsection (b). For the purposes of this section, a gas well is a well which is producing or capable of producing marketable quantities of gas or of gas and oil with a gas-oil ratio of more than 100 MCF per bbl of oil.

(b) Identification shall be accomplished by conducting the following the steps required in (1) through (6), submitting a report documenting this work, and submitting the survey results within seven days of completion. The Department shall make this survey work publically available on its website within 7 days of receipt.

(1) A review of the Department's active, inactive, plugged, orphaned and abandoned well database.

(2) A review of applicable farm line maps made available on the Department website, where accessible.

(3) Submitting a questionnaire on forms provided by the Department to landowners whose property is within the area identified in subsection (a) regarding the precise location of orphaned and abandoned wells on their property.

(4) A review of historical air photos.

(5) A field survey that includes a ground survey to identify surface evidence of orphaned, abandoned, or improperly abandoned wells, including the use of methane detection equipment.

(6) Aeromagnetic and ground magnetic surveys.

(c) Prior to obtaining a permit for site construction or to drill or hydraulically fracturing a well, the operator shall:

(1) Provide evidence to the Department that all the wells it is financially responsible for in Pennsylvania either are producing or have been properly P&A'd in accordance with 58 Pa.C.S. § 3220 and the Department's requirements for long-term plugging and abandonment.

(2) Submit a plat to the Department showing the location and GPS coordinates of orphaned and abandoned wells identified under subsection (b) and proof of notification that the operators submitted questionnaires under subsection (b)(3).

(3) Provide evidence to the Department that, for each orphaned or abandoned well identified, the well's owner was located, and the well owner has properly P&A'd the well according to the Department's requirements for long-term plugging and abandonment or,

(A) The well owner cannot be located or will not properly P&A the well and that the Department's Well Plugging Funds (58 Pa.C.S. § 3271) have been used to properly P&A each well, according to the Department's requirements for long-term plugging and abandonment, or

(B) The operator has properly P&A'd the well according to the Department's requirements for long term plugging and abandonment.

(d) The Department will include any new orphaned and abandoned well data into its well database, within 30 calendar days, and make that data publically available on the Department's website.

If the EQB disagrees with our recommendation for improving the proposed regulation for abandoned and orphaned well identification, and allows the PADEP to issue permits without

requiring all improperly abandoned wells (including orphaned wells) to be P&A'd according to the PADEP's requirements for long-term plugging and abandonment, we request that the EQB:

- (1) Explain how its proposal is consistent with Pennsylvania law;
 - (2) Provide statistics on the number of improperly abandoned wells (including orphaned wells) in Pennsylvania;
 - (3) Provide a quantitative technical assessment of the cumulative adverse impact these wells have had on the air, surface water, and groundwater; and,
 - (4) Provide a projection of potential future cumulative impacts.
- (1143)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

The Department disagrees with this comment, as oil and gas production levels can be anticipated by referencing current and historical production activities in the area of development.

Existing laws and regulations address the proper plugging and abandonment of wells and when such activities must be completed. The Department has various enforcement mechanisms at its disposal for ensuring that those laws and regulations are complied with. Plugging identified wells ahead of hydraulic fracturing is one option for mitigating risk and has been practiced in the state historically. The Department has agreed to make forms and clarifying guidance available prior to adoption of the final rule in order to address some of the concerns expressed in this comment.

For matters related to the dimensions of the area of review, please see response to comment 627.

For matters related to the inclusion of other well types in the area of review survey, please see response to comment 626.

Plats submitted to the Department identifying wells sites will be done so electronically and are considered public records. The Department's databases will be updated with information as appropriate, although the timeframe for making updates is not being addressed as part of this rulemaking.

Farm line maps are currently available for review at the PA Geologic Survey's office in Pittsburgh. The Department currently maintains and makes available a list of orphaned and abandoned sites that have not been plugged. The location of plugged wells are available in PA*IRIS/WIS. Existing databases are being expanded upon by the Department as historical analog source maps become available and as time permits. Companies in possession of such maps may share them with the Department, if they so choose, in order to facilitate development of a more comprehensive reference database over time. It should also be noted that the Department has modified the regulatory language to broaden the historical maps and database sources that could be referenced during the area of review survey. However, the revised language recognizes that not all operators may have access to the same sources. Finally, pending guidance will detail appropriate search techniques in cases where wells are not found at the reported location.

Under the Clean Streams Law, it is considered unlawful for any person or municipality to put

or place into any of the waters of the Commonwealth, or allow or permit to be discharged from property owned or occupied by such person or municipality into any of the waters of the Commonwealth, any substance of any kind or character resulting in pollution as herein defined. Any such discharge is declared to be a nuisance. Oil and gas wells must be constructed, completed, and operated in a way that does not violate the Clean Streams Law. The Department evaluates environmental and well integrity data that it collects and continues to look for opportunities to complete studies to inform the rulemaking process.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

With regard to cumulative impacts, please see response to comment 2910.

719. Comment: I am glad to see that article 13 acknowledged the communication or migration between the new and historic oil and gas wells. Are some areas, because of previous drilling or mining, unfit for new non-conventional drilling? If there is an interest to drill new wells in a pre-drilled area, who is responsible for finding and plugging the existing historic oil or gas well, or coal mine or salt well? I heard an argument from the industry as to that second question. That argument is, “no other industry has to clean up after a previous”. That is weak. Would a rail-roader try to run a high speed train without doing extensive work on the road bed and tracks first? Would an auto mechanic change a water pump without replacing the weak hoses? Would you paint your house without preparing the surfaces to be painted? Would an army officer send his troops across a field or down a road without sweeping for mines? Besides, the gas industry today is beholding in many ways, to the pioneers of the industry. We should use the opportunity of today to clean up the environmental mess of the past. (1126)

Response: By monitoring the highest risk sites, any environmental impacts can be greatly curtailed and addressed by the operator completing stimulation activities.

720. Comment: In 2010 The Pennsylvania (PA) Department of Environmental Protection (DEP) volunteered to have its hydraulic fracturing program reviewed by The State Review of Oil and Natural Gas Environmental Regulations, Inc., (STRONGER). One of the recommendations STRONGER made to the Pennsylvania Department of Environmental Protection was the following:

The review team recommends that DEP consider whether there are areas or situations in which wells (active and abandoned) in the vicinity of hydraulic fracturing operations provide pathways for fluid movement into groundwater. In such areas or situations, DEP should require operators to identify and eliminate these potential pathways for fluid movement into groundwater before conducting hydraulic fracturing operations.

“Require operators to identify” the potential pathways needs to be recognized for what it is: a recommendation to require operators to conduct surveys to identify nearby wells.

In order to comport with STRONGER recommendations; at minimum the Department of Environmental Protection’s proposed changes to Act 78 should require a comprehensive environmental survey to be conducted. Methods and standards of how the department will require operators to conduct environmental surveys need to be defined.

Locating wells, even for trained professionals can be difficult.

In some areas of Pennsylvania searching existing wells, such as areas of the Bradford Oil Field

where early wells were cased with wood, many of the casings have disintegrated, leaving unlined wellbores. Some have caved in, leaving wide open holes. Some are partially covered with vegetation or snow, surveying these areas can be extremely dangerous.

The department should consider this is not uncommon in some early oil fields and require professionals, trained in the field of environmental surveying to conduct environmental surveys in historic oil and gas fields.

STRONGER's recommendation was also to "eliminate these potential pathways for fluid movement into groundwater before conducting hydraulic fracturing operations." Plugging is the only way to eliminate the potential pathways.

At minimum regulations should require orphan, abandoned and unplugged wells identified by surveys within 1000 feet of proposed wells and well bores to be plugged before authorizing new well permits.

During a comment period at the TAB meeting held in State College, Aug. 2013, a conventional well operator explained he had hydraulically fractured "shallow" horizontal wells. "At least 30." Conventional well operators should also be required to perform environmental surveys and existing unplugged, orphan and abandoned wells should be plugged before new well permits are authorized, especially before authorizing permits for intentionally deviated shallow wells. (844b)

Response: The Department disagrees that it is necessary to specify the qualifications of individuals completing the area of review survey. By requiring a plat, it is implied that identified well sites must be surveyed by engineers/surveying professionals.

The regulatory language has been modified and the final-form rulemaking now requires that the survey be completed prior to drilling. Plugging an identified well is a potential risk mitigation strategy available to an operator and this practice has been applied historically. However, assuming that all identified wells in the survey have not been plugged or pose equivalent risks, and mobilizing plugging equipment to each site to re-enter wells is beyond the scope of a reasonable regulation aimed at minimizing risk. By monitoring well sites appropriately, an assessment can be made regarding the potential for environmental impact and corrective actions employed should an unanticipated communication event occur.

For matters related to the timing of the area of review survey, please see response to comment 627.

721. Comment: Southwestern Energy would support a rule that requires reasonable diligence to identify nearby active, inactive, plugged, abandoned, and orphaned wells prior to hydraulic fracturing. The DEP's proposal, however, would lead to open-ended obligations for identifying these wells. (1145)

Response: For concerns related to the open-ended characterization of the rule, please see response to comment 632.

For matters related to the inclusion of other well types in the area of review survey, please see response to comment 626.

722. Comment: In subsection (b)(1), the word "of" appears to be missing between "review" and "the". (852a)

Response: The Department acknowledges this comment and will make the necessary correction.

723. Comment: Within 1,000 feet of a well bore or lateral, the operator must locate abandoned or orphaned wells. Some of these wells were drilled in the 1800's (with wood conductor pipe). In the early 1900's, thousands of wells were abandoned with the casings pulled to provide steel for World War II. As a result, it is virtually impossible to locate these wells. (627, 4681 – 4682)

Response: Although the Department acknowledges some well sites may be difficult to identify in the field, it does not agree that this will be the case for all high-risk sites requiring monitoring.

724. Comment: Information obtained by the operator regarding orphaned wells and subsequent monitoring reports of those wells should also be provided to the landowner as part of the proposed regulation. (1170)

Response: For matters related to the dissemination of information regarding identified orphaned and abandoned wells, please see response to comment 684.

725. Comment: Consideration must be taken into account for those landowners within the defined search radius who refuse to provide orphaned well location information to an operator and/or allow access to orphaned wells on their property. (1170)

Response: For matters related to the landowner questionnaire, please see response to comment 662.

726. Comment: 78.52a - The location coordinates for a large number of wells that may exist in the Department's database are likely derived from sources other than field GPS coordinates. Some coordinates may have been derived from old maps. For a variety of reasons, a well with latitude/longitude coordinates in the Department's database may not be visible on the ground, perhaps because the coordinates are inaccurate, or possibly because the well does not exist. It seems appropriate that any wells which appear on the Department's database should be identified, provided their total depth extends below the interval that could reasonably be influenced by hydraulic fracturing. A vertical isolation distance of 1,500 feet above wellbore perforations in an unconventional well and 500 feet above wellbore perforations in any other well is a reasonable isolation distance that exceeds the normally expected vertical growth of induced fractures. A requirement to consult "applicable farmline maps, where accessible" in order to identify wells lacks clarity required for a regulation. There are many sources of information on old wells in Pennsylvania, including many reports by state agencies, as well as privately owned maps and records maintained by various operators. If the Department's database could be sufficiently enhanced, a review of the database should be an adequate obligation for well identification. A partnership effort between industry and state government seems an appropriate method of compiling available data on historical oil and gas wells. Because of the generally higher rate, volume and pressure used in hydraulic fracturing of the Marcellus and other deep shales, constructing a more comprehensive database of historical deep wells (those that penetrate to a depth at least 1,500 feet above the Marcellus Shale) would be a priority. It is hoped that with good cooperation, this could be accomplished within a few months, as the state's current database for this set of deeper wells is believed to be nearly complete. Enhancement of the shallow well database will require significantly more work, time and expense, and is likely a multi-year project. The proposed language in Subsection 78.52(b)(3) would require submission of a questionnaire to landowners on forms

provided by the Department. There has been no opportunity to review the proposed questionnaire and no details provided with regard to what the Department envisions as the operator's obligations to verify information received. There is far too much uncertainty related to this provision to support it as a regulatory requirement. Additionally, the oil and gas industry's identification of abandoned and orphaned wells will benefit from further development of the Department's database, and should be postponed until the database and mapviewer system is improved. Accordingly, the Department should consider a phased implementation of this new section.

Suggested Language: 78.52a Well identification prior to hydraulic fracturing

(a) Prior to hydraulically fracturing an unconventional well, the operator shall identify in accordance with subsection (b) the location of active, inactive, plugged, orphaned or abandoned wells within 1,000 feet measured horizontally from the surface projection of any portion of the wellbore whose total depth is known or reasonably expected to be less than 1,500 feet above the shallowest vertical depth to be perforated or isolated for hydraulic fracturing. Prior to hydraulically fracturing a conventional well, the operator shall identify the location of active, inactive, plugged, orphaned or abandoned wells within 500 feet of the well bore whose total depth is known or reasonably expected to be less than 500 feet above the shallowest vertical depth to be perforated or isolated for hydraulic fracturing.

(b) Identification shall be deemed to have been satisfied by conducting a review of the Department's database for active, inactive, plugged, orphaned and abandoned wells.

(c) Prior to hydraulically fracturing a well, the operator shall submit a plat to the Department showing the location and GPS coordinates of wells identified pursuant to subsection (b) whose total depth is known or reasonably expected to be less than 1,500 feet, in the case of an unconventional well or 500 feet, in the case of any other well, above the shallowest vertical depth to be perforated or isolated for hydraulic fracturing. The operator may identify on the plat those wells that are identified on the Department's database but which have not been located on the ground using reasonable efforts.

(d) This subsection shall become effective six months from final publication in the Pennsylvania Bulletin.(1174)

Response: For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

For matters related to which well sites must be monitored because of vertical proximity to the stimulated interval, please see response to comment 626.

For matters related to the value of the landowner questionnaire, please see response to comment 626.

For matters related to the inclusion of other well types in the area of review survey, please see response to comment 626.

For a summary of which wells sites in the area of review must be mapped, please see response to comment 705.

727. Comment: 78.52a – Pre-Hydraulic Fracturing Assessment: With regard to proposed Section 78.52a,

Commentator supports a rule that requires reasonable diligence to identify abandoned and orphaned wells prior to hydraulic fracturing. We also believe the identification should include active, inactive and plugged wells. The regulation should provide clear direction to both the DEP staff and well operators. The rule should provide a precise limitation of the area of review, both horizontally and vertically from the well bore, based upon potential risks related to hydraulic fracturing and communication with other wells in the area, rather than propose open ended obligations. There is a technical consensus that shallow wells are largely irrelevant to deep unconventional well operations. As such, the questionnaire as proposed is unlikely to yield useful information and is more likely to create confusion, administrative complications and delays for well operators and DEP staff without any benefit. The questionnaire should be eliminated. The regulation should be amended to reflect that the operator's obligation consists of: a) consulting with the DEP's database to identify only those active, inactive, plugged, abandoned and orphaned wells that are known or reasonably expected to penetrate the area of review (i.e., located within the specified horizontal distance of a planned wellbore and extending deep enough to potentially be impacted by hydraulic fracturing of the target horizon); b) monitoring of abandoned or orphaned wells that penetrate the area of review during hydraulic fracturing by visual observation or other method approved by the DEP, including circumstances where an operator does not have access to the well; and c) taking appropriate remedial action on any well that is affected by hydraulic fracturing in such a way as to create an environmental risk, recognizing limitations of access and ownership of such well.(1174)

Response: For matters related to the value of the landowner questionnaire, please see response to comment 626.

For concerns related to the open-ended characterization of the rule, please see response to comment 632.

For matters related to the inclusion of other well types in the area of review survey, please see response to comment 626.

The area of review has been defined in reference to the horizontal plane and has been further refined in the vertical plane in consideration of available studies and provided comments.

For matters related to which well sites must be monitored because of vertical proximity to the stimulated interval, please see response to comment 626.

For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

For matters related to acceptable monitoring protocols, please see response to comment 694.

For matters related to remediation following a frac communication incident, please see response to comment 706.

728. Comment: Consideration must be given to special circumstances in which an orphaned well is utilized for a certain purpose. For example, the PGC utilizes an artesian orphaned oil and gas well to supply wetlands that were created on SGLs to improve wildlife habitat. Should drilling operations negatively impact the water quality or quantity from this well, would the operator be responsible for replacing the use? Operators should be required to evaluate the functions and values, if any, of any identified abandoned or orphaned wells prior to drilling. (1170)

Response: The Department disagrees that this should be addressed in the rulemaking. In the

unlikely event that the altered well is being used for some other purpose, replacing that resource would be subject to §§ 78.51(e) and 78a.51(e), which protect water supplies for uses other than human consumption. Certain restoration requirements in the Act may also apply.

729. Comment: § 78.52a and § 78.73 Pre-Hydraulic Fracturing Assessment - We applaud the Department for pursuing detailed assessment of potential conduits for fluid migration prior to the commencement of hydraulic fracturing activities. Orphaned and abandoned wells, improperly constructed production wells, natural fissures, and “complex” geology can all represent potential pathways for contamination of protected water, and we are glad to see the Department proposing to require operators to examine the area around proposed wells for such hazards. In an attached Appendix, we offer some suggestions for enhancing the Department’s proposed evaluation.

Appendix -- Proposal for Revision to draft PA § 78.52a and § 78.73

Definitions

“Impacted strata” shall mean (i) the productive horizon that is to be stimulated with a hydraulic fracturing treatment and (ii) all strata that are immediately adjacent to such productive horizon and are within the operator’s estimated or calculated effective fracture height for such hydraulic fracturing treatment.

“Intervening zone” shall refer to those geological formations (or part of a formation) located between the top boundary of the productive horizon that is being hydraulically fractured and the base of the deepest stratum or zone that contains protected water.

“Limited intervening zone” shall mean an intervening zone that (i) is less than 1,000 vertical feet thick, or (ii) is more than 1,000 vertical feet thick, but which the Department determines, based on the lithologic, geomechanical or other properties of the formations that comprise the intervening zone, may not contain an adequate confining layer or is in a structurally complex geologic setting with known faults that extend through the intervening zone and are likely to be transmissive. Notwithstanding the foregoing, an intervening zone less than 1,000 vertical feet thick may be excluded from classification as a “limited intervening zone” if the Department determines that such intervening zone contains an adequate confining layer

§ 78.52a. Identification of operating, inactive, abandoned and orphaned wells, and other potential fluid conduits.

- (a) Prior to hydraulically fracturing the well, the operator of a gas or oil well shall identify the location of operating, inactive, orphaned and abandoned wells that penetrate the impacted strata, and geologic faults and natural fracture zones that are known to completely transect the impacted strata, within 1,320 feet measured horizontally from the vertical well bore and 1,320 feet measured from the surface above the perforated section of a horizontal well bore (if applicable) in accordance with subsection (b). The Department may specify a greater or lesser distance upon determination that regional or local conditions justify a larger or smaller area of investigation.
- (b) Identification shall be accomplished by conducting the following:
 - (1) A review of the Department’s operating, inactive, orphaned and abandoned well databases;
 - (2) Submitting a questionnaire on forms provided by the Department to landowners whose property is within the area identified in subsection (a) regarding the precise location of orphaned and abandoned wells on their property;

- (3) A review of company records, available records of offset operators, public databases, and other regulatory agency records;
- (4) A review of historical maps (i.e. WPA, USGS, Pennsylvania Geologic Survey, operator “farm sheet” maps), where available;
- (5) A review of historical air photos available on the Pennsylvania State University ‘Penn Pilot’ website (<http://www.pennpilot.psu.edu/>);
- (6) For wells with a limited intervening zone:
 - (A) An analysis of the site specific hydrology (depth of protected water) and geophysical characteristics of the intervening zone and confining layer(s) contained within the intervening zone. The purpose of the analysis is to demonstrate that the confining layer(s) has sufficient areal extent, impermeability, and absence of transmissive faults or fractures such that the proposed hydraulic fracturing treatment design will not: (i) result in the vertical migration of the fracturing fluids, hydrocarbons, or other contaminants into strata that contains protected water; or (ii) result in a horizontal fracture that intersects with a nearby well that could result in the vertical migration of the fracturing fluids, hydrocarbons, or other contaminants into strata that contains protected water. A confining layer is of sufficient areal extent and thickness if it is capable of preventing or arresting vertical fracture propagation
 - (B) An analysis including information on the geologic structure, stratigraphy and hydrogeologic properties of the proposed producing formation(s) and intervening zone in the area of investigation, including (i) geologic name and description of all formations penetrated, including relevant logs, (ii) structure maps, including any faults, and (iii) any geomechanical analyses, including permeability, relative hardness (using Young’s Modulus) and relative elasticity (using Poisson’s Ratio).
 - (C) An analysis that utilizes a 3D model populated with the most current data available and approved by the Department that will estimate the maximum vertical and horizontal fracture propagation length, and which shows that the hydraulic fracturing treatment will not propagate fractures into strata containing protected water. The model input and output shall be submitted as part of the application, and the model shall be based on all relevant geologic and engineering data including but not limited to rock mechanical and geochemical properties of the producing zone and confining layer(s) and anticipated hydraulic fracturing pressures, rates, and volumes;
- (c) Prior to hydraulically fracturing a well, the operator shall submit:
 - (1) a plat to the Department showing the location and GPS coordinates of operating, inactive, orphaned and abandoned wells identified pursuant to subsection (b)
 - (2) a statement that the operator has met the identification requirements of subsection (b)
 - (3) a statement that the operator does not expect the hydraulic fracturing treatment to cause fluid movement through any identified wells or geologic features that would pollute waters of the Commonwealth.
- (d) For limited intervening zone wells, the analysis called for by subsection (b)(6) may be submitted on a well-by-well basis, or may be approved by Department for an area, and referenced as a pre-approved intervening zone analysis in the well application for wells with a limited intervening zone drilled in such area. (997a)

Response: For matters related to which well sites must be monitored because of vertical proximity to the stimulated interval, please see response to comment 626.

The risk being addressed is in association with hydraulic fracturing and, generally speaking, due to lithostatic pressure applied by overlying rock layers and the physics constraining

fracture mechanics, the most likely pathway to fresh groundwater during hydraulic fracturing is represented by improperly abandoned oil and gas wells. The detailed geological analysis specified in this comment does not significantly improve the ability of the Department to mitigate the risk being addressed, although the regulatory language has been modified and now requires treatment pressure and volume monitoring aimed at identifying abnormal fracture growth.

For matters related to the inclusion of other well types in the area of review survey, please see response to comment 626. Generally speaking, due to lithostatic pressure applied by overlying rock layers and the physics constraining fracture mechanics, the most likely pathway to fresh groundwater during hydraulic fracturing is represented by improperly abandoned oil and gas wells. If faults or zones of fracture concentration do play some role in communication, it is by allowing propagated fractures to move out of zone and into an improperly abandoned oil or gas well. However, the Department has modified the regulatory language to include a provision for monitoring fracture treatment pressures at the stimulated well site. This provision is intended to allow for the identification of abnormal fracture growth.

For matters related to the dimensions of the area of review, please see response to comment 627.

For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

The Department disagrees that requiring operators to submit a statement that frac communications are not expected is a useful risk mitigation strategy.

- 730. Comments:** With regard to proposed section 78.52a, the regulation should provide clear direction to both the PADEP staff and well operators. The rule should provide a precise limitation of the area of review, both horizontally and vertically from the well bore, based upon potential risks related to hydraulic fracturing and communication with other wells in the area, rather than proposed open ended obligations.

The regulation should be amended to direct the operator to: a) consult the PADEP's database to identify only those active, inactive, plugged, abandoned and orphaned wells that are known or reasonably expected to penetrate the area of review (i.e., located within the specified horizontal distance of a planned wellbore and extending deep enough to potentially be impacted by hydraulic fracturing of the target horizon); b) monitor abandoned or orphaned wells that penetrate the area of review during hydraulic fracturing by visual observation or other method approved by the PADEP (allowing exceptions where an operator does not have access to the well); and c) take appropriate remedial action on any well that is affected by hydraulic fracturing in such a way as to create an environmental risk, recognizing limitations of access and ownership of such well. (1147)

Response: For matters related to the dimensions of the area of review, please see response to comment 627.

For matters related to which well sites must be monitored because of vertical proximity to the stimulated interval, please see response to comment 626.

For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

For matters related to acceptable monitoring protocols, please see response to comment 694.

The Department is developing clarifying guidance related to site access prior to promulgation of the final rule. Specifically, this issue will be addressed in a guidance document discussing the area of review requirements and the components of a suitable monitoring plan. The provision in the final-form rulemaking that addresses this matter is related to treatment pressure and volume monitoring. The Department believes that even in situations where identified wells cannot be visually monitored, monitoring at the well being hydraulically fractured will allow the operator to determine if anomalous frac growth is taking place that is indicative of a possible communication event.

- 731.** Comment: Pre-hydraulic fracturing assessment (abandoned wells) - Sections 78.52a and 78.73. Proposed section 78.52a would require an operator, before hydraulically fracturing a gas well, to identify the location of all orphaned and abandoned wells within 1,000 feet from the vertical well bore and 1,000 feet from the entire length of a horizontal well bore. Section 78.73 would require an operator to plug and orphaned or abandoned well that it “alters” during hydraulic fracturing.

TAB is very concerned with breadth and vagueness of these sections. First, Act 13 does not require identification of abandoned or orphaned wells to obtain a drilling permit nor does it require operators to plug these wells. Express statutory authority for these sections is lacking. Second, the Department’s proposal raises many practical compliance problems. As examples, there is no definition of what it means to “alter” an abandoned or orphaned well. The necessary diligence to identify and subsequent obligations related to abandoned wells remain unclear and could potentially create unreasonable burdens without coincident environmental benefit. Access may be denied to property on which abandoned or orphaned wells are located. A well may be identified on the DEP database or historic farm maps but cannot be field-located. The regulation does not address what happens in any of these circumstances. Even if identifying abandoned or orphaned wells before hydraulic fracturing is good standard practice in certain circumstances, the rule does not provide operators the flexibility to identify such wells during various other stages of permitting, drilling, or completion. (1172)

Response: For matters related to the statutory authority of the regulation, please see response to comment 625.

For matters related to the definition of alteration, please see response to comment 686.

For matters related to well site access, please see response to comment 730.

- 732.** Comment: Let me express my strong support for the new provisions requiring those constructing an unconventional gas well to do a survey for orphan and abandoned wells. This is long overdue and commendable. The Oil & Gas Industry’s opposition to this provision is disgraceful. (869)

Response: The Department acknowledges this comment.

- 733.** Comment: My understanding of the issues regarding drilling near legacy wells dates back to 2009 when I realized that the planned Lundy horizontal 2H well in standing Stone Township was in close proximity to the legacy Harold W. Lundy well, plugged in 1991. At that time, I provided input relative to the permitting of the Lundy wells, wrote letters to Oil & Gas, TAB and CHK. I provided input on the advanced rulemaking and again during the public comment period of final rulemaking. I am providing copies of comments I made and the response that I got. Although no regulations regarding abandoned wells were enacted by DEP at that time, my efforts were not in

vain. The Harold w. Lundy legacy well did get evaluated and ultimately was plugged in March 2011 prior to the fracking of the new Lundy 2H.

Although I am pleased to see the DEP addressing this issue at this time, I am more than disappointed at the lack of strength of the regulations. The regs deal only with a very limited set of wells, the officially “abandoned and orphaned” and do not include identification of inactive wells in the area of proposed new wells. Given the Harold w. Lundy well experience, there is clearly a need to identify inactive wells also.

Identification of wells is not enough. All wells in the area of a planned horizontal well must be evaluated, even if previously plugged. In Bradford County, there are currently 5 orphaned and abandoned wells. By my last count from DEP eFacts records when the site search for inactive wells was still operational online, Bradford County has 23 inactive wells. The potential hazard to our environment from fracing near these wells is potentially much greater than from the orphaned and abandoned wells. I assume there is a similar situation statewide. The wells must be plugged or replugged, if necessary, prior to fracing.

The “visual monitoring” at unspecified frequency in your proposed 78.73 is insufficient. The concept of allowing fracing until changes in the monitored legacy well are noted is unacceptable. Requiring plugging after the changes occur is requiring plugging too late to prevent impact to the environment. This approach is not proactive and does not protect our water.

My proposal relative to identification is to adopt the Alaskan proposed regulations which were reviewed by the DEP and commented upon in the regulatory analysis associated with these standard changes. We need to go all the way and identify all well penetrations, as well as geological faults and fractures. At a minimum, inactive wells should be included in the identification step along with abandoned and orphaned wells. In addition, well penetrations must be evaluated, and replugging conducted if necessary prior to fracing the horizontal well.

I have twice provided the wording for a standard that would provide meaningful change. The DEP has had almost 3 years to seriously consider my input, if the DEP were so inclined. I will now read the proposed standard that I provided to the DEP in the advanced rulemaking and rulemaking public comment processes.

This proposal is included in my handout and highlighted and is numbered 78.77. With minor revision, it would meet the needs of providing proactive protection to the waters of the commonwealth, including the private water supplies of our residents. Read from document 2857 Received by the DEP Aug 2010 here. Relative to 78.103 and 78.105, many wells currently classified as inactive need to be reclassified as abandoned. There is no stated impetus in the standards as to when the Department takes the initiative to do this. I will assist, if needed, in providing that impetus for Bradford County’s inactive wells. Only one well previously considered inactive has been reclassified as orphaned and abandoned in the past several years. Despite my dissemination of the inactive list to CHK and to Bradford county leadership, I do not see any evidence of the other wells on the inactive list having been evaluated, and potentially replugged, despite my pleas for this to occur. The inactive list is being ignored in Bradford county and likely across the state. The true proportions of the problem with legacy wells in PA are best represented by the sum total of the orphaned, abandoned, and inactive legacy wells.

Regarding data, there have been changes in the DEP’s eFACTS which limit the ability of the public to access data that we previously were able to obtain. There are several examples but the pertinent

one here is the inability to access the inactive well list in totality. I have included in my testimony package the list I was able to access 2 years ago. I applaud the DEP's current mapping project; it needs to be completed with all wells shown. The Harold w. Lundy well is not shown, and is also semi-invisible in eFACTS.

I would welcome the opportunity to discuss these problems with a data administrator if I could be directed to the correct person.

Lastly, I would like to voice a specific concern for our areas, and specifically Wyoming County's, glacial lakes. Encroachment of drilling toward Lake Carey and Lake threaten special public resources. Current standards do not deal adequately with the special needs of our area's glacial lakes. Water quality, habitat, and recreational opportunities afforded by these lakes need to be specially considered, as does the underlying geology. One proposal would be for an automatic evaluation of all glacial lakes for potential classification as EV (exceptional value).

I expect to submit additional comments via e-mail. These comments will address other aspects of the proposed regulations. If I should register to comment at a different county's public comment forum, it will be to provide comments pertaining to different regulations than covered today. I ask you not to exclude my participation at a second event. I request that an additional public hearing be scheduled for Bradford County. s See Appendix 4 for attachments (877)

Response: For matters related to the inclusion of other well types in the area of review survey, please see response to comment 626. For matters related to the identification of natural features, please see response to comment 705.

Plugging an identified well is a potential risk mitigation strategy available to an operator and this practice has been applied historically. However, assuming that all identified wells in the survey have not been plugged or pose equivalent risks, and mobilizing plugging equipment to each site to re-enter wells is beyond the scope of a reasonable regulation aimed at suitably addressing risk. By monitoring well sites appropriately, an assessment can be made regarding the potential for environmental impact and corrective actions employed should an unanticipated communication event occur.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

The Department does not agree with this comment. Statutory and regulatory provisions currently allow for wells to be classified as inactive.

For matters related to sources that should be referenced when completing the area of review survey, please see response to comment 628.

The Department does not believe that a lake should be classified as Exceptional Value in Ch. 93, Water Quality Standards, simply due to the fact that it was formed by glacial activity.

- 734.** Comment: I agree with DEP that these wells should be identified. But they must be identified and plugged and sealed according to state safety standards before well site construction starts. Operators must be required to avoid communication between new wells and old to prevent blowouts, accidents and well casing failure. (5936 – 6089)

Response: For matters related to the timing of the area of review survey, please see response to comment 627.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

§ 78.53 Erosion and sediment control and stormwater management.

735. Comment: Failure to meet erosion and sedimentation control requirements can harm public natural resources, especially waters of the Commonwealth. We recommend that the Board revise the Proposed Rulemaking to provide a public participation process, include guidance and requirements related to riparian buffer protection and restoration, and require full compliance with Chapter 102, notwithstanding the provisions of § 102.8(n). (1152)

Response: Oil and gas activities are subject to the requirements of Chapter 102, including the applicable public participation, riparian buffer and stormwater management requirements. To the extent the commentator objects to Chapter 102 applicability, the Department responds that it is inappropriate to modify regulatory requirements established under 25 Pa. Code Chapter 102 through modifications to 25 Pa. Code § 78.53. This rulemaking does clarify restoration requirements in Sections 78.65 and 78a.65, and in turn addresses concerns related to § 102.8(n).

736. Comment: The term “Oil and Gas Operations” should be used in place of the undefined term “Oil and Gas Activities” or the term “Oil and Gas Activities” should be defined in Chapter 78. (852a, 1137, 1147, 1153, 1164, 1174)

Response: The Department agrees and has modified the section to use the term oil and gas operations in place of oil and gas activities.

737. Comment: Chapter 78.53 should be rewritten to prevent incorporation of guidance documents into the regulation. The regulation should only require compliance with Chapter 102. (1137, 1147, 1153, 1164, 1174)

Response: The guidance documents are listed as a reference and are not incorporated as requirements.

738. Comment: There is an important need to update the referenced manuals in § 78.53 as sources of best management practices for oil and gas well activities. Additionally, the recent efforts to develop model plan for erosion and sediment control, post construction stormwater management and site restoration should be finalized. (1137, 1164, 1174).

Response: The Department agrees that guidance manuals should be kept up to date.

739. Comment: We appreciate the updated clarification of this provision. We recommend the adoption of this provision at the minimum as it is written. (660a)

Response: The Department acknowledges the comment.

740. Comment: Under § 78.53, language has been added to clearly state that any person conducting earth disturbance activities associated with any aspect of oil and gas activities, as defined in § 78.1, must comply with Chapter 102 to Title 25 of the Pennsylvania Code, as well as the DEP’s Erosion and

Sediment Pollution Control Manual and the Oil and Gas Operators Manual.

While we support the explicit inclusion of these requirements, we are disappointed that DEP opted not to take the opportunity to formalize, through regulation, certain sections of its erosion and sediment control policy for oil and gas activities. (Policy for Erosion and Sediment Control and Stormwater Management for Earth Disturbance Associated with Oil and Gas Exploration, Production, Processing, or Treatment Operations or Transmission Facilities. Document No. 800-2100-008). Specifically, DEP failed to include its interpretation of the definition of a “project” for purposes of determining whether an erosion and sediment control permit is needed. Section III. of the policy states:

DEP interprets “project” to be substantially connected well sites, access roads, pipelines, other service lines, support facilities, and/or other oil and gas activities. Well pads, impoundments and pipelines, etc., may be permitted separately but are considered together solely to determine whether the total project acreage limit of §102.5(c) has been met and a permit is required. All portions of a project area of 5 acres or more must obtain permit coverage prior to commencing earth disturbance activity.

There has been significant confusion among the public about DEP’s interpretation of a project and under which circumstances the DEP will require an erosion and sediment control permit for oil and gas activities. We strongly recommend that DEP formally adopt through this regulation, in both §§ 78.51 and 78.53, a definition of a “project” for purposes of determining when an erosion and sediment control permit is needed, pursuant to DEP’s Policy for Erosion and Sediment Control and Stormwater Management for Earth Disturbances for Oil and Gas Exploration, Production, Processing, or Treatment Operations or Transmission Facilities, Document No. 800-2100-008. (1157)

Response: The Policy for Erosion and Sediment Control and Stormwater Management for Earth Disturbance Associated with Oil and Gas Exploration, Production, Processing, or Treatment Operations or Transmission Facilities (Document No. 800-2100-008) provides guidance for implementation of § 102.5, including guidance regarding what constitutes a project for purposes of determining permit applicability. Erosion and sediment control permits are issued under authority of Chapter 102. The Department believes that guidance for implementation of Chapter 102 is most appropriately implemented through a technical guidance document.

741. Comment: Sites activities related to siting, drilling, completing, producing, servicing and plugging the well, constructing, utilizing and restoring the access road and restoring the site...”
Recommendation: Prescriptive language should be included for erosion and sediment control for pipelines and pipeline infrastructure. (118)

Response: Section 78.53 requires compliance with Chapter 102 for all oil and gas operations. The term “oil and gas operations” includes earth disturbance associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities which includes pipelines and pipeline infrastructure.

742. Comment: The proposed amendments to this section cross reference the requirements of Chapter 102. This section also specifies that best management practices for erosion and sediment control for oil and gas activities are listed in the Erosion and Sediment Pollution Control Program Manual , Commonwealth of Pennsylvania , Department of Environmental Protection, No. 363-2134-008, as

amended and updated, and the Oil and Gas Operators Manual, Commonwealth of Pennsylvania , Department of Environmental Protection, Guidance No. 550-0300-001, as amended and updated. Erosion and sedimentation Control is at the forefront of our service to Greene County residents. We appreciate that the updated Chapter 102 regulation has been addressed in the regulation update. (566)

Response: The Department acknowledges the comment.

743. Comment: We are encouraged to see language specifying that “Any person proposing or conducting earth disturbance activities associated with oil and gas activities shall comply with the requirements of 25 Pa. Code Chapter 102 (relating to erosion and sediment control)”, and that best management practices for erosion and sediment control for oil and gas well activities are listed in the *Erosion and Sediment Pollution Control Program Manual*, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 363-2134-008, as amended and updated. The guidance therein, stating that activities creating runoff from a permitted project site that discharges to Special Protection Waters streams (those classified as High Quality [HQ] or Exceptional Value [EV]), and that calls for more stringent criteria being used to design the BMPs for these sites, is sound.

Furthermore, language referring to work in these drainages and stating that “Nondischarge alternatives are to be used wherever possible” is fully justifiable. We believe these protections would be strengthened by including a requirement that specifies that Antidegradation Best Available Combination of Technologies (ABACT) BMPs be used to the fullest extent possible at all times when working in drainages of Special Protection Waters with anti-degradation standards. (1062, 1133)

Response: Implementation of the Chapter 93 antidegradation requirements for erosion and sediment control in special protection watersheds is addressed in Chapter 102 including requirements to evaluate nondischarge alternatives and implement ABACT BMPs when nondischarge alternatives do not exist. Section 78.53 requires compliance with Chapter 102 for all oil and gas operations. Therefore § 78.53 requires compliance with antidegradation provisions in Chapters 102 and 93.

744. Comment: Section 78.53 should explicitly reference the operators’ post-construction stormwater management obligations under 25 Pa. Code Chapter 102. Chapter 102 requires operators to control erosion and sedimentation during earth disturbance activities (25 Pa. Code §102.4), and to manage stormwater after disturbance activities have ceased (25 Pa. Code §102.8). Current section 78.53 notes only the section 102.4 requirements because current 78.53 was promulgated in 2001 – nine years before section 102.8 became law. Now that section 102.8 is law, section 78.53 should note that PCSM BMPs are listed in the Pennsylvania Stormwater Best Management Practices Manual Commonwealth of Pennsylvania. (852a)

Response: The Department agrees and has added “Stormwater Management” to the title of the section as well as included a reference to the Stormwater Best Management Practices Manual in the section. The requirement to comply with Chapter 102 encompasses post construction stormwater management requirements.

745. Comment: Regarding the Department’s proposal to require compliance with Chapter 102 generally, rather than specifically requiring the implementation of BMPs and E&S plans, we understand this as an acknowledgement that under Chapter 102, some oil and gas earth disturbance activities do not require E&S plans. Specifically, Chapter 102 does not require E&S plans for projects that disturb less than 5,000 square feet and do not have the potential to discharge to a special protection water

body. Chapter 102 also does not require post-construction stormwater management (“PCSM”) BMPs or plans for any oil and gas earth disturbance activities that disturb less than five acres of earth.

Section 78.53 should require PCSM plans for all oil and gas activities that require erosion and sediment controls plans. Section 78.53 and Chapter 102 should be formally harmonized. However, we also believe that protection of the Commonwealth’s water resources demands that PCSM BMPs and plans be required for all activities that require E&S BMPs and plans, respectively. Currently, proposed revised section 78.53 does not mention post-construction stormwater management at all.

Section 78.53 should require PCSM BMPs and/or plans for post-construction activities in all cases where E&S BMPs and/or plans are required during construction. The fact that Chapter 102 requires E&S BMPs and/or plans (but not PCSM BMPs and/or plans) for activities that disturb less than five acres appears to be a drafting error. In any case, it is irrational and directly contrary to the purpose of Chapter 102, which is “to minimize the potential for accelerated erosion and sedimentation *and to manage post construction stormwater.*” Oil and gas activities that disturb less than five acres of earth create impervious surfaces and post-construction stormwater just like larger activities. Consequently, PCSM BMPs should be required for all such activities, and PCSM plans should be required for all projects that require E&S plans – i.e., all projects that disturb between 5,000 square feet and five acres, and projects that disturbs less than 5,000 feet but have the potential to discharge stormwater to a surface water with a designated or existing use of High Quality or Exceptional Value. (852a)

Response: The rulemaking is consistent with and requires compliance with the existing Chapter 102 requirements, for which there are different acreage triggers for permit applicability for certain categories of earth disturbance activities. Chapter 102 requires post construction stormwater management when a permit is required under Section 102.5. The commentator is proposing a requirement that goes beyond existing Chapter 102 requirements. It is not appropriate to modify regulatory requirements established under Chapters 92a and 102 through modifications to Chapter 78 or Chapter 78a.

746. Comment: Section 78.53 should also note that operators must seek and obtain National Pollutant Discharge Elimination System (NPDES) permits under 25 Pa. Code Chapter 92a for stormwater discharges that cause or contribute to violations of water quality standards. While stormwater discharges from oil and gas activities are generally exempt from NPDES requirements under the federal Clean Water Act, *see* 2005 Energy Policy Act Pub. L. No. 109- 58, § 323, 119 Stat. 694 (codified as amended at 33 U.S.C. § 1362(24)), this exemption does not apply to discharges that cause or contribute to a violation of a water quality standard – e.g., sediment-laden discharges into streams impaired for siltation. *See* 40 C.F.R. § 122.26(c)(1)(iii)(C). (852a)

Response: The Department agrees that an NDPEs permit is required for stormwater discharges that cause or contribute to a violation of water quality standards. In Pennsylvania, operators can demonstrate compliance with water quality standards when the operator obtains and complies with the required permits under Chapter 102, as provided in the 2010 Chapter 102 rulemaking. The Department does not agree that the inclusion of the suggested language in the final rulemaking is necessary or appropriate.

747. Comment: For purposes of clarity, section 78.53 should also be retitled “Earth disturbance activities.” (852a)

Response: The intent of the section is to reference the requirements in Chapter 102 which is titled “Erosion and Sediment Control”.

748. Comment: Section 78.53 should be revised to read as follows:

§ 78.53. Earth disturbance activities.

(a) General Requirements

Any person proposing or conducting earth disturbance activities associated with oil and gas operations shall comply with the requirements of 25 Pa. Code Chapter 102 (relating to erosion and sediment control and post-construction stormwater management) and 25 Pa. Code Chapter 92a (relating to National Pollutant Discharge Elimination System). Best management practices for erosion and sediment control for oil and gas well activities-operations are listed in Erosion and Sediment Pollution Control Program Manual, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 363-2134- 008, as amended and updated, and the Oil And Gas Operators Manual, Commonwealth of Pennsylvania, Department of Environmental Protection, Guidance No. 550-0300-001, as amended and updated. Best management practices for post-construction stormwater management for oil and gas activities are listed in the *Pennsylvania Stormwater Best Management Practices Manual* Commonwealth of Pennsylvania, Department of Environmental Protection, No. 363-0300-002, as amended and updated.

(b) PCSM BMPs and Plans

- i. Notwithstanding any other provision of law, any earth disturbance activities covered under section (a) that require the implementation of E&S BMPs under 25 Pa. Code 102.4 shall also require the implementation of PCSM BMPs satisfying the requirements of 25 Pa. Code 102.8(b)-(n) and 25 Pa. Code 102.11.
- ii. Notwithstanding any other provision of law, any earth disturbance activities covered under section (a) that require the preparation and implementation of an E&S plan under 25 Pa. Code 102.4 shall also require the preparation and implementation of a PCSM plan that satisfies the requirements of 25 Pa. Code 102.8(b)-(n) and 25 Pa. Code 102.11.

(c) NPDES Permits

Any person proposing or operating a point-source discharge of stormwater that causes or contributes to a violation of water quality standards under 25 Pa. Code Chapter 93 shall obtain a NPDES permit under 25 Pa. Code Chapter 92a. (852a)

Response: See responses to comments 744, 745, 746 and 747.

749. Comment: 78.53 – Since passage of legislation in 2005, the federal Clean Water Act exempted most stormwater discharges associated with oil and gas construction activities from permitting requirements under the National Pollutant Discharge Elimination System (NPDES) program. The PADEP has established a state specific regulatory program for such discharges under the Pennsylvania Clean Streams Law. The centerpiece of this program is the PADEP’s Erosion and Sediment Control General Permit for Earth Disturbance Associated with Oil and Gas Exploration, Production, Processing, or Treatment Operations or Transmission Facilities, or the ESCGP permit. Although the PADEP’s program is intended to prevent oil and gas construction activities from polluting the waters of the Commonwealth, it has not been successful in many cases.

A February 2012 report by the PennEnvironment Research and Policy Center documented 3,355 citations for environmental violations at Pennsylvania oil and gas wells between January 1, 2008, and December 31, 2011, and 2,392 of those violations posed a direct threat to the environment.

(Erica Staff, Penn Environment Research & Policy Center, Risky Business: An Analysis of Marcellus Shale Gas Drilling Violations in Pennsylvania 2008-2011 (Feb. 2012)). The greatest percentage of violations (26 percent) was related to erosion and sediment control. Some operators incurred the same violations repeatedly at a single site, failing to address conditions related to the violation. Some operators repeated the same violations at multiple sites, indicating the need to improve both regulatory requirements and implementation of improved practices. Violation issues were related to both erosion and sediment control and to pollution prevention practices. There are many reasons, some of which are outlined below, why the PADEP's program has been unsuccessful in protecting water quality from surface discharges in so many cases.

The PADEP reviews applications for coverage under ESCGP-2 (and its predecessor, ESCGP-1) through an "expedited review process" that is too brief to allow agency staff to conduct meaningful technical reviews. For most projects, the PADEP grants permit coverage within 14 business days as long as an application is deemed administratively complete and is certified by a professional with proper credentials, such as a state-licensed engineer. For projects in special protection watersheds, on floodplains, and on contaminated brownfield sites, the PADEP's review period is 43 business days. Given the PADEP's declining budget—a 50 percent reduction over the last decade—and increasing workload during the shale gas boom, neither timeframe is long enough to allow for the meaningful technical review that an ESCGP-2 application associated with unconventional oil and gas production activities necessitates. Yet Governor Corbett's Executive Order 2012-11 directed the agency to process permit applications "as expeditiously as possible" and even made "compliance with the review deadlines a factor in any job performance evaluation." As a result, the ESCGP-2 process, whether expedited or not expedited, operates largely as a self-regulating process with limited or no PADEP technical review and oversight. (1143)

Response: This comment relates to administration of the Chapter 102 program and the associated Erosion and Sediment Control General Permit, which are beyond the scope of this rulemaking.

750. Comment: The ESCGP-2 program does not include public participation opportunities. Notice is not published in the Pennsylvania Bulletin (or anywhere else) when an operator applies for coverage under ESCGP-2; notice is provided only when coverage is granted. Even if the public is aware that an application for ESCGP-2 coverage has been submitted, the PADEP's expedited review period makes it nearly impossible to meaningfully review an operator's plan before the appeal deadline (30 days from the date of Bulletin publication). The PADEP thus lacks the benefit of input from citizens who may be knowledgeable about local conditions. (1143)

Response: This comment relates to the administration of the Chapter 102 Erosion and Sediment Control General Permit and is beyond the scope of this rulemaking.

751. Comment: For as long as wells are being drilled, the well site may be considered under construction. During that period, which could last for years on a multi-well pad, the site need only be "permanently stabilized." Under that standard, erosion and sediment controls may be in place but post-construction stormwater management practices may not be required. Further, the minimal stabilization requirement applies for an additional nine months after the last well is drilled, when partial restoration begins, and under 58 Pa.C.S. § 3216(g), operators may request restoration extensions of up to two years. The lack of stormwater management during the lengthy stabilization period means that large impervious areas will cause uncontrolled runoff. (1143)

Response: This comment relates in part to the Chapter 102 Erosion and Sediment Control General Permit which is beyond the scope of this rulemaking. In addition, § 3216(g) of the

2012 Oil and Gas Act requires implementation of post construction stormwater management BMPs during the restoration extension period. Restoration or partial restoration after drilling to post construction standards is addressed through clarifications to the restoration section of the rulemaking in §§ 78.65 and 78a.65.

752. Comment: Even after construction is complete, the PADEP's regulations do not ensure that post-construction stormwater management Best Management Practices (PCSM BMPs) will be properly designed and implemented at Oil and Gas Operations. Although those sites are required to provide stormwater management, including measures to prevent increases in stormwater runoff flow rates and volume, operators of oil and gas activities that require site restoration or reclamation are exempt from the obligation to provide an engineering analysis confirming that the proposed management will work as intended (§ 102.8(n)). Without the supporting engineering calculations and documentation, neither the PADEP nor the applicant have any assurance stormwater management measures will protect water quality during the long periods of well operation prior to final site restoration. We have provided recommendations for site restoration criteria in our recommendations under § 78.65. (1143)

Response: This comment relates in part to the Chapter 102 Erosion and Sediment Control General Permit which is beyond the scope of this rulemaking. In addition, §3216(g) of the 2012 Oil and Gas Act requires implementation of post construction stormwater management BMPs during the restoration extension period. Restoration or partial restoration after drilling to Chapter 102 post construction standards is addressed through clarifications to the restoration section of the rulemaking in sections 78.65 and 78a.65.

753. Comment: The PADEP's regulations do not require a PCSM plan for any projects disturbing fewer than five acres. Under § 102.5(c), ESCGPs are required only for oil and gas activities occupying at least five acres, and PCSM is required only as part of the ESCGP. This approach is flawed, because sites not meeting the five-acre threshold can pose a risk to water quality, particularly if there are numerous small sites co-located in one defined area, such as a watershed. (1143)

Response: The rulemaking is consistent with and requires compliance with the existing Chapter 102 requirements, for which there are different acreage triggers for permit applicability for certain categories of earth disturbance activities. Chapter 102 requires post construction stormwater management when a permit is required under Section 102.5. The commentator is proposing a requirement that goes beyond existing Chapter 102 requirements. It is not appropriate to modify regulatory requirements established under Chapters 92a and 102 through modifications to Chapter 78 or Chapter 78a.

754. Comment: In applications submitted to the PADEP under the ESCGP-2, it is common practice for both the erosion and sediment control measures and the stormwater measures to be undersized or improperly designed. Practices specific to erosion and sediment control are routinely and incorrectly applied as post construction stormwater management practices. The guidelines provided in Chapter 4 of the Oil and Gas Operators Manual (550-0300-001) were last updated in 2001 and do [not] reflect the current criteria provided in the March 2012 Erosion and Sediment Pollution Control Manual (No. 363-2134-008). The more stringent and technologically up to date design criteria should always apply for erosion and sediment control. The requirements of the December 2006 Pennsylvania Stormwater Best Practices Manual (363-0300-002) should prevail for stormwater management BMPs. (1143)

Response: Operators must comply with the requirements of Chapter 102. The Department acknowledges that the Oil and Gas Operators Manual should be updated but also

acknowledges that the guidance documents are listed as a reference and are not incorporated as requirements. The reference has been retained. To the extent the comment relates to implementation of the regulatory requirements, it is beyond the scope of this rulemaking.

755. Comment: Under § 102.14(d)(vii), oil and gas activities that include site reclamation or restoration are exempt from the riparian buffer requirements so long as the “riparian buffer is undisturbed to the extent practicable.” Because there is no guidance for application of that standard, riparian buffer waivers are routinely granted for oil and gas activities, without supporting documentation of the need to disturb the buffers and without any requirement to minimize buffer disturbance or to provide restoration. We recommend that Chapter 78 be revised to cure as many of these defects as possible. Failure to meet the ESCGP-2 or other Chapter 102 requirements can cause harm to human health or public natural resources, especially waters of the Commonwealth. We recommend that the EQB strengthen what is now an essentially self-regulating permit process, by creating a public participation process for adjacent property owners, public resource agencies, water purveyors, and other interested parties, who can assist the PADEP in ensuring that those requirements are met. We also recommend that the EQB include guidance and requirements regarding riparian buffer protection and forested buffer restoration. (1143)

Response: See response to comment 735.

756. Comment: We recommend that the EQB require full compliance with Chapter 102, notwithstanding the provisions of § 102.8(n). Doing so will increase public confidence that proposed erosion and sedimentation and stormwater controls will in fact protect waters of the Commonwealth. The additional documentation is essential in the absence of any watershed-based or cumulative analysis of the impacts of Oil and Gas Operations, including chronic water pollution and flow disruption, and in the absence of a meaningful metric for the extent impervious surface the PADEP will allow to remain after restoration occurs across numerous and dispersed well sites. (1143)

Response: See responses to comments 735, 751 and 2910.

757. Comment: For the reasons discussed in comments 749 through 756, above, We recommend that § 78.53 be revised as follows:

§ 78.53. Erosion and sediment control, stormwater management, and riparian buffers

(a) Any person proposing or conducting earth disturbance activities associated with oil and gas activities shall comply with Chapter 102 (relating to erosion and sediment control and stormwater management). Best management practices for erosion and sediment control for oil and gas activities are listed in the *Erosion and Sediment Pollution Control Program Manual*, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 363-2134-008, as amended and updated. Best management practices for stormwater management are listed in the *Pennsylvania Stormwater BMP Manual*, Department of Environmental Protection, No. 363-0300-002. The guidelines of the most recently updated document shall prevail.

(b) NOIs, as defined in § 102.1, for Oil and Gas Operations shall be published in the Pennsylvania Bulletin, and the PADEP may not issue its determination on a permit application until a thirty-day period for public review and comment is complete.

(c) Any person may submit notice to the Department of documentation and design deficiencies related to erosion and sediment control or stormwater management in a permit application submitted by any oil and gas operation seeking permit coverage under Chapter 102. Provided that

the notice includes documentation of the specific components of the permit application that do not meet Chapter 102 requirements, the Department shall deliver written acknowledgement of the notice to both the applicant and the person submitting the notice within 14 days of receiving the notice. The Department shall have an additional 14 days to complete a written deficiency determination. If the Department identifies deficiencies, the permit holder shall have 14 days to address all deficiencies. If the deficiencies are not addressed within the 14-day period, permit coverage shall be suspended until all deficiencies are addressed.

(d) Two years after site disturbance begins and until full site restoration is complete, notwithstanding the provisions of § 102.8(n), the post-construction stormwater management required under Chapter 102 shall be implemented at all areas of a well site not needed for safe Oil and Gas Operations. The areas needed for safe Oil and Gas operations include the following:

- (1) Areas used for service vehicle, well workover equipment, and rig access.
- (2) Areas used for storage tanks and secondary containment facilities.
- (3) Areas used for wellheads and appurtenant processing facilities.
- (4) Areas used for any necessary safety buffer limited to the area surrounding equipment that is physically cordoned off to protect the facilities.
- (5) Areas used to store supplies or equipment required for exploration or production operations.
- (6) Areas used for operation and maintenance of long-term PCSM best management practices.

(e) Notwithstanding the provisions of § 102.8(n), a person proposing oil and gas activities that involve one (1) acre or more of earth disturbance over the life of the project shall comply fully with the erosion and sediment control and stormwater management requirements of Chapter 102.

(f) Existing riparian buffers shall be considered undisturbed to the extent practicable, within the meaning of § 102.14(d)(vii), provided that there is no removal of vegetation or site disturbance within the riparian buffer. For wooded riparian buffers, disturbance or compaction of the root zone of wooded vegetation shall be considered disturbance. Direct discharge of stormwater to riparian buffer areas without prior stormwater management is prohibited. If riparian buffer disturbance occurs, forested riparian buffer restoration in accordance with the technical requirements of § 102.14 is required for all disturbed areas. (1143)

Response: See responses to comments 749 through 756.

758. Comment: Assure compliance for erosion and sediment pollution control specific to special protected waters under the Clean Streams Act. [78.53] (1098)

Response: See response to comment 743.

§ 78.55 Control and disposal planning

759. Comment: 78.55(a) - Are site specific plans just for new or altered wells that will generate waste, or for all wells on operators bond? Is it retroactive? (411)

Response: The regulation specifies that planning must occur prior to conducting oil and gas operations. The regulation specifies that persons conducting oil and gas operations shall prepare and implement site specific PPC plans. The definition of oil and gas operation specifies that it includes well site preparation, construction, drilling, hydraulic fracturing, completion, production, operation, alteration, plugging and site restoration associated with an oil or gas well.

760. Comment: **78.55** – Operators are required to prepare a Preparedness, Prevention, and Contingency (PPC) Plan in conformance with the 2001 Pennsylvania Guidelines for the Development and Implementation of Environmental Emergency Response Plans (PADEP, Guidelines for the Development and Implementation of Environmental Emergency Response Plans, No. 300-2200-001 Sept. 2001) [hereinafter 2001 Guidelines]) We support the requirement to prepare a PPC plan. However, we do not agree that the requirement to prepare a PPC plan should apply only to unconventional wells (shale gas wells). A PPC plan is needed for all Oil and Gas Operations as defined at § 78.1, which includes all wells and well sites.

Pennsylvania currently estimates that the environmental hazard associated with conventional wells (\$10 billion) far exceeds that of unconventional wells (\$713 million). The 2013 Pennsylvania Standard State All-Hazard Mitigation Plan estimates that conventional oil and gas well incident hazards could occur at 1,183 facilities, potentially impacting over a million buildings, with a replacement value of over \$10 billion, based on “brick-and-mortar structures located within 1000 yards of an active or abandoned conventional oil or gas well.” (2013 Pennsylvania Standard State All-Hazard Mitigation Plan, page 131, http://www.portal.state.pa.us/portal/server.pt/community/programs_and_services/4547/hazard_mitigation_forms_presentations_and_other_documents/806856). The same report estimates that unconventional oil and gas well incident hazards could occur at 77 facilities, potentially impacting over a hundred thousand buildings, with a replacement value of over \$713 million, based on “brick-and-mortar structures located within 1000 yards of an active, inactive, or plugged unconventional oil or gas well.” (*Id.*) Additionally, the Pennsylvania Standard State All-Hazard Mitigation Plan states that there is a risk of private water supply contamination:

Private water supplies such as domestic drinking water wells in the vicinity of oil and gas wells are at risk of contamination from brine and other pollutants including methane which can pose a fire hazard. (Id. at 419). (1143)

Response: Both conventional and unconventional operators are required to develop and implement PPC Plans under §§ 78.55 and 78a.55, respectively.

761. Comment: The 2001 Pennsylvania Guidelines for the Development and Implementation of Environmental Emergency Response Plans state that a Spill Prevention Response (SPR) is required for regulated storage tank facilities with an aggregate aboveground storage tank capacity of more than 21,000 gallons. (2001 Guidelines). Oil and Gas Operations should also require a SPR, but this is not addressed in the proposed regulation.

The proposed regulation is written in a confusing manner. First, it requires a PPC plan for Oil and Gas Operations, but provides incomplete instruction on what is required. Second, it does not advise the operator when a SPR plan is needed.

We recommend that the regulation be re-written to clarify that all Oil and Gas Operations require a PPC plan and that a SPR may be required if a storage tank with a capacity of more than 21,000 gallons is used (2001 Guidelines, *supra.*). We recommend the emergency response elements listed in § 78.55(i) be included in one integrated PPC plan, rather than having two separate plans (a PPC Plan and a separate Emergency Response Plan for the wellsite). (1143)

Response: The regulation specifies that plans developed in conformance with the *Guidelines for the Development and Implementation of Environmental Emergency Response Plans*, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 400-2200-001, as amended and updated, will be deemed to meet the requirements of §§ 78.55 and 78a.55.

The guidance referenced by the commentator refers to the need for a Spill Prevention Response (SPR) plan for regulated storage tank facilities. These facilities are regulated under Chapter 245 of the Department's regulations and are beyond the scope of Chapter 78. Therefore, the revisions proposed by the commentator to include a statement that a spill prevention response plan may be required would unnecessarily increase the complexity of the regulation. Operators may develop an integrated plan instead of separate PPC and Emergency Response Plans.

762. Comment: The proposed regulations do not require PADEP review and approval of the PPC plan before Oil and Gas Operations commence or when the plan is amended. We recommend that the PADEP review and approve the PPC plan as part of the permit application process and that the PADEP review and approve amendments and that Pennsylvania update its All-Hazard Mitigation Plan to include information provided in the industry plans. (1143)

Response: The Department disagrees that it is reasonable or necessary for the Department to review and approve all PPC plans prior to commencement of Oil and Gas Operations. Review and approval of PPC plans has not been historically required by the Department prior to conducting activities. The Department does not believe that a requirement for the Department to review and approve PPC plans prior to commencement of oil and gas operations will result in a significant increase in the quality or implementation of PPC plans. Updates to the All Hazard Mitigation plan are beyond the scope of this rulemaking.

763. Comment: Commentator recommends that local governments be consulted by the applicant in the preparation of the PPC Plan to ensure that any responsibilities assumed or assigned to the local government in the plan can be delivered by the local government. The applicant should also be required to provide adequate funding to the local government and/or provides supplemental resources to provide a high-quality response system. Local governments should also update their local All-Hazard Mitigation Plan to include information provided in the industry plans. (1143)

Response: The Department agrees that it is prudent for oil and gas operators to consult with all entities which are relied upon by the PPC plan. The Department also agrees that it is prudent for local All Hazard Mitigation Plans to be kept up to date. Requiring operators to provide funding for local governments is beyond the scope of this rulemaking.

764. Comment: We support the requirement for a pressure barrier policy to be contained in the PPC plan; however, we recommend that the regulation clarify that a minimum of two pressure barriers (the initial and a redundant backup) be required, consistent with industry's two-barrier safety recommended practice, because "hazards are contained by multiple protective barriers. (Int'l Ass'n of Oil & Gas Producers, Asset Integrity – the Key to Managing Major Incident Risks, Report No. 415 (Dec. 2008); Int'l Ass'n of Oil & Gas Producers, Process Safety – Recommended Practices on Key Performance Indicators, Report No. 456 (Nov. 2011)) (1143)

Response: Revisions to blow out prevention requirements are beyond the scope of this rulemaking. However, the Department is currently developing a pressure barrier policy guidance document.

765. Comment: The distribution list contained in the 2001 PPC Guidance document at Section I, Subpart D requires a copy to be provided to the PADEP and agencies that may become involved in the response. The proposed regulation should at least match the distribution requirement in the 2001 PPC Guidance document. The proposed regulation states that copies of the PPC plan will be provided only to the PADEP, landowner, and Fish and Boat Commission upon request. We

recommend that plan distribution be expanded. Local governments, first responders, and residents on or adjacent to land used for Oil and Gas Operations should receive copies of the PPC plan prior to commencement of construction activities. (1143)

Response: Sections 78.55(f) and 78a.55(f) specify that copies of well operator's PPC plan shall be provided to the Department, the Fish and Boat Commission or the landowner upon request and shall be available at the well site during drilling and completion activities. Section 78a.55(i)(5)(v) specifies that all unconventional operators shall submit the emergency response plan and subsequent updates to PEMA, the Department, the county emergency management agency and the public safety answering point with jurisdiction over the well site. The Department believes that the requirements in this section are sufficient to ensure protection of public health and safety and the environment.

766. Comment: The PPC plan should incorporate National Incident Management System planning standards, (See the Federal Emergency Management Administration website for a complete description of the National Incident Management System planning standards, <http://www.fema.gov/national-incident-management-system>; and the Pennsylvania State Fire Commissioner website for a description of the National Incident Management System and how it relates to responding to oil and gas emergencies in Pennsylvania, <http://www.portal.state.pa.us/portal/server.pt/community/nims>) including the use of the Incident Command System, Incident Action Planning and Common Communications Plans (See the Federal Emergency Management Administration website for a complete set of Incident Command System forms and instructions, <http://www.fema.gov/forms/job-aids-tools-templates>) for all Oil and Gas Operations (defined at § 78.1), not just unconventional well operations. (1143)

Response: The regulatory language requiring development of PPC plan in conformance with the *Guidelines for the Development and Implementation of Environmental Emergency Response Plans*, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 400-2200-001, as amended and updated is sufficient to ensure protection of public health and safety and the environment. To the extent that the Department determines that it is necessary and appropriate to require incorporation of National Incident Management System planning standards, use of the Incident Command System, Incident Action Planning and Common Communications Plans into PPC plans, the Department will revise the *Guidelines for the Development and Implementation of Environmental Emergency Response Plans*, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 400-2200-001 to incorporate such requirements.

767. Comment: Industrial fires, explosions, blowouts, and spills require specialized emergency response equipment, which may not be available at local fire and emergency services departments. For example, local fire and emergency services departments typically do not have well capping and control systems. Larger, paid fire and emergency services departments, located near existing industrial developments, may have some industrial firefighting capability; however, the level of capability should be assessed by the operator and supplemented. If local emergency response services are relied upon in the PPC, operators should ensure emergency response personnel are trained, qualified, and equipped to respond to oil and gas industrial accidents. Small, local, volunteer fire and emergency services departments will typically not be equipped or qualified to meet this need.

On average, a blowout occurs in 7 out of every 1,000 onshore exploration wells.(S. Rana, *Environmental Risks- Oil and Gas Operations Reducing Compliance Cost Using Smarter Technologies*, 4-6 (Aug. 2009) (SPE Paper 121595-MS, Asia Pacific Health, Safety, Security and

Environment Conference)). Blowout rates are less frequent for production wells where more information is known about the reservoir, well control is optimized, and personnel are more experienced in site-specific conditions. For example, a review of production well blowouts in California estimated 1 blowout per 2,500 wells drilled. (P.D. Jordan, & S.M. Benson, *Well Blowout Rates in California Oil and Gas District 4- Update and Trends, Summary of Well Blowout Risks for California Oil and Gas District 4*, 1991-2005, Table 1) California's data showed that: 25% of the blowouts affected more than 25 acres; the average blowout lasted 18 hours; and the maximum blowout length was 6 months. Therefore, blowouts are a reasonably foreseeable significant impact, and mitigation is warranted.

Hydrocarbon reservoirs can contain large quantities of gas and formation water, which can be released into the surrounding environment during a well blowout, resulting in significant damage. For example, the Chesapeake Energy 2011 Marcellus well blowout in Bradford County, Pennsylvania spilled thousands of gallons of fracture treatment fluid over "containment walls, through fields, personal property and farms, even where cattle continue[d] to graze." (*Pennsylvania Fracking Spill: Natural Gas Well Blowout Spills Thousands of Gallons of Drilling Fluid*, The Huffington Post, (Apr. 20, 2011), <http://www.huffingtonpost.com/2011/04/20/pennsylvania-fracking-spill-gas-blowout-2011n851637.html>.)

Methods to control a gas well blowout can require significant water withdrawals – from 500,000 to 6,000,000 gallons per day. Well control experts may also use foam and dry chemicals to respond to a blowout. Controlling a well blowout can create large volumes of waste. Rig-deluge operations create large pools of water that can transport oil, chemicals, fuels, and other materials toward lower elevation drainage areas.

In addition to the Chesapeake Energy 2011 well blowout, another Pennsylvania Marcellus Shale blowout occurred in 2010. (*Blowout Occurs at Pennsylvania Gas Well*, Wall Street Journal (June 4, 2010); *Pennsylvania Fracking Spill: Natural Gas Well Blowout Spills Thousands of Gallons of Drilling Fluid*, The Huffington Post, (Apr. 20, 2011), <http://www.huffingtonpost.com/2011/04/20/pennsylvania-fracking-spill-gas-blowout-2011n851637.html>). Also, in 2010, there was a major industrial fire. The news reported that it took "16 hours for out-of-state crews to address a June 3 blowout in Clearfield County and 11 hours to extinguish a July 23 fire in Allegheny County. In both cases, well operators had to wait for response crews to fly in from Texas." (*Emergency Crews Set for Pa. Wells* (Aug. 25, 2010), <http://pagasdrilling.com/tag/cudd-well-control/>). In 2010, CUDD Well Control located a new facility in Canton Township, Bradford County, Pennsylvania. It is recommended that the regulation require operators to have a contract in place for immediate response by a trained and qualified well control contractor. If a contract with a well control expert is not in place when a blowout occurs, contract negotiations can cause detrimental delays. A recent gas well fire (February 2014) at a Chevron well in Greene County Pennsylvania lasted two weeks (K. Colaneri, *Crews Cap Leaking Chevron Gas Well That Started Fire in Southwest Pa*, StateImpact (Feb. 24, 2014), <http://stateimpact.npr.org/pennsylvania/2014/02/24/crews-cap-leaking-chevron-gas-well-that-started-fire-in-southwest-pa/>) and resulted in the death of one worker. (J. Casto, *State Police Recover remains of worker from Greene County Gas Well Fire*, TribLiveNews (Feb. 19, 2014), <http://triblive.com/news/adminpage/5624873-74/gas-state-pad#axzz2vW0Y8fEK>) The cause of the gas well explosion is under investigation by the PADEP, but early reports indicate a defective wellhead. The well was brought under control by a specialized well capping expert, Wild Well Control. The initial well explosion also resulted in a fire at an adjacent well. (K. Colaneri, *Well Fire in Southwest Pa. May Burn Through the Weekend*, StateImpact (Feb. 14, 2014), <http://stateimpact.npr.org/pennsylvania/2014/02/14/well-fire-in-southwest-pa-may-burn-through-the-weekend/>) (1143)

Response: The Department acknowledges that specialty companies are needed to actually address the technical matters associated with a well control incident. The role of first responders is, and continues to be, security of the perimeter of the site in such instances and assisting with any impacts in the surrounding community.

768. Comment: Well capping is a proven, effective, and rapid method to control a blowout. Well control contractors provide the expertise and equipment for this operation. However, in some limited cases, well capping is not effective, and a relief well may be required. Therefore, it is important for operators to also have prearranged access to a relief well rig, either via a contract with a rig provider or via a memorandum of agreement to provide emergency response assistance with a nearby operator. (1143)

Response: Due to the frequency of occurrence of well control incidents, the Department does not believe it is reasonable or necessary to have this requirement in place for safe and environmentally protective operations to be conducted.

769. Comment: The regulation should also include requirements for the operator to conduct drills to practice the plan, and for the PADEP to audit the plan via drills, exercises, equipment inspections, and personnel training audits. (1143)

Response: Requirements for the operator to conduct drills to practice the plan and for the Department to audit the practice have not been historically required by the Department. The Department does not believe the requirement will result in a significant increase in the quality or implementation of PPC plans and would be overly burdensome for operators.

770. Comment: In accordance with comments 760 through 769, above, Commentator recommends that the section be amended to read:

§ 78.55. Control and disposal planning; Emergency Response Plans for Oil and Gas Operations.

(a) Preparation and implementation of plan for Oil and Gas Operations.

Persons conducting Oil and Gas Operations shall prepare and implement site specific PPC plans according to §§ 91.34 and 102.5(l) (relating to activities utilizing pollutants; and permit requirements).

(1) The PPC plan shall include information demonstrating that the oil and gas operator has sufficient equipment and trained and qualified personnel immediately available, or on contract, to contain, control and clean up the worst-case discharge or respond to the worst-case emergency.

(2) If local emergency response resources are relied on in the PPC, operators shall ensure they are trained, qualified, and equipped to respond to an industrial accident. Operators are required to provide adequate funding to the local government and provide sufficient industrial response equipment and trained and qualified personnel to supplement local emergency response resources to ensure that there are sufficient resources, in total, to contain, control and clean up the worst-case discharge or respond to the worst-case emergency.

(3) The operator must conduct an annual drill to test the PPC, with sufficient prior notice to the Department and local emergency response resources that are relied on under the PPC to ensure that they have an opportunity to participate.

(4) In addition to the PPC Plan, a Spill Prevention Response (SPR) is also required for regulated storage tank facilities with an aggregate aboveground storage tank capacity of more than 21,000 gallons.

(b) Preparation and implementation of a plan for well sites. In addition to the requirements in subsection (a), the well operator shall prepare and develop a site specific PPC plan prior to storing, using, generating or transporting regulated substances to, on or from a well site from the drilling, alteration, production, plugging or other activity associated with oil and gas wells.

(1) The PPC plan shall include a written well blowout response plan, a contract retainer with an emergency well control expert, and prearranged access to a relief well rig, either via a contract with a rig provider or via a memorandum of agreement, to provide emergency response assistance with a nearby operator.

(2) If local emergency response resources are relied on in the PPC, operators shall ensure they are trained, qualified, and equipped to respond to an industrial accident. If the operator cannot demonstrate that local emergency responders have the required training, qualifications, an equipment to respond to an industrial accident, the operator should be required to provide its own response resources or have a contract in place with a qualified professional.

(c) Containment practices. The well operator's PPC plan must describe the containment practices to be utilized at the Oil and Gas Operation. The PPC plan must include a description of the equipment to be kept onsite during drilling and hydraulic fracturing operations, and all other Oil and Gas Operations, that can be utilized to prevent a spill from leaving the well site.

(d) Requirements. The well operator's PPC plan must also identify the control and disposal methods and practices utilized by the operator and be consistent with the act, The Clean Streams Law (35 P. S. §§ 691.1—691.1001), the Solid Waste Management Act (35 P. S. §§ 6018.101—6018.1003) and §§ 78.54, 78.56—78.58 and 78.60—78.63. The PPC plan must also include a pressure barrier policy developed by the operator that identifies a minimum of two pressure barriers to be used during all identified Oil and Gas Operations.

(e) Approval and Revisions. The well operator shall submit the PPC and SPR plans to the Department for review and approval as part of the permit application. Operations may not commence until Department approval of the PPC and SPR plans is complete. Proposed revisions to the PPC and SPR plans must be submitted to the Department for review and approval prior to implementing a change to the practices identified in the PPC and SPR plans.

Once approved, the Department will audit each PPC and SPR plan at least once every five years at an oil and/or gas production operation, or once during the well construction operation to verify that there is sufficient trained and qualified personnel and equipment available to carry out the plan.

(f) Copies. A copy of the well operator's PPC and SPR plans shall be provided to the Department, the Fish and Boat Commission, or the land owner, residents on or adjacent to the land to be used, the County and Local Emergency Management Agency, Local Fire and Medical Service Agencies that would be involved in the response upon request and shall be available at the site during drilling and completion activities for review.

(g) Guidelines. With the exception of the pressure barrier policy required under subsection (d), PPC and SPR plans developed in conformance with the Guidelines for the Development and Implementation of Environmental Emergency Response Plans, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 400-2200-001, as amended and updated, will be deemed to meet the requirements of this section.

(h) Emergency contacts. A list of emergency contact phone numbers for the area in which the well site is located must be included in the PPC and SPR plans and be prominently displayed at the well site during drilling, completion, or alteration activities.

(i) Emergency response planning elements required in the PPC and SRP Plans Oil and Gas Operations.

(1) Applicability. This subsection applies to all Oil and Gas Operations.

(2) Definitions. For the purposes of this subsection, the following definitions apply:

Emergency responder—Police, firefighters, emergency medical technicians, paramedics, emergency management personnel, oil and gas personnel trained and qualified for response to emergencies and their contract staff, well control experts, public health personnel, state certified hazardous materials response teams, Department emergency personnel and other personnel authorized in the course of their occupations or duties, or as an authorized volunteer, to respond to an emergency.

(3) Registration of addresses.

(i) Prior to construction of an access road to a well site, the operator of an oil or gas well shall request a street address for the well site from the county or municipality responsible for assigning street addresses.

(4) Signage.

(i) Prior to construction of the access road, the operator of an oil or gas well shall display a reflective sign at the entrance.

(5) Emergency response.

(i) The operator of an Oil and Gas Operation shall develop and implement an emergency response plan that provides for equipment, procedures, training and documentation to properly respond to emergencies that threaten human health and safety for each well site. The plan shall incorporate National Incident Management System planning standards, including the use of the Incident Command System, Incident Action Planning and Common Communications Plans. The plan must include:

(A) The emergency contact information, including phone numbers, for the well operator's local representative for the Oil and Gas Operation and the operator's 24-hour emergency phone number.

(B) The emergency notification procedures that the operator shall utilize to contact emergency responders during an emergency.

(C) A description of the Oil and Gas Operation personnel's response to the following well site emergencies:

(I) Fire.

(II) Medical emergency.

(III) Explosion or similar event.

(IV) Spill.

(V) Security breach or other security event.

(VI) Any other incident that necessitates the presence of emergency responders.

(D) A description of the procedure to be used to provide the most current information to emergency responders in the event of an emergency, including the following:

(I) The current Material Safety Data Sheet (MSDS) required under law to be present at the Oil and Gas Operation.

(II) The location of the MSDSs at the Oil and Gas Operation.

(III) The name of the position in the operator's organization responsible for providing the information in subclauses (I) and (II).

(E) A list containing the location of any fire suppression, well control and spill control equipment maintained by the Oil and Gas Operator at the Oil and Gas Operation.

(F) A description of any emergency equipment available to the operator that is located off of the Oil and Gas Operation.

(G) A summary of the risks and hazards to the public within 1 mile of the well site and the associated planning assumptions.

(H) An outline of the emergency response training and qualification plan that the operator has established.

- (ii) The emergency response plan in subparagraph (i) may consist of two parts:
 - (A) A base plan common to all of the operator's Oil and Gas Operations well site containing some of the elements described in subparagraph (i).
 - (B) A site-specific plan containing the remaining elements described in subparagraph (i).
- (iii) The operator shall submit a copy of the current emergency response plan for that well site unless the permit provides otherwise. For plans using the approach in subparagraph (ii), the operator may submit one base plan provided that the site-specific plans are submitted for each well site.
- (iv) The operator shall review the plan and submit an update annually on or before March 1 each year for Department review and approval in accordance with § 78.55(e). In the event that updates are not made to the plan for that review period, the operator shall submit a statement indicating the review was completed and updates to the plan were not necessary.
- (v) The plan and subsequent updates shall be submitted to:
 - (A) PEMA.
 - (B) The Department.
 - (C) The county emergency management agency.
 - (D) The Public Safety Answering Point with jurisdiction over the well site.
 - (E) The landowner and residents on or adjacent to the land where the Oil and Gas Operation is located.
 - (F) The local government.
- (vi) A copy of the plan shall be available at the Oil and Gas Operation during all phases of operation.
- (vii) The emergency response plan must address response actions for Oil and Gas Operations as defined in § 78.1.
- (viii) The requirements in subparagraphs (i)—(vii) may be met by implementing guidance issued by the Department in coordination with PEMA. (1143)

Response: See responses to comments 760 through 769.

771. Comment: 78.55(a) requires persons conducting oil and gas operations to prepare and implement site specific preparedness, prevention and contingency (PPC) plans. As suggested by commentators, allowing conventional operators to prepare a single PPC plan for multiple sites would lessen the fiscal impact of the regulation. Would this Commonwealth's natural resources be adequately protected if the regulation allowed conventional operators to prepare one PPC plan for multiple sites? If so, we suggest that this subsection be amended accordingly. (1099)

Response: It is necessary to ensure that the PPC plan is appropriate to address site specific conditions for each site. There may be instances where the operator finds that a PPC plan prepared for one site is applicable to another site but the plan must be analyzed prior to making such a determination.

772. Comment: 78.55(a) -- This provision should clarify that PPC planning is required to the extent 25 Pa. Code §§ 91.34 and 102.5(1) apply to the subject activity. It also appears that Section 78.55(a) overlaps and duplicates requirements that are set forth in Section 78.55(b). While Section 78.55(b) requires well operators to prepare PPC plans for activities at well sites, Section 78.55(a) covers "oil and gas operations" and applies to any "person" conducting such operations thereby introducing significant uncertainty and confusion as to how these provisions are to operate in tandem. Section 78.55(a) must be clarified to apply only to oil and gas operations that do not take place at well sites (well sites are covered under Section 78.55(b)) and that at such locations, the person or entity in charge of the operations be responsible for preparing and implementing a PPC plan, as appropriate, to eliminate the potential for preparation of multiple, competing PPC plans.

Suggested amendatory language:

(a) Preparation and implementation of plan for oil and gas operations at a location other than a well site. Persons conducting oil and gas operations at a location other than a well site shall prepare and implement site specific PPC plans according to §§ 91.34 and 102.5(l), as applicable. (1103)

Response: Requirements outlined in subsection (b) are in addition to the requirements in subsection (a). Subsection (a) simply reiterates requirements found at §§ 91.34 and 102.5(l). Subsection (b) establishes a requirement for development of a PPC plan for oil and gas operations occurring on a well site. Oil and gas operations occurring on a well site must comply with both subsections (a) and (b).

773. Comment: The proposed amendments to 25 Pa. Code Chapter 78 include changes to requirements for preparing and implementing pollution prevention and contingency (“PPC”) plans. As drafted, the provisions are confusing and appear to create overlapping and duplicative requirements. Specifically, while the proposed version of 25 Pa. Code § 78.55(b) requires well operators to prepare PPC plans for activities at well sites, the proposed version of 25 Pa. Code § 78.55(a) covers “oil and gas operations” and applies to any “person” conducting such operations. Operations at well sites are encompassed within “oil and gas operations” as that term is defined, thereby introducing significant uncertainty and confusion as to how the foregoing provisions are to operate in tandem. To address this problem, we recommend that 25 Pa. Code § 78.55(a) be clarified to apply only to oil and gas operations that do not take place at well sites (well sites are covered under Section 78.55(b)) and that at such locations, the person or entity in charge of the operations be responsible for preparing and implementing a PPC plan, as appropriate, to eliminate the potential for preparation of multiple, competing PPC plans by different entities. We also recommend that in conjunction with this change, the first phrase of the proposed version of 25 Pa. Code § 78.55(b) be eliminated (i.e., “In addition to the requirements in subsection (a)”).

In addition, it is important to note that the need to have PPC plans is specifically addressed in 25 Pa. Code §§ 91.34 and 102.5(l). Accordingly, the proposed versions of both 25 Pa. Code §§ 78.55(a) and 78.55(b) should contain cross references to those provisions and indicate that PPC plans must be prepared “in accordance with” and “to the extent required by” those provisions.

Recommended changes to the proposed version of 25 Pa. Code §§ 78.55(a) and (b) to address the foregoing issues are set forth below:

(a) Preparation and implementation of plan for oil and gas operations. Persons conducting oil and gas operations at a location other than a well site shall prepare and implement site specific PPC plans in accordance with and to the extent required by 25 Pa. Code §§ 91.34 and 102.5(l) (relating to activities utilizing pollutants; and permit requirements). The person in charge of the operations at the location shall be responsible for preparing and implementing the PPC plan for the location.

(b) Preparation and implementation of plan for well sites. The well operator shall prepare and develop a site specific PPC plan in accordance with and to the extent required by 25 Pa. Code §§ 91.34 and 102.5(l) (relating to activities utilizing pollutants; and permit requirements) prior to storing, using, generating or transporting substances to, on or from a well site from the drilling, alteration, production, plugging or other activity associated with oil and gas wells. (1173)

Response: See response to comment 772.

774. Comment: § 78.55(a)-(b) - This provision should clarify that PPC planning is required to the extent 25 Pa.Code §§ 91.34 and 102.5(l) apply to the subject activity. It also appears that Section 78.55(a) overlaps and duplicates requirements that are set forth in Section 78.55(b). While Section 78.55(b) requires well operators to prepare PPC plans for activities at well sites, Section 78.55(a) covers “oil and gas operations” and applies to any “person” conducting such operations thereby introducing significant uncertainty and confusion as to how these provisions are to operate in tandem. We suggest that Section 78.55(a) be clarified to apply only to oil and gas operations that do not take place at well sites (well sites are covered under Section 78.55(b)) and that at such locations, the person or entity in charge of the operations be responsible for preparing and implementing a PPC plan, as appropriate, to eliminate the potential for preparation of multiple, competing PPC plans.

Suggested amendatory language:

- (a) Preparation and implementation of plan for oil and gas operations at a location other than a well site. Persons conducting oil and gas operations at a location other than a well site shall prepare and implement site specific PPC plans according to §§ 91.34 and 102.5(l), as applicable.
- (b) Preparation and implementation of plan for well sites. The well operator shall prepare a site specific PPC plan, in accordance with §§ 91.34 and 102.5(l), as applicable, prior to storing, using, generating or transporting substances subject to those provisions to, on or from a well site. (1137, 1147, 1174)

Response: See response to comment 772.

775. Comment: This section creates an unnecessary burden for small operators who conduct operations at multiple well sites in close proximity where the PPC plan would be the same for all such operations. That annual cost will be about \$25 million. If the Department’s concern is that PPC plans tend to become outdated with changing personnel or methods, that concern can be addressed by requiring PPC plans to be updated with any change in the relevant information.

Suggested amendatory language:

- (a) *Preparation and implementation of plan for oil and gas operations.* Persons conducting oil and gas operations at locations other than well sites shall prepare and implement updated site specific PPC plans according to the requirements in 25 Pa.Code § 91.34 and 102.5(l).
- (b) Well operators shall prepare and develop an updated PPC plan prior to storing, using, generating or transporting regulated substances to, on or from a well site [including tophole water, brines, drilling fluids, additives, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids and drill cuttings, from the drilling, alteration, production, plugging or other activity associated with oil and gas wells to, on or from a well site.
- (c) *Requirements.* The well operator’s PPC plan must also identify the control and disposal methods and practices utilized by the well operator and be consistent with the act, The Clean Streams Law (35 P.S. §§ 691.1—691.1001), the Solid Waste Management Act (35 P.S. §§ 6018.101—6018.1003) and §§ 78.54, 78.56—78.58 and 78.60—78.63.
- (d) *Revisions.* The well operator shall revise the PPC plan prior to implementing a change to the practices identified in the PPC plan.
- (e) *Copies.* A copy of the well operator’s PPC plan shall be provided to the Department, upon request and shall be available at the well site during drilling and completion activities for review.
- (f) *Guidelines.* A PPC plan developed in conformance with the *Guidelines for the Development and Implementation of Environmental Emergency Response Plans*, Commonwealth of

Pennsylvania, Department of Environmental Protection, No. 400-2200-001, as amended and updated, shall be deemed to meet the requirements of this section.
(1135)

Response: See responses to comments 771 regarding development of site specific PPC plans and 772 regarding the requirements of subsections (a) and (b). Inclusion of the pressure barrier policy in the PPC plan is appropriate.

776. Comment: Control and Disposal Planning (PPC Plans) - 78.55 is titled “Control and Disposal Planning; Emergency Response for Unconventional Wells.” Paragraph “(a)” mandates the implementation of “site specific PPC plans according to the requirements in 25 Pa. Code § 91.34 and 102.5(1).” Neither of the cross-referenced regulations is specific to unconventional activities. The requirement for operators to generate “site specific” PPC Plans needs additional clarity and should be consistent throughout the PA Code. 93.34(b) says that the Department “may” require the submission of a plan. How does a conventional operator discern if a request for a plan will be forthcoming and what would be the timeframe given to the operator to produce a plan? As a conventional operator, we began compiling site specific PPC Plans based on rules like 102.5(1) as part of our pre-drill preparation. Because of the effort involved, these plans are initiated months in advance of the site construction. If the Department may or may not be requiring a plan (as intimated in 91.34b) and 78.55 is specific to unconventional operators, how are conventional operators to interpret applicability and how can they be guaranteed that their drilling and completion operations will not be interrupted by an order to produce a plan within some indeterminate timeframe and based on interpretational discretion? The regulatory language regarding the PPC plans and their applicability lacks clarity and consistency. Perhaps conventional operators should be permitted to develop a general, PPC template as opposed to the site specific expectation mandated for the unconventional operators. These proposed additions should be tabled in favor of further consideration. (12, 623)

Response: See responses to comments 771 regarding development of site specific PPC plans and 772 regarding the requirements of subsections (a) and (b). As part of this rulemaking, in response to comments and recent legislation (the Act of July 10, 2014 (P.L. 1053, No. 126)), the Department split Chapter 78 into two separate Chapters – one for conventional oil and gas wells (Chapter 78) and the other for unconventional wells (Chapter 78a). The purpose of this amendment to the final rulemaking was to clarify the different requirements for conventional and unconventional wells. The Department believes that having two completely separate regulatory Chapters should serve to eliminate any confusion about what requirements apply to conventional and unconventional wells. In addition, having separate Chapters allows the Department to craft regulations to match the environmental risks posed by each segment of the industry (compare, for example, section 78.56 and section 78a.56, which contain significantly different requirements for temporary storage at conventional and unconventional well sites, respectively). The bifurcation of the regulation into Chapters 78 and 78a clarifies the issue brought up by the commentator regarding applicability of this section to conventional operations.

777. Comment: This section is titled “Control and Disposal Planning; Emergency Response for Unconventional Well Sites” (in the Pennsylvania Bulletin version), which is misleading and appears to limit the section to unconventional wells.

Paragraph (a) mandates the implementation of “site specific PPC plans according to §§ 91.34 and 102.5(l).” Neither of the cross-referenced regulations is specific to unconventional activities. The requirement for operators to generate “site specific” PPC Plans needs additional clarity and should

be consistent throughout the PA Code. Section 91.34(b) says that the Department “may” require the submission of a plan. How does a conventional operator discern if a request for a plan will be forthcoming and what would be the timeframe given to the operator to produce a plan? If the Department may or may not be requiring a plan (as intimated in 91.34(b)) and 78.55 is specific to unconventional operators, conventional operators will not be able to interpret applicability. They cannot be assured that their drilling and completion operations will not be interrupted by an order to produce a plan within some undetermined timeframe and based on interpretational discretion.

The regulatory language regarding the PPC plans and their applicability lacks clarity and consistency. Conventional operators should be permitted to develop a general, PPC template as opposed to the site specific expectation mandated for the unconventional operators. These proposed additions should be given further consideration regarding the clarity of these regulations.

Section 78.55(a) also broadens the scope of PPC plans to any “person” conducting oil and gas operations,” generally, whereas subsection (b) is specific to operators at well sites, which makes section 78.55(a) even more confusing. Subsection (a) should be clarified to apply only to oil and gas operations that do not take place at well site.

Suggested amendatory language:

(a) Preparation and implementation of plan for oil and gas operations at a location other than a well site. Prior to generation of waste, persons conducting oil and gas operations at a location other than a well site shall prepare and implement PPC plans according to the requirements in 25 Pa.Code §§ 91.34 and 102.5(l), as applicable.(1153)

Response: See responses to comments 771 regarding development of site specific PPC plans and 772 regarding the requirements of subsections (a) and (b).

As part of this rulemaking, in response to comments and recent legislation (the Act of July 10, 2014 (P.L. 1053, No. 126)), the Department split Chapter 78 into two separate Chapters – one for conventional oil and gas wells (Chapter 78) and the other for unconventional wells (Chapter 78a). The purpose of this amendment to the final rulemaking was to clarify the different requirements for conventional and unconventional wells. The Department believes that having two completely separate regulatory Chapters should serve to eliminate any confusion about what requirements apply to conventional and unconventional wells. In addition, having separate Chapters allows the Department to craft regulations to match the environmental risks posed by each segment of the industry (compare, for example, section 78.56 and section 78a.56, which contain significantly different requirements for temporary storage at conventional and unconventional well sites, respectively). The bifurcation of the regulation into Chapters 78 and 78a clarifies the issue brought up by the commentator regarding applicability of this section to conventional operations.

778. Comment: 78.55(b) – “...prior to storing, using, generating or transporting regulated substances to, on or from a well site...” --- It is suggested that this section be revised to allow for a general discussion of what substances are anticipated to be found at the well site since an operator may not know what regulated substances will be onsite prior to use. (1057)

Response: The Department disagrees that the revisions proposed by the commentator are needed. If the operator is uncertain about which regulated substances will be at the well site, the operator may include all potential regulated substances in the PPC plan.

779. Comment: Section 78.55 (b) should require site specific PPC and SPC plans to the Department in addition to the appropriate local and state emergency response coordinators in .pdf format to make the plans more easily transferable and accessible on mobile devices. (852a)

Response: See response to comment 761 regarding inclusion of a requirement for SPR Plans.

780. Comment: We believe that PPC plans should be available to all state agencies, including residents, and made available to the public. (845)

Response: See response to comment 784.

781. Comment: 78.55(b) -- The use of the term “regulated substance” in this subsection is unclear and is difficult to apply to the oil and gas industry. The potential for an overly broad interpretation is high with the Department’s proposed definition, which includes literally thousands of substances, many of which are naturally occurring and many of which are environmentally benign. In addition, the proposed paragraph appears to include some grammatical confusion, which should be clarified.

Suggested amendatory language:

(b) Preparation and implementation of plan for well sites. The well operator shall prepare a site specific PPC plan, in accordance with §§ 91.34 and 102.5(1), as applicable, prior to storing, using, generating or transporting substances subject to those provisions to, on or from a well site. (1103, 1137, 1174)

Response: Use of the term “regulated substance” was intentionally selected to be very broad and cover all substances that may cause pollution.

782. Comment: 78.55(b) – The term “regulated substances” is not sufficiently precise, as explained above in our comments concerning its definition. The existing list of materials for which a PPC plan is required should be retained.

Suggested Regulatory Language:

(b) Preparation and implementation of plan for well sites. The well operator shall prepare a site specific PPC plan prior to storing, using, generating or transporting tophole water, brines, drilling fluids, additives, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids and drill cuttings from the drilling, alteration, production, plugging or other activity associated with oil and gas wells. (1153)

Response: See response to comment 781.

783. Comment: **78.55(c)** – The Proposal has not clarified the nature of equipment that should be described in the PPC plan. The second sentence of this subsection should be deleted.

Suggested amendatory language:

(c) Containment practices. The unconventional well operator’s PPC plan must describe the containment practices to be utilized and the area of the well site where containment systems will be employed as required under section 78.64a. (1103, 1137, 1153, 1174)

Response: The nature of equipment that should be described in the PPC plan is specified in

the rulemaking and is described as equipment that can be used to prevent a spill from leaving the well site.

- 784.** Comment: 78.55 (d)(d.2) – Distribute copies and revisions of control disposal plans and emergency response plans to local emergency response groups, county conservation districts, and municipal offices to promote awareness and compliance; post electronically for public review. (855, 1098)

Response: Sections 78.55(f) and 78a.55(f) specify that copies of well operator’s PPC plan shall be provided to the Department, the Fish and Boat Commission or the landowner upon request and shall be available at the well site during drilling and completion activities. Section 78a.55(i)(5)(v) specifies that all unconventional operators shall submit the emergency response plan and subsequent updates to PEMA, the Department, the county emergency management agency and the public safety answering point with jurisdiction over the well site. The Department believes that the requirements in this section are sufficient to ensure protection of public health and safety and the environment. In addition, emergency response plans submitted to the Department are available to the public for review through the Department’s website.

- 785.** Comment: 78.55(d)(2) – If federally listed species are identified in the PNDI online project review receipt, known species occurrences are in proximity to the proposed project permit site. The National Park Service should be afforded the option of requesting a copy of the Preparedness, Prevention and Contingency Plan (PPC) to avoid placing the Department and the applicant at risk of an ESA section 9 violation. (1134)

Response: The Department disagrees that the National Park Service should be added to this section of the rulemaking. This process is captured by § 78.15(d). If a potential impact to threatened or endangered species is identified in the PNDI receipt, the applicant must demonstrate to the Department that the impact will be minimized and mitigated to the satisfaction of the applicable public resource agency. Also, PPC plans are public documents which are available upon request.

- 786.** Comment: Section 78.55(d.2) – Since this section deals with control and disposal planning and emergency response, would it not be a benefit if both the municipality and county also received a copy of the PPC plan? Both entities have responsibility for emergency response and having the information beforehand would greatly improve responses. (415)

Response: See response to comment 784.

- 787.** Comment: 78.55(d.2) – We support that copies of the well operator’s PPC plan shall be provided to the Department, PFBC or the landowner upon request as well as being available at the well site. Not every landowner is going to be interested in having the PPC. However, there are landowners that are concerned about the site specific measures taken regarding storing, using, generating or transporting regulated substances to, on or from a well site. The details therein, such as, containment systems employed and equipment that may be kept onsite during drilling and fracturing operations that can be utilized to prevent a spill from leaving a well site may be important to our farmers with consideration to their crops and livestock. Our organic farmers may need to provide this information to their cooperative.

Incidents in our region such as the ATGAS blowout in Bradford County and YARASAVAGE blowout in Wyoming County both point to the need to have adequate planning and emergency response and thus, a detailed PPC Plan. We have come to the conclusion that in the case of an

emergency, such plans are invaluable. The submitted plan must be site specific. It is imperative the Department review these plans. On the local level, we've seen how initial emergency response plans provided by operators, for example, such as Williams Field Services' Emergency Response Plan was so inadequate the Township's Planning Commission and Zoning Board Solicitor rejected and returned it to the Williams regarding the proposed Sickler Compressor Station in Washington Township, Wyoming County. Thus the devil is in the details and whether it is a PPC or Emergency Response Plan they must be adequately prepared and reviewed. We recommend this provision at the minimum as it is written. (660a)

Response: The regulation specifies that persons conducting oil and gas operations shall prepare and implement site specific PPC plans. See response to comment 762.

788. Comment: The proposed "pressure barrier policy," to be developed by the operator, is poorly defined with no restraints or guidelines. It is impossible to assess economic losses from the policy as currently written. I recommend either a more specific definition or its removal from the proposed regulations. (450)

Response: Pressure barrier requirements are outlined in § 78.72

789. Comment: The well operator's PPC plan must also identify the control and disposal methods and practices utilized by the well operator and be consistent with the act, The Clean Streams Law (35 P. S. §§ 691.1-691.1001), the Solid Waste Management Act (35 P. S. §§ 6018.101-6018.1003) and §§ 78.54, 78.56-78.58 and 78.60-78.63. The PPC plan must also include a pressure barrier policy developed by the operator that identifies barriers to be used during identified operations. Pressure barrier policy is not defined. Objection is made that the lack of a definition does not allow the operator to know if the policy will require expenditures to fulfill requirements, or if the requirement is reasonable. (460)

Response: See response to comment 788.

790. Comment: 78.55(d.2) – We recommend the following revision to the existing text: (d.2) "Copies. A copy of the well operator's PPC plan shall be provided to the Department, the Pennsylvania Fish and Boat Commission, nearby landowners, including the National Park Service, if applicable, or the general public upon request and shall be available at the site during drilling and completion activities for review." (1062, 1133)

Response: See response to comment 784 and 785.

791. Comment: Emergency Response Planning frequently becomes the focus of attention only after the emergency occurs. In the aftermath of The Deepwater Horizon oil spill, the post mortem was accompanied by intergovernmental blame across all levels of governance. If we have learned anything from recent environmental accidents, strengthening the requirements surrounding emergency response planning are essential to safeguarding public resources and environmental health. The Preparedness, Prevention and Contingency (PPC) plans warrant more attention than just to meet the format of the DEP guidelines, No.400-2200- 001. The regulations must indicate that all PPC plans are reviewed and approved by the appropriate DEP official and have incorporated municipal and local authorities into the planning process. (1063)

Response: See response to comment 762.

792. Comment: The Department should update its oil and gas operators manual or develop guidelines

specifically for oil and gas that better reflects its current practice of requiring site specific information within a PPC plan and/or tailor a template for oil and gas specific PPC plans. Much of the “Guidelines for the Development and Implementation of Environmental Emergency Response Plans” document is outdated and does not necessarily apply to oil and gas development. (1071)

Response: The Department agrees that technical guidance documents and policy should be kept up to date.

793. Comment: 78.55(d.2) – The well operator’s PPC Plan must be submitted to local Emergency Management authorities. The PPC plan contains important information which is crucial to planning by local authorities having responsibility for Emergency Management first response. It is simply inexcusable that 25 PA Code Chapter 78 does not convey to well operators the duty of providing this information by force of rule. Not only must this rulemaking require the well operator to provide the complete PPC plan to local Emergency Management personnel, existence of the plan must be communicated to counties and municipalities by means of Act 14 county/municipality notifications. (869a)

Response: See response to comment 784.

794. Comment: 78.55(d.2) – PPC plans should be automatically submitted to the Department. Given its emergency response authority, the Department should have all relevant safety information in hand. (997a)

Response: See response to comment 784.

795. Comment: Pursuant to the Department’s emergency response authority, the records of mine influenced water should be automatically submitted to the Department to ensure that all relevant safety information is immediately in hand. (1142)

Response: Under §§ 78.59b and 78a.59b, operators must develop and submit a mine influenced water storage plan to the Department prior to storing mine influenced water in a well development impoundment.

796. Comment: If an oil or gas activity is within a SWPZ the affiliated water system should also receive a copy of the operators PPC plan. The operator should also have the water systems’ emergency contact information. (1149, 1150)

Response: The Department disagrees the water system owners must receive a copy of the oil and gas operator’s PPC plan when activities are conducted within a source water protection zone. The Department has amended public resource screening requirements to include approved wellhead protection areas established under § 109.713. This allows for an objective and identifiable area to be identified by the operator. The Department acknowledges that surface water sources should be protected and believes that Chapter 78 and other Department regulations and statutes provide adequate protection. PPC plans developed under the *Guidelines for the Development and Implementation of Environmental Emergency Response Plans*, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 400-2200-001 are deemed adequate. To the extent that the operator should include a water system’s contact information in their PPC plan under the *Guidelines for the Development and Implementation of Environmental Emergency Response Plans*, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 400-2200-001, it is required.

797. Comment: Emergency plans (78.55) should include notification of affected individuals, including landowners and those who might be impacted by difficulties with water supplies. (153)

Response: Section 78a.55 regarding emergency response plans requires that the operator develop and implement an emergency response plan which includes a summary of the risks and hazards to the public within 1/2 mile of the well site and the associated planning assumptions which should include notification of potentially impacted parties in the event of an emergency.

798. Comment: All tanks and pipelines should be designed and built to last at least 100 years. All wellheads and pipelines should be monitored closely with an array of sensors, with information summarizing current and past leaks summarized for the public (analogous to a weather report). Wells in production should be tested yearly for integrity of casing and cement, and any that are leaking should be repaired, or sealed and abandoned.(156)

Response: All tanks and pipelines utilized to store or transport regulated substances must be maintained in good working condition regardless of the age of the facility.

Current regulations in § 78.88 address mechanical integrity monitoring at operating wells in Pennsylvania. Such wells must be inspected quarterly and any leaks noted must be reported to the Department annually. Various means may be used to check for leaks.

799. Comment: I am the primary owner of Bull Run Energy, LLC . My company produces oil and gas from conventional oil and gas wells in Pennsylvania. I didn't grow up in the oil patch and I don't come from a long line of oil men. I don't have thousands or even dozens of wells. I am an entrepreneur who is trying to build a company. We drilled 4 wells last year and I hope to drill 10 or 12 this year. My office is above my garage and my work truck has car seats in it because it also our family truck. I am a well pumper, construction supervisor, development planner, geologist, landman, bookkeeper, company man and most relevantly the environmental compliance officer. Every regulation that needs understood, report that needs filed, plan that needs written, record that needs sent, notification that needs submitted on a non-functioning website - that all has to be done by me. I can't contract out 15 minutes here and 2 hours there to meet regulatory compliance; it's just not practical. Of course the DEP isn't the only government agency that needs my constant attention. There is also the EPA, IRS, OSHA, PENNDOT, Township Road Master, and many others. The cumulative effect of all of these laws and regulations is a tremendous burden not only in terms of dollars spent, but in efficiency.

My company is a member of the Pennsylvania Grade Crude Oil Coalition (PGCC). PGCC has carefully reviewed the proposed regulatory changes and the accompanying Regulatory Analysis Form submitted by the DEP (the DEP Analysis). Our company has participated in that review and, together, we members who work in the conventional oil and gas industry have performed our own analysis of the estimated costs that will be imposed upon the regulated community of conventional oil and gas producers.

Time after time the DEP Analysis fails to state the cost for the new regulatory requirements. One example is the increased burden imposed upon conventional operators generated by the site specific component of proposed section 78.55. Most conventional operators employ a generic PPC plan that meets the requirements of existing section 78.55. Among other items the generic plan lists the company contacts and internal spill cleanup resources and lists the outside contractors who might be called upon to assist in the response. This information is and has been a sufficient guide on how to

handle materials and respond to releases or threatened releases, because (i) conventional well and tank sites are small, (ii) the volume of material that could be released from an accidental spill is small, and (iii) there are fewer different materials on site at conventional vs. unconventional operations to manage. The proposed regulation requires a “site specific” plan that meets the requirements in 25 Pa. Code 91.34. Section 91.34 applies to locations where pollutants are both “produced” and “stored” and thus the proposed regulations would require a site specific plan at the well (where the fluid is “produced”) and at the separate tank locations (where it is “stored”).

The Analysis fails to state either the need for or the cost of such additional burden. Assuming 200,000 conventional well and tank locations, a cost of \$40 for the PPC storage unit, a labor cost of \$25 to install, and a cost of \$100 to prepare each plan, the initial installation cost would be \$33,000,000. That \$100 preparation cost assumes that the plan can be prepared internally. Many conventional operators do not have the internal resources and if the plan preparation is contracted out the cost can run as high as \$500. In that case the high end of the estimate is over \$100 million. Thereafter the plans would have to be periodically updated and damage to the onsite storage boxes will have to be repaired. If we assume an annual update and repair cost at \$125 per site, the annual maintenance cost is \$25,000,000. This is just one example. There are many more costs that are either not cited at all or are significantly understated. (389,1136)

Response: See responses to comments 771 regarding development of site specific PPC plans and 772 regarding the requirements of subsections (a) and (b). Subsection (a) simply reiterates the requirements already existing in §§ 91.34 and 102.5(l). Since subsection (a) does not establish any new requirements, no cost was attributed to this subsection.

- 800.** Comment: The climate for small business has become increasingly more difficult over the past several decades. One of the heightened challenges to both large and small business has been the substantial increase of new regulations. These regulations have caused many smaller businesses to reduce their work force or just close all together.

I was pleased when in 2012 the Legislature revised the Regulatory Review Act to require agencies like the DEP to specifically consider the impact of new regulations on small business. Among other things, the DEP is now supposed to consider the benefit of any new regulation in conjunction with the associated costs.

Today we are reviewing numerous proposed regulations and requirements that will result in substantial increases in costs on Pennsylvania’s conventional oil and gas industry. As you have heard from a number of speakers this evening, the DEP has failed to show a compelling need for many of these.

I would like to take a few minutes to speak about the new requirements regarding well site and tank battery site specific PPC (Preparedness, Prevention & Contingency) plans to be imposed on conventional oil and gas operators.

Today most conventional operators employ a generic PPC plan that meets the requirements of existing section 78.55. Among other items the generic plan lists the company contacts and internal spill cleanup resources. It also lists the outside contractors who might be called upon to assist in the response.

This information has been and is a sufficient guide on how to handle materials and respond to releases or threaten releases. In conventional versus unconventional operations, well and tank sites are smaller, the volume of materials that could be released from an accidental spill are smaller and

there fewer types of materials to manage on site at conventional versus unconventional operations.

The proposed regulation elevates the burden by requiring a “site specific” plan that meets the requirements in 25 Pa. Code, section 91.34. Section 91.34 applies to locations where pollutants are both “produced” and “stored”. Therefore, the site specific requirements would apply to both individual wells and to separate tank locations.

When the DEP provided their analysis of the new regulations to you, the DEP failed to attribute any cost to this new requirement. They also failed to discuss the need for such an additional burden. I am confident that the need does not exist. In addition to containing small amounts of materials, conventional well and tank locations are highly similar. Unique chemicals or other pollutants do not exist from site to site. The critical information of who to contact and where to locate cleanup resources are already contained in the existing generic plan.

It is shocking that the DEP did not provide to you any cost estimates for compliance with this new proposed requirement. There is a reasonable assumption of 200,000 discrete conventional well and tank locations. Assuming a cost of \$40 for the PPC storage unit, a labor cost of \$25 to install and a cost of \$100 to prepare each plan, the initial installation cost would be \$33,000,000. The \$100 preparation cost assumes that the plan can be prepared internally. The plan prepared by contracted professionals could cost as much as \$500. Annual plan updates and repair costs will continually increase the cost of doing business.

Based on my 34 years of lending experience, I can assure you the small business man and women who make up our conventional oil and gas industry cannot absorb these tens of millions of dollars in increased costs. This is especially true when the DEP has failed to show any reason why the existing generic plans are inadequate. The costs of these new burdens are dramatically out of balance with any benefits that might be achieved. (874)

Response: See responses to comments 771 regarding development of site specific PPC plans and 772 regarding the requirements of subsections (a) and (b). Subsection (a) simply reiterates the requirements already existing in §§ 91.34 and 102.5(l). Since subsection (a) does not establish any new requirements, no cost was attributed to this subsection.

- 801.** Comment: while not directly related to natural gas activities, we cannot ignore the implications of the tragic and avoidable situation in West Virginia. When dealing with industrial activities, especially those of the extractive industries, it is essential to ensure that our residents are protected by strong regulations. While Section 78.55 of the proposed regulations requires a Preparedness, Prevention, and Contingency Plan to prevent and address pollution events, I appeal to you to strengthen this section by including a requirement that these plans FULLY DISCLOSE ALL CHEMICALS, THEIR AMOUNTS AND MIXTURES, as well as any potential harm they may cause, to all agencies, landowners, and first responders. (918)

Response: Under § 78a.55 operators must include a description of the procedure used to provide the most current information to emergency responders in the event of an emergency including material safety data sheets required under law to be present at the well site in the emergency response plan.

- 802.** Comment: The DEP wants us to put PPC plans at every well site and tank battery. The DEP doesn't include a cost estimate for this, but if the whole industry has to put up storage units at over 100,000 well sites and make up individual plans for each site, it will cost 10's of millions of dollars. Talk about a waste of money. Our well sites are all the same. The generic plans that we

already have tell us where to go and who to contact, and those generic plans work fine. Our wells only produce small amounts so any spill that we ever have would be small. All that a site specific plan would do is cost a lot of money. But it wouldn't give any more protection. (985)

Response: See responses to comments 771 regarding development of site specific PPC plans and 772 regarding the requirements of subsections (a) and (b). Subsection (a) simply reiterates the requirements already existing in §§ 91.34 and 102.5(l). Since subsection (a) does not establish any new requirements, no cost was attributed to this subsection.

- 803.** Comment: The requirement for PPC plans creates an unnecessary burden for small operators. Plans would be similar for each well site yet frequent updating would be required for the plans to be meaningful. (998)

Response: See responses to comments 771 regarding development of site specific PPC plans and 772 regarding the requirements of subsections (a) and (b). Subsection (a) simply reiterates the requirements already existing in §§ 91.34 and 102.5(l).

- 804.** Comment: § 78.55 (f) - This section requires the well operator to provide the PPC plan to, in addition to the Department, the Pennsylvania Fish and Boat Commission or the landowner upon request. This is unreasonable. The Fish and Boat Commission and the landowner have no jurisdiction to access PPC plans. The Department should not by regulation give them authority they do not have otherwise, or be placed in a situation by those parties that would require the Department to take enforcement action for violations of this section. It is strongly recommended that these proposed changes be deleted. (124a)

Response: The Pennsylvania Fish and Boat Commission has jurisdictional responsibilities over waters of the Commonwealth, as well as DEP, therefore it is within the intent of the rulemaking for the Pennsylvania Fish and Boat Commission to be provided a copy of the PPC Plan. It is not unreasonable to provide them a copy of an oil and gas site's PPC plan, so they may investigate any areas of concern that fall under their jurisdiction. Additionally, landowners have a vested interest in the contents of the PPC plan and should have access to the plan. Therefore, it is in the best interest of the landowner to be provided a copy of the PPC Plan so they understand the activities and potential pollutants and how they will be controlled in the event of a spill or release of a regulated substance.

- 805.** Comment: 78.55(f) - Upon what authority does the PAFBC or the landowner have the right to review a PPC plan? The Department should have the only authority to request and review a PPC plan. (411)

Response: See response to comment 804.

- 806.** Comment: 78.55(d.2) – The Pennsylvania Fish and Boat Commission and a landowner have no authority or right to review a PPC plan. The Department should have the only authority to request and review a PPC plan.

Suggested Regulatory Language:

(d.2) Copies. A copy of the well operator's PPC plan shall be provided to the Department upon request and shall be available at the well site during drilling and completion activities for review. (1103, 1137, 1153, 1174)

Response: See response to comment 804.

807. Comment: Operators should not be required to submit PPC plans to the PFBC or landowners. These are public documents that are available through DEP and operators should not be required to do the Departments job or transfer implied regulator authority to other entities. This is simply an administrative task that adds an unnecessary and unneeded burden to the operators. (606, 606a)

Response: See response to comment 804.

808. Comment: 78.55(f): In addition to providing a copy of the PPC plan to the Department, this revised subsection will now require well operators to provide a copy of the PPC plan to the Fish and Boat Commission or the landowner, upon their request. Did EQB consider the possibility of also allowing local governments to request a copy of the PPC plan? (1099)

Response: See response to comment 784.

809. Comment: The surface impact of a conventional well site represents only a small fraction of an unconventional well, and unlike unconventional well sites, conventional operators store minimal equipment and fluids at individual sites. Furthermore, the impacts of conventional well sites vary nominally. The proposed language requiring Preparedness, Prevention & Contingency (PPC) Plans should clarify that a single comprehensive plan is satisfactory for conventional well operators rather than site specific PPC plans. If the proposal is intended only for unconventional wells, the language should consistently state so. (1113, 1118, 1120, 1115a, 1176-1188)

Response: See response to comment 771 regarding development of site specific PPC plans.

810. Comment: Compliance with Guidance. Section 78.55 (g) indicates that PPC plans developed in accord with the Department's Emergency Response Plan Guidelines will meet the regulatory requirement, but the regulation does not mandate that the PPC plan comply with the Guidelines. The regulation should eliminate this ambiguity and simply mandate that PPC plans comply with the Guidelines. (852a)

Response: The department has considered this comment and declines to make the suggested amendment to this final-form rulemaking. The final-form rulemaking establishes a standard for PPC plan preparation. While compliance with the Guidance may be one way of meeting that standard, it is possible to comply with the standard without complying with the Guidance.

811. Comment: Catastrophic releases. Neither section 78.55 nor the Guidance addresses public health and safety concerns regarding dam failure and catastrophic releases that may result from freshwater and centralized impoundments. The PPC Plan should provide for such an event. (852a)

Response: Sections 78.55(a) and 78a.55(a) require all persons conducting oil and gas operations to prepare and implement site specific PPC plans according to §§ 91.34 and 102.5(l). Construction and operation of freshwater and centralized impoundments is included in the definition of Oil and Gas operations. In addition, public health and safety concerns regarding dam failure and catastrophic releases that may result from freshwater and centralized impoundments are address under Chapter 105.

812. Comment: Spills from pipelines associated with the impoundments. Section 78.55 does not appear to require planning for spills from pipelines that carry freshwater and wastewater to centralized impoundments. 78.55 should be amended to require the PPC Plan to address spills from pipelines associated with the impoundment. (852a)

Response: Sections 78.55(a) and 78a.55(a) require all persons conducting oil and gas operations to prepare and implement site specific PPC plans according to §§ 91.34 and 102.5(l). Construction and operation of pipelines that carry freshwater and wastewater to centralized impoundments is included in the definition of Oil and Gas operations.

- 813.** Comment: The Proposed Regulations require a well operator to provide a copy of its Preparedness, Prevention and Contingency Plan (“PPC Plan”) to the Department upon request. Pursuant to the Department’s emergency response authority, the PPC plan should be automatically submitted to the Department to ensure that all relevant safety information is immediately in hand. (1142)

Response: PPC plans must be submitted to the Department upon request and maintained onsite at all times oil and gas operations are being conducted. It is most important that the PPC plan is readily available at the project site to ensure that it can be quickly accessed and implemented when necessary.

- 814.** Comment: Control and disposal planning; emergency response for unconventional wells – As most well pads are very similar in nature and design, Site-specific requirements for PPC plans should be struck from the Chapter 78 language. A master plan governing all owner/operator locations is appropriate. (1167)

Response: See response to comment 771 regarding development of site specific PPC plans.

- 815.** Comment: We would like the Department (DEP) to put a halt to open-air pits for produced water and waste water, as well as drill cuttings. (862)

Response: Air quality issues are addressed under Article III and the outside of the scope of this rulemaking.

§ 78.56 Temporary storage

- 816.** Comment: 78:56: The control and storage of production fluids (Section C) is vital, given the toxicity and unknown nature of production fluids. The prohibition against the use of open top structures to store brine and other produced fluids during and after the operation of the well is of utmost importance. (980, 1098)

Response: The Department acknowledges the comment.

- 817.** Comment: 78.56(a)(1) – The term “regulated substances” is not sufficiently precise and is unnecessary in this paragraph.

Suggested Regulatory Language:

(a) Except as provided in §§ 78.60(b) and 78.61(b) (relating to discharge requirements; and disposal of drill cuttings), the operator shall contain substances generated from the drilling, altering, completing, recompleting, servicing and plugging the well, including brines, drill cuttings, drilling muds, oils, stimulation fluids, well treatment and servicing fluids, plugging and drilling fluids other than gases in a pit, tank or series of pits and tanks or other approved storage structures. The operator shall install or construct and maintain the pit, tank or series of pits and tanks or other approved storage structures in accordance with the following requirements:

(1) The pit, tank, series of pits and tanks or other approved storage structure shall be constructed

and maintained with sufficient capacity to contain substances which are used or produced during drilling, altering, completing, recompleting, servicing and plugging the well. (1153)

Response: “Regulated substance” is defined in section 103 of The Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) (35 P.S. §6026.103). This definition is very specific and has been used without significant ambiguity or confusion since the passage of Act 2 in 1995.

- 818.** Comment: DEP has failed to consider the impact of this section on 150,000 legacy conventional wells and associated tanks in Pennsylvania. All conventional wells, whether predominantly oil or gas producers, produce some amount of liquids and tanks are used to store that produced oil and the associated production fluids. These tanks are a multitude of sizes and, in general, older operations consist of smaller and more numerous tanks. Tanks are also used throughout the conventional industry for other purposes including the recovery of liquids from “drips” (devices used to segregate liquids from natural gas) and for the temporary storage or recovery of liquids during well-servicing or plugging operations. PGCC estimates there are 175,000 of these various tanks in use in the conventional oil and gas industry.

The proposed revision to the current regulation is unnecessary and the cost of compliance is not remotely in balance with the benefit to be derived. Tanks have existed in the conventional oil and gas fields for 150 years and the risks of unfettered access to valves and lids is no different today than it was 12 years ago (when Subchapter C was last updated) or 30 years ago when the Oil and Gas Act of 1984 was adopted.

In addition, the term “regulated substance” throughout section 78.56 is overly broad and ambiguous because the section refers to temporary storage of substances from drilling, altering, completing, recompleting, servicing and plugging the well. Reference to the particular substances, e.g., brines, cuttings, stimulations and fluids other than gases would provide better guidance to the regulated community. Finally, the use of the term “fluid” can be confusing and unclear where the term is meant to refer to “liquids” rather than gases.

Suggested amendatory language:

(a) Except as provided in §§ 78.60(b) and 78.61(b) (relating to discharge requirements; and disposal of drill cuttings), the operator shall contain ~~[pollutional]~~ **regulated** substances from the drilling, altering, completing, recompleting, servicing and plugging the well, including brines, drill cuttings, drilling muds, oils, stimulation fluids, well treatment and servicing fluids, plugging and drilling fluids other than gases in a pit, tank or series of pits and tanks **or other approved storage structures**. The operator shall install or construct and maintain the pit, tank or series of pits and tanks **or other approved storage structures** in accordance with the following requirements:

(1) The pit, tank, ~~[or]~~ series of pits and tanks **or other approved storage structure** shall be constructed and maintained with sufficient capacity to contain all ~~[pollutional]~~ **regulated** substances which are used or produced during drilling, altering, completing, **recompleting, servicing** and plugging the well.

(2) **Modular aboveground storage structures that exceed 20,000 gallon capacity, which ~~that~~ are assembled on site, may not be utilized to store regulated substances resulting from drilling, altering, completing, recompleting, servicing and plugging the well without Department approval. The Department shall maintain a list of approved modular storage structures on its website. The owner or operator shall notify the Department at least 3 business days before the commencement of construction of these storage structures. This**

notice shall be submitted either electronically to the Department through its website and include the date the storage structure installation will commence or by hard copy U.S. Mail if the operator is a Small Business registered with the Department. If the date of installation is extended, the operator shall re-notify the Department with the date that the installation will commence which need not be 3 business days in advance.

[(2)] (3) A pit shall be designed, constructed and maintained so that at least 2 feet of freeboard remain at all times. If open tanks **or open storage structures** are used, the tanks **and storage structures** shall be maintained so that at least 2 feet of freeboard remain at all times unless the tank **or storage structure** is provided with an overflow system to a standby tank or pit with sufficient volume to contain all excess liquid ~~[fluid or waste] regulated substances~~. If an open standby tank **or open storage structure** is used, it shall be maintained with 2 feet of freeboard. If this subsection is violated, the operator immediately shall take the necessary measures to ensure the structural stability of the pit, or tank **or other storage structure**, prevent spills and restore the 2 feet of freeboard.

[(3)] (4) Pits, ~~[and]~~ tanks **and other approved storage structures** shall be designed, constructed and maintained to be structurally sound and reasonably protected from unauthorized acts of third parties.

(5) Operators shall install “Danger” or “No Trespassing” signs on tanks unless ~~[Unless an individual is continuously present at the well site, operators shall equip all tank valves and access lids to regulated substances with reasonable measures to prevent unauthorized access by third parties such as]~~ gates, locks, open end plugs, removable handles, retractable ladders or other measures are utilized to ~~[that prevent]~~ discourage unauthorized access by third parties. Tanks storing freshwater, fire prevention materials and spill response kits are excluded from the requirements of this paragraph. (1135)

Response: See response to comment 817 with regard to the definition of the term “regulated substances.” See response to comment 1217 with regard to use of the term “prevent.” The Department agrees that changes in the final-form rulemaking to § 78.56 to remove the requirement to install equipment to prevent unauthorized access by third parties are appropriate for conventional operations. The Department agrees that aboveground modular storage facilities with a capacity of 20,000 gallons or less do not need authorization by the Department prior to use and has added that language to the final rulemaking. Finally, the Department has added a definition of “modular aboveground storage structure” to § 78.1 and § 78a.1 of the final-form rulemaking clarifying that aboveground storage tanks that are assembled onsite and have a storage capacity greater than 20,000 gallons are considered “modular aboveground storage structures” for purposes of this subsection.

819. Comment: The protection of tanks from unauthorized acts of third parties is nearly impossible when that unauthorized party decides to vandalize equipment and tanks. Measures that fit the circumstances (tank sizes, location secondary containment signing, and locks where appropriate) need applied at the operator’s discretion rather than mandated by regulation. Given the number of tanks, man ways, plumbing, and valves that have been installed during the existence of the industry a regulation cannot address all the variables without resulting in the need to replace tanks, and tank containment facilities in many instances. Modifying tanks by drilling or welding to secure locking devices would require expensive cleaning, use of inert gases to prevent explosion at substantial cost. (998)

Response: The Department agrees that changes to § 78.56 to remove the requirement to install equipment to prevent unauthorized access by third parties are appropriate for conventional operations.

820. Comment: Given the number of tanks in use the initial costs of compliance for subsection (6) above will be between \$325 million and \$1 billion. The benefit of this proposed provision is recklessly out of balance with the cost. Even assuming that the valves and tank lids are secured by locks, a third party can easily commit “unauthorized access.” Standing 300 yards away an unauthorized accessor can breach the tank with a rifle shot. Even after the locking valve is installed an unauthorized accessor can breach the tank with a single swing of a sledgehammer against the valve nipple. And any locking device that can be bolted or welded on can be pried off with a pipe wrench or cut by bolt cutters, in a few seconds.

The draft rule failed to consider reasonable options, such as signage. Warning or no trespassing signs can be affixed at reasonable cost. In analyzing the effectiveness of signage one must acknowledge that a mere sign will not discourage a determined trespasser. But on the same hand, neither will a mere lock when a rifle, sledgehammer or bolt cutter can so easily defeat the defense. But the signage might give pause to a teenage vandal who simply needs a small warning to jerk them out of their youthful blindness and see that there is a danger present that they had not originally contemplated.

Suggested amendatory language:

- (6) [(4)] [(9)] A pit, [or] tank or other approved storage structure** that contains drill cuttings from below the casing seat, ~~pollutional regulated substances, wastes~~ or **liquids [fluids]** other than tophole water, fresh water and uncontaminated drill cuttings shall be impermeable. **[and comply with the following:]**
- [(i) The pits] [(9)] (7) Pits** shall be constructed with a synthetic flexible liner **that covers the bottom and sides of the pit.** [The] [I] **Liners** used in a pit **with a footprint area of 1/5 of an acre or more** or other approved storage structures shall comply with the following:
- (i) Have [with]** a coefficient of permeability of no greater than 1×10^{-7} 10^{-10} cm/sec. **[and with sufficient strength and thickness to maintain the integrity of the liner.]**
- (ii) Be at least 30 mils thick unless otherwise approved by the Department. Approval may be granted if the manufacturer demonstrates that the alternative thickness is at least as protective as a 30 mil liner. A list of approved alternative liners shall be maintained on the Department’s website.**
- (iii) The liner shall be designed, constructed and maintained so that the physical and chemical characteristics of the liner are not adversely affected by the [waste] regulated substance stored therein and the liner is resistant to physical, chemical and other failure during transportation, handling, installation and use. Liner compatibility for pits storing waste shall satisfy ASTM Method D5747 Compatibility Test for Wastes and Membrane Liners or other compatibility test approved by the Department for the duration the pit or other temporary storage structure is used.**
- (iv) Adjoining sections of liners shall be sealed together to prevent leakage in accordance with the manufacturer’s directions. The integrity of all seams of the adjoining sections of liner shall be tested prior to use. Results of the tests shall be available upon request. [If the operator seeks to use a liner material other than a synthetic flexible liner, the operator shall submit a plan identifying the type and thickness of the material and the installation procedures to be used, and shall obtain approval of the plan by the Department before proceeding.] (1135)**

Response: The Department agrees that changes to § 78.56 to remove the requirement to install equipment to prevent unauthorized access by third parties are appropriate for conventional operations.

The Department disagrees with the other proposed changes and believes that appropriate liners should be required even for pits of a relatively small size. Without an appropriate liner, even a relatively small pit can leak and cause pollution of the waters of the Commonwealth. The Department agrees that a listing of approved alternative liners can be made available on the Department's website.

- 821.** Comment: This new slope requirement is a very significant departure from existing conventional practice wherein vertical walled pits are employed. Pits at a conventional well site are used for a very short period of time (generally one or two days) and contain a small amount of liquid (measured in dozens or hundreds of barrels). Vertical walled pits have sufficed for these purposes without environmental incidents; indeed vertical walled pits are better than the 2:1 option because of the vertical pit's small footprint and low environmental disturbance.

A sloped 2:1 pit would occupy a much larger space. On a level surface the disturbance area for a 2:1 pit is 10 times larger than a vertical walled pit. The required space increases with slope so that where the slope is 40% the disturbance area for a 2:1 pit is 100 times larger than a vertical walled pit. The additional space would have to be cleared thus requiring the removal of more timber and earth disturbance. The additional earth disturbance will require greater sedimentation control measures.

Moreover, one of the key concerns of pit construction is the insertion of the pit liner upon a smooth surface free of roots, sharp rocks or other elements that lead to loss of liner integrity. The 2:1 requirement vastly increases the area which must be prepared for the liner, thus exponentially increasing the hazard of liner puncture. The much larger footprint will also bear a significant financial cost. Annual compliance with the proposed requirement will cost between \$18.75 million and \$83.75 million.

Suggested amendatory language:

[(ii)] [(10)] (8) The pit shall be constructed so that the liner subbase is smooth, uniform and free from debris, rock and other material that may puncture, tear, cut or otherwise cause the liner to fail. **The pit must be structurally sound and the interior slopes of a pit with a foot print area of 1/5 acre or more must have a slope no steeper than 2 horizontal to 1 vertical.** The liner subbase and subgrade shall be capable of bearing the weight of the material above the liner without settling that may affect the integrity of the liner. If the pit bottom or sides consist of rock, shale or other materials that may cause the liner to fail, a subbase of at least 6 inches of soil, sand or smooth gravel, or sufficient amount of an equivalent material, shall be installed over the area as the subbase for the liner.

[(iii)] [(11)] (9) The bottom of the pit shall **not penetrate [be at least 20 inches above]** the seasonal high groundwater table **upon installation**, unless the operator obtains approval under subsection (b) for a pit that exists only during dry times of the year and is located above groundwater.

[(12)] (10) Stormwater shall be diverted away from the pit.

[(13)] (11) Prior to placing material in the pit, the liner shall be inspected for lack of uniformity, damage and other imperfections that may cause the liner to leak. The well operator shall correct damages or imperfections before placing the material in the pit, and shall maintain the pit until closure of the pit.

[(iv)] [(14)] (12) If a liner becomes torn or otherwise loses its integrity, the pit **or approved storage structure** shall be managed to prevent the **[pit]** contents from leaking **[from the pit]**. If repair of the liner or construction of another temporary pit **or approved storage structure** is not practical or possible, the **[pit]** contents shall be removed and disposed at an approved waste

disposal facility or disposed on the well site in accordance with § 78.61, § 78.62 or § 78.63 (relating to disposal of residual waste—pits; and disposal of residual waste—land application).

[(v)] [(45)] (13) The liner shall be secured around the perimeter of the pit in a manner that does not compromise the integrity of the liner. If the liner drops below the 2 feet of freeboard, the pit shall be managed to prevent the pit contents from leaking from the pit and the 2 feet of lined freeboard shall be restored.

[(47)] (14) Condensate, whether separated or mixed with other fluids, shall not be stored in any open top structure or pit. Tanks used for storing or separating condensate during well completion shall be monitored and shall have controls to prevent vapors from exceeding the lower explosive limits of the condensate outside the tank. Tanks used for storing or separating condensate shall be grounded. (1135)

Response: The Department agrees with the proposed changes to subsection (a)(8); however, the Department believes that 1/5th of an acre is too large a footprint to serve as an appropriate cutoff. The Department has revised § 78.56(a) to remove minimum slope requirements for a pit with a footprint less than 3,000 ft² or volume less than 125,000 gallons of capacity. For pits with greater aerial extent or capacity, operators must obtain authorization from the Department prior to construction.

The Department disagrees with the proposed changes to subsection (a)(9) because the 20 inch separation requirement allows for a physical barrier between the seasonal high groundwater table and the bottom of the pit to prevent mixing of impounded materials and groundwater and to ensure structural integrity of the pit.

822. Comment: 78.56 – We do not support limiting new requirements to unconventional wells only. Best practices for temporary storage should apply to all wells. (1143)

Response: The Department acknowledges the comment.

823. Comment: 78.56 – We oppose the use of open pits for temporary waste storage, because of the pollution hazards posed.

We oppose continued allowance and waivers for the long-term burial of drilling waste on-site. It is inefficient to construct a temporary pit that could leak and then transfer that waste later to a tank to remove the waste to an approved waste handling site. It is more efficient to place the waste directly into the tank that will be used to transport it to an approved waste handling site. Such closed loop systems are more conducive to recycling than open pit storage.

Open pits have the potential to contaminate groundwater and surface water and many spills, leaks, and other problems involving pits have occurred statewide. The state's continued use of production pits poses significant environmental problems. (The State Review of Oil and Gas Environmental Regulations "Pennsylvania Hydraulic Fracturing Review" (STRONGER, 2010) Finding III.4 stated: "the DEP's experience with pits has shown that, although their use is decreasing, many liner failures still occur with pits and other types of waste are being dumped into pits." STRONGER recommended that DEP "consider adopting regulations or incentives for alternatives to pits used for unconventional wells in order to prevent the threat of pollution to the waters of the Commonwealth.") Open pits and open tanks contribute to air pollution. Oil and Gas Operations, like the ones shown in the photo below can be located very close to homes and nearby residents should be protected from inhaling toxic vapors from these operations. Closed-loop tank systems should be used to contain volatile materials and wastes to capture air pollution and route vapors to be sold or used for power (preferably), or alternatively to an incinerator or flare.



Homes within close proximity to shale drilling operations in Hopewell Township, Washington County, PA.

We recommend deletion of all regulations that allow pits. Waste and regulated substances should be stored in covered aboveground storage tanks or modular structures. (1143)

Response: The Department has amended the final rulemaking to ban the use of pits for temporary waste storage at unconventional well sites. The Department has determined that it is appropriate to remove this practice because it is not commonly used by unconventional operators. Additionally, the typical type and scope of use by unconventional operators is generally incompatible with technical standards for temporary pits prescribed under § 78.56. Conversely, the typical type and scope of use by conventional operators is generally compatible with the technical standards for temporary pits prescribed under § 78.56. The Department believes that the technical standards for temporary pits prescribed under § 78.56 ensure protection.

- 824.** Comment: 78.56 – We support the use of closed-loop temporary tankage for handling materials, chemicals, and waste at Oil and Gas Operations, providing that they do not pose pollution or other environmental and health hazards, generate new problems such as excessive truck traffic, or land disturbance from pipelines. While closed containment systems such as tanks can be preferable to impoundments for air and water quality, they are not risk-free and require strong regulation and oversight. Any facility that holds flowback water, brine, and other gas wastes, and from which substances are transported, can pose threats to the environment and health. For tanks to be beneficial, their location and size must be appropriate for the site in question. Tanks must be enclosed to prevent air pollution, have sufficient containment to prevent leaks and subsequent water and soil contamination, and be consistently and properly inspected and maintained. For tanks that are vented, filtering or capture and control of pollutants is essential to protect people from harmful air emissions depending on the tank content type. (1143)

Response: The Department acknowledges the comment.

825. Comment: **78.56(a)(2)** – We support the proposed change that includes PADEP development of an approved list of modular temporary storage units that are allowed. However, we request that the PADEP include a definition for modular storage structure in the definition section at § 78.1. We assume that the EQB is referring to modular storage structures such as connexs and other metal-sided box shaped structures that are prefabricated and brought to the oil and gas site to safely store materials on site, out of the weather and so that they can be secured by a lock, although this needs clarification. If the EQB is considering modular storage structures to contain other hazardous materials such as fuels and chemicals, it needs to be clear what structures it envisions and how they are appropriate and safe for that use. (1143)

Response: The Department has added a definition of “modular aboveground storage structure” to §§ 78.1 and 78a.1 of the final-form rulemaking to clarify that a modular aboveground storage structure is “an aboveground structure used to store wastewater that requires final assembly at a well sit to function an can be disassembled and moved to another well site after use.”

826. Comment: We request that the PADEP make it clear what can be stored in a temporary tank, and what can be stored in an approved modular storage structure. (1143)

Response: Use of temporary storage structures is restricted to storing regulated substances generated by the well or used during drilling, altering, completing, recompleting servicing and plugging the well.

827. Comment: It is essential that the PADEP clarify whether these tanks and “tank farms” would be for principal use at well sites or also be allowed to service multiple wells from a wide radius (as is the case with existing centralized impoundments).

The PADEP should also clarify when operators would be required to obtain a Waste Management Permit (WMGR 123) for tanks and “tank farms;” this aspect was indicated as an area for regulatory review during the April 23, 2013 Technical Advisory Board (TAB) meeting. (1143)

Response: Temporary storage structure use is defined. Use of temporary storage structures is restricted to storing regulated substances generated by the well or used during drilling, altering, completing, recompleting servicing and plugging the well. Large tank farms & tank storage pads are permitted on well sites when criteria are met under §§ 78.56 and 78a.56. A waste management permit is necessary when § 78.56 does not apply to the proposed operation.

828. Comment: We support the requirement for lined containment areas to be placed under temporary storage. A temporary tank poses a greater environmental risk than a stationary tank, because temporary tanks are relocated many times during their operating lives, increasing the potential for tank damage during transit and the likelihood of tank appurtenance leakage.

Liners should be impervious and impermeable (not allowing fluid to pass through). The proposed regulation would allow some permeability through the liner, albeit a small coefficient of permeability is proposed. No amount of leakage should be allowed. Lined containment should be “leak proof.” (1143)

Response: The standard of a coefficient of permeability of 0 as proposed by the commenter is

not reasonably achievable. The standard of coefficient of permeability is sufficiently low to ensure that no significant amount of regulated substances will escape through a properly functioning liner.

829. Comment: The proposed language contains conflicting instructions about disposal of drill cuttings. Existing regulation § 78.56 requires that the operator shall contain polluttional substances including drill cuttings. The revised language includes a proposed option for land application of drill cuttings. We do not support land application of drill cuttings. Please see our recommendations below in our comments on the proposed regulation at § 78.61. (1143)

Response: See response to comment 1442 and 1574.

830. Comment: The regulation should clarify that the PADEP approves the use of fully enclosed aboveground storage tanks and modular structures, that uncovered storage containers may not be used for any wastes, and that temporary use of buried tanks and structures are prohibited. Pits currently in use should be phased out within one year. (1143)

Response: See response to comment 823. The Department does not believe that an explicit phase out date is required because existing regulations require removal of onsite pits within 9 months of completion of drilling.

831. Comment: We recommend that the PADEP require storage tank inspections and alarm systems. Tank inspections should be conducted at least once every five years to examine structural conditions and document corrosion or damage, and identify necessary repairs before returning the tank to service. Monitoring and control systems should be installed, including high-liquid-level alarms that sound and display in an immediately recognizable manner; high-liquid-level automatic pump shutoff devices, which are designed to stop flow at a predetermined tank content level; and a means of immediately determining the liquid level of tanks. (1143)

Response: The Department disagrees for several reasons. First, these tanks are only providing temporary storage while wells are being drilled and completed on a well site. Second, the Department has not documented frequent compliance or environmental harm issues with tank storage on well sites, absent intentional acts of vandalism or dumping. Finally, the Department is not mandating inspections as these tanks are typically only located on active well sites where operator personnel are present regularly while the tank is in operation. Operators are required to outline their monitoring and inspection requirements and frequency in site-specific PPC plans under §§ 78.55 and 78a.55.

832. Comment: Based on information contained in comments 822 through, 831 above, Commentator recommends the following changes to the proposed regulations at § 78.56:

§ 78.56. Temporary Approved Aboveground Storage Tanks and Modular Structures; Prohibition of Pits.

(a) Except as provided in § 78.60(b) (relating to discharge requirements), the operator shall contain regulated substances and wastes from the drilling, altering, completing, recompleting, servicing and plugging the well, including brines, drill cuttings, drilling muds, oils, stimulation fluids, well treatment and servicing fluids, plugging and drilling fluids other than gases in a aboveground tank or series of tanks or modular structures approved by the Department. The use of buried tanks and buried modular structures are prohibited. The operator shall install or construct and maintain the aboveground tank or series of tanks or other modular structures in

accordance with the following requirements:

- (1) The tank, series of tanks, or other modular structures shall be constructed and maintained with sufficient capacity to contain all regulated substances and wastes which are used or produced during drilling, altering, completing, recompleting, servicing and plugging the well. Tanks or other authorized storage equipment may not be located in a mapped floodplain or within 50 feet of the top of bank of any watercourse.
- (2) Modular aboveground storage structures that are assembled onsite may not be utilized to store regulated substances; only factory prefabricated modular storage structures are allowed. The Department will maintain a list of approved aboveground tanks and modular storage structures on its web site and will make clear the type of regulated substances that can be safely stored in each approved tank or the structure. The owner or operator shall notify the Department at least 3 business days before the planned use of these storage structures. The notice shall be submitted electronically to the Department through its web site and include the date the aboveground tank or modular storage structure installation will begin. If the date of installation is extended, the operator shall renotify the Department with the date that the installation will begin, which does not need to be 3 business days in advance.
- (3) Aboveground tanks and modular storage structures containing volatile materials and wastes shall be designed and operated to capture air pollution and route vapors to power generation equipment (preferably), or alternatively to an incinerator or flare.
- (4) Aboveground storage tanks and other approved modular structures shall be designed, constructed at the factory and maintained, routinely inspected and verified to be structurally sound and reasonably protected from unauthorized acts of third parties prior to use. Each tank shall be inspected by a certified tank inspector and each modular structure shall be inspected by a structural engineer at least once every five years. The inspection shall examine structural conditions and document corrosion or damage, and identify necessary repairs before returning it to service. Overflow alarms shall be installed. Alarm systems shall be installed on all liquid storage tanks or other approved storage structures. The systems shall include high-liquid-level alarms that sound and display in an immediately recognizable manner; high-liquid-level automatic pump shutoff devices, which are designed to stop flow at a predetermined tank content level; and a means of immediately determining the liquid level of tanks.
- (5) Unless an individual is continuously present at the well site, a fence must completely surround the storage equipment all pits to prevent unauthorized acts of third parties and damage caused by wildlife. Netting or fencing must be provided to prevent wildlife capture such as birds.
- (6) An individual must be continuously present at the well site during well construction, well workovers and well stimulation operations. For other Oil and Gas Operations, when an individual is not continuously present at the well site, operators shall equip all tank valves and access lids to regulated substances with reasonable measures to prevent unauthorized access by third parties such as locks, open end plugs, removable handles, retractable ladders or other measures that prevent access by third parties. Tanks storing freshwater, fire prevention materials and spill response kits are excluded from the requirements of this paragraph.
- (7) The operator of the well site shall display a sign on or near the tank or other approved storage structure identifying the contents and an appropriate warning of the contents such as flammable, corrosive or a similar warning.
- (8) A tank or other approved modular storage structure that contains drill cuttings from below the surface casing seat, regulated substances, wastes or fluids other than tophole water, fresh water and uncontaminated drill cuttings from above the surface casing seat shall be impermeable.
- (9) Aboveground storage tanks and other approved modular structures shall be set on top of a synthetic flexible liner that is sufficient in size to capture any leaks or drips that may occur from the tank or modular structure.

Liners must be impervious, impermeable and comply with the following:

- (i) The liner must be at least 30 mils thick.
- (ii) The liner shall be designed, constructed and maintained so that the physical and chemical characteristics of the liner are not adversely affected by the regulated substance stored therein and the liner is resistant to physical, chemical and other failure during transportation, handling, installation and use. Liner compatibility must satisfy ASTM Method D5747, Compatibility Test for Wastes and Membrane Liners, or another compatibility test approved by the Department for the duration the temporary storage structure is used.
- (iii) Adjoining sections of liners shall be sealed together to prevent leakage in accordance with the manufacturer's directions. The integrity of all seams of the adjoining sections of liner shall be tested prior to use. Results of the tests shall be available upon request.
- (10) Prior to placing storage tanks or modular structures on the liner, the liner shall be inspected for lack of uniformity, damage and other imperfections that may cause the liner to leak. The well operator shall correct damages or imperfections before placing any the material in storage tanks or modular structures on the liner.
- (11) If a liner becomes torn or otherwise loses its integrity, storage tanks or modular structures must be continuously monitored for leaks by onsite personnel while the liner is repaired. If repair of the liner is not practical or possible, the storage tank or modular structure contents shall be removed and disposed of at an approved waste disposal facility.
- (12) The well operator shall notify the Department at least 3 business days before the installation of the liner. The notice shall be submitted electronically to the Department through its web site and include the date the liner will be installed. If the date of installation is extended, the operator shall renotify the Department with the date of installation, which does not need to be 3 business days in advance. A licensed professional engineer or geologist shall design the well site and shall submit a statement on forms provided by the Department certifying that the liner, as built, is compliant with this section. This certification shall be submitted within 10 business days of installation of the liner.
- (13) Condensate, oil, natural gas, or volatile substances, whether separated or mixed with other fluids, may not be stored in any open top structure or pit. Tanks and modular structures used for storing or separating condensate, oil, natural gas, or volatile substances during well completion shall be grounded, monitored and have controls to capture vapors. All captured vapors shall be used for power or, upon demonstration of good cause, shall be routed to an incinerator or flare, and to prevent vapors from exceeding the lower explosive limits outside the tank or modular structure.
- (b) The operator may request to use practices other than those specified in subsection (a) which provide equivalent or superior protection by submitting a request to the Department for approval. Use of pits or uncovered storage containers will not be approved as meeting the standard of equivalent or superior protection. The request shall be made on forms provided by the Department.
- (c) Storage and Disposal of uncontaminated all drill cuttings, regardless if from above or below the surface casing seat, in pits is prohibited.
- (d) Storage and disposal of contaminated fluids, semifluids, or solids associated with oil and gas activities, including, but not limited to, fresh water, wastewater, flowback, mine influenced water, and drilling mud, in pits is prohibited. All existing pits used to store and dispose of contaminated fluids, semifluids, or solids associated with oil and gas activities, including, but not limited to, wastewater, flowback, mine influenced water, and drilling mud must be removed and the pit be remediated by ____ Editor's Note: The blank refers to one year after the effective date of adoption of this proposed rulemaking). (1143)

Response: See responses to comments 822 through 831.

833. Comment: We opposed long-term onsite burial of any drill cuttings contaminated with chemicals,

oil, grease, pollutional materials, regulated substances, water based drilling muds that contain chemical additives, oilbased drilling muds, polymer-based drilling muds containing mineral oil lubricants, NORM, mercury, heavy metals, and other chemical additives or toxins. We are particularly concerned that the EQB does not require on-site burial pits to meet the same construction, monitoring, and leak detection standards that would be required of a centralized approved solid waste treatment facility. Nor does the EQB require the operator to test the waste and verify its composition and hazard. For example, the onsite burial methods proposed for drill cuttings are not appropriate for drill cuttings containing NORM or heavy metals or coated with some types of chemicals that would damage the liner.

Drilling waste should be removed from the drilling location and properly disposed of at an approved waste disposal facility capable of handling the quantity and type of waste generated. We recommended the use of closed-loop tank systems to handle and store drilling muds and cuttings, and disposal of this waste at an offsite approved solid waste treatment facility or by deep well injection in an EPA approved well.

If the EQB rejects this recommendation, and permits the continued use of pits, we request that the EQB provide a written scientific and technical analysis justifying the proposal, including:

- (1) A quantitative technical assessment of air, water, soil and human health impact of pit use and proposed disposal methods (onsite burial and land application);
- (2) Data on the historic use of pits in Pennsylvania, including those known to have leaked or overflowed, and quantification of the cumulative adverse impact of these impoundments on air, soil, surface water, groundwater and animal life;
- (3) Data that proves land application of drill cuttings in contact with tophole water, fresh water, or gas is safe. While drill cuttings from above the surface casing seat that have only been in contact with tophole water, freshwater, or gas may not be contaminated if the EQB uses our proposed definition of tophole water and freshwater, we remain concerned that there is no limitation on composition of the drill cuttings itself. For example, drill cuttings could contain NORM or heavy metals. The EQB must consider not only whether the drill cuttings have been contaminated during the drilling process, but whether the drill cuttings themselves contain contaminants;
- (4) Data on historic use of drill cutting land application in Pennsylvania and other states, including an analysis of the frequency, type, and severity of pollution events resulting from land application and a projection of future cumulative impact; and,
- (5) Data on historic long-term onsite burial of drill cuttings in Pennsylvania and other states, including an analysis of the frequency, type, and severity of pollution events resulting from onsite burial and a projection of future cumulative impact.

If, after this analysis is complete, and the EQB finds that use of pits provide a net environmental and human health benefit, we request that the EQB significantly strengthen the regulatory requirements, by including best practices used by the federal government (BLM), other oil and gas producing states, and those we recommend. At a minimum, the following improvements to the proposed regulations should be included:

- (1) Protection Standard: All pits shall be designed, constructed, and operated to prevent contamination of fresh water; and protect public health and the environment. (N.M. Code, § 19.15.17 (Pits, Closed-Loop Systems, Below-Grade Tanks and Sumps)). The applicant should be required to provide a design, construction and operation plan, signed by a professional engineer that ensures this standard will be met.
- (2) Pit Location. No pits should be constructed in sensitive areas or other locations that have

heightened potential to result in adverse impacts to human health or the environment. (USDOI, BLM, *Management of Oil and Gas Exploration and Production Pits* (Nov. 15, 2011)). Pits may not be located in a mapped floodplain or within 50 feet of the top of bank of any watercourse. Pits should be installed above seasonal groundwater levels. Pit locations should be accurately surveyed, and the location provided to the PADEP for inclusion in a web-based database made available to the public, listing the size, location, and contents of the pit.

(3) Pit Separation Distance from Streams and Wetlands. Pits must not be located within 100 linear feet upstream of any watercourse, wetland, or spring. The applicant shall evaluate the potential flow path and point of discharge from a pit to the nearest downstream water body. The PPC Plan shall document the potential flow path, maximum potential discharge, and proposed emergency response for management of any discharge from a pit to an adjacent or downstream water body.

(4) Pit Distance to Seasonal High Water Table: The requirement that buried pits be only 20 inches above the seasonal high water table gambles with local water quality since Pennsylvania has many shallow groundwater sources. Other states require far greater distances, such as 25 feet in New Mexico. (N.M. Code, § 19.15.17 (Pits, Closed-Loop Systems, Below-Grade Tanks and Sumps))

(5) Meet Chapter 105 Requirements. All pits should be subject to the PADEP's Chapter 105 regulations, as explained above in the Centralized Impoundment comments. [Cross reference]

(6) Pit Liner. All pits should be lined with a synthetic liner that is compatible with the pit contents, resistant to weathering, sunlight, puncturing and tearing (USDOI, Bureau of Land Management, *Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development* (The Gold Book) (4th ed. 2006)). Unlined pits are prohibited (N.M. Code, § 19.15.17 (Pits, Closed-Loop Systems, Below-Grade Tanks and Sumps.)). The liner must be impervious (Colorado, Rule 904 Pit Lining Requirements and Specifications, <https://cogcc.state.co.us/Announcements/Rule904.pdf>). Liner material must be of sufficient thickness and length to withstand expansion and contraction without cracking or being damaged, and withstand settling movements of the underlying earth, and be at least 60 mils thick. (Id.) Two layers of liners should be installed, providing one complete redundant back-up barrier. Pit lining systems shall be designed, constructed installed and maintained in accordance with the manufacturer's specifications and good engineering practices (Id.)

(7) Pit Leak Detection. Pits must have a leak detection system that underlies the liner (USDOI, BLM, *Onshore Oil and Gas Order No. 7* (1993)). The leak detection system should monitor a leak between the two layers of liner material.

(8) Groundwater Monitoring Systems. Install groundwater monitoring systems.

(9) Fences and Netting. Pits must be surrounded by fences tall and strong enough to keep out wildlife, and nets or other devices installed to prevent birds from coming in contact with the wastes (N.M. Code, § 19.15.17 (Pits, Closed-Loop Systems, Below-Grade Tanks and Sumps)).

(10) Inspection. The pit liner and leak detection system must be inspected weekly and a record of the inspection results kept by the operator. The Department should be notified immediately if a leak is detected or the liner is damaged.

(11) Repair/Removal. If a leak is detected, pit use must be immediately stopped, the pit removed, and the contamination remediated.

(12) Land Application and Burial. Drill cuttings must be tested to verify that it is uncontaminated prior to land application or burial. (By comparison, Ohio requires contaminated drill cuttings to be sent to a permitted solid waste disposal facility, unless the Ohio EPA approves a beneficial reuse option. Ohio EPA, Fact Sheet: Drill Cuttings from Oil and Gas Exploration in the Marcellus and Utica Shale Regions of Ohio (Jan. 2014), http://epa.ohio.gov/Portals/34/document/fact_sheets/Fact%20Sheet%20on%20Drilling%20Muds%20and%20Cuttings%20Final%2010-01-13.pdf). Drill cuttings containing Naturally Occurring Radioactive Materials, heavy metals, or other regulated substances shall be disposed at an at an offsite approved solid waste treatment facility.

(13) Reporting and Recordkeeping. Quarterly reports should be submitted to the PADEP to verify that the pit continues to meet the PADEP's requirements. Any deficiencies must be immediately reported and remedied.

(14) Insurance and Liability. Require a certificate of pollution insurance of at least \$1,000,000 for each pit. Clarify the operator is strictly liable for any contamination or harm caused by the pit. (1143)

Response: See response to comment 823.

834. Comment: The Department should impose a specific time limit for the on-site storage of fluids. (1142)

Response: A time limit for pits is specified under § 78.56(d) where removal of all pits and wastes is required within 9 months after completion of drilling. In addition, § 78.56(d) requires pits used during servicing, plugging or recompleting a well to be removed within 90 days of construction.

835. Comment: 78.56(a)(2) – Commentator appreciates the Department's willingness to review and approve aboveground storage structures once and then have that structure be preapproved for future use without additional review. That should be stated in the regulation. The term "regulated substances" is overly broad as used in this section, as noted elsewhere in these comments.

Suggested Regulatory Language:

(2) Modular aboveground storage structures that are assembled on site may not be utilized to store substances under this section without Department approval. The Department shall maintain a list of approved modular storage structures on its internal website. The owner or operator shall notify the Department at least 3 business days before the commencement of construction of these storage structures. This notice shall be submitted electronically to the Department through its website and include the date the storage structure installation will commence. If the date of installation is extended, the operator shall re-notify the Department with the date that the installation will commence which need not be 3 business days in advance. The Department shall set forth a procedure for companies supplying such structures to follow to obtain Department approval. Once a design has been approved by the Department, subsequent assembly of the approved structure at another site does not require a new approval, but would require notices to landowners and local governments.

(1153)

Response: See response to comment 817 in regard to the definition of the term "regulated substances. The Department disagrees with the proposed revisions to the subsection. Authority to construct and operate above ground modular facilities is issued under the well

operators' well permit. Approval may not be granted to companies supplying such structures if they are not oil and gas well operators.

836. Comment: 78.56(a)(1) – Define “recompleting the well.” (1098)

Response: “Completion of a well” is defined in the 2012 Oil and Gas Act as the date after treatment, if any, that the well is properly equipped for the production of oil or gas, or if the well is dry, the date that the well is abandoned.

837. Comment: C.O.G.E.N.T. advocates the use of tanks as the preferred method for both conventional and unconventional operations. One operator in our region, Cabot has already utilized above ground modular structures. Our water resources need to be adequately protected and it is well known that above ground temporary storage is a superior practice in regards to eliminating environmental impacts associated risks. Adequate security and safety measures are necessary to protect the public and the facility from wildlife and unauthorized access. Many of these sites are near homes and they need to be adequately secure to protect nearby properties as well.

We recommend the provisions related to modular above ground containment structures as they can assist operators in their recycling methods and water storage along with being a better environmental practice near our homes. We prefer the use of tanks over the use of pits, especially in the case of unconventional drilling. Since this practice is lingering with perhaps only a few unconventional drillers, we are receptive to these revised regulations. In reality however, we would like to see all unconventional operators cease using pits and rather utilize tanks. (660a)

Response: The Department acknowledges the comment. See response to comment 823.

838. Comment: 78.56(a)(3) – The proposal changes the word “waste” to “regulated substances.” The use of this term is not sufficiently precise, as explained above in our comments concerning its definition, and results in an unreasonable and unlawful expansion of the scope of this section. So that the scope of this provision is not unreasonably and unlawfully broadened, the proposed term “regulated substances” should be rejected and the correct terms “fluid” and “waste” should continue to be used.

Suggested Regulatory Language:

(3) A pit shall be designed, constructed and maintained so that at least 2 feet of freeboard remain at all times. If open tanks or open storage structures are used, the tanks and storage structures shall be maintained so that at least 2 feet of freeboard remain at all times unless the tank or storage structure is provided with an overflow system to a standby tank or pit with sufficient volume to contain all excess fluid or waste. If an open standby tank or open standby storage structure is used, it shall be maintained with 2 feet of freeboard. If this subsection is violated, the operator immediately shall take the necessary measures to ensure the structural stability of the pit, or tank or other storage structure, prevent spills and restore the 2 feet of freeboard. (1153)

Response: Regulated substance is defined in section 103 of The Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) (35 P.S. §6026.103).

839. Comment: Regarding the monitoring requirements for ‘Temporary Storage’ at unconventional well sites, it appears that potential pollution from air emissions has not been adequately addressed. These pits and tanks have the potential to emit air pollutants, such as Volatile Organic Compounds, Hazardous Air Pollutants and Greenhouse Gases, uncontrolled into the outdoor atmosphere. As with existing regulations for conventional permitted compressor stations, monitoring and reporting of tank

emissions occurs. I would recommend that language be added to include monitoring, and reporting to the Department, of air pollutants from all applicable storage sources, be they temporary or permanent. As it is, these sites do not require Air Quality permits and the Department's Air Quality Program does not monitor these air pollutants. Inspections of these sites are conducted by the Department's Oil & Gas Bureau which do not adequately address air quality concerns. Charged with protecting the air quality of the Commonwealth, the Department should require owners and/or operators to monitor and report air pollutant emissions throughout all aspects of well development and maintenance. With the current inventory, and expected increase in inventory, of these types of sources, the emission of air pollutants is of great concern and should be the duty of the Department to monitor.

As currently stated within 78.56(a)(1) The pit, tank or series of pits and tanks shall be constructed and maintained with sufficient capacity to contain all pollutional substances and wastes which are used or produced during drilling, altering, completing and plugging the well. Owners/operators of wells are currently unable to be within 100% compliance with this requirement due to evaporative and fugitive air emission processes that occur from, but not limited to, pits and tank pressure relief valves. As written, it provides protection from water and soil pollution but does not provide adequate protection from air pollution. Language should be added to adequately include air pollution concerns. This same issue would apply if/when the language is changed to 'Temporary Storage'. (625)

Response: Air quality issues are addressed under Article III and the outside of the scope of this rulemaking.

- 840.** Comment: § 78.56(a) should be clearly entitled to reflect the scope of the provisions, which are limited to the use of pits and tanks for temporary storage.

In addition, the use of the term regulated substances is overly broad and creates uncertainty under this subsection, which should be better focused on the substances at well sites that would be contained in pits, tanks or other approved storage structures.

Suggested amendatory language:

§ 78.56. Temporary storage in pits, tanks and other approved storage structures

Except as provided in §§ 78.60(b) and 78.61(b) (relating to discharge requirements; and disposal of drill cuttings), the operator shall contain substances generated from and used for the drilling, altering, completing, recompleting, servicing and plugging the well, including brines, drill cuttings, drilling muds, oils, stimulation fluids, well treatment and servicing fluids, plugging and drilling fluids other than gases in a pit, tank or series of pits and tanks or other approved storage structures. The operator shall install or construct and maintain the pit, tank or series of pits and tanks or other approved storage structures in accordance with the following requirements: (1137, 1174)

Response: Regulated substance is defined in section 103 of The Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) (35 P.S. §6026.103).

- 841.** Comment: **78.56(a)(1) – (3)**, - It appears the word “standby” was inadvertently omitted from the next to last sentence in subsection(3) in association with the “storage structure.” In addition, the term “regulated substance” should be replaced in accordance with the comment above to provide clarity with respect to the obligations under this section. Suggested Language: (1) The pit, tank, series of

pits and tanks or other approved storage structure shall be constructed and maintained with sufficient capacity to contain substances which are used or produced during drilling, altering, completing, recompleting, servicing and plugging the well. (2) Modular aboveground storage structures that are assembled on site may not be utilized to store substances resulting from the drilling, altering, completing, recompleting, servicing or plugging the well without Department approval. The Department shall maintain a list of approved modular storage structures on its website. The owner or operator shall notify the Department at least 3 business days before the beginning of construction of these storage structures. The notice shall be submitted electronically to the Department through its website and include the date the storage structure installation will begin. If the date of installation is extended, the operator shall re-notify the Department with the date that the installation will begin, which does not need to be 3 business days in advance. (3) A pit shall be designed, constructed and maintained so that at least 2 feet of freeboard remain at all times. If open tanks or open storage structures are used, the tanks and storage structures shall be maintained so that at least 2 feet of freeboard remain at all times unless the tank or storage structure is provided with an overflow system to a standby tank or pit with sufficient volume to contain all excess fluid. If an open standby tank or open standby storage structure is used, it shall be maintained with 2 feet of freeboard. If this subsection is violated, the operator immediately shall take the necessary measures to ensure the structural stability of the pit, or tank or other storage structure, prevent spill and restore the 2 feet of freeboard.(1137, 1174)

Response: The Department agrees and has added the word “standby” to the respective section. The Department disagrees with the remainder of the comment. Regulated substance is defined in section 103 of The Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) (35 P.S. §6026.103).

842. Comment: **78.56(a)(1)** – “...shall be constructed and maintained with sufficient capacity to contain all polluttional regulated substances which are used or produced during drilling, altering, completing, recompleting, servicing and plugging the well.: -- The same comment as 78.55(b) applies to this section. It is suggested that this section be revised to allow for a general discussion of what substances are anticipated to be found at the well site since an operator may not know what regulated substances will be onsite prior to use. It is suggested that the language is revised to state “...which are used [**or anticipated to be**] produced...” (1057)

Response: The storage facilities must be constructed and maintained with sufficient capacity to contain all regulated substances which are used or produced during drilling, altering, completing, recompleting, servicing or plugging the well whether anticipated or not.

843. Comment: **78.56(a)(1)** – As noted on page 53 of the STRONGER, September, 2013 Review “The regulations do not require liners or secondary containment around tanks or other facilities storing polluting substances, but such liners are recommended practices.” With sites located near within and around our rural, farmland and forested communities, many times nearby our homes, schools and even local hospitals, we really want to see safeguards consistently employed operator to operator, site to site. We urge the Department to consider adding this recommended practice as a provision to this rulemaking as noted by the STRONGER Review. (660a)

Response: Sections 3218.2(a),(c)(d) of the Oil and Gas Act require unconventional well sites to install containment practices to prevent spills to ground surface or spills off the well site. When using modular aboveground storage, §§ 78.56(a)(2) and 78a.56(a)(2) require prior approval from the Department which includes a review for adequate secondary containment.

844. Comment: **§ 78.56 (a)(I)** - It is suggested that the language be revised to state “...which are used or

anticipated to be produced ...” (861)

Response: See response to comment 842.

- 845.** Comment: Eliminate pits and open storage structures as referenced in 78.56(a)(2) – (4); if maintained, increase freeboard to 3 feet at all times given frequency and volume of recent storm-related precipitation. (1098)

Response: See response comment 818. Two feet of freeboard is an appropriate standard and must be maintained at all times. Therefore it does take into account storm related precipitation.

- 846.** Comment: 78.56(a)(2) - What is the protocol for Department approval? A time frame needs to be set upon which the Department must make an approval or denial decision. Who at the Department is qualified to approve modular storage structures? (411)

Response: The Department evaluates proposed modular aboveground storage structures on a case by case basis to determine whether the proposed structure will provide equivalent or superior protection. Reviews are conducted by qualified staff. Requests to use modular aboveground storage structures are tracked in the Department’s eFACTS system.

- 847.** Comment: § 78.56(a)(2) – Clarify the design approval process for modular aboveground containment structures so that once a design has been approved by the DEP, subsequent assembly of the approved structure at another site does not require a new approval. (861)

Response: Each site requires its own authorization from the Department. The Department reviews not only modular designs but also site specific construction and topographic conditions. The Department’s website will list approved modular structures but authorization of the process will still be required to ensure proper siting of the facility. Clarifying language has been added to the subsection in the final-form rulemaking.

- 848.** Comment: 78.56(a)(2) – Eliminate modular aboveground storage structures unless they are comparable to closed tanks and, if used, extend notification periods from 3 to 10 business days. (1098)

Response: The Department evaluates proposed modular aboveground storage structures on a case by case basis to determine whether the proposed structure will provide equivalent or superior protection. The Department believes that the notification timeframe established in the regulations is sufficient to allow Department field staff to plan inspection schedules.

- 849.** Comment: **78.56(a)(2):** As previously referenced in our general comments about the drawbacks of overly prescriptive language, it is suggested that the Department strikes the language saying “The Department shall maintain a list of approved modular storage structures on its website” and instead establish minimum requirements for modular aboveground storage structures. This would maintain the Department’s desired standard, but allow operators flexibility to determine the best available options at any given time for their circumstances. Additionally, the Department should issue guidance as to the approval process required for modular above ground storage structures assembled on site. (1071)

Response: The Department evaluates proposed modular aboveground storage structures on a case-by-case basis to determine whether the proposed structure will provide equivalent or

superior protection. Each site requires its own authorization from the Department. The Department reviews not only modular designs but also site specific construction and topographic conditions. The Department's website will list approved modular structures but authorization of the process will still be required to ensure proper siting of the facility.

850. Comment: Section 78.56(a)(2) should indicate that the Department will maintain the list of approved modular structures on its web site. (852a)

Response: The Department agrees. No changes to the subsection are required.

851. Comment: Section 78.56(a)(2) should require the applicant to estimate the amount of waste/wastewater generated and stored in the temporary facility. The regulation requires the design of the pit or tank to include two feet of freeboard, but without more specific information about the collection and disposal schedule of wastewater, the Department cannot know if the freeboard is attainable throughout the use of the pit or tank. The Department's approval should include a review of the facility design to ensure compliance with this requirement. To that end, the design of the temporary pit or tank should include the ability to contain rainfall from a 25- year, 24-hour storm event, and still maintain two feet of freeboard. (852a)

Response: See response to comment 842. Two feet of freeboard is an appropriate standard and must be maintained at all times. Therefore it does take into account storm related precipitation.

852. Comment: **78.56(a)** – The wording in this provision appears inconsistent with the intended scope, confusing the details of the requirements. First, the Board ought to update the provision heading to state: “Temporary Storage in Pits, Tanks and Other Approved Structures” to accurately reflect the scope of the provision. Second, to the extent “other approved storage structures” in 78.56(a) is to refer to those storage structures approved under the proposed subpart (a)(2) of 78.56, the Board could clarify the term to support efficient implementation of the requirement. While it may seem evident that this is what is intended by the Board, it should be specified in the initial language of the provision to avoid any confusion. Finally, the use of the term “regulated substance” seems inappropriate for this section, which is limited to substances at well sites that would be contained in pits, tanks or other approved storage structures. The Board should consider an alternative term. (1085)

Response: See response to comment 817 in regards to the definition of “regulated substance.” The title for the section is appropriate. The language in subsection (a) is broadly worded to account for all situations where the Department is approving alternative storage structures or practices.

853. Comment: **78.56(a)(2)** – The owner or operator shall notify the Department at least 3 business days before the commencement of construction of these containment structures. Add language to clarify the design approval process for modular aboveground containment structures so that once a design has been approved by the DEP subsequent assembly of the approved structure at another site does not require a new approval. (1057)

Response: See response to comment 849.

854. Comment: In § **78.56(a)(3)**, the Department should receive immediate notice of any violation. (997a)

Response: The Department encourages all operators to report all violations to the Department. In certain circumstances the Department mandates notification. For example, see §§ 78.66(b) and 78a.66(b).

855. Comment: **78.56(a)(3)** – The scope and reach of the proposed rule seems unclear regarding the type of regulated substance it applies to and the Board should clarify that the requirements do not pertain to solidified waste. It appears that the proposal requires two feet of freeboard for open tanks or open storage structures for regulated substances in liquid form. However, this is not made clear by the proposed language. Because open tanks or open storage structures are used to store solidified waste, such as drill cuttings, two feet of freeboard is unnecessary. The Board should consider clarifying this language. We propose that the Board rewrite the second sentence of the provision to state: “If open tanks or open storage structures are used, the tanks and storage structures shall be maintained so that at least 2 feet of freeboard remain at all times unless the tank or storage structures is provided with an overflow system to a standby tank or pit with sufficient volume to contain all excess fluid or regulated substances in liquid phase.” (1085)

Response: The subsection requires 2 feet of freeboard to be maintained for all open topped structures that are used to contain regulated substances including substances which are in a solid phase. This requirement is appropriate to accommodate storm events and other operational issues.

856. Comment: In § **78.56(a)(5)**, since no fence can absolutely ensure “prevention” of unauthorized acts by third parties or damage by wildlife, We recommend replacing “prevent” with “discourage”.

Suggested amendatory language:

For unconventional well sites, unless an individual is continuously present at the well site, a fence or fences shall completely surround all pits to discourage unauthorized acts of third parties and damage caused by wildlife. (1137)

Response: See response to comment 1217.

857. Comment: **78.56(a)(5)** – Unconventional wells should not be singled out to require fencing around pits. If it is acceptable to have an unfenced pit on a conventional well site, why not an unfenced pit on an unconventional well site? A chain link fence may provide for some protection from third parties and wildlife, but not all. There is no way to prevent a person who wants to vandalize a pit from doing so simply by putting up a fence, as a person can use wire cutters to access the pit. Environmental groups argue for fences built high enough to keep out deer and tight enough at the bottom 1-2 feet to keep out small animals. Even with those types of protections, animals that tunnel under the ground, that can climb fences like snakes, or that can jump over fences like deer cannot be kept out under all circumstances. There have been many incidents along the roads where deer jump the fence and run into traffic, or where deer jump a fence and then cannot get back out and are stranded. Putting nets on neither pits nor impoundments should be required as birds get caught in nets and then die.

There are too many unanswered questions here. For example, the proposed language does not address when this must be done: for only new pits or impoundments or would it also include existing ones. If existing ones, then what would be the time frame to comply? Requiring fencing creates legal ramifications, such as potential liability for trespassers. DEP apparently has not considered the cost/benefit analysis of this requirement. Installing fencing can range in tens of thousands of dollars to possibly keep out an animal. There are many other industries that have a

variety of pits or impoundments that do not require fences around them such as electric generation, mining and paper manufacturing as a few examples. Delete subsection (5). (1153)

Response: The Department has revised § 78a.56 to disallow the use of pits on unconventional well site and accordingly has removed the requirement to install fencing around pits on unconventional well sites.

858. Comment: **78.56(a)(5)** – Why are unconventional wells singled out to require fencing around pits. If it's ok for a conventional drill pit, why not a pit on an unconventional well site? (411)

Response: The Department has revised § 78a.56 to disallow the use of pits on unconventional well site and accordingly has removed the requirement to install fencing around pits on unconventional well sites.

859. Comment: **78.56(a)(5)** – (7) address security for pits, tanks and approved storage structures. Commentators raise a variety of concerns related to these provisions, such as timelines for implementation, safety issues related to installing locks and locking lids, reasonableness of equating the presence of a person to a fence, cost of installing a fence and/or locks, and whether a person, lock and/or fence can ensure prevention of damage or access. We ask EQB to explain in the Preamble and RAF of the final-form regulation how the security requirements in this section reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: The Department agreed that changes to § 78.56 to remove the requirement to install equipment to prevent unauthorized access by third parties are appropriate for conventional operations. In addition, the Department has revised § 78a.56 to disallow the use of pits on unconventional well site and accordingly has removed the requirement to install fencing around pits on unconventional well sites. The Department has retained requirements in § 78a.56 to continue to require installation of equipment to prevent unauthorized access by third parties at unconventional well sites. The intent of these requirements is to prevent unauthorized acts by third parties. The Department acknowledges that fencing or personnel on site will not prevent unauthorized acts of third parties in all cases but replacing “prevent” with “discourage” would not satisfy the intent of the section.

860. Comment: The Proposed Rulemaking includes a number of revisions to 25 Pa. Code § 78.56's requirements concerning the use of pits for temporary storage of contaminated fluids, including brine. When left in pits, brine and other drilling fluids can stagnate and become a source of malodors. The Proposed Rulemaking should require well operators to treat produced water (by removing volatile organic compounds, adding biocides, or aerating fluids stored in pits) to prevent malodors and the bacterial growth that can lead to the formation of malodors. For example, the Colorado Oil and Gas Conservation's Rule 902.i requires that “[o]perators shall utilize appropriate biocide treatments to control bacterial growth and related odors as needed”¹³ when pits are used to store produced water. Further, produced water can contain pollutants that can harm domestic animals and wildlife. Neither the existing Chapter 78 regulations nor the Proposed Rulemaking include any protections designed to keep birds away from drilling fluids stored in pits, and section 78.56(a)(5) of the Proposed Rulemaking requires that a pit be fenced only when an individual is not continuously present at its well site. This is inadequate both to protect domestic animals and wildlife from the fluids in pits and to protect pits from damage that could be caused by domestic animals and wildlife. Accordingly, Section 78.56 should include a requirement that well operators install fencing around, and netting over, pits whenever necessary to protect domestic animals and wildlife. Again, the Colorado Oil and Gas Conservation Commission's rules concerning pits include just such a

requirement: Where necessary to protect public health, safety and welfare or to prevent significant adverse environmental impacts resulting from access to a pit by wildlife, migratory birds, domestic animals, or members of the general public, operators shall install appropriate netting or fencing.¹⁴ (1159)

Response: Malodors are regulated by the Department Air Quality Program including those from oil and gas pits and impoundments. Treatment by aeration is acceptable and does not require any special permits. Treatment using biocides/chemicals/filtering at the well site does require OG 71 permit approval.

The Department acknowledges the comment about bird netting. There are federal laws that protect migratory birds, including the requirement for bird netting. These laws are administered by the U.S. Fish & Wildlife Service (FWS) and are outside the scope of this rulemaking.

861. Comment: We support the requirement in subsection (a)(5) to install fencing around all pits to protect wildlife. (1157)

Response: The Department acknowledges the comment.

862. Comment: 78.56(a)(5) – This provision meets the recommendation of the STRONGER, September 2013 Review as noted on page 38 of the report. (STRONGER 2013 Guideline Sections 5.5.3.f. and 5.5.4.b.) C.O.G.E.N.T. concurs with the Department’s inclusion of the fencing provision. We recommend the adoption of this provision at a minimum as it is written. (660a)

Response: The Department acknowledges the comment.

863. Comment: 78.56(a)(6) – We support the implementation of this provision for both conventional and unconventional drillers. While we realize that this may create an additional cost for the conventional drillers, our Commonwealth is moving forward to a new age as major oil and gas producing state. It is unfortunate that our conventional drillers have not kept pace with technology, enhancing their operations to better practices. Now that we are in this changing time, many entities within our state have had to adapt. More rural residents have had to adapt to having industrial facilities nearby their homes. Our state highway and local road systems have had to adapt. Our counties and local governments, and at times, even our school districts have had to adapt by designating more resources to address oil and gas related issues. Thus, our conventional drillers have come to a time now where they also need to adapt and comply with this provision.

On February 20, 2014, West Texas Crude was noted at \$103.30/Barrel as reported by Energy Assurance Daily. At the Tunkhannock Hearing, Mark Cline, a fourth generation oil man and PIPP Board member testified that Pennsylvania’s conventional wells produce Penn Grade Crude Oil which is the best lubricating oil in the world. So, it just makes sense that the Pennsylvania conventional drillers are benefiting from these increasing prices and top dollar for the world’s best lubricating oil. It does appear that now, they can easily afford to bring their operations in line with the modern technologies. According to the regulatory analysis form, the cost the conventional drillers would bear for compliance with this regulatory change ranges from \$40 to \$5,000. This is really a reasonable expenditure that will provide for public health and safety and environmental protections.

We’ve taken the time to consider the information provided at the EQB/DEP rulemaking hearings by conventional drillers. Testimonies provided give an unclear review of their operations. One aspect

they've strongly advocated is that they have not created environmental harm with their operations and that the past 30 years of the O&G Act proves that. We put forth here information to the contrary, that is neither true for all operators, nor all of the time. We also note that, it is indeed time to update the O&G Act for conventional drillers based on new and available technologies that they may employ concerning tanks and horizontal drilling as just two examples. We'd like to draw your attention now to just two easily discovered items that indicate why conventional drillers need to be subject to adequate regulations that protect our public health and safety, environment and especially water resources. While we can sympathize with their plight on perhaps an added expense, when it comes to public health and safety, it is also necessary that serious consideration is given regardless of the business size and scope.

We also strongly caution the Department regarding separate regulations for conventional drillers. Two-tiered approaches for any type of regulation only serve to weaken and confuse. We strongly advocate that the Department note within each provision the 'target audience'. As a suggestion, the regulatory language may be indicated as follows.

- 00.0 Title
 - 00.01 Pursuant to conventional oil and gas operations, operators shall....
 - 00.02 Pursuant to unconventional oil and gas operations, operators shall....

- 00.0 Title
 - 01.01 This section applies to both conventional and unconventional oil and gas operations.

This creates clear language and understanding for all stakeholders, the Department, the regulated community, and the public. It is also helpful as there are some operators with both conventional and unconventional operations. It is much clearer to have all regulations in the same format and in the same document. (660a)

Response: As part of this rulemaking, in response to comments and recent legislation (the Act of July 10, 2014 (P.L. 1053, No. 126)), the Department split Chapter 78 into two separate Chapters – one for conventional oil and gas wells (Chapter 78) and the other for unconventional wells (Chapter 78a). The purpose of this amendment to the final rulemaking was to clarify the different requirements for conventional and unconventional wells. The Department believes that having two completely separate regulatory Chapters should serve to eliminate any confusion about what requirements apply to conventional and unconventional wells. In addition, having separate Chapters allows the Department to craft regulations to match the environmental risks posed by each segment of the industry (compare, for example, section 78.56 and section 78a.56, which contain significantly different requirements for temporary storage at conventional and unconventional well sites, respectively). See response to comment 818.

864. Comment: 78.56(a)(6) – Consideration must be given to locking access lids to tanks. During normal well production, the well is blown to the tank and pressure must be released through the access lids on some wells. If this is shut and locked, the tank can explode due to the increased pressure.

Suggested Regulatory Language:

(6) Unless an individual is present at the well site or the well is not in production, operators shall equip all tank valves and access lids to substances under this section with reasonable measures to discourage unauthorized access by third parties such as locks, open end plugs, removable handles, retractable ladders or other measures that discourage access by third parties. Tanks

storing freshwater, fire prevention materials and spill response kits are excluded from the requirements of this paragraph. (411, 1153)

Response: See response to comment 818. Section 78a.56(a)(6) allows for alternatives to tank lid locks, specifically it allows measures other than those listed to be utilized to prevent access by third parties. Access lids that are not designed to be operated as pressure relief valves should not be operated as pressure relief valves.

865. Comment: In § 78.56(a)(6), since no lock, plug, handle, etc. can absolutely ensure “prevention” of unauthorized acts by third parties or damage by wildlife, We recommend replacing “prevent” with “discourage”.

Suggested amendatory language:

(6) Unless an individual is continuously present at the well site, operators shall equip all tank valves and access lids to substances under this section with reasonable measures to discourage unauthorized access by third parties such as locks, open end plugs, removable handles, retractable ladders or other measures that discourages access by third parties. Tanks storing freshwater, fire prevention materials and spill response kits are excluded from the requirements of this paragraph. (1137, 1174)

Response: See response to 1217.

866. Comment: **78.56(a)(6):** As previously referenced in our general comments about the drawbacks of overly prescriptive language, we suggest that the phrase “such as locks, open end plugs, removable handles, retractable ladders or other measures that prevent access by third parties” be stricken. The requirement that operators take reasonable measures to prevent third party access provides clear direction while allowing operators flexibility to determine the best protections for their specific circumstances. (1071)

Response: See response to comment 818. Section 78a.56(a)(6) allows for alternatives to tank lid locks, specifically it allows measures other than those listed to be utilized to prevent access by third parties.

867. Comment: **78.56(a)(6) and 78.57(g)** – Commentator requests that the Rule provide for the need to vent or partially access temporary storage for other general safety management requirements and consider the differences between key locks and spring-loaded thief hatches where appropriate in defining what constitutes “reasonable measures” to prevent unauthorized third-party access to support the industry in achieving compliance. The Board could make the language more complete by defining what constitutes “reasonable measures” as some storage requires the option of partial opening for venting in the event the tank becomes pressurized, such as with produced water tanks. The Board should amend the provisions to allow for such access. (1085)

Response: The Department believes that the language is sufficiently flexible to address the concerns raised by the commentator.

868. Comment: The regulation **78.56(a)(6)** which talks about securing our tanks from third party access has no environmental benefits. There are around 150,000 tanks used in the conventional industry. There is no history of problems. To equip 150,000 tanks with secure lids and valves would be quite a dangerous undertaking. They contain an explosive material. We would have to empty the tank and

then fill it with water. Even then there is always a possibility for a problem to happen. Then we would have to haul the water that we used to the brine plant because now according to the DEP it would be contaminated. That in itself is another added cost. Securing tanks with locks doesn't do much as they can be cut very easily. Locking the doors on your home ever; day doesn't keep people from breaking in. Just ask the people from Bradford. This is just another burdensome regulation that will do more harm than good. Regulation 78.56 Pits. The environmentalists are calling for no more pits because they say our wastes are hazardous. The Environmental Protection Agency says it is not a hazardous substance. The environmentalist say there are studies that say there may be harmful health effects. They can talk about studies all they want, but there is no proof. There are 26,000 people working directly in the conventional oil and gas industry. 26,000 people working directly with this material on a daily basis. Not one of us are sick because of it. (863c)

Response: See response to comment 818.

- 869.** Comment: 78.56(a)(7): As previously referenced in our general comments about the benefits of streamlined program, the Department should strike the language in 78.56(a)(7) which is duplicative of federal regulation. Operators are already required by the Occupational Safety and Health Administration's Hazard Communication Standard, which aligns to the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Standard, and requires operators to provide hazard information by putting labels on containers and preparing safety data sheets. (1071)

Response: It is appropriate to include this health and safety provision in the rulemaking.

- 870.** Comment: The commentator recommends the removal of unnecessarily prescriptive language in § 78.56(a)(7) by striking "such as flammable, corrosive, or similar warning."

Commentator suggests the following amendatory language:

(7) The operator of an unconventional well site shall display a sign on or near the tank or other approved storage structure identifying the contents, and as applicable, containing an appropriate warning of the contents. (1137, 1174)

Response: See response to comment 869.

- 871.** Comment: **78.56(a)(7)** – An operator, whether it is a conventional or unconventional operator, should display a sign to provide such notice; however, this section should only be applied to operations after the regulations take effect and should not be made retroactive. The signs only need to be for contents such as flammable, corrosive or similar warnings that would be needed for emergency responders.

Suggested Regulatory Language:

(7) The operator of a well site shall display a sign on or near the tank or other approved storage structure identifying the contents, if the contents warrant identification for emergency responders such as flammable, corrosive or a similar warning. This section shall not be applied to existing well sites. (1153)

Response: Existing tanks or other approved storage structures should already be labeled in accordance with federal safety standards.

- 872.** Comment: **78.56(a)(8)** – The renumbering proposed below, combined with the proposed deletion of the phrase "and comply with the following" in (8) above, would have the effect of proposed

paragraphs (9) through (16) applying to all pits, including those containing topohole water, fresh water, and uncontaminated drill cuttings. Consistent with the current construct in existing Subsection 78.56(a)(4), We recommend retaining the suggested language below:

Suggested Language: (8) A pit, tank, or other approved storage structure that contains drill cuttings from below the casing seat or fluids other than topohole water, fresh water and uncontaminated drill cuttings shall be impermeable, and comply with (9) - (16) of this subsection. (1137, 1174)

Response: The Department disagrees with the suggested amendments. The requirements in paragraphs (8) through (14) of § 78.56 are appropriate for pit construction and operation regardless of the materials stored in the pit.

873. Comment: **78.56(a)(8)** – Given the unknown hazards of drill cuttings, fracking fluid, wastewater, and emerging gases, omit the use of pits and storage structures unless closed; limit the use of pits to potable water; maintain parameters for liners and pit construction to optimize water containment. (1098)

Response: See response to comment 823.

874. Comment: **78.56(a)(8)** – The proposal changes the words “pollutional substances” and “wastes” to “regulated substances.” The use of this term is not sufficiently precise, as explained above in our comments concerning its definition, and results in an unreasonable and unlawful expansion of the scope of this section. So that the scope of this provision is not unreasonably and unlawfully broadened, the proposed term “regulated substances” should be rejected and the correct terms “pollutional substances” and “waste” should continue to be used.

Suggested Regulatory Language:

(8) A pit, tank, or other approved storage structure that contains drill cuttings from below the casing seat, wastes or fluids other than topohole water, fresh water and uncontaminated drill cuttings shall be impermeable. (1153)

Response: See response to comment 817.

875. Comment: Site plans should be certified by a licensed professional. Under section **78.56(a)(9)**, site specific design plans and specifications for each of the temporary storage structures should be submitted to the Department for approval and should be signed and sealed by a professional engineer with certification that the system meets the requirements of all applicable state and federal laws and is protective of public health and the environment. (852a)

Response: To the extent that the commenter is referring to modular above ground storage facilities, §§ 78.56(a)(2)-(3) and 78a.56(a)(2)-(3) require both structural and siting approval for facilities greater than 20,000 gallons. To the extent that the commenter is referring to pits at conventional well sites or tanks, the permit by rule concept is appropriate given the design, construction and temporary nature of these structures.

876. Comment: **78.56(a)(9)** – Liners of the same type and quality required for the impoundments should be required to cover freeboards to minimize risk to the waters of the commonwealth. (997a, 1031)

Response: The Department agrees that liners are required to cover freeboard; no changes to the regulatory language are required. The Department disagrees that temporary pits require liners of the same type and quality of those required for impoundments.

877. Comment: The specification requires the liners to have a coefficient of permeability no greater than 1×10^{-10} and to be above a certain thickness (30 mils for secondary containment and 40 mils for primary containment). The DEP reserves the right to approve an equivalent “as protective as a 30 mil (or 40 mil) liner”. It is our opinion that this information is not precise. Different liners with the same thickness will have different properties. Organizations, such as the GRI (Geosynthetic Research Institute), have researched and developed basic geomembrane specifications to assure a specific level of manufacturing quality for geomembranes. Industries such as waste and mining have adopted these regulations as minimum requirements and still use them today. It is therefore our recommendation that the PA DEP Oil & Gas Regulations specifies the GRI-GM-13 or GRI-GM-17 as minimum requirement for the mechanical and physical properties. For example, article 78.56(a)(9)(ii) could read as follows: *“Liner must have physical, mechanical and endurance properties equal or better as a 30 mils GRI-GM- 13 or GRI-GM-17 liner. Approval may be granted...”*(166)

Response: The Department believes that the requirements for liner thickness are appropriate to ensure protection. The subsection allows for a liner to be approved if the manufacturer demonstrates that an alternative thickness is at least as protective as a 30 mil liner. A list of approved alternative liners shall be maintained on the Department’s web site.

878. Comment: Relying on the manufacturer’s recommendations for installation guidelines does not guarantee an impermeable liner. As impermeable as a material is, the impermeability of a liner is only as good as its weakest link and often, this link is the installation. As such, the International Association of Geosynthetic Installers (IAGI) has developed standard practices for the installation of geomembranes that will maximize the potential of impermeability. They also set standard practices for the quality control and quality assurance of the installation. It is therefore our recommendation that the DEP should use these standards and not refer to the manufacturer’s best practices as they might not all lead to an impermeable liner. For example, article 78.56(a)(9)(iv) could read as follows:

“Adjoining sections of liners shall be sealed together to prevent leakage in accordance with the IAGI installation guidelines. The integrity...”

In the same frame of mind, the IAGI installation guidelines also specify how repairs should be performed and therefore, any references to repairs should be:

“... as per IAGI Installation guidelines...”

Our above recommendations are based on past experiences. The specifications mentioned above have been proven and are still utilized by many organizations such as the US EPA for waste containment. Following these recommended specifications would ensure a quality in the material manufacturing as well as in the installation and repairs of the liners. (166)

Response: The Department acknowledges that proper installation of a geosynthetic liner is critical to ensure that the liner is impermeable and believes that installation in accordance with manufacturer’s recommendations is the most reasonable and appropriate requirement to include in this rulemaking.

879. Comment: § 78.56(9)(i) The language requiring “sufficient strength and thickness” must be restored. The following wording has been deleted in the current rulemaking: “... and with sufficient strength and thickness to maintain the integrity of the liner.” Deletion of this wording is simply indefensible. Does the Environmental Quality Board seriously intend to relieve well operators of responsibility for maintaining integrity of a pit liner? That is certainly how this reads to a layperson. Imposing the duty on a well operator of maintaining the integrity of its infrastructure is exactly what 25 PA Code

Chapter 78 is supposed to do. (869a)

Response: The provisions under § 78.56(a)(8)(i)–(iv) contain language that addresses liner strength, thickness and integrity.

880. Comment: 78.56(a)(9)(ii) – Pit liners at conventional wells are currently only required to be 20 mils thick and an exemption should be made for that under this section. (411)

Response: The subsections allow for a liner to be approved if the manufacturer demonstrates that an alternative thickness is at least as protective as a 30 mil liner.

881. Comment: 78.56(a)(9)(ii) – Commentator appreciates the Department’s willingness to review and approve liners one time and then have preapproved liners available for future use without additional review. That should be stated in the regulation.

Also, if previously acceptable 20 mil liners are no longer adequate, then the conventional well industry finds this objectionable as the associated increased costs of thicker liners will not necessarily translate into reduced environmental risk. Pits associated with conventional operations are small in size and generally open for a short amount of time. The 30 mil requisite is an excessive and inappropriate standard for conventional operators who land farm drill cuttings or perform service work on an existing producing well.

Suggested Regulatory Language:

(ii) For unconventional operators, liners must be at least 30 mils thick unless otherwise approved by the Department. Approval may be granted if the manufacturer demonstrates that the alternative thickness is at least as protective as a 30 mil liner. A list of approved alternative liners shall be maintained on the Department’s website. The Department shall set forth a procedure for suppliers of such liners to follow to obtain Department approval. For conventional operators the liner shall be at least 20 mils thick unless otherwise approved by the Department. (1153)

Response: See response to comment 823 regarding pits at unconventional well sites. See response to comment 880.

882. Comment: The 30 mil liner thickness required in Pennsylvania’s oil and gas regulations is anachronistic, particularly given the practices in some other states. For example, Michigan requires the use of a second liner to encapsulate the entire pit, not just its contents. Colorado specified that liners must be of sufficient thickness and length to withstand expansion, contraction and settling of the underlying earth and in some cases must be 60 mils thick. Utah regulations indicate the need for a minimum of 60 mil primary liners and 40 mil secondary liners. (853a)

Response: The Department believes that the requirements for liner thickness are appropriate to ensure protection. The subsection allows for a liner to be approved if the manufacturer demonstrates that an alternative thickness is at least as protective as a 30 mil liner. A list of approved alternative liners shall be maintained on the Department’s web site.

883. Comment: 78.56(a)(9)(iii) – The proposal changes the word “waste” to “regulated substance.” The use of this term is not sufficiently precise, as explained above in our comments concerning its definition, and results in an unreasonable and unlawful expansion of the scope of this section. So that the scope of this provision is not unreasonably and unlawfully broadened, the proposed term “regulated substances” should be rejected and the correct term “waste” should continue to be used.

Suggested Regulatory Language:

(iii)The liner shall be designed, constructed and maintained so that the physical and chemical characteristics of the liner are not adversely affected by the material stored therein and the liner is resistant to physical, chemical and other failure during transportation, handling, installation and use. Liner compatibility for waste shall satisfy ASTM Method D5747 Compatibility Test for Wastes and Membrane Liners or other compatibility test approved by the Department for the duration the pit or other temporary storage structure is used. (1153)

Response: See response to comment 817.

884. Comment: 78.56(a)(9)(iv) – What comprises an integrity test of liner sections? (411)

Response: Seam testing should be conducted in accordance with a quality assurance and quality control plan. Operators should consult with the manufacturer of the liner to determine appropriate testing protocols.

885. Comment: 78.56(a)(9)(iv) – It is suggested that language is added to allow for visual inspections of a liner as means to satisfy the liner integrity requirement. (124a, 861, 1057)

Response: Visual inspections are not an acceptable means to ensure the liner integrity requirement is met.

886. Comment: 78.56(a)(9)(iv): As previously referenced in our general comments about the drawbacks of overly prescriptive language, it is our suggestion that the entire prescriptive pit section be stricken and replaced with a specification that pits should be lined with impervious liners with bottom above the measured groundwater table . That requirement provides clear direction while allowing operators flexibility to determine the best impermeable liner for their site specific circumstances. In addition, the language in the proposed Section 78.56(a)(9)(iv) requiring that all liner seams be tested and available to the Department upon request would be challenging to implement. (1071)

Response: The Department believes that the rulemaking is appropriate to protect waters of the Commonwealth from pollution due to pits leaking regulated substances. Testing of liner seams is an appropriate practice to ensure the quality of the liner installation.

887. Comment: 78.56(a)(9)(v)(16) – Extend notification for installation of pit liners to 10 business days; limit certification of pit compliance to employees of the Department. (1098)

Response: Three business days notification is more practical for industry and the Department. The subsection also allows a certification process by a licensed engineer or geologist in lieu of 3 day notification to the Department.

888. Comment: 78.56(a)(9) provides technical requirements related to pit liners. Commentators suggest amending this provision to make liner thickness dependent upon pit depth, require certification of pit liners, and require liners to cover freeboard. Other commentators state that visual inspections of liner seams should suffice. We ask EQB to explain in the Preamble and RAF of the final-form regulation how the technical requirements for pit liners in this section reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: The Department has explained in the Preamble and RAF of the final form regulation how the technical requirements for pit liners in this section reasonably and adequately balance protection of public health and natural resources against the fiscal impact on the oil and gas industry.

889. Comment: Liner thickness for any pits should be increased depending on depth and certifications should be required. Section 78.56(a)(9) provides that pits must be lined with 30 mil thick synthetic liner. Pits with anticipated liquid depths greater than 10 feet should have a liner material at least a 40 mils thick and certification from the manufacturer that pinhole frequency for the plastic will not cause a coefficient of permeability greater than 1×10^{-10} cm/sec, or excessive leakage beyond the allowable leakage specified in the regulation. (852a)

Response: The standards are appropriate to provide adequate protection from pollution.

890. Comment: Alternative systems should be certified by a licensed professional. Section 78.56(a)(9) authorizes an alternative liner system. The proposed alternative liner system should be certified by a licensed professional engineer with a narrative description of how the alternative system is equal to or greater than the performance standards in the regulations. (852a)

Response: It is not appropriate licensing in the regulation as there may be some instances in which certification by a licensed professional are unnecessary. The Department will address this issue in guidance implementing these provisions.

891. Comment: 78.56(a)(10): Pits with 2:1 slopes are both impractical and unnecessary for conventional well operations. Pit collapse at conventional sites has not been a problem, largely because those pits are small in size and generally open for a short period of time. The average size of a pit for conventional oil wells is: 15' x 35' x 6' (width x length x depth). This requirement would increase that size from 525 square feet to 2100 square feet or more - an increase of 400% leading to an increase in the size of the well pad. While this may be a reasonable safeguard for long-term pits on multi-well unconventional pads, it represents an unnecessary expense to conventional operators whose pits are significantly smaller and are open only a fraction of the time by comparison. This increase would cause added expenses to the operator requiring:

- 1.) A larger pit liner
- 2.) Construction expenses
- 3.) Additional timber damage
- 4.) Land-use agreement changes
- 5.) Restoration costs

By mandating 2:1 interior slopes, pit size will need to increase significantly in order to accommodate sufficient volume. Therefore, bigger pits will translate into larger locations, increased environmental damage, and additional costs to the operator. These pits are temporary in nature and should be exempt if they are less than 1/8 an acre in size and are in use for 90 days or less. This paragraph (10) details the construction parameters for pits mandating a 2 to 1 horizontal to vertical slope for the interior sides. While this may be a reasonable safeguard for long-term pits on multi-well unconventional pads, it is an unnecessary expense to conventional operators. It will require a much larger footprint of disturbed area and is not practical in confined drilling areas. Bigger pits will translate into larger locations, increased environmental damage, and additional costs to the operator. *Please refer to the attached illustration showing how 2:1 interior pit slopes translate into

larger pits, larger pads, increased costs, and potentially more environmental damage. (PULL ILLUSTRATION)

Suggested Regulatory Language:

(10) The pit shall be constructed so that the liner sub-base is smooth, uniform and free from debris, rock and other material that may puncture, tear, cut or otherwise cause the liner to fail. The pit must be structurally sound. For pits associated with unconventional well development or that will remain open for more than 30 days, the interior slopes of the pit with a foot print area of 1/5 acre or more must have a slope no steeper than 2 horizontal to 1 vertical. The liner sub-base and subgrade shall be capable of bearing the weight of the material above the liner without settling that may affect the integrity of the liner. If the pit bottom or sides consist of rock, shale or other materials that may cause the liner to fail, a subbase of at least 6 inches of soil, sand or smooth gravel, or sufficient amount of an equivalent material, shall be installed over the area as the sub-base for the liner, unless otherwise approved by the Department. (1153)

Response: The Department disagrees that the requirements will result in an increase of the aerial extent of on-site pits to the extent indicated in the comment. The Department has revised§ 78.56(a) to remove minimum slope requirements for a pit with a footprint less than 3,000 ft² or volume less than 125,000 gallons of capacity. For pits with greater aerial extent or capacity, operators must obtain authorization from the Department prior to construction. The Department believes that this revision addresses the commenter's concerns.

892. Comment: 78.56(a)(10) implements a new requirement for pit slopes which commentators say is impractical and unnecessary. Commentators state that the new requirement would dramatically increase the size of the pits, thereby increasing the environmental impact. We ask EQB to explain in the Preamble and RAF of the final-form regulation the need for this change. We also ask EQB how the slope requirements in this section reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: The Department has revised§ 78.56(a) to remove minimum slope requirements for a pit with a footprint less than 3,000 ft² or volume less than 125,000 gallons of capacity. For pits with greater aerial extent or capacity, operators must obtain authorization from the Department prior to construction. The Department believes that the revised requirements reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry.

893. Comment: With regards to pit side slopes of 2: 1 (H:V), the surface area disturbance necessary to meet this proposed requirement will increase the pit size by at least a factor of ten up to a factor of 100. No specific incidents or justification for this proposed regulation have been referenced by PADEP. Implementation of this regulation will be a detriment to the environment since it will require further earth disturbance with no clear benefit. I recommend removing this requirement or imposing an exemption for pits 1,000 BBL or less.(450)

Response: See response to comment 891.

894. Comment: The proposed 78.56(a)(10) states all pits must have a maximum side slope of 2:1. At my job, it is imperative that I work directly with land owners and their reasonable requests to minimize disturbance related to our activity. This proposed requirement is a slap in the face to any land owner who will have oil & gas activity on their property. It essentially takes away our ability to work with landowners to make sure they are satisfied with the disturbance they are faced with. (613)

Response: See response to comment 891.

895. Comment: The proposed language specifying a 2:1 slope for storage pits should be revised to allow for vertical sides in small pits. Pits at conventional well sites are used for a shorter duration and a steeper slope allowance will result in less surface disturbance without any greater likelihood of ground contamination. (1115a, 1118, 1120, 1176-1188)

Response: See response to comment 891.

896. Comment: Paragraph 10 details the construction parameters for pits mandating a 2:1 horizontal to vertical slope for the interior sides. While this may be a reasonable safeguard for long-term pits on multi-well, unconventional pads, this, too, represents not only an unnecessary expense to conventional operators, but it will require a much larger footprint of disturbed area. This consequential environmental impact will not be a popular reality with the surface owners who have historically appreciated our willingness to work in tight quarters. (12, 623)

Response: See response to comment 891.

897. Comment: 78.56(a)(11) - In addition to giving this task to a trained professional, they must also research the specific soil of that terrain by accessing the soil maps at the court house for that location and also investigate other community resources that would be able to contribute to their research of that specific location such as a local conservation program. They must also document soil type, and soil characteristics such as drainage, permeability, potential for surface run off and potential changes during changing weather patterns. Once this data is collected and reviewed their information must be reviewed by the PA DEP, EPA (for possible future guideline data collection), and should also be submitted to the local court houses for record keeping purposes. Their process of data collection should be documented and reviewed to ensure a complete investigation occurred, this should also be public information as well as the name of the person and entity that reviewed their study also. (189)

Response: The requirements for determining the seasonal high groundwater elevation is sufficient to ensure environmental protection.

898. Comment: Determine seasonal high water table over a 12-month period; hold operator accountable for findings given the implications of flooding.[78.56 (a) (9)(iii)(11)] (1098)

Response: Seasonal high groundwater conditions can be determined through observation of soil characteristics in the field by a soil scientist or other similarly qualified person. A 12 months observation period is not required.

899. Comment: 78.56(a)(11) – Determination of Seasonal High Groundwater Table (SHGT) should be done by an independent 3rd party. A requirement that waste protection infrastructure should be located at a “safe distance” above SHGT is fitting and proper, though many have questioned whether 20 inches is sufficient distance to be “safe”. Just as important as the actual measure of distance is the issue of who determines what the SHGT actually is. It is quite simply a conflict of interest for a well operator to be the party that determines this. The Environmental Quality Board must require that SHGT be determined by an independent certified professional, similar to the requirement that pre-drilling water tests be done by an independent certified laboratory (§ 78.52). (869a)

Response: The subsection requires the determination to be made by a qualified person. Operators will be held responsible to ensure that the requirements are met and to address and issues that may arise as a result of an improper determination.

900. Comment: The certification by a soil scientist, required under § 78.56(a)(11), that the pit bottom is at least 20 inches above the seasonal high groundwater table, be provided to DEP (not just made available) prior to placing material in the pit. (1157)

Response: See response to comment 823 regarding temporary pits at unconventional well sites.

901. Comment: 78.56(a)(11) – This section, as written is appropriate. The determination of the seasonal high water table can be difficult and includes many variables such as the time of year the determination is made as well as recent precipitation. An example that has been experienced is a geologist or soil scientist with education and qualifications in hydrogeology and hydric soils has made a scientific determination of the seasonal high water table at a drill pit on day 1. On day 2, the Department Water Quality Specialist makes a site inspection prior to the pit liner being installed and due to the precipitation during day 2 the Water Quality Specialist makes the determination that the operator has intercepted the seasonal high groundwater table based on visual standing water in the base of the pit without any scientific reasoning. The scientific determination should be the deciding factor.

A suggestion is the re-writing of the definition of *seasonal high groundwater table* in section 78.1 for clarification and to make a clear separation of groundwater and precipitation accumulated in a pit prior to the liner being installed. A further suggestion is to use the term *seasonal high saturation* instead of *seasonal high groundwater table* as the inclusion of the term *groundwater table* can be confusing. (411)

Response: The subsection accommodates the hypothetical situation presented in the comment by requiring the operator to provide the name, qualifications and statement of the individual making the determination and the basis for the determination to be provided to the Department upon request. The Department will review the documentation to ensure that an appropriate determination has been made.

902. Comment: 78.56(a)(11) – Operators, their consultants and Department field staff sometimes disagree on the distance between the pit bottom and seasonal high groundwater table, often when there is accumulated precipitation in the pit before the liner is installed. An accepted agronomic definition of “seasonal high groundwater table” is the endosaturation. See Keys to Soil Taxonomy (11th ed. 2010), U.S. Department of Agriculture and National Resources Conservation Service, pg. 24. The seasonal high groundwater table should not be based on episaturated conditions. Episaturated soil is saturated soil in a horizon that overlies an unsaturated horizon, where the unsaturated horizon lies within a depth of 2 meters from the surface, i.e., a perched water table. Episaturation is associated with the presence of perched water tables through Pennsylvania that may be as shallow as 12 inches that are not associated with wetland areas. Without using the more precise definition of endosaturation, a significant percentage of pits will have to be constructed to grade, which may eliminate or the option of cutting pits into grades and/or require that pits be placed on fill. This may not be practical in some circumstances and may disturb more surface area and have a greater environmental impact than necessary.

The definition of “seasonal high groundwater table” in section 78.1 should be revised for clarification, to make a clear separation between groundwater and precipitation accumulated or

beneath in a pit prior to the liner being installed. This determination is not intended to require a high degree of expertise. Geologists and wetlands biologists with a good soil background should be able to make this determination without a problem.

Revise the definition of “Seasonal high groundwater table” in section 78.1 as follows: “The soil is saturated with water in all layers from the upper boundary of saturation to a depth of 200 cm or more from the mineral soil surface.” (1153)

Response: The definition and implementation of the seasonal high groundwater table are appropriate. Elevated water tables within 20 inches of the bottom of the pit may impact structural integrity of the pit or cause intermingling of groundwater and the regulated substances contained within the pit.

- 903.** Comment: 78.56(a)(11) – The minimum separation distance of 20 inches between oil and gas pits and impoundments is inexcusably short and gambles with water quality in a state with many shallow water resources. It is notable that other states require greater separation such as 25 feet in New Mexico, 5 feet in Louisiana and 4 feet in Michigan. (853a)

Response: The 20 inch separation requirement allows for a physical barrier between the seasonal high groundwater table and the bottom of the impoundment to prevent mixing of impounded water and groundwater and to ensure structural integrity of the impoundment. Remediation of potential leaks from pits by the soil is not expected due to the nature of the waste generally contained in temporary pits.

- 904.** Comment: Further proposals under temporary storage are suggesting liner compatibility testing, liner seam testing, inspection requirements, notification to the Department prior to pit liner installation and a demonstration that the pit bottom is 20 inches above the seasonal high water table. In order to test liner compatibility, if we want true and transparent results, every single chemical used at that site must be known. Every single chemical going into that pit must have research data showing what reactions they will have with one another. If the gas and oil company counters with the argument that these chemicals are proprietary ingredients they shall not be granted any type of permit or allowance for a storage pit as this has great potential to cause harm to ground water, surface water, air quality, and human health. We can do things as long as they are legal, but also as long as they do not negatively impact anyone or anything else. If we choose to practice something that does have potential to harm, we face moral, ethical, and legal repercussions, as should these companies.

The proposals also state:

“[(4)] (8) A pit [or], tank or other approved storage structure that contains drill cuttings from below the casing seat, [pollutional] regulated substances[, wastes] or fluids other than tophole water, fresh water and uncontaminated drill cuttings shall be impermeable [and comply with the following:].” “(iii) The liner shall be designed, constructed and maintained so that the physical and chemical characteristics of the liner are not adversely affected by the [waste] regulated substance stored therein and the liner is resistant to physical, chemical and other failure during transportation, handling, installation and use. Liner compatibility must satisfy ASTM Method D5747, Compatibility Test for Wastes and Membrane Liners, or other compatibility test approved by the Department for the duration the pit or other temporary storage structure is used.”

The EPA document titled “METHOD 9090A COMPATIBILITY TEST FOR WASTES AND MEMBRANE LINERS” supplies information and instructions for testing liners. Each well contains several different mixtures of known chemicals and chemicals which are regarded as proprietary ingredients. In order for the gas and oil companies to use these liners they must attest

to the fact that each liner will indeed hold up to these regulations set forth by the EPA. If some of the chemicals are proprietary data and are unknown it would be interesting to see how the lawyers, whom submit information to and from the DEP to obtain permitting, can attest that all of the information in their packets are true and accurate. I propose that the PA DEP work with the EPA in investigating the validity of their statements as well as investigate whether there is information that these liners have been tested with multiple combinations of the chemicals they use and that the liners are specific to each and every well site. If the Department ends up choosing to continue to allow liner use in pits then I also propose that the thickness of these liners are increased as well as ensuring that the liners are individualized and specific to each site. It is also interesting to note that this particular EPA document has not been revised since 1992. (189)

Response: The requirements for ensuring liner compatibility are appropriate and ensure environmental protection.

- 905.** Comment: In regards to pits being 20 inches above the seasonal high water table, these pits should not be near the seasonal high water table. The potential chemicals in these pits pose risk to contaminating the seasonal high water table. One must also consider the fact that each region consists of different soil types which affect drainage, permeability, and run off. For example, Mercer County, Pennsylvania, consists of mainly 4 different soil types, “The Ravenna-Frenchtown association is the most extensive in the county, making up about 57 percent of the total landscape. It is a somewhat poorly drained to poorly drained soil. Its character leads to a high water table and restricted permeability which can limit its use. Next, is the Chenango-Braceville-Halsey association, which is well drained to poorly well drained. Its limitations include seasonal high water table, slowly or highly permeable, and drought. This association makes up approximately 20 percent of the county’s soils. Third, is the Canfield-Ravenna association. It consists of moderately well drained and somewhat poorly drained soils. Its limitations include a slowly permeable subsoil and a seasonal high water table. This association covers nearly 17 percent of the county. Finally, is the Wayland, coarse variant-Papakating-Red Hook association which is very poorly drained to moderately well drained soils underlain by alluvium. Slow permeability, seasonal wetness, and likelihood of flooding are major limitations of these soils.(4)” When an operator advises the DEP that they have checked the location of the seasonal high water table they must submit proof of what materials were reviewed to determine this, along with copies of those materials. Prior to an operator receiving a permit for a pit, this information must be reviewed by an independent professional who specializes in geology and hydrogeology. Of course, the concerned Citizens of the State of Pennsylvania, including myself, do not feel comfortable with pits that contain any type of chemical being anywhere near the ground especially when a “liner” is the only barrier. The seasonal high water table also fluctuates with weather changes and we do not have the capabilities to predict exactly what type of weather will affect us in the future. Meteorologists, and people who have interests in the land and farming, can hypothesize what the weather will be like in the coming year, but it is rarely if ever exact. (189)

Response: See response to comment 903. The subsection requires the operator to provide the name, qualifications and statement of the individual making the determination and the basis for the determination to be provided to the Department upon request. The Department will review the documentation to ensure that an appropriate determination has been made.

- 906.** Comment: The challenge that operators face in dealing with growing volumes of solid and liquid waste should not be an excuse to allow dangerous substances to harm health and the environment. The oil and gas industry alone enjoys a special exemption to the U.S. Resource Recovery and Conservation Act (RCRA), which regulates the storage, transport, and disposal of hazardous materials. Pennsylvania should choose to follow the protective standards of RCRA. At the very least, DEP’s proposed Chapter 78 changes must address the risks posed by drilling waste; as

currently proposed, they simply do not.

Many spills and leaks occur at waste pits and impoundments. Production pits and any open impoundments, tanks, and modular structures should be prohibited for the temporary containment of regulated substances and production fluids (such as wastewater, drill cuttings, gels, and used frac sand).

Only covered, closed-loop systems should be allowed for this purpose. These must have consistent and reliable leak detection, secondary containment, groundwater monitoring, and emission prevention systems.

The requirement that pits and impoundments be only 20 inches above the seasonal high groundwater table gambles with local water quality in a state with many shallow water sources. If pits are allowed, the separation distance must be vastly expanded; other states require far greater distances, such as 5 feet in Louisiana and 4 feet in Michigan. (853, 912, 926)

Response: See response to comment 823 regarding pits at unconventional well sites. The Department has incorporated by reference the federal definition of “hazardous waste” in 25 Pa. Code Chapter 261a. Any changes to that regulation are beyond the scope of this rule making. See response to comment 903 in regards to the 20 inch separation requirement.

907. Comment: Subsection 78.56(a)(13) states that an operator shall correct damages or imperfections (in the liner) before placing material in the pit, and shall maintain the pit until closure of the pit. We recommend adding language to this section that describes the monitoring and inspection requirements for the life of the pit, including the frequency by which the liner should be inspected and required methods for leak detection. (1157)

Response: The Department is not mandating inspection types and schedules as these facilities are typically only located on active well sites where operator personnel are present regularly while the facility is in operation. Operators are required to outline their monitoring and inspection requirements and frequency in site-specific PPC plans under 25 Pa. Code § 78.55 and 25 Pa. Code § 78a.55.

908. Comment: 78.56(a)(14) – Operators should be allowed to use or reuse pit contents if the liner is compromised instead of requiring the contents of the pit/tank/structure to be managed/disposed of as a residual waste.

Suggested Regulatory Language:

(14) If a liner becomes torn or otherwise loses its integrity, the pit or approved storage structure shall be managed to prevent the contents from leaking. If repair of the liner or construction of another temporary pit or approved storage structure is not practical or possible, the contents may be used or reused as permitted by law or shall be removed and disposed at an approved waste disposal facility or disposed on the well site in accordance with § 78.61, § 78.62 or § 78.63 (relating to disposal of residual waste—pits; and disposal of residual waste—land application). (1153)

Response: Pit contents must be managed appropriately and the subsection allows for that appropriate management.

909. Comment: § 78.56 (a)(14) - It is suggested that language is added to allow for the reuse and storage of liquids if the liner is compromised instead of requiring the contents of the pit/tank/structure to be managed/disposed as a residual waste. (861, 124a)

Response: See response to comment 908.

- 910.** Comment: 78.56(a)(14) – “...the [pit] contents shall be removed and disposed at an approved waste disposal facility or disposed on the well site in accordance with § 78.61, § 78.62 or § 78.63 (relating to disposal of [residual] solid waste—pits; and disposal of [residual] solid waste—land application).” -- It is suggested that language is added to allow for the reuse and storage of liquids if the liner is compromised instead of requiring the contents of the pit/tank/structure to be managed/disposed as a residual waste. (1057)

Response: See response to comment 908.

- 911.** Comment: 78.56(a)(14) – The subsection should not require disposal of pit liners or contents where those materials can be reused. The second sentence should be deleted. Suggested language: (14) If a liner becomes torn or otherwise loses its integrity, the pit or approved storage structure shall be managed to prevent the pit contents from leaking from the pit.(1137, 1174)

Response: See response to comment 908.

- 912.** Comment: 78.56(a)(11, 16-17) Pits – Unconventional Operations. - We have serious concerns over the use of pits with unconventional operations. It is our understanding, and it was noted in the February 20, 2014 Penn State Extension Webinar regarding the recently released production and waste reports, that the industry has largely moved away from this practice. For the few complacent operators, does it really seem the best move is to create more stringent regulations or rather, perhaps discontinue the use may be a better option? Why create more stringent operations for the few rather than discontinue and commence with above ground storage structures as the more responsible operators have done? Above ground storage structures are a superior choice with consideration to adequately protecting our water resources and knowing the damage that pits can create. Nearby residents need to be protected from second best operations when there are better, more community friendly, more environmentally friendly options available. Regulations serve the floor of requirement for some operators that are otherwise complacent. (660a)

Response: See response to comment 823.

- 913.** Comment: 78.56(a)(16) – The form showing the statement from the engineer or geologist should be produced and reviewed prior to establishment of this section. (411)

Response: See response to comment 823

- 914.** Comment: Currently a typical Dallas Energy well site consists of an area 60 feet by 100 feet (6,000 square feet). The pit used to contain fluids and sand that flow back during the well stimulation and completion process is 8 feet wide by 40 feet long by 8 feet deep disturbing an area of about 320 square feet. This size of pit fits within the confines of the typical well site and can be constructed using one excavator in a few hours depending on the soil conditions encountered. This type of pit is used for a short period of time and is usually filled-in shortly after the well is completed.

Implementation of § 78.56(a)(10), which requires the interior slopes of the pit must have a slope no steeper than 2 horizontal to 1 vertical, would require a pit with a top of 40 feet wide by 72 feet long for a pit with a bottom of 8 feet wide by 40 feet long resulting in earth disturbance of an area 9 times (2,880 square feet) that of pit with vertical sides. Construction of this style of pit would require use of both an excavator and bulldozer, take a minimum of 8 hours or more to construct

depending on the soil conditions encountered on the well site, result in a cost of 3 to 4 times that of a pit with vertical sides and require a increase in size of the well site to accommodate the larger pit size. (885)

Response: See response to comment 891.

- 915.** Comment: 78.56(a)(16): It is unclear why an operator would be asked to notify the Department before the installation of the pit liner as it does not add any environmental protection, but does add additional process burden on the operator and on the Department. We suggest striking the language or at a minimum, that the Department provides clear explanation of the benefit of this requirement that justifies the additional obligation for the operator. (1071)

Response : See response to comment 823

- 916.** Comment: Licensed professional engineers and not geologists should certify pit and liner compliance. Section 78.56 (a)(16) allows a geologist to certify pit design and compliance. A geologist does not have the experience or skills to certify pit and pit liner compliance for as built structures. As built certification should be done by a licensed professional engineer that observed the construction of the pit and pit liner. (852a)

Response: See response to comment 823. In accordance with the Pennsylvania Engineer, Land Surveyor And Geologist Registration Law it is considered unprofessional and inconsistent with honorable and dignified bearing for any professional engineer, professional land surveyor or professional geologist to attempt to practice in any field of engineering, land surveying or geology in which the registrant is not proficient. Accordingly, to the extent that a licensed professional geologist did not have the experience or skills to certify pit and pit liner compliance, but did so anyway, they would be in violation of the Pennsylvania Engineer, Land Surveyor And Geologist Registration Law. It is reasonable for the Department to expect the regulated community to comply with the law when developing regulations.

- 917.** Comment: Notice to the Department. Section 78.56 (a)(16) should require that the Department receive notice prior to installation of the pit and pit liner, whether or not a certification is submitted after construction. In fact, post construction certification should be required for all pits and tanks with notations of any changes between proposed and as-built design plans and specifications. (852a)

Response: See response to comment 823.

- 918.** Comment: 78.56(a)(16) - We recommend that an appropriately trained professional can provide a statement that a pit and its liner have been built in compliance with this section. Requiring a statement from a licensed professional engineer or geologist imposes an unnecessarily strict, and potentially expensive, requirement. Suggested Language: (16) The unconventional well operator shall notify the Department at least 3 business days before the installation of the pit liner. This notice shall be submitted electronically to the Department through its website and include the date the liner will be installed. If the date of installation is extended, the operator shall re-notify the Department with the date of installation which does not need to be 3 business days in advance. Notice is not required if the appropriately trained professional that designed the well site submits a statement on forms provided by the Department certifying that the pit and the pit liner, as built, are compliant with this section. This certification shall be submitted within 10 business days of installation of the pit liner.(1137, 1174)

Response: See response to comment 823.

919. Comment: 78.56(d): To account for the dynamics of an operation like ours where with one rig move we drill and complete every well on a pad in sequence, we ask that this section should be clarified to read, “9 months after completion of the last permitted well.” Additionally this subsection should acknowledge that pits used for onsite disposal of drill cuttings or residual waste in accordance with 78.61 or 78.62 do not have to be removed and filled under this paragraph (d). (1071)

Response: See response to comment 1694.

920. Comment: All gas facilities including tanks, pits, wells, and compressor stations should have monitors designed and operated by a third party, functioning 24 hours a day, and recording findings that are directly available to the DEP and public. The gas industry should not be responsible for conducting this monitoring but should be financially responsible for payment of the implementation and conduction of that process. 78.56(a)(17): (938a)

Response: The Department disagrees that the scope of monitoring proposed in the comment is necessary to ensure environmental protection.

921. Comment: Temporary Storage - During the Oil & Gas Technical Advisory Board Workgroup meetings last year, industry suggested expanding temporary storage authorizations to facilitate reuse of wastewater for hydraulic fracturing. While this proposal was not incorporated into the Proposed Rulemaking, we understand it still may be included in revisions to the draft or in a subsequent agency policy. If the Department is considering establishing guidelines for expanded temporary storage, any regulation or policy at a minimum should include the following requirements:

- Storage should be limited to permitted and bonded well sites.
- The Department should receive notice after installation, but prior to use, to allow for inspection if deemed appropriate.
- Storage should be limited to closed loop or modular tank systems with robust containment and leak detection coupled with routine monthly inspection. Tanks should be inspected between uses.
- Storage should truly be temporary – limited to no more than twelve months, including any extensions granted by the Department.
- There should also be a maximum storage volume limit, based on case-by-case analysis of each individual site. (997a)

Response: The Department believes that the provisions of § 78.56 are appropriate for temporary storage of regulated substances at well sites. Temporary Storage is restricted to use during drilling, altering, completing, recompleting, servicing and plugging the well. Due to the concerns of the Oil and Gas Industry and the fact that the Department’s Bureau of Waste Management also addresses the storage of residual waste, the department has decided that the provisions for Centralized Tank Storage are no longer necessary.

922. Comment: It is very important that temporary storage be defined because under 78.57, brine and other well operation fluids have to be in a covered tank, unless these materials are in temporary storage, then they could be in uncovered pit. These pits can be used during the drilling process and up to 9 months after. That is a long time for any of the regulated substances and wastes to be exposed to the elements and environment. There is a risk of contamination even though there is to be a 2’ space between the surface and the top of the storage unit. Heavy rains, wind, snow pack, ice formation, evaporation of the stored substances and the risk of wildlife falling in, are all concerns

that can have a negative impact to the environment and the liner, by not having these storage units covered.

Diverting stormwater away from the pits should also include provisions that the diversion does not create an erosion and sediment issue and that it is not directed to a stream, watercourse or SWPZ. (1149)

Response: See response to comment 823. The Department believes that the provisions of § 78.56 are appropriate for temporary storage of regulated substances at conventional well sites. Temporary Storage is defined by use of these structures. Their use is restricted to use during drilling, altering, completing, recompleting, servicing and plugging the well. See response to comment 1694. Erosion and sediment control issues are covered under § 78.53.

923. Comment: On December 19 of 2013, the Pennsylvania Supreme Court invalidated significant portions of Act 13, notably to the extent that the absence of defined criteria in the law could lead to arbitrary decision making on the part of the DEP. In addition to the section noted above (Section 2), the DEP must also reevaluate the whole of the proposed regulation in order to better take into account the requirements of the Pennsylvania Supreme Court in “Robinson Township” regarding its decision-making process, and ensure that any proposed criteria is not unduly vague or missing necessary criteria. One good example of this is the lack of a definition for “temporary”.

In other example, under § 78.56 and § 78.57, the DEP’s decision-making process to approve “modular aboveground storages”, “underground or partially buried storage tanks” and/or “other practices other than those specified” is not defined nor regulated and could be viewed as unconstitutional. There are no guidelines for the approval process. As a consequence, there can be no evaluation of whether decisions are being made in a consistent manner, nor could a decision of the DEP be challenged if the decision-making process is not regulated by conditions or criteria. Additionally, under § 78.57, an operator could discharge the brine and other fluids on or into the ground or into the waters of this Commonwealth if approved by the Department, without any criteria for determining when such an instance is appropriate. Similarly, this provision could be view as unconstitutional - being too vague to comply with the Environmental Rights Amendment.

In order to comply with the state of the law, these provisions must be completed with a defined decision-making process to approve modular aboveground storages, buried storage tanks, other practices and/or the discharge of fluids into waters of the Commonwealth, with a right of appeal granted to residents and municipalities.

Finally, several provisions in the proposed regulations refer to the waiver that can be granted by the DEP from setback requirements from certain bodies of water (§ 78.56, § 78.57, § 78.60 and § 78.61). The decision-making process to grant a waiver has been declared unconstitutional by the PA Supreme Court in its decision “Robinson Township v. Commonwealth of Pennsylvania” on December 19, 2013.¹⁶ As a consequence, if the DEP does not take into account the requirements of the Court, the waivers granted could be easily challenged. An amendment of the present proposed legislation would be the opportunity to comply with the PA Supreme Court requirements. In order to take into account local concerns and to secure the permits that are granted by the DEP, the amendment should at least:

- Add the precise conditions that would lead the DEP to grant a waiver in order to avoid arbitrary decision.
- Grant a right of comment and a right of appeal for the residents, municipalities and storage operators.

- Reverse the burden of proving during an appeal from a DEP’s decision. (1161)

Response: “Temporary” is not defined in Chapter 78a, however this Chapter has also been developed under the authority of the Solid Waste Management Act (SWMA), 35 P.S. § §6018.101, et seq. In Section 103, “storage” is defined as “the containment of any waste on a temporary basis in such a manner as not to constitute disposal of such waste. It shall be presumed that the containment of any waste in excess of one year constitutes disposal. This presumption can be overcome by clear and convincing evidence to the contrary.” If the regulated substance that is being stored under § 78.56(a) is a waste, the criteria is found in the definition of “storage” under SWMA. For other regulated substances, the plain meaning definition of “temporary” in the dictionary may be used. Temporary is defined as lasting for only a limited period of time, not permanent. In the context of this section, it is also worth noting that the well site must be restored within 9 months of the completion of drilling, including removing all drilling supplies, equipment, primary containment and secondary containment not necessary for production or needed to safely operate the well.

Section 78.56(b) allows an operator to request through a form on the Department’s website the ability to use practices that provide equivalent or superior protection than those outlined in subsection (a), and therefore the procedure and evaluating criteria are included in § 78.56.

Section 78.57(a) specifically indicates that the operator may not discharge brine and other fluids on or into the ground or into the waters of this Commonwealth, except as allowed in Subchapter C, Environmental Protection – Performance Standards or otherwise approved by the Department. Therefore, the criteria are currently provided in Subchapter C and in accordance with each section that allows approval by the Department in accordance with standards that are the equivalent or offer superior protection than those provided.

Under § 7514(c) of the Environmental Hearing Board Act, 35 P.S. § 7514(c), no action of the Department adversely affecting a person shall be final as to that person until the person has had the opportunity to appeal the action to the Board in accordance with the Board’s regulatory procedures. If a person has not perfected an appeal in accordance with the regulations of the Board, the Department’s action shall be final as to the person.

The ability of the Department to waive setbacks for certain water bodies has been deleted from the final-form rulemaking.

The Department believes the revisions to Chapters 78 and 78a are consistent with the Constitution and applicable statutes, and provide appropriate protections for public health and safety.

- 924. Comment: We call on DEP to completely ban the use all pits for the storage of wastewater, drill cuttings, residual waste, and other contaminated substances in these proposed regulations – whether permanent or temporary holding ponds. Instead, DEP should be ensuring that produced wastewater, flowback, and other contaminated fluids are stored in closed loop systems, with a secondary containment, and a leak detection system, in accordance with best industry standards. This must happen without exceptions in order to better protect our health and out environment. Mounting violations, and the potential for water and air pollution have already led some companies to transition away from pits and standardize the use of closed loop systems which utilize tanks to store wastewater. Despite these best industry practices that should have inspired the DEP while drafting the bill, the proposed regulation unfortunately currently does not prohibit the storage of wastewater in open pits. (1139, 1160, 1161)**

Response: See response to comment 823.

925. Comment: In all instances, any impoundment or storage pits required to have a liner, whether deemed “temporary” or not, and whether it is located on a well pad site or off a well pad site as part of a secondary or centralized storage area, should be required to be drained and liner inspected on an annual basis. In lieu of annual draining and liner inspection, a leak detection system should be installed between primary and secondary liners. (997a)

Response: See response to comment 823 regarding temporary pits at unconventional well sites. See response to comment 907 in regards to temporary pit inspections.

926. Comment § 78.56 Temporary Storage - Suggested amendatory language:

(a) Except as provided in §§ 78.60(b) and 78.61(b) (relating to discharge requirements; and disposal of drill cuttings), the operator shall contain substances generated from and used for the drilling, altering, completing, recompleting, servicing and plugging the well, including brines, drill cuttings, drilling muds, oils, stimulation fluids, well treatment and servicing fluids, plugging and drilling fluids other than gases in a pit, tank or series of pits and tanks or other approved storage structures. The operator shall install or construct and maintain the pit, tank or series of pits and tanks or other approved storage structures in accordance with the following requirements:

(1) The pit, tank, series of pits and tanks or other approved storage structure shall be constructed and maintained with sufficient capacity to contain substances which are used or produced during drilling, altering, completing, recompleting, servicing and plugging the well.

(2) Modular aboveground storage structures that are assembled on site may not be utilized to store substances resulting from the drilling, altering, completing, recompleting, servicing and plugging the well without Department approval. The Department shall maintain a list of approved modular storage structures on its website. The owner or operator shall notify the Department at least 3 business days before the beginning of construction of these storage structures. The notice shall be submitted electronically to the Department through its website and include the date the storage structure installation will begin. If the date of installation is extended, the operator shall re-notify the Department with the date that the installation will begin, which does not need to be 3 business days in advance.

(3) A pit shall be designed, constructed and maintained so that at least 2 feet of freeboard remain at all times. If open tanks or open storage structures are used, the tanks and storage structures shall be maintained so that at least 2 feet of freeboard remain at all times unless the tank or storage structure is provided with an overflow system to a standby tank or pit with sufficient volume to contain all excess fluid. If an open standby tank or open standby storage structure is used, it shall be maintained with 2 feet of freeboard. If this subsection is violated, the operator immediately shall take the necessary measures to ensure the structural stability of the pit, or tank or other storage structure, prevent spills and restore the 2 feet of freeboard.

..*

(5) For unconventional well sites, unless an individual is continuously present at the well site, a fence or fences shall completely surround all pits to discourage unauthorized acts of third parties and damage caused by wildlife.

(6) Unless an individual is continuously present at the well site, operators shall equip all tank

valves and access lids to substances under this section with reasonable measures to discourage unauthorized access by third parties such as locks, open end plugs, removable handles, retractable ladders or other measures that discourages access by third parties. Tanks storing freshwater, fire prevention materials and spill response kits are excluded from the requirements of this paragraph.

..*

(8) A pit, tank, or other approved storage structure that contains drill cuttings from below the casing seat or fluids other than tophole water, fresh water and uncontaminated drill cuttings shall be impermeable, and comply with (9) – (16) of this subsection.

..*

(14) If a liner becomes torn or otherwise loses its integrity, the pit or approved storage structure shall be managed to prevent the [pit] contents from leaking [from the pit]. (1147)

Response: See response to comment 817 regarding the definition of regulated substances.

927. Comment: We believe that the Department should include technical standards for closed loop systems in guidance or in § 78.56, and other places where appropriate. Many operators are already implementing this management practice. The Department should encourage and enforce the use of closed loop systems where conditions merit and where it will result in improved environmental performance and risk reduction. Technical standards will be important to ensuring these systems perform as intended. (997a)

Response: See response to comment 823.

928. Comment: Sections 78.56 and 78.57, as written, are conflicting and contradictory. Section § 78.57 (Control, storage and disposal of production fluids), states that open top structures shall not be used to store brine and other fluids produced during operation of the well. However, § 78.57 (b) also provides that the operator may not use a pit for storage of fluids or brine, with the exception of temporary storage, without adding further information. This provision is then undermined by § 78.56, which clearly allows open top temporary storages, without adding any definition of “temporary”. There is no clear indication whether it is § 78.56 or § 78.57 that will be applicable in a given situation.

Furthermore, there is no definition of ‘temporary storage’ in the regulations. In the webinar on January 3rd, 2014, a DEP staffer suggested a definition by stating that stored wastewater should be removed at the end of the drilling operation – however this is not outlined in the proposed regulations. This however illustrates the point that the DEP is not in fact banning the use of open air waste pits. As a drilling operation can last for an extended or undetermined period of time, the proposed legislation concretely does not halt the use of permanent open storage structure. In addition, this definition would imply that some storages containing waste that are not “temporary” should not be removed at the end of the operations.

Finally, these provisions also allow buried storage in certain circumstances. Buried pits can result in groundwater and other pollution, and should be prohibited. (1161, 1166)

Response: Under § 78.56(a)(1) use of pits for temporary storage is restricted to the following: drilling, altering, completing, recompleting, servicing and plugging the well. Subsection 78.56(d) requires pits to be removed within 9 months of completion of drilling. Pits used

during servicing, plugging and recompleting the well shall be removed or filled within 90 calendar days of construction.

929. Comment: **78.56** – The proposed amendments fail to include a definition of what constitutes temporary. Subsection (d) requires an owner or operator to remove or fill a temporary pit within 9 months of completion of drilling, or in accordance with an extension granted by DEP. Because there is no timeframe by which all the wells permitted for a particular well pad must be drilled, the “temporary” pit that was constructed to service that well pad could exist for many years, becoming more of a permanent fixture in the landscape. (1157, 1166)

Response: See response to comment 928.

930. Comment: We also recommend that the operator be required to submit documentation to the DEP, describing methods used to divert stormwater away from the pit, at the same time as the certification from the soil scientist is submitted. This will help to ensure that stormwater controls are in place for the pit, before any material is placed therein. (1157)

Response: Diversion of stormwater is a simple task that can be identified and corrected after construction and does not require review by the Department. In addition, erosion and sediment control issues are covered under §78.53.

931. Comment: Pits and Liners - Section 78.56 has intermittent references to unconventional operations blurring the lines of applicability for conventional operators. 9(ii) mandates that all pit liners have a minimum thickness of 30 mils. While this may be a reasonable safeguard for long-term pits on multi-well, unconventional pads, it represents an unnecessary expense and inconvenience to conventional operators whose pits are significantly smaller and are open only a fraction of the time by comparison. It can be understood that a conventional operator use a 30 mil liner in pits that they intend to encapsulate, but in situations where they intend to landfarm drill cuttings or are performing service work to an existing, producing well, the 30 mil requisite is an inappropriate standard. (12, 263)

Response: See response to comment 2627 regarding the bifurcation of the regulations. See response to comment 823 regarding temporary pits at unconventional well sites. See response to comment 880 regarding minimum liner thickness for temporary pits. The Department has documented numerous pit liner tears and other failures and believes that use of 30 mil liner is appropriate to reduce the number of liner failures at well sites.

932. Comment: Fluids related to wells should be contained in man-made facilities that prevent these fluids from contaminating groundwater (78.1, 78.56, definitions of “pit”, etc). The allowance of “natural depressions” presents the possibility of liquid being stored in holes that are insufficient protected from leakage.

Requirements for liners for containment facilities should be increased and applied uniformly. Requirements specified in 78.56 for liners are not applied consistently in other sections, such as 78.56(a)(8)-(19). Specified distances between the bottoms of storage pits and seasonal high groundwater tables are insufficient. Instead of 20”, these distances should be at least 4-5 feet. (153)

Response: Liners are required for all pits containing regulated substances. See response to comment 903 regarding the seasonal high groundwater separation requirement.

933. Comment: All fluids related to oil and gas development should be contained in engineered facilities,

not “natural depressions.” (Section 78.1, definition of “freshwater impoundment” and “pit,” Section 78.56) (19, 21, 23, 26, 55, 165, 180, 192, 391, 429a, 637, 851, 843, 868, 946, 951, 958, 1005, 1019)

Response: See response to comment 932.

- 934.** Comment: Section 78.56 should no longer authorize the use of earthen pits for temporary storage. Section 78.56 continues to allow earthen pits to be used for temporary storage of materials capable of polluting soil and groundwater. If the Department applied a best practices and best available technology standard, and compared the environmental protectiveness of available options, it would conclude that earthen pits should no longer be authorized for that purpose.

Above ground tanks and containers are more dependable. Above ground tanks and containers can be located on liners and fitted with secondary containment. Spills and leaks are more readily spotted using above ground tanks and containers, so that actions to prevent environmental harm can be taken more promptly. In addition, because the Department lacks adequate personnel to fully inspect each temporary storage pit before construction, there is little or no assurance that liners are properly installed without leaks or tears. Because there is no requirement for groundwater monitoring at temporary storage pits, it is virtually impossible for the Department to determine that a pit has leaked. Further, aside from historical practice, there is no scientific basis for assuming that twenty inches of soil is protective of groundwater across Pennsylvania regardless of where the pit is located. For all of these reasons, we urge the Department to ban the practice of allowing earthen pits to continue to be used for temporary storage of regulated and waste materials. (852a)

Response: See response to comment 823.

- 935.** Comment: Ban open pit waste impoundments (99, 149, 649, 1168)

Response: See response to comment 823.

- 936.** Comment: Article 1, Section 27 of the PA Constitution imposes an obligation upon the EQB to act as a trustee for Pennsylvania’s public natural resources. The Constitution directs the EQB to “conserve and maintain these resources for the benefit of all people. In revision Chapter 78 the EQB must consider this constitutional requirement and craft regulations that protect the corpus of the trust by preserving PA’s natural resources. Open pits needlessly threaten PA’s public resources. We urge the EQB to faithfully discharge its duty as a trustee by imposing a ban on open pits. (1166)

Response: The Department acknowledges the comment. Under § 78.56 open pits are allowed to temporarily store regulated substances and wastes from the drilling, altering, completing, recompleting, servicing and plugging wells at the well site where the substances or wastes are generated or will be beneficially used. However, under § § 78.57 and 78a.57 open top structures are not allowed to store brine and other fluids produced during the operation of a well. The EQB has determined that this appropriately protects the environment and Pennsylvania’s public natural resources together with other applicable sections of this rulemaking and other existing regulations consistent with the Commonwealth’s constitutional mandate under Article I, Section 27 of the Pennsylvania Constitution.

- 937.** Comment: Open pits should be banned. Evaporation of toxic chemicals are harmful to the environment. Technology is available for storage of well materials. (14)

Response: See response to comment 823.

938. Comment: Open storage pits should be prohibited due to the associated water and air contamination incidents. Open pits are not needed, technically or fiscally. Instead, a mandatory closed-loop system reduces spills and contamination of air/water should be used. (104, 1166)

Response: See response to comment 823.

939. Comment: The DEP should insure that the water supply (drilling sites) is protected and standards should be established for pre drilling. Water should not be left in open pits. Please establish standards to keep the water safe and the surrounding areas free from contaminates.(184)

Response: See response to comment 823.

940. Comment: Open pits for waste water storage should be banned due to recorded incidents of contamination of air, water and soil and impacts to human health. Drillers, regardless of their company's financial state, should be required to remediate any contaminated water and/or soil.(16, 46, 67, 401, 470, 595, 596, 916, 956, 1078, 1166)

Response: See response to comment 823. Spill response and remediation is regulated under §78.66.

941. Comment: Standards for frack pits and impoundments (Sections 78.56, 78.57, 78.58, and 78.59). Mounting violations and the potential for water and air pollution have already led some companies to transition away from pits and standardize the use of closed loop systems which utilize above ground tanks to store wastewater. DEP should: Prohibit operators from using open pits for storage of regulated substances, including wastewater, drill cuttings, and substances (like gels and cement) that return to the surface after fracking. Many spills, leaks, and other problems involving pits have occurred statewide that contaminate water, soil and air. Waste should be stored only in closed systems. (17, 18, 19a, 51,62,70,72, 73,79,102,104,125,135,148, 160,161, 162, 169, 200-385, 400, 471, 475, 477, 560, 564, 565, 566, 626, 632, 808, 843, 884, 886, 909, 922, 947, 492a, 992, 1000, 1039, 1047, 1058, 1068, 1078, 1086, 1098, 1102, 1139, 1160, 1161, 4582 – 4584, 17455)

Response: See response to comment 823.

942. Comment: There are many communities who think the issues of Marcellus Shale are not their problem. They live outside the Shale region and are not directly impacted by drilling and fracking wastewater. This thinking is naive and short-sighted.

Although West Chester and Chester County is not located in the Marcellus Shale region, we are downstream from the regions where fracking operations are underway and growing rapidly. Not that many years ago, it was common for people to think about only their own backyards, and not worry themselves about the problems of their neighbors. We have learned through too many tragedies starting with the Chernobyl nuclear accident, that toxins when released can blow and flow around the world. Air and water pollution does not respect national, state or regional boundaries. We all live downstream.

West Chester's water sources and public health are at risk from regional pollution. In addition, West Chester's economic development is directly connected to the success of our region and our state. My sense is that the Chapter 78 sections on "Waste Management at Well Sites" and "Off-site Issues" are the most relevant for residents of Chester County who are concerned about downstream impacts (including regulations for pipelines). It is from this perspective that I urge you to take the time necessary to make careful scientifically based decisions on waste management at well sites

and off-site.

It is important to note that the DEP considered other changes. For instance, they considered eliminating pits and underground tanks for managing wastes, but felt such restrictions were impractical. Are they really? I contend that the health of our people, our children, should be at the top of any list of standards for practicality.

The science appears to support a ban on fracking waste pits at this time. I urge you to follow the science and to ban all fracking waste pits. In addition, while many of us want all fracking to cease, we must stop expansion until the FULL effects of drilling are fully understood. Others will testify to the scientific reasons to ban all fracking waste pits. I speak for the children who are the future of West Chester. I urge you to slow down, study the science and choose only those options that are deemed to be scientifically safe for the children of West Chester and the Commonwealth. Thank you. (112)

Response: See response to comment 823.

- 943.** Comment: Pennsylvania’s continued acceptance of open pits and impoundments poses continued environmental risk. According to Finding III.4 of STRONGER, the DEP’s experience with pits has shown that although their use is decreasing, many liner failures still occur with pits. STRONGER recommends that DEP consider adopting regulations or incentives for alternative to pits to prevent the threat of pollution to the waters of the commonwealth. (886)

Response: See response to comment 823.

- 944.** Comment: The prohibition of open pits is essential to protecting the commonwealth from the proven ills associated with open pits. (886, 1110, 4744 – 5668)

Response: See response to comment 823.

- 945.** Comment: Many constituents desires to ban all types of fracking pits, both temporary and permanent, due to the negative effect that fracking has on wastewater. (1112, 10328 – 17454, 17456)

Response: See response to comment 823.

- 946.** Comment: Pennsylvania’s regulations (Sections 78.56, 78.57, 78.58, and 78.59) should reflect industry best practices, and require the storage of wastewater, flowback, and other contaminated fluids in closed loop systems. Using tanks to store fluids is a reasonable requirement for drillers, who must eventually remove the fluids in containment tanks. Other states such as Maryland, New York and New Mexico already have developed regulations requiring the use of closed loop systems so the proposed regulations lags behind current regulatory advances in other states. (853a, 1100)

Response: See response to comment 823.

- 947.** Comment: DEP does not require individual permits for the use of drilling and production pits (although it does for centralized impoundments)—allowing operators to avoid, for example, providing information on the number, location, and capacity of pits at well sites, as well as complete planning for waste management at the outset of site development. This permitting gap in turn means that pits can be “rolled into” the construction, use and restoration standards for well

sites in general rather being subject to considerations that can increase the safe operation of pits* such as soil stability and setbacks from water resources. Such lax regulatory oversight is unacceptable given that drilling wasted stored at pits and impoundment can be contaminated with chemicals, barium, strontium, heavy metals, radioactive materials and other substances. (853a)

Response: See response to comment 875.

- 948.** Comment: The Department has issued notices of violation in the area of improper management and disposal of drill cuttings at 48 well sites statewide between January 2010 and August 2013. The violations were issued for a range of problems. These documented examples of environmental harms only reflect what is known to have occurred and instance in which problems were recorded by DEP as violations. Because DEP is under staffed, it is virtually impossible for the Department to detect, let along prevent such problems.

**Rachel Carson State Office Building
P.O. Box 8765
Harrisburg, PA 17105-8765
September 17, 2013**

Bureau of Oil and Gas Management

**717-772-2199
Fax 717-772-2291**

CONTACT NAME
COMPANY
STREET ADDRESS 1
STREET ADDRESS 2
CITY, STATE, ZIP

Dear Marcellus Shale Gas Well Operator:

Department inspectors have been documenting a number of violations pertaining to the operation of open pits used for the management of drilling and fracturing fluids at Marcellus Shale wells sites. These violations, which have included both the over topping and leaking of pits, have resulted in the contamination of both soil and the waters of the Commonwealth. Several Marcellus Shale well operators have expressed a desire to move towards a pitless drilling and fracturing system to more effectively manage these fluids in an environmentally sound manner. The management of drilling and fracturing fluids in tanks, rather than open pits, could significantly reduce the possibility of a release of industrial waste to the environment.

Department records indicate that you have drilled at least one gas well into the Marcellus Shale formation within the past year. Department of Environmental Protection Secretary John Hanger respectfully requests that you provide the Department with information regarding what steps, if any, your company has taken to convert to a pitless drilling and fracturing system. Please provide this information to the Department, to my attention at the address above, by October 7, 2010.

If you have any questions, please contact me at 717-772-2199. Thank you for your cooperation in this matter.

Sincerely,

Scott R. Perry
Director
Bureau of Oil and Gas Management

(853a)

Response: See response to comment 823. The Department believes that the current temporary storage requirements are appropriate and recognizes the need to maintain an in-field presence at well sites to ensure that waste is appropriately managed. Staff levels have increased as a result of the well permit fee increase in June 2014 and the Department believes that staff levels are adequate to conduct necessary inspections.

949. Comment: In a September 17, 2013 letter from Director Scott Perry the Department clearly acknowledges the inherent environmental risks of open waste pits – making it illogical and dangerous to continue to allow the practice under Chapter 78. In that letter Director Perry also emphasizes the importance of eliminating pits by saying “Several Marcellus shale well operators have expressed a desire to move towards a pit-less drilling and fracturing system to more effectively manage these fluids in an environmentally sound manner. The management of drilling and fracturing fluids in tanks rather than open pits could significantly reduce the possibility for a release of industrial waste to the environment. This official view by the agency should be reflected in the proposed revisions. (853a)

Response: See response to comment 823.

950. Comment: DEP must NOT allow the storage of wastewater in open pits or impoundments but require the use of closed loop systems based on tank storage, with a backup system to contain and detect leaks, the current best practice standard.(399, 891, 922, 992, 1068)

Response: See response to comment 823.

951. Comment: Open pit storage of regulated substances should be prohibited as should onsite processing drill cuttings. (1148)

Response: See response to comment 823.

952. Comment: A better remedy for the problems created by open pit storage of hazardous waste—one that I would like to see instituted at Beaver Run Reservoir -- would be to require a closed-loop system for handling onsite wastes. The US Department of the Interior advises of pits:

“Use of enclosed tanks and closed loop or semi-closed loop systems is environmentally preferable to the use of open pits.... Open production pits are to be strongly discouraged. Closed tanks and systems minimize waste, entry by wildlife, fugitive emissions that affect air quality, and reduce the risk of soil and groundwater contamination. In addition, the use of tanks instead of pits expedites the ability to complete interim reclamation. Costs may be reduced with the use of tanks, particularly when the pit requires solidification or netting.”

Our review of oil and gas compliance reports, including inspector comments from site visits and violations issued, revealed that problems with waste pits are very common. Eliminating these pits would allow inspectors to spend more time monitoring other areas of concern and would remove the waste pit as a source of contamination. I call on DEP to eliminate the onsite storage of toxic materials in open pits. (402)

Response: See response to comment 823.

953. Comment: Since the technology already exists to contain containments in closed looped systems and tanks, then I urge DEP to propose in their regulations the requirement for closed loop

systems. All open pits should be banned including temporary pits. The suggested 9 month allowance is also too long for temporary storage pits and these should also be prohibited. (848, 922)

Response: See response to comment 823.

954. Comment: The regulations should prohibit the use of open pits or impoundments for storage of fluids, drill cuttings and other wastes. Anything less than closed loop fluid management should not be allowed. These restrictions should not only apply to new operations but should be applied to continued use of existing pits and impoundments as well. (930, 1083)

Response: See responses to comments 823 and 830.

955. Comment: Given the availability of closed loop systems, the use of pits and open topped tanks should be banned for short term storage due to their history of spills and leaks and the potential for air pollution. Some of these pits and tanks have even caught on fire. Many operators are already using closed loop systems. Other operators should be required to adopt these “best management practices. (1066, 1089, 1229)

Response: See response to comment 823.

956. Comment: I wish express concern about section 78.56 which deals directly with soil science. This section states either soil scientists or a “similarly trained person” may do the soil tests to determine the depth to the soil water table. This is undefined at best and would allow SEOs, E&S technicians, or geologists to determine seasonal high water tables in soils. Evaluation of redoximorphic features (mottling) is a skill that requires both field experience and a scientific background in soils.

Additional changes to the regulations that concern me include deleting the definition of a season high water table, though the term continues to use the term throughout the document. (101)

Response: The regulation is written to allow appropriately trained individuals to determine the depth to the seasonal high water table. The Department has not proposed to delete the definition of “seasonal high water table.”

957. Comment: Section 78.56 allows open pits to be used as temporary storage structures for containment of wastes used in the hydraulic fracturing process. Open pits are not acceptable as either temporary or permanent storage structures. Heavy precipitation or earth movement such as from earthquakes or nearby fracking operations could cause wastes in open pits to be released into the surrounding environment including the groundwater. Potentially dangerous substances should be stored in closed containers that have been designed to safely sequester such substances. These containers should be approved by the DEP or engineers hired by DEP at the expense of the well drilling company.(108, 405, 406)

Response: See response to comment 823.

958. Comment: What about wastewater storage in open pits? (Section 78.56) Although DEP regulations allow this kind of storage, better methods should be used in order to avoid contamination. Laws have recently been passed in Illinois that hydraulic fracturing flowback and produced water should be stored in tanks above ground for temporary purposes. Constant monitoring is required to avoid pollution of nearby streams.(111)

Response: See response to comment 948.

959. Comment: Section 78.56 – One of the sources of water contamination is the open pits that hold flowback water. These open pits should be prohibited because inadequate or faulty liners can allow this toxic flowback water to seep underground. Heavy rains, such as those happening around the country, can cause these pits to overflow. Both of these situations have the potential to contaminate our aquifers.(129, 949)

Response: See responses to comments 823 and 855.

960. Comment: No surface impoundments, as open ponds could expose birds and land animals to toxic chemicals, and leaks through faulty liners, floods and overflows could pollute streams, soil, and aquifers for decades or centuries. (156)

Response: See response to comment 823. Onsite pits utilized by the conventional oil and gas industry are significantly smaller and are left open for significantly shorter periods of time than onsite pits used at unconventional oil and gas well sites. As a result of the reduced size and limited timeframe, the Department does not believe that temporary onsite pits at conventional well sites pose a significant threat to birds and land animals. Additionally, federal laws which are administered by the U.S. Fish and Wildlife Service have been enacted to protect migratory birds.

961. Comment: I live in Oklahoma where these fracking pits abound. I can tell you from personal experience that they devastate wildlife (which mistakes it for safe water), but also contaminate soil, contaminate surface and ground water when they overflow and leak, and send toxins into the air that can affect people and animals for miles downwind.(159)

Response: See response to comments 823 and 960.

962. Comment: Please take measures to prevent pollution from frack pits. Waste should be stored in closed systems that utilizes above-ground tanks not open pits.(163, 494)

Response: See response to comment 823.

963. Comment: Processing of residual waste should be done in a ‘closed-loop system’ to prevent contamination. Open pits should not be permitted for regulated substances or for water from mining or sewage. All drilling fluids should be stored and transported in secure containers to be recycled for future drilling at permitted recycling facilities or to be disposed of at licensed landfills where adequate monitoring is provided.(182)

Response: See response to comment 823.

964. Comment: DEP should NOT allow the storage of wastewater in open pits or impoundments. (185, 187, 843, 868, 5782 – 5785)

Response: See response to comment 823.

965. Comment: In addition to the modular tanks receiving prior DEP approval, the tanks must be inspected, the oil and gas company must provide written documentation of date and time of last inspection as well as the name and signed signature of the mechanic inspecting such unit. The person

who inspected the unit shall be held liable, as well as their employer, for any deficits to said storage units punishable under criminal law. (189)

Response: Under §§ 78.56(a)(6) and 78a.56(a)(6), pits, tanks and other approved storage structures must be maintained to be structurally sound and reasonably protected from unauthorized acts of third parties. Operators are required to outline their monitoring and inspection requirements and frequency in site specific PPC Plan under §§ 78.55 and 78a.55.

966. Comment: Open impoundments that store flowback water used in the fracking process pose a health risk to nearby landowners from pollutants that evaporate or degrade from chemicals in pits, or are released into the environment and vaporized into a community's air. For instance, multiple residents in southwest PA who live near a centralized wastewater impoundment had blood and urine analyzed and were told by doctors that they had chronic exposure to volatile organic compounds (VOCs). Some doctors believed their patients' levels were high enough to advise moving away from the impoundments. I support DEP's ban of central wastewater impoundments, but even so-called temporary impoundments storing hazardous chemicals can still have serious health and environmental impacts, are not needed and should not be allowed. While I believe that no allowances should be made for open storage pits, the suggested 9 months would be far too long to allow for temporary storage at a drilling site.

There are many justifications for why DEP should ban all open wastewater impoundments. The technology exists to properly contain hazardous substances in closed-looped systems and tanks immediately after fracking and completion occurs, as some companies in Pennsylvania are already using it. North Dakota and Illinois have already implemented bans on open wastewater impoundments except for emergency situations. Even the conservative and industry supported Center for Sustainable Shale Development includes in their standards a condition to use closed-loop systems to eliminate the use of pits for all wells. In addition, DEP should prohibit operators from storing any solid wastes such as drill cuttings in open pits. Drill cuttings can contain radioactive materials that pose serious health risks to workers and nearby residents. (119,242a,629,950)

Response: See response to comment 823.

967. Comment: DEP regulations continue to allow the storage of wastewater in open pits or impoundments. Open pits are a recipe for disaster and the state needs to ban them altogether. Existing impoundments should be cleaned up and closed. Hydraulic fracturing fluid, flowback and produced water at well sites should be stored in above ground tanks during all phases of drilling and treated as the hazardous waste that it is. (635)

Response: See responses to comments 823 and 830.

968. Comment: Water Used for Fracking (i.e. water to be sent into well) :

- Regulations should not permit open containers or "pits": all fluids should be contained only in closed tanks and closed loop systems.
- The tanks and closed loop systems should be permitted only for a designated, limited time, e.g., during weeks of fracking.
- This water should not be called "fresh water." (609, 938, 938a)

Response: See responses to comments 823 and 830. Some water sources for hydraulic fracturing are freshwater sources.

969. Comment: No open pits, or "frack pits", should be allowed on well sites; no hazardous substances in

pits. No onsite processing of drill cuttings; these cuttings can contain toxic and radioactive materials. No mixing and storage in open impoundments of “reused” or “recycled” water from fracking and drilling with clean water for use in additional operations; “freshwater” Is not defined, leading to “freshwater” impoundments with regulations that do not address their hazardous contents. (787, 843, 1030, 1030a, 1064, 1068, 1073-1077, 1079-1082, 1084, 1101, 1158, 1168, 4584 – 4650, 5936-6089)

Response: See response to comment 823. Freshwater, when mixed with regulated substances is no longer freshwater and cannot be stored in a freshwater impoundment.

970. Comment: We should have no open pits for the storage of chemicals, waste and liquids. But we should have closed-pit recycling. (845)

Response: See response to comment 823.

971. Comment: As you know, the wastewater contains toxic chemicals, metals, .many unknown chemicals, and sometimes radioactive particles. Open pits as storage are an extreme hazard to the health of humans and wildlife. You know from your own records of violations that the liners in those pits LEAK because of inadequate anchorage or the pit overflows because of heavy rains or several other reasons. The toxins in the wastewater will contaminate soil streams nearby or seep into aquifers. In addition, the toxins evaporate into the atmosphere before the wastewater is hauled away, which results in air pollution. I suggest your regulations:

- Prohibit drillers from using open pits for storage of waste water, drill cuttings and all other substances that return to the Surface with the fracking fluid.
- Require drillers to use ONLY closed system storage. (865, 912, 1215)

Response: See response to comment 823.

972. Comment: Determination that a pit bottom is 20 feet above seasonal high water table should be done by an accredited *independent* professional, as is done with pre-drilling water tests. Or consider county Emergency Management personnel. There should be a requirement that they be given a copy of the PPC plan, since they are directly affected by it. (869)

Response: See response to comment 899. PPC plans must be available onsite. Existing regulations under § 78.55 require unconventional operators to submit an emergency plan to county Emergency Management Agency.

973. Comment: As a better environmental and community friendly practice, we support the use of modular above ground containment structures. One operator in Susquehanna County has utilized such structures already [Cabot]. These structures are a viable method to replace the lingering practice of flowback/wastewater earthen impoundments still utilized by an operator within our region. [OHara Centralized Wastewater Impoundment, SWN, Jackson Twp., Susquehanna County, Permits 95- 29-65420-021 and ESG13-115-0126]. We recommend the provisions related to modular above ground containment structures as they can assist operators in their recycling methods and water storage and are a better environmental practice near our homes. (660a)

Response: The Department acknowledges the comment.

974. Comment: The storage of contaminated (to any degree) frack wastewater or drill cuttings should be prohibited. (912)

Response: Proper storage of wastewater and drill cuttings is a necessary component of environmentally protective waste management.

975. Comment: Open air pits used as interim holding area should be prohibited. The contaminated water should be contained in liquid tight containers prior to decontamination treatment and only after treatment should the water be allowed to reenter the ecosystem. This treatment at the point of origin is the most effective and lowest cost method to ensure the safety of the water supply. As we have recently seen in WV's Elk River incident, once chemicals enter the water supply clean up at the point of use is difficult and perhaps impossible. In addition, the cost of needing to replace the entire water distribution system could be enormous and needs to be avoided by instituting a point of origin treatment standard. I would appreciate a reply addressing my concerns and recommendations. (959)

Response: See response to comment 823.

976. Comment: Pits. Temporary or permanent. storing waste of any form including flowback water or contaminated drill cuttings should not be permitted anywhere in the state of Pennsylvania. The standards state that residual waste including contaminated drill cuttings may be disposed of on site.

The US Department of the Interior, advises of pits: "Use of enclosed tanks and closed loop or semi-closed loop systems is environmentally preferable to the use of open pits and is to be encouraged by the BLM. Open production pits are to be strongly discouraged. Closed tanks and systems minimize waste, entry by wildlife, fugitive emissions that affect air quality, and reduce the risk of soil and groundwater contamination. In addition, the use of tanks instead of pits expedites the ability to complete interim reclamation. Costs may be reduced with the use of tanks, particularly when the pit requires solidification or netting."

Waste pits are banned in New Mexico. According to news articles: Antero in Colorado State does not utilize pits, but a closed loop system. Chief and Rex Energy have moved to all closed loop systems. Andarko Petroleum uses close loop systems in Pennsylvania. The EPA Star program recommends a closed loop system. But Pennsylvania's *new, proposed* regulations allow the continuance of frack pits, inviting further pollution and contamination of waters.

Presently DEP permits leakage of toxic chemicals onto residential properties and farmlands from the pits, the amount of leakage permitted being determined by the depth of the fluid in the pits. There should be no legally allowed leakage of fluids onto surrounding land areas.

The proposed regulations will not help to prevent flooding, spills, and leak violations that are commonly occurring.

Stating a required footage of freeboard provides little protection. Violations due to overflow of the required freeboard occur on a regular basis, companies repeatedly are charged with the same violations, and fines are limited or non-existent.

How will condensate tanks be monitored? All gas facilities including tanks, pits, wells, and compressor stations should have monitors designed and operated by a third party, functioning 24 hours a day, and recording findings that are directly available to the DEP and public.
Fumes from tanks must be recaptured so not to pollute the air.

The gas industry should not be responsible for conducting this monitoring but should be financially responsible for payment of the implementation and conduction of that process. (912, 926, 938)

Response: See response to comment 823. Pits are not permitted to leak under any circumstance. Violations for failure to maintain 2 feet of freeboard do not imply that these violations cause containment structures to overflow on a regular basis.

977. Comment: The water prepared to be put into the well is highly variable in chemistry. It can easily contain enough hazardous chemicals to contaminate the site; thus it must be in closed containers.

Note that the requirement for closed containers/closed loop systems will avoid the use of “natural topographic depressions” within the definitions of an allowed “pit” and/or “freshwater impoundment.” No regulations should allow fluids related to oil and gas operations to be managed in “natural depressions.” All temporary and permanent impoundments, storage tanks, pits, that collect discharges from wells must be tested at least quarterly. (938, 938a)

Response: See responses to comment 823 and 932. Water quality monitoring of the contents of temporary pits is not required due to the temporary and transient nature of the pit contents.

978. Comment: Shouldn't the trucks that transport fluids from temporary tanks have to bear the same identification plaques as the tanks? (939)

Response: Chapter 78 does not regulate residual waste transportation. All trucks transporting residual waste are subject to the regulations in Chapter 299.

979. Comment: Under the sections on pits and impoundments, it indicates that at least 2 feet of freeboard space be allowed. This is only two inches more than two sheets of this paper placed end to end. This is not adequate space to prevent potential overflow of the impoundments nor of the standby tanks or pits (945).

Response: Two feet of freeboard is an appropriate standard and must be maintained at all times.

980. Comment: Even with a person continually present at a well site, a fence should surround all impoundments. Many of these impoundments are too large for one person to ensure that no wildlife - or children - get too close or fall in. Bird nets should also be mandatory in order to keep wildfowl out. (945)

Response: See response to comment 960.

981. Comment: Tests for liner compatibility - It is essential that it be demonstrated that liners will not be dissolved by the chemicals they contain. How will these be tested in advance when impoundments contain drilling chemicals, water, heavy metals and other substances from below the surface and when no one seems to know the chemical compounds and reactions that are formed among all of this AND when impoundments are often used for chemicals from multiple wells and each well may have a different cocktail of chemicals used, which then produces yet MORE unknown compounds and chemical reactions? It seems inevitable that liners will eventually fail due to chemical assault, to say nothing of tears from equipment, wildlife, and seam failure. (945)

Response: See response to comment 904.

982. Comment: While the regulatory efforts in this document seem to be focusing on the prevention of water pollution, which is an excellent step, there needs to be as much, if not more emphasis on air

pollution from these impoundments. High levels of VOCs are common from these installations. Given their close proximity to residences, people will be exposed 24/7 to fumes coming off of these installations. This is clearly unsafe and unwise. Steps must be taken to dramatically reduce or eliminate entirely the fumes being emitted from these impoundments and pits. (945)

Response: Air quality issues are addressed under Article III and the outside of the scope of this rulemaking.

983. Comment: We recognize the Department may consider allowing temporary storage of brines or produced water to facilitate recycling in future hydraulic fracturing. If so, storage should only occur at permitted and bonded well sites with robust leak detection, secondary containment, capacity and time limit measures. (997)

Response : See response to comment 823.

984. Comment: The pit requirement for a slope no steeper than 2 horizontal to 1 vertical for conventional wells which are small (contain less than 100 BBL of fluid) and are used for a short period of time (1-2 days) results in substantial larger areas of disturbance and greater costs without benefit.

The requirement for conventional operators to retain soil scientists for certification of pit bottoms relative to the seasonable ground water table adds a significant cost for operators. A performance standard would be appropriate. (998)

Response: See response to comment 821 with regard to pit slopes. The requirements in § 78.56(a)(10) do not include certification of the depth to the seasonal high groundwater table by a soil scientist or other similarly trained person.

985. Comment: We want all pits, especially regarding the use of contaminated substances to be eliminated. Pits do not provide for adequate environmental protection in watershed such as the Mehoopany Creek. We do support the use of modular aboveground storage structures. We also support fencing as proposed. (1035)

Response: See response to comment 823.

986. Comment: The proposed regulations do not sufficiently define allowable modular and aboveground waste structure, nor consider whether their use should be restricted or prohibited under certain conditions. These gaps must be corrected before the revisions are finalized. The proposed regulations should specify the procedures, information, and data that the DEP would use to determine whether or not these structures would ensure protection of water and air quality. (853a)

Response: See response to comment 849.

987. Comment: The proposed regulations do not even acknowledge or address the construction of large tank farms and tank pads. The proposed regulation should clarify that operators would be required to obtain a waste management permit (WMRG123) as well as any other relevant permits and requirements related to E&S control, land disturbance, setbacks and air quality and other concerns. DEP should also consider whether these tank facilities would be large enough or constructed in such a way as to require regulation under 25 Pa. Code Chapter 105. (853a)

Response: Section 3273.1 of the 2012 Oil and Gas Act waives the obligation to obtain a waste permit and post a bond for any “pit, impoundment, method or facility employed for the

disposal, processing or storage of residual wastes generated by the drilling of an oil or gas well or from the production of wells which is located on the well site.” This waiver is conditioned on the well being permitted, the operator having a bond and the operator maintaining compliance with the 2012 Oil and Gas Act and Chapter 78 or Chapter 78a. Any other permits the operator is required to obtain for example “ESCGP-2” are required to maintain compliance with Chapter 78 or Chapter 78a.

988. Comment: Please take care of our water supply by stopping the use of open air frack pits. Unfortunately the government in PA has no regard for our environment. We, the citizens pay our taxes and deserve our water supply and overall environment to be safe. Please do your part to make it happen for us and future. (1045)

Response: See response to comment 823.

989. Comment: Although storage is contemplated to be of a duration of less than 9 month (§ 78.56(d)), time extensions can be issued with the possibility of temporary storage being in service for longer than one year. Procedures should be in place to routinely monitor the integrity of tanks and lining of pits. The following text is recommended. (997a)

- Pits – The liner of a pit with a single liner shall be inspected when the pit has been in service for one year and annually thereafter. The inspection shall be completed by emptying the pit and visually inspecting the liner. If the operator does not propose to empty the pit and inspect the pit liner on at least an annual basis, the operator shall install a double liner and leak detection system. The leak detection system must meet the requirements of § 78.59c(e)(3). (997a)
- Tanks – Each aboveground tank (including modular aboveground storage structures) shall be inspected when the tank has been in service for one year and annually thereafter. The inspection shall be completed by emptying the tank and visually inspecting the inside of the tank. If the operator does not propose to empty the tank and inspect the inside on at least an annual basis, the operator shall install a leak detection system to monitor the integrity of the tank and all interconnected piping on a monthly basis. (997a)

Response: See response to comment 823. The Department disagrees that the scope of monitoring proposed in the comment is necessary to ensure environmental protection.

990. Comment: For pits, the Department should require the use of approved equipment or practices to prevent access by wildlife for which fences are not an adequate deterrent (e.g., cover netting for avian species) (997a)

Response: See response to comment 960.

991. Comment: The Proposed Regulations should: (1) ban the use of pits and open-top structures for storage of regulated substances and wastes; (2) ban the use of centralized impoundments for storage of hazardous materials. §§ 78.56, 78.57, 78.59c address requirements regarding the containment, processing, and storage of regulated substances and wastes associated with well site development and drilling operations. On January 9, 2014, the League of Conservation Voters submitted comments (the “LCV comments”) asking for the Proposed Regulations to impose an across-the-board ban on the use of open pits for waste- storage. I support the LCV comments, which were reiterated by dozens of other commentators, because adopting this approach will strengthen environmental protections as well as impose more predictable and enforceable requirements.

§ 78.56 gives drilling operators the option to temporarily store regulated substances and wastes in

either pits or tanks. Whereas, § 78.57 bans the use of open top structures and pits to store brine and other production fluids, except where permitted by The Clean Streams Law. Both sections dedicate most of their subsections to describing elaborate and prescriptive standards for the approval and construction of pits. Given the scarcity of the DEP's resources, compared to the rate at which new well sites are being developed by drilling operators, it is unrealistic to expect the DEP to efficiently enforce these elaborate standards. Regulations that overburden the DEP with the need to make case-by-case determinations may be even worse than having no regulations at all, because not only do such regulations lead to lax enforcement and raise the risk of environmental harm, but they contribute to a situation where the DEP is perpetually short on resources, understaffed, and without the means to take a proactive approach to enforcing the mandate of the ERA.

On January 22, 2014, the Clean Air Council submitted comments (the "CAC comments"), "calling for a complete ban on open [centralized] wastewater impoundments." See § 78.59c. On January 9, 2014, and on January 19, 2014, both Penn Future and the Appalachian Mountain Club submitted comments (the "Penn Future comments," the "AMC comments") that were amendable to some use of centralized impoundments to store wastewater, but called for enhanced setback requirements. I support a complete ban on centralized wastewater impoundments. In the alternative, I support enhanced setback requirements, specifically with respect to extending setback requirements to all bodies of water. (1070)

Response: The Department has amended the final rulemaking to ban the use of pits for temporary waste storage at unconventional well sites. The Department has determined that it is appropriate to remove this practice because it is not commonly used by unconventional operators. Additionally, the typical type and scope of use by unconventional operators is generally incompatible with technical standards for temporary pits prescribed under §78.56. Conversely, the typical type and scope of use by conventional operators is generally compatible with the technical standards for temporary pits prescribed under §78.56. The Department believes that the technical standards for temporary pits prescribed under §78.56 ensure protection.

See response to comment 1251 regarding Centralized Impoundments.

See response to comment 231 regarding setbacks from waterbodies.

992. Comments: Waste pits are an abomination and should be banned. Some states have already recognized the harm to the environment they have caused and have banned them. Evaporating chemical mixtures of a non-descript nature pose serious health risks to workers as well as residents, not to mention the wildlife that come in contact with this slurry of toxins. Leaking liners and flooding of pits that cannot be controlled contaminate ground water and eventually reach aquifers. Fences and gates do not keep this horrible liquid confined. (1072)

Response: See response to comment 960.

993. Comment: The Department is updating the requirements for both temporary and long-term waste management related to oil and gas development with its proposed Rule. Site containment systems and practices are a key component to reducing potential threats of pollution to the Waters of the Commonwealth as are many of the spill reporting requirements and other practices such as the allowances for large volume modular tanks. Several of the proposed regulations are developed based on sound field experience. (1085)

Response: The Department acknowledges the comment.

994. Comment: Drilling company operators should be prohibited from using open pits for waste storage. (1088)

Response: See response to comment 823.

995. Comment: Limit storage and containment to closed tanks to reduce health hazards and environmental risks; reinsert the word polluttional rather than regulated substances given loopholes in regulations relative to the oil and gas industry; and omit the use of pits, and other approved storage structures throughout the section on containment. [78.56] (855, burden on taxpayers, 1098)

Response: See response to comments 817 and 823.

996. Comment: We represent 72 firms and agencies dealing with the proper development and use of geosynthetic materials including “synthetic flexible liners” which are called “geomembranes” by many other organizations. Among our 18 agency members is the Pennsylvania Department of Environmental Protection with Steve Socash as our contact person. See our website at www.geosynthetic-institute.org for details. This communication has two major points which we ask you to seriously consider as you go forward with your regulations.

- a. The original Subchapter C -Environmental Protection Performance Standards has a 1×10^{-7} cm/sec maximum permeability for the synthetic flexible liner being used. This is a ridiculously high value and represents a typical clay or silt soil. Geomembranes have permeabilities down to 1×10^{-13} cm/sec and should be referenced and regulated as such. The agency is confusing everyone (including the public) by having such a high value representing the liner material for all types of containment pits.
- b. The proposed January 15, 2014 regulation banning the use of lined pits is completely inappropriate. A properly lined geomembrane pit manufactured with polymers such as high density polyethylene (HDPE) will outlast steel storage tanks by decades.’ Attesting to this established fact is that all landfills and surface impoundments for nonhazardous and hazardous solid and liquid wastes are lined accordingly. Their performance has been documented over time and with the use of double lined systems allows for the development of an “action leakage rate” for ultimate security of adjacent land and waters.” Your proposed banning of geomembrane lined pits for flowback and production drilling waters flies in the face of the entire solid and liquid waste technology as practiced by the U.S. EPA and every state agency (including Pennsylvania) as well.

As a Pennsylvania resident my entire life and working with the PADEP since its original founding, I ask you to re-consider your stance insofar as pit lining for flowback and production waters at drilling sites and operations. As you likely know the potential for contamination of these drilling fluids pales into insignificance in comparison to hazardous, and even nonhazardous, leachate from the solid and liquid waste industries.

RESUME

Robert M. Koerner, Ph.D., P.E., NAE
<robert.koerner@coe.drexel.edu>

I. Personal

Date of Birth: December 2, 1933
Married: Wife – Pauline W. Feuerer
Children – Michael R. Koerner (October 2, 1960)
George R. Koerner (February 15, 1962)
Pauline K. Limberg (August 17, 1964)
Grandchildren – David, Paula, Addie, Robert, Max, Helena
Residence: 130 Wood Road, Springfield, Pennsylvania 19064

II. Education

B.S.C.E. – Drexel Institute of Technology – Philadelphia, PA - 1956
M.S.C.E. – Drexel Institute of Technology – Philadelphia, PA - 1963
Ph.D. – Duke University – Durham, NC - 1968

Additional Studies

Soil Mechanics @ Columbia University – New York, NY – 1956-59
Law @ Temple University – 1964
Mathematics @ University of Delaware – Newark, Delaware – 1964-65

III. Teaching Experience

1964 – 1965	Instructor, School of Engineering Pennsylvania Military College, Chester, PA
1965-1967	N.S.F. Teaching Intern in Civil Engineering Duke University, Durham, North Carolina
1968 – present	Drexel University: Assistant Professor - 1968 Associate Professor - 1971 Professor - 1975 H. L. Bowman Professor - 1984 Emeritus Professor - 2003

IV. Institute Experience

1986-present	Founder/Director – Geosynthetic Research Institute
1995-present	Founder/Director – The Geosynthetic Institute

V. Industrial Experience

1956 – 1960	- Engineer and Superintendent (highway and heavy construction in PA, NJ and NY.) The Conduit and Foundation Corp., Philadelphia, PA
1960 – 1962	- Engineer – Analyst (involved in all aspects of soil consulting practice), Dames and Moore, Consulting Soil Engineers, New York, NY
1962 – 1963	- Engineer and Superintendent (industrial foundation design and consultation, and general heavy construction), J. J. Skelly, Inc., Media, PA
1968 – 1986	- Private consultant in Geotechnical and Foundation Engineering, Powder Metallurgy, Powder Processing and Behavior, Nondestructive Testing, Geosynthetics, Professional Witness Investigations and Legal Testifying: (Incorporated as Geotechnical Research Inc., 1976)
1986 – present	- Advisory consultant in geosynthetics to member organizations of the Geosynthetic Research Institute/Geosynthetic Institute

VI. Professional Memberships

American Society of Civil Engineers (ASCE)
American Society for Testing and Materials (ASTM)
International Geotextile Society (IGS)
North American Society of Geosynthetics (NAGS)
Registered Professional Engineer (PE) Pennsylvania #19855-E

VII. Publications (author or co-author)

Books, Book Chapters, Major Reports	-	79
Refereed Journal Articles	-	156
Conference Proceedings Papers	-	226
Misc. Papers and Articles	-	<u>118</u>
		579

VIII. Funding Experience (some with others)

Geotechnical Engineering	\$1,140,000	
Nondestructive Evaluation	1,600,000	■
Geosynthetics		
- environmental related	3,090,000	
- transportation related	840,000	
- industrial consortium	<u>8,000,000</u>	
	\$14,670,000	

IX. Major Professional Offices and Honors

Chairman	-	American Society for Engineering Education (ASEE) – 1974-1975
President	-	Philadelphia Section, American Society of Civil Engineers (ASCE) – 1975-1976
Recipient	-	Outstanding Educators of America – 1972
Recipient	-	Lindback Award for Distinguished Undergraduate Teaching at Drexel University – 1974
Co-Recipient	-	Industrial Research IR-100 Award, Earth Dam Spill Alert Device – 1977
Recipient	-	Inter Fraternity Association Undergraduate Teaching Award – 1977-1978
Recipient	-	Delaware County Chapter, Pennsylvania Society of Professional Engineers, Engineer-of-the-Year – 1978
Co-Recipient	-	1 st Neal Rice Award – Intl. Briquetting and Agglomeration Society - 1979
Recipient	-	Western Electric Fund Award American Society of Engineering Education, 1980
Recipient	-	Delaware Valley, Engineer-of-the-Year, 1981
Recipient	-	Honorary Doctorate of Engineering Science, Spring Garden College, Philadelphia, PA and Commencement Speaker, 1981
Recipient	-	Civil Engineer-of-the-Year, Philadelphia, PA – 1989
President	-	North American Geosynthetics Society (NAGS) – 1989-1991
Recipient	-	Honorary Member in the American Society of Civil Engineers (ASCE) – 1992
Recipient	-	1 st Mercer Lecture (IGS/ISSMFEE) – 1992
Recipient	-	Award of Merit and Fellow (ASTM) – 1994
Recipient	-	Award of Merit in Design (IGS) – 1994
Co-Recipient	-	Award of Excellence (NAGS) – 1995
Recipient	-	32 nd Terzaghi Lecture (ASCE) – 1996
Co-Recipient	-	1 st T. Allen Haliburton Award (ASTM) – 1996
Recipient	-	1 st Giroud Lecture (IGS) – 1998
Member	-	National Academy of Engineering – 1998
Co-Recipient	-	3 rd T. Allen Haliburton Award (ASTM) – 1998
Recipient	-	1 st Burmister Lecture (Columbia Univ.) – 1999
Recipient	-	2 nd Terzaghi Lecture (TU Vienna) - 1999
Recipient	-	8 th Kersten Lecture (Univ. Minnesota) – 2000
Co-Recipient	-	James R. Croes Medal (ASCE) – 2000

Recipient	- 4 th George Sowers Lecture (Geo. Tech) – 2001
Recipient	- 2 nd CAEE Department Alumni Lecture (Drexel Univ.) – 2001
Recipient	- 10 th Jack Hilf Lecture (Univ. Colorado) – 2002
Recipient	- 2 nd U.K. Geosynthetics Lecture (ICE-London) – 2002
Recipient	- College of Engineering Lifetime Achievement Award (Drexel University) – 2003
Honoree	- Symposium on Research Legacy of R. M. Koerner at Drexel University – 2004
Recipient	- 10 th T. H. Wu Lecture (Ohio State Univ.) – 2005
Recipient	- 4 th U.K. Geosynthetics Lecture (ICE-London) – 2005
Honoree	- Robert M. Koerner Symposium on Geosynthetics, ASCE Mechanics Division, Baton Rouge, LA – 2005
Recipient	- 7 th Burmister Lecture (Columbia University) – 2005
Recipient	- Award of “Hero” of GeoInstitute of ASCE – 2005
Recipient	- Drexel University College of Engineering, Engineer-of-the-Year – 2006
Recipient	- 1 st Theodore Sigmon Lecturer (Natl. Acad. Bldg. Insp. Engrs.) – 2007
Recipient	- 11 th Robert L. Schiffman Lecturer (Cornell University) – 2007
Recipient	- 3 rd H. C. Nutting Lecture (Cincinnati, OH) – 2007
Recipient	- 2 nd Distinguished Lecture (Colorado State University) – 2007
Participant	- External Advisory Council (University of Delaware) – 2006 to 2008
Honoree	- Honorary Membership in International Geosynthetics Society – 2008
Recipient	- Diplomat – Geotechnical Engineers Certification – 2009
Co-Recipient	- Best Paper in Journal of Geotextiles and Geomembranes – 2010
Member	- Worcester Polytech Deans Advisory Council – 2011

(1114)

Response: The Department acknowledges the comment. The Department disagrees that the standard for permeability of 1×10^{-10} cm/s is too high. See response to comment 823.

Sections 78.57 and 78a.57 eliminate the use of pits and all other open top structures for the collection of production fluids during the operation of the well. The Department believes that the requirements for control, storage and disposal of production fluids are appropriate to ensure protection. Control, storage and disposal of fluids during other times is regulated pursuant to §§ 78.56 and 78a.56.

997. Comment: The proposed language related to securable tank valves, access lids and other equipment should be clarified to reflect the differences between conventional and unconventional well sites. Furthermore, the language regarding securable equipment should be revised to specify that these upgrades will be required only at new sites and at existing sites when the useful life of the current equipment ends and an upgrade is necessary. (1113, 1115a, 1118, 1120, 1176-1188)

Response: The Department has revised subsection (a)(6) to remove the requirement to install equipment to prevent unauthorized acts of third parties at conventional well sites.

998. Comment: High demand for limited drilling services, delays caused by weather events and other extenuating circumstances make it difficult to establish a definitive timeframe for the drilling and completion of a conventional well. Moreover, the time frames necessary for the drilling and completion of conventional wells are far shorter than unconventional wells. The proposed language should be revised to allow for the single notice already required at the commencement of drilling a conventional well in lieu of the additional notice required under the proposed regulations. (1113, 1115a, 1118, 1120, 1176-1188)

Response: See response to comment 823. The Department has deleted subsection (a)(16), which requires notices to the Department of pit liner installation, from the final-form rulemaking. Subsection 78.56(e) requires an owner or an operator to notify the Department electronically at least 3 business days before commencing construction of a pit used during servicing, plugging or recompleting the well.

999. Comment: 78.56(a)(5) – The presence of workers at the site does not ensure that wildlife will not access a disposal pit. Fencing should be mandatory. In addition, pits containing regulated substances must be covered with netting to prevent birds and bats from inadvertently entering the pit. (1134)

Response: See response to comment 960.

1000. Comment: The current use of all pits should be grandfathered. (1145)

Response: The Department does not believe that an explicit grandfathering is required because existing regulations require removal of onsite pits within 9 months of completion of drilling.

1001. Comment: Frack pits and impoundments of fracture chemicals, water, drill cuttings and other toxic substances should not be left open and exposed to the air where particles may be released. Instead, they should be contained in closed loop systems and properly disposed of according to regulations which should be contained in SB411. (1146)

Response: See response to comment 823.

1002. Comment: It is very important that temporary storage be defined because under 78.57, brine and other well operation fluids have to be in a covered tank, unless these materials are in temporary storage, then they could be in uncovered pit. These pits can be used during the drilling process and up to 9 months after. That is a long time for any of the regulated substances and wastes to be exposed to the elements and environment. There is a risk of contamination even though there is to be a 2' space between the surface and the top of the storage unit. Heavy rains, wind, snow pack, ice formation, evaporation of the stored substances and the risk of wildlife falling in, are all concerns that can have a negative impact to the environment and the liner, by not having these storage units covered.

Diverting stormwater away from the pits should also include provisions that the diversion does not create an erosion and sediment issue and that it is not directed to a stream, watercourse or SWPZ. (1150)

Response: See responses to comments 928 and 930.

1003. Comment: Pits and impoundments should not be allowed at any future well site or production facility and that existing pits and impoundments that are still open should be phased out with all wastes removed and sent, with a manifest system to track each shipment, to a licensed waste handling, treatment and disposal facility approved to handle such waste. For future well sites and production facilities, all materials that previously had been managed in pits or impoundments would now be required to be managed in close-loop above ground systems using tanks or other containment structures. (1151)

Response: See response to comment 830.

- 1004.** Comment: Leakage Rate. The rule should include allowable leakage rates for temporary pit liners and indicate maximum mass loading in that leakage to prevent contamination of groundwater. (852a)

Response: See response to comment 823. Pits are not permitted to leak under any circumstance.

- 1005.** Comment: EQB proposes numerous changes to § 78.56. A change that occurs throughout the regulation is to modify the former reference to “pollutional substances” to now read “regulated substances.” “Regulated substance” is proposed to be added as a new defined term in § 78.1 as follows: “Any substance defined as a regulated substance in section 103 of The Pennsylvania Land Recycling and Environmental Remediation Act (Act 2) (35 P.S. § 6020.103).” However, “regulated substance” is not a defined term under 35 P.S. § 6020.103, and therefore, its meaning in the context of Chapter 78 is unclear. EQB must either define the term “regulated substance” or select an appropriate term that is already clearly defined in another statute or regulation.

Additionally, it is unclear whether the provisions of § 78.56 apply solely to storage of regulated substances or whether some provisions also apply to storage of freshwater. The introductory provision of subparagraph (a) seems to imply that all of the following subparts apply only to storage of regulated substances, but, some of the subparts expressly reference regulated substances and some do not. As drafted it is unclear whether (for example) a freshwater pit must comply with all of the requirements set forth in § 78.56.

Also, if § 78.56 applies to more than just regulated substances (ie, freshwater storage), then where an operator constructs a water impoundment that services multiple well sites, must it satisfy the requirements for a “pit” set forth in § 78.56 considering that the proposed definition of “pit” set forth in § 78.1 limits that term to a facility “that services a single well site.” We assume that is not EQB’s intent for the provisions of § 78.56 to apply to an impoundment as separate provisions for impoundments are addressed under §§ 78.59a, 78.59b and 78.59c, but clarification is needed. (1140)

Response: See response to comment 817. Section 78.56 does not apply to storage of freshwater. Freshwater can store in Well development impoundments and are regulated under §§ 78.59a and 78a.59a.

- 1006.** Comment: **78.56 (d)** – This subsection should be clarified to require removal or filling of pits after the completion of all drilling on a well pad rather than completion of drilling.

Suggested Regulatory Language:

(d) The owner or operator shall remove or fill the pit within 9 months after completion of all drilling on a well site, or in accordance with the extension granted by the Department under section 3216(g) of the act and §78.65(d). Pits used during servicing, plugging and recompleting the well shall be removed or filled within 90 calendar days of construction. (1153)

Response: The regulatory language is consistent with the 2012 Oil and Gas Act.

- 1007.** Comment: **Section 78.56(d)** – This subsection 78.56(d) should be clarified to require removal or filling of pits after the completion of all drilling on a well pad and to acknowledge that pits used for onsite disposal of drill cuttings or residual waste in accordance with Sections 78.61 or 78.62 do not have to be removed and filled under this paragraph (d).

Suggested Language: (d) Except as authorized under §§ 78.61 or 78.62 for disposal of drill cuttings or residual waste, the owner or operator shall remove or fill the pit within 9 months after completion of last well, or in accordance with the extension granted by the Department under section 3216(g) of the act (58 Pa.C.S. 3216(g)) and § 78.65(d). Pits used during servicing, plugging and recompleting the well shall be removed or filled within 90 calendar days of construction.(1137, 1174)

Response: Disposal of drill cuttings or residual wastes in accordance with §§ 78.61 or 78.62 must be accomplished within the timeframes for restoration established in § 78.56.

- 1008.** Comment: The Department allows use of high-density polyethylene liners even though they have only been given a “fair” rating for puncture performance, installation damage resistance and stress cracking by geosynthica.net as well as lower ratings for these aspects than liner low-density polyethylene (LLDPE) liners required in some other states such as New Mexico. (853a)

Response: The Department acknowledges the comment.

- 1009.** Comment: We recommend including technical standards for closed-loop systems to encourage and enforce the use of closed-loop systems where conditions merit and where it would result in reducing environmental impacts. (1031)

Response: The Department has amended the final rulemaking to ban the use of pits for temporary waste storage at unconventional well sites. The Department has determined that it is appropriate to remove this practice because it is not commonly used by unconventional operators. Additionally, the typical type and scope of use by unconventional operators is generally incompatible with technical standards for temporary pits prescribed under § 78.56. As a result, unconventional operators will no longer be permitted to dispose of residual waste including contaminated drill cuttings in a pit at the well, unless the pit is authorized by a permit or other approval is obtained from the Department. Conversely, the typical type and scope of use by conventional operators is generally compatible with the technical standards for temporary pits prescribed under § 78.56. The Department has allowed the disposal of residual wastes including contaminated drill cuttings in a pit at conventional well sites for decades without significant harm to public health and safety or the environment and consequently has not banned the use of pits for temporary waste storage at conventional well sites in this rulemaking.

- 1010.** Comment: The use of pits, ponds for storage of fracturing fluid or waste needs to end completely as these leak and flood into the water table. (806)

Response: The Department has amended the final rulemaking to ban the use of pits for temporary waste storage at unconventional well sites. The Department has determined that it is appropriate to remove this practice because it is not commonly used by unconventional operators. Additionally, the typical type and scope of use by unconventional operators is generally incompatible with technical standards for temporary pits prescribed under § 78.56. As a result, unconventional operators will no longer be permitted to dispose of residual waste including contaminated drill cuttings in a pit at the well, unless the pit is authorized by a permit or other approval is obtained from the Department. Conversely, the typical type and scope of use by conventional operators is generally compatible with the technical standards for temporary pits prescribed under § 78.56. The Department has allowed the disposal of residual wastes including contaminated drill cuttings in a pit at conventional well sites for decades without significant harm to public health and safety or the environment and consequently has

not banned the use of pits for temporary waste storage at conventional well sites in this rulemaking.

The Department agrees that centralized impoundments should be regulated in the same manner as other waste transfer facilities and impoundments are regulated under Chapters 287-289. Therefore, in order to ensure consistency the Department has revised § 78.59c to require any new centralized impoundments to be authorized by a residual waste permit under Article IX. In addition, § 78.59c also requires operators of existing centralized impoundments permitted under a Dam Permit for a Centralized Impoundment Dam to either submit a closure plan to the Department within 6 months and close the centralized impoundment with 3 years of the effective date of the rulemaking or obtain a residual waste permit for the operation of the centralized impoundment with 3 years of the effective date of the rulemaking.

1011. Comment: The pit regulation changes, which are clearly targeted for the unconventional drillers if applied to the shallow conventional drillers, will actually make the pits much larger and the costs unaffordable. (627, 4681 – 4682)

Response: The Department has amended the requirements regarding use of pits for temporary storage by conventional and unconventional operators. The Department has amended the final rulemaking to ban the use of pits for temporary waste storage at unconventional well sites. The Department has determined that it is appropriate to remove this practice because it is not commonly used by unconventional operators. Additionally, the typical type and scope of use by unconventional operators is generally incompatible with technical standards for temporary pits prescribed under § 78.56. As a result, unconventional operators will no longer be permitted to dispose of residual waste including contaminated drill cuttings in a pit at the well, unless the pit is authorized by a permit or other approval is obtained from the Department. Conversely, the typical type and scope of use by conventional operators is generally compatible with the technical standards for temporary pits prescribed under § 78.56. The Department has revised § 78.56(a) to remove minimum slope requirements for a pit with a footprint less than 3,000 ft² or volume less than 125,000 gallons of capacity.

1012. Comment: Waste management at well sites - Sections 78.56, 78.57, 78.58, 78.59a - 78.59c. Section 3273.1 of Act 13 carries forward the provision of the 1984 Oil and Gas Act that Chapter 78, rather than the Pennsylvania Solid Waste Management Act, governs the disposal, processing or storage of residual wastes generated at the well site. This regulatory treatment is critical to the industry because it simplifies compliance requirements and avoids conflicting management standards between the Department's oil and gas management and its solid waste management programs. However, the prescriptive nature of these proposed rules will significantly impact the design, construction and use of impoundments and open top tanks. (1172)

Response: The Department acknowledges the comment.

1013. Comment: We have heard another industry representative refer to the industry as representing the best collective wisdom. I fail to see how an open air pit used to collect massive amounts of poison represents collective wisdom.

Open air pits should be illegal. Burying the wastes on sites should be illegal. These are two things that you can do to help these people whose homes and health have been compromised by an industry that spends millions of dollars on political campaigns and public relations. They can spend that money putting the waste in tanks, keeping it out of these open air pits, to try and protect who live near these places. Let them spend the money to try to do something reasonable for the people

who are suffering now. (1213)

Response: The Department has amended the final rulemaking to ban the use of pits for temporary waste storage at unconventional well sites. The Department has determined that it is appropriate to remove this practice because it is not commonly used by unconventional operators. Additionally, the typical type and scope of use by unconventional operators is generally incompatible with technical standards for temporary pits prescribed under §78.56. As a result, unconventional operators will no longer be permitted to dispose of residual waste including contaminated drill cuttings in a pit at the well, unless the pit is authorized by a permit or other approval is obtained from the Department. Conversely, the typical type and scope of use by conventional operators is generally compatible with the technical standards for temporary pits prescribed under § 78.56. The Department has allowed the disposal of residual wastes including contaminated drill cuttings in a pit at conventional well sites for decades without significant harm to public health and safety or the environment and consequently has not banned the use of pits for temporary waste storage at conventional well sites in this rulemaking.

1014. Comment: The unsafe use of frack ponds should be eliminated and spills should be minimized with safer drilling practices. (104)

Response: See response to comment 823.

§ 78.57 Control, storage and disposal of production fluids

1015. Comment: Section 78.57(a) – The Department uses the terms “operation” and “operation, service and plugging” indiscriminately. The language used throughout the Proposed Rulemaking should be consistent and thus be captured by using the defined term provided in Section 78.1 under “Oil and Gas Operations.” (997a,1142)

Response: The use of the term “operation” in §§ 78.57(a) and 78a.57(a) is intended to limit application of this section to control, storage and disposal of production fluids during the operation of the well. Control, storage and disposal of fluids during other times is regulated pursuant to § 78.56 (see § 78.56(a)) and § 78a.56. The Department has amended subsection (b) in the final-form rulemaking to clarify this requirement.

1016. Comment: DEP’s proposed revision in subsection (e) above fails to account for the extraordinary costs of removing underground storage tanks, which includes far more than labor costs to inspect and test the integrity of pits. All tanks that are removed will have to be replaced by an installation that meets the secondary containment requirements of proposed section 78.57(c). Therefore, the conventional operator will suffer three costs not contemplated in the Analysis: 1) the cost of removing the tank and recovering the site; 2) the cost of installing a replacement tank in a facility that includes secondary containment; and 3) the cost of replacing the tanks for those tanks which will inevitably be damaged by the removal process.

Moreover tank burial is done for functional reasons not considered in the Analysis. In some instances production water is virtually fresh; in these cases the tanks are buried to prevent the water from freezing and to allow its removal in winter. In other instances the tanks are buried to facilitate drainage to the tank. The specific gravity of production water is greater than oil, and production water is drained by gravity to a production water storage tank. For this process to function, the production water tank must be physically lower than the oil tank. Thus, particularly in flat regions, the production water tank is buried. Where burying is no longer permitted under the proposed

regulations, and where the region is relatively flat, the entire storage facility will have to be redesigned to allow for production water separation and storage. One alternative will be to elevate the oil storage tanks on earthen berms or other supports. Another alternative will be to install significant additional tank capacity so that the production water can always be drained into a relatively empty storage tank. In either event the cost will be significant—existing plumbing must be disconnected and re-plumbed, additional tanks or earthwork will be required, and liquids will have to be temporarily removed and stored. Estimates range from \$5,000 to \$20,000 per site depending upon the topography and storage capacity requirements.

Even if only 2,000 buried production tanks are implicated by this new regulatory provision the cost will be significant. At \$6,500 to \$11,000 per tank the cost for replacement alone will range from \$13 million to \$22 million. Even if only ½ of those sites require additional modification because of drainage impracticality the additional cost (at between \$5,000 and \$20,000 per modified site) will be \$5 million to \$20 million for a total cost range of \$18 million to \$42 million for buried production tanks.

In addition, small tanks used to drain drips that are governed by the proposed regulations. There are many thousands of these tanks over and above the numbers discussed above, which tanks are particularly in use in the conventional gas well realm. Many of these tanks are buried as a matter of surface owner request or in order to prevent the tank from being an obstruction to free passage on rights of way. PGCC estimates the existence of 15,000 of these generally smaller tanks, with removal, recovery, replacement and secondary containment costing between \$3,000 and \$9,000 per tank, for a total range between \$45 million and \$135 million.

The cost for both buried production and buried drip tanks ranges from \$63 million to \$177 million. Given the high cost of compliance and given that virtually only small businesses utilize the practice of buried tanks, the DEP failed to consider alternatives as required by the Regulatory Review Act. One of the considerations required under that Act is whether small businesses can be excluded from the requirement altogether. That consideration is appropriate here. Presumably the object of the tank requirement is to help insure that production water is not inadvertently discharged from a leak undiscovered because the tank is buried. A logical question for the DEP to analyze is how frequently discharge from a buried production water tank has been encountered. If the answer is seldom then the benefit of the regulation does not balance the cost. The DEP is in unique possession of those records and the law requires the DEP to consider the same.

The costs of compliance with this section are not in balance with any benefit and reasonable alternatives for Small Businesses were not considered. PGCC understands the objective of this section to be the protection of waters of the Commonwealth from excessive brine impacts, which should be evaluated on a case-by-case basis, rather than through a blanket rule.

Suggested amendatory language:

(c) Secondary containment capable of preventing tank contents from entering waters of the Commonwealth is required for all new, refurbished or replaced tanks or other aboveground containment structures approved by the Department, including their associated manifolds, that contain brine and other liquids [fluids] produced during operation of the well, if such containment is within 100 feet of surface waters of the Commonwealth. If one tank in a series of tanks is added, refurbished or replaced, secondary containment is required for the entire series of tanks, unless exempted as a Small Business or otherwise. The secondary containment area provided by dikes or other methods of secondary containment open to the atmosphere shall have containment capacity sufficient to hold the volume of the largest

single tank, plus an additional 10% of volume for precipitation. Compliance with § 78.64 (relating to containment around oil and condensate tanks) or using double walled tanks capable of detecting a leak in the primary container may be used to shall fulfill the requirements in this subsection.

(d) Tanks, series of tanks or other above ground storage structures approved by the Department used to store brine or other liquids ~~[fluids]~~ produced during operation of the well, shall be designed, constructed and maintained to be structurally sound in accordance with sound engineering practices adhering to nationally recognized industry standards and the manufacturer's specifications. Tanks that are manifolded together shall be designed in a manner to prevent the uncontrolled discharge of multiple manifolded tanks.

(e) ~~[Underground or partially buried storage tanks may not be used to store brine or other fluids produced during operation of the well unless approved by the Department. Existing underground or partially buried storage tanks shall be removed within 3 years of the effective date of this subsection.]~~ A well operator utilizing underground or partially buried storage tanks as of the effective date of this section shall provide the Department with a list of the well sites where the underground or partially buried storage tanks are located. And schedule for removal of the tanks within six months from the effective date of this subsection.

(f) All new, refurbished or replaced permanent aboveground and underground tanks that store brine or other liquids ~~[fluid]~~ produced during operation of the well must comply with the applicable corrosion control requirements in the Department's storage tanks regulations at 25 Pa. Code §§ 245.531-534.

(g) All new, refurbished or replaced tanks storing brine or other liquids fluids produced during operation of the well shall be reasonably protected from unauthorized acts of third parties. Unless the tank is surrounded by a fence or posted with "Danger" and "No Trespassing" signs, tank valves and access lids shall utilize ~~[locks, open end plugs or removable handles and ladders on tanks shall be retractable]~~ or other measures that discourage ~~[prevent]~~ unauthorized access by third parties.

(1135)

Response: The Department does not agree with the suggested language in subsection (c). Secondary containment is important to protect all waters of the Commonwealth, including groundwater. Further, the substances stored at well sites do not depend on the operator's status as a small business or otherwise, so allowing for a distinction based on business size would not adequately protect the environment.

The Department acknowledges the economic impact of the provision requiring removal of underground storage tanks at well sites and has amended the final rulemaking accordingly. Continued use of underground storage tanks at oil and gas well sites will be allowed under the final rulemaking. However, as commentator points out, there are thousands of these underground storage tanks at well sites across the Commonwealth, and proper standards for operation and maintenance of these storage tanks are critical for protection of the environment from spills and releases. For example, Section 3218.4(b) of the 2012 Oil and Gas Act establishes that permanent aboveground and underground tanks must comply with the applicable corrosion control requirements in the Department's storage tank regulations. The final rulemaking includes language establishing these and other appropriate standards.

The Department has added language to the final rulemaking addressing the phase-in of requirements for existing aboveground and buried tanks at well sites.

- 1017.** Comment: 78.57(e) – This section states that an operator must remove underground or partially buried tanks within 3 years of the effective date of the subsection and goes on to state that removal must be scheduled within 6 months of the effective date. Underground tanks are allowed at gas stations and industrial facilities. They should be allowed at well sites also.

Moreover tank burial is done for functional reasons not considered in the Analysis. In some instances production water is virtually fresh; in these cases the tanks are buried to prevent the water from freezing and to allow its removal in winter. In other instances the tanks are buried to facilitate drainage to the tank. The specific gravity of production water is greater than oil, and production water is drained by gravity to a production water storage tank. For this process to function, the production water tank must be physically lower than the oil tank. Thus, particularly in flat regions, the production water tank is buried. Where burying is no longer permitted under the proposed regulations, and where the region is relatively flat, the entire storage facility will have to be redesigned to allow for production water separation and storage. One alternative will be to elevate the oil storage tanks on earthen berms or other supports. Another alternative will be to install significant additional tank capacity so that the production water can always be drained into a relatively empty storage tank. In either event the cost will be significant—existing plumbing must be disconnected and re-plumbed, additional tanks or earthwork will be required, and liquid will have to be temporarily removed and stored.

Suggested Regulatory Language:

(e) A well operator utilizing underground or partially buried storage tanks as of the effective date of this section shall provide the Department with a list of the well sites where the underground or partially buried storage tanks are located. (1153)

Response: See response to comment 1016 regarding the removal of underground or partial buried storage tanks. Continued use of underground storage tanks at oil and gas well sites will be allowed under the final rulemaking.

- 1018.** Comment: 78.57 – We recommend that best technology standards also apply to existing tanks, and that operators be given a period of time to bring the tanks and other aboveground containment structures into compliance.

We support the proposal to require removal of underground or partially buried storage tanks. However, we do not support the waiver clause “unless approved by the Department.” We request that clause be deleted. If the EQB envisions that the PADEP will waive the required removal of underground or partially buried storage tanks and the prohibition on their use, it should explain the circumstances where this would be allowed and define the criteria that would be used in issuing the waivers.

We recommend that buried tanks be prohibited, since they pose a risk of unchecked pollution and aboveground tanks are easier to inspect, maintain, repair, and monitor.

We also recommend incorporating many of the same recommendations we made for temporary storage tanks.

More specifically, we recommend the following changes to the proposed regulations at § 78.57:

§ 78.57. Control, storage and disposal of production fluids.

(a) Unless a permit has been obtained under § 78.60(a) (relating to discharge requirements), the operator shall collect the brine and other fluids produced during operation of the well in a tank or a series of tanks, or other device approved by the Department for subsequent disposal or reuse. Open top structures may not be used to store brine and other fluids produced during operation of the well. Buried tanks are prohibited. All existing open top structures at existing Oil and Gas Operations must be removed by_ (Editor's Note: The blank refers to one year after the effective date of adoption of this proposed rulemaking.). All tanks at existing Oil and Gas Operations must meet the new standards of § 78.57 by _____(Editor's Note: The blank refers to one year after the effective date of adoption of this proposed rulemaking.). Except as allowed in this subchapter, the operator may not discharge the brine and other fluids on or into the ground or into the waters of this Commonwealth.

(b) The operator may not use a pit for the control, handling or storage of brine and other fluids produced during operation, service or plugging of a well.

(c) The operator shall install or construct and maintain the aboveground tank and approved aboveground containment structures in accordance with the following requirements:

(1) All tanks and approved aboveground containment structures shall be constructed and maintained with sufficient capacity to contain all regulated substances and wastes that are used at the Oil and Gas Operation. All tanks shall be located on the well pad so that any spills will be captured by the containment structures and other spill prevention systems.

(2) The operator shall notify the Department at least 3 business days before the planned installation of each tank or approved aboveground containment structure. The notice shall be submitted electronically to the Department through its web site and include the date the installation will begin. If the date of installation is extended, the operator shall renotify the Department of the date that the installation will begin.

(3) All tanks and approved aboveground containment structures containing volatile materials and wastes shall be designed and operated to capture air pollution. All captured vapors shall be used for power, or upon a showing of good cause shall be routed to an incinerator or flare.

(4) All tanks and approved aboveground containment structures shall be designed and constructed at the factory and maintained, routinely inspected and verified to be structurally sound and reasonably protected from unauthorized acts of third parties prior to use. Each tank shall be inspected by a certified tank inspector at least once every five years. Each approved aboveground modular containment structure shall be inspected by a structural engineer at least once every five years. The inspection shall examine structural conditions, document corrosion or damage, and identify necessary repairs before returning it to service.

(5) Overflow alarm systems shall be installed on all liquid storage tanks. The systems shall include high-liquid-level alarms that sound and display in an immediately recognizable manner; high-liquid-level automatic pump shutoff devices, which are designed to stop flow at a predetermined tank content level; and a means of immediately determining the liquid level of tanks.

(6) Unless an individual is continuously present at the Oil and Gas Operation, a fence must completely surround the storage equipment to prevent unauthorized acts of third parties and damage caused by wildlife.

(7) Unless an individual is continuously present at the Oil and Gas Operation, operators shall equip all valves and access lids to regulated substances with reasonable measures to prevent unauthorized access by third parties such as locks, open end plugs, removable handles, retractable ladders or other measures that prevent access by third parties. Each tank and approved aboveground containment structure storing freshwater, fire prevention materials and spill response kits is excluded from the requirements of this paragraph.

(8) The operator shall display a sign on or near the each tank and approved aboveground containment structure identifying the contents and providing an appropriate warning of the contents, such as flammable, corrosive or another description of the relevant danger.

(9) Secondary containment liners capable of preventing tank and approved aboveground containment structures contents from entering waters of the Commonwealth is required for all existing, new, refurbished or replaced tanks or other aboveground containment structures approved by the Department, including their associated manifolds, that contain brine and other fluids produced during operation of the well. New, refurbished or replaced tank and approved aboveground containment structures must meet this standard upon construction or installation. Existing tanks must meet these standards by _____ (Editor's Note: The blank refers to one year after the effective date of adoption of this proposed rulemaking.).

If one tank in a series of tanks is added, refurbished or replaced, secondary containment is required for the entire series of tanks. The secondary containment area provided by dikes or other methods of secondary containment open to the atmosphere must have containment capacity sufficient to hold the volume of the largest single tank, plus an additional 10% of volume for precipitation. Compliance with § 78.64 (relating to containment around oil and condensate tanks) or using double walled tanks capable of detecting a leak in the primary container fulfill the requirements in this subsection.

All tanks and approved aboveground containment structures shall be set on top of a synthetic flexible liner that is sufficient in size to capture any leaks or drips that may occur from the tank or modular structure. Liners shall be impervious, impermeable, at least 30 mils thick; no "alternate methods" allowing for thinner liners shall be allowed. The liner shall be designed, constructed, and maintained so that the physical and chemical characteristics of the liner are not adversely affected by the regulated substance stored therein and the liner is resistant to physical, chemical and other failure during transportation, handling, installation and use. Liner compatibility must satisfy ASTM Method D5747, Compatibility Test for Wastes and Membrane Liners, or other compatibility test approved by the Department for the duration tank or other storage structure is used. Adjoining sections of liners shall be sealed together to prevent leakage in accordance with the manufacturer's directions. The integrity of all seams of the adjoining sections of liner shall be tested prior to use. Results of the tests shall be available upon request.

Prior to placing the tanks and approved aboveground containment structures on the secondary containment liner, the liner shall be inspected for lack of uniformity, damage and other imperfections that may cause the liner to leak. The operator shall correct damages or imperfections before placing the tanks on the liner.

If a liner becomes torn, or otherwise loses its integrity, tanks must be continuously monitored for leaks by onsite personnel while the liner is repaired. If repair of the liner is not practical or possible, the storage tank contents shall be removed and placed in another tank that meets the requirements of this section.

The operator shall notify the Department at least 3 business days before the installation of the liner. The notice shall be submitted electronically to the Department through its web site and include the date the liner will be installed. If the date of installation is extended, the operator shall renotify the Department with the date of installation. A licensed professional engineer or geologist that designed the site shall submit a statement on forms provided by the Department certifying that the liner, as built, is compliant with this section. This certification shall be submitted within 10 business days of installation of the liner.

(d) Tanks, series of tanks or other aboveground storage structures approved by the Department used to store brine or other fluids produced during operation of the well shall be designed, constructed and maintained to be structurally sound in accordance with sound engineering practices adhering to Nationally recognized industry standards and the manufacturer's specifications. Tanks that are manifolded together shall be designed in a manner to prevent the uncontrolled discharge of multiple manifolded tanks.

(e) Underground or partially buried storage tanks may not be used to store brine or other fluids produced during operation of the well. All existing underground or partially buried storage tanks shall be removed by _____ (Editor's Note: The blank refers to 1 year after the effective date of adoption of this proposed rulemaking.). A well operator utilizing underground or partially buried storage tanks as of _____, (Editor's Note: The blank refers to the effective date of adoption of this proposed rulemaking.) shall provide the Department with a list of the well sites where the underground or partially buried storage tanks are located and scheduled for removal of the tanks by _____ (Editor's Note: The blank refers to 6 months after the effective date of adoption of this proposed rulemaking.)

(f) All tanks and approved aboveground containment structures that store materials containing or contaminated with regulated substances must comply with the applicable corrosion control requirements in §§ 245.531—245.534 (relating to corrosion and deterioration prevention). Existing tank bottoms that do not meet the standards of § 245.531(b) shall be taken out of service and repaired or replaced to meet that standard before being returned to use. All existing tanks and approved aboveground containment structures must be evaluated by a corrosion expert by _____ (Editor's Note: The blank refers to one year after the effective date of adoption of this proposed rulemaking) and the corrosion expert's report must be provided to the Department. If the corrosion expert recommends installation of cathodic protection, lining, coating, or other corrosion control measures, the operator must make those repairs within Editor's Note: The blank refers to 18 months after the effective date of adoption of this proposed rulemaking).

(g) All existing, new, refurbished or replaced tanks storing brine or other fluids produced during operation of the well must be reasonably protected from unauthorized acts of third parties. Unless the tank is surrounded by a fence, tank valves and access lids must utilize locks, open end plugs or removable handles and ladders on tanks must be retractable or other measures that prevent access by third parties. (1143)

Response: The Department notes that many of the revisions proposed by the commenter are inappropriate given the applicability of this section of the regulations. This section of the regulations is focused on control, storage and disposal of production fluids at a well site. The scope of this section applies to well sites where wells have been put into production which is fundamentally different than §§ 78.56 and 78a.56. Those sections are focused on temporary storage at a well site which is in the phase of developing oil and gas wells.

See response to comment 1016 regarding the removal of underground or partial buried

storage tanks. Continued use of underground storage tanks at oil and gas well sites will be allowed under the final rulemaking.

The Department disagrees with the proposed revisions to subsection (b). See response to comment 823.

Regarding secondary containment requirements, the Department disagrees with the proposed changes. The existing §§ 78.57(c) and 78a.57(c) address secondary containment including many of the concerns addressed by the commenter through a reference to §§ 78.64 and 78a.64.

The Department disagrees with the proposed changes to subsection (c)(1) because it is not feasible to construct a tank on site that is of sufficient capacity to contain all of the fluids that will be produced through the lifetime of the well.

The Department disagrees with the proposed changes to subsection (c)(2) because the Department does not believe it is necessary for Department staff to receive notification for each and every tank that is installed at an oil and gas production site. The Department has not noted any significant environmental impacts from improper installation of tanks at oil and gas well production sites.

Regarding air pollution concerns, air emissions are regulated under Article III and are beyond the scope of this rulemaking.

Regarding security issues, the Department does not agree with the proposed revisions because of the limited scope of applicability to only production well sites.

Regarding inspections, the Department has amended §§ 78.57 and 78a.57 to require quarterly and monthly inspection of tanks, respectively.

- 1019.** Comment: 78.57: The DEP should entirely prohibit operators from using open pits and impoundments to store flowback, brines and other drilling wastes and instead require that such wastes be stored in tanks and other closed-loop containment systems. (852, 1210)

Response: The Department acknowledges the comment.

- 1020.** Comment: § 78.57(a): The insertion of pits into the wording is ill-advised and contradicts the prohibition of open top structures. Prohibition of open top structures in this clause is welcome and commendable (see point 11 immediately below). A pit is an open top structure. Consequently, the insertion of pits into this clause is contradictory and must be removed. (869a)

Response: Section 78.57(a) and section 78a.57(a) eliminate the use of pits for the collection of production fluids.

- 1021.** Comment: § 78.57(a): Deletion of “service and plugging” from the operations where brine and fluids must be collected is ill advised; the “service and plugging” wording should be put back. (869a)

Response: “Servicing and plugging” are short term operations covered under §§78.56 and 78a.56.

- 1022.** Comment: Another area where the EQB’s proposed regulations fall short concerns the use of open pits on the well pads to store the waste water from the fracking process (Sections 78.56, 78.57, 78.58, and 78.59). Waste water returns to the surface contaminated with toxic chemicals, as well as buried salts and naturally occurring radioactive material and as such needs to be contained to avoid contamination of nearby water sources. To date, Consol Energy has been cited twice for leak violations where, thankfully, the toxic fluids did not enter the reservoir and the ground contaminated was removed from the reservoir site. Also, to Consol Energy’s credit, the operator is using a double layer of plastic to line pits.

The proposed regulations will do little to prevent flooding, spills, and leak violations that may continue to occur at Beaver Run Reservoir and are now commonly occurring at shale gas drilling sites throughout the Commonwealth. Stating a required footage of freeboard provides little protection. Violations due to overflow of the required freeboard occur on a regular basis; companies repeatedly are charged with the same violations; and fines are limited or non-existent. DEP currently permits leakage of toxic chemicals onto residential properties and farmlands from pits, the amount of leakage permitted being determined by the depth of the fluid in the pits. I call on DEP to stop permitting such leakage of fluid on surrounding land and to impose fines that will discourage repeat violations. (402)

Response: The Department acknowledges the comment. Section 78.57(b) and Section 78a.57(b) prohibit the use of pits to store brine or other fluids produced during operation of a well.

- 1023.** Comment: §78.57(a) states: “Open top structures shall not be used to store brine and other fluids produced during operation of the well.” This is commendable but “the well” should be replaced by “a well”. Produced water from some other well should not be stored in an open-top structure either. (869, 869a)

Response: The language in § 78.57(a) mirrors the language contained in section 3273.1 of the 2012 Oil and Gas Act. Produced water from wells not located on the well site may only be stored on another well site so long as all of the produced water so stored will be used at the other well site.

- 1024.** Comment: § 78.57(a): This provision must make it clear that a pit is an open-top structure. Hydraulic fracturing chemicals should not be put into “open-top structures” either. Altogether, pits should only be used for actual fresh water. (869, 869a)

Response: Section 78.57 and section 78a.57 eliminate the use of pits for the collection of production fluids. Hydraulic fracturing additives are not addressed by this section and storage of such materials is regulated under § 78a.64a.

- 1025.** Comment: we support the prohibition on using open top structures to store brine and other produced fluids (78.57(a)); and the need for increased security to prevent vandalism and unlawful discharges from storage tanks pads (§§ 78.56(a) and 78.57(g)). (852)

Response: The Department acknowledges the comment.

- 1026.** Comment: **78.57(a):** This section could be interpreted as excluding the use of centralized impoundments (§ 78.59c). Centralized impoundments play a critical role in facilitating the economics to allow for a robust water recycling program that provides relief to water use and disposal demands in the region. It has been a stated goal for the Commonwealth to promote the

responsible recycling and reuse of oil and gas wastes to reduce the demand on fresh water resources for oil and gas development and operations. Conversely, if forced to abandon the use of centralized impoundments for collecting produced water to stage for reuse, companies would have to supplant that storage with a series of storage tanks that total a much larger footprint or turn to a greater use of freshwater.

Suggested amendatory language:

(a) Unless a permit has been obtained under § 78.60(a) (relating to discharge requirements), the operator shall collect the brine and other fluids produced during operation of the well in a tank or a series of tanks, centralized impoundment, or other device approved by the Department for subsequent disposal or reuse. Open top structures shall not be used to store brine and other fluids produced during operation of the well with the exception of centralized impoundments permitted under § 78.59c. Except as allowed in this subchapter or otherwise approved by the Department, the operator may not discharge the brine and other fluids on or into the ground or into the waters of this Commonwealth. (1099, 1071, 1137, 1147, 1174)

Response: The Department does not agree with the suggested language in subsection (a). All references to pits or open-top structure as an acceptable structure for storing fluids produced during operation of the well are being eliminated from §§ 78.57 and 78a.57.

- 1027.** Comment: 78.57(a)(b) Commentator supports the elimination of the use of pits and the use of a series of pits as used for the collection of brine and other fluids. Commentator also supports measures that provides for more stringent requirements for the storage of brine and other fluids eliminating the use of open top storage. The STRONGER Pennsylvania Follow-Up State Review published September 2013 notes that “The DEP’s current regulations in 25 Pa. Code §§ 78.56 and 78.57 are limited with regard to requirements for location, use, capacity, age and construction of E&P waste tanks.” Further, the Review states, “The review team has determined that a large number of tanks exist throughout Pennsylvania and that the state does not have standards for tank closure and removal.” And finally, the Review states, “The review team finds that the DEP consider adopting regulations that address tank inventory, structural integrity, siting, the use of open top tanks, secondary containment, tank security and removal.” [page 39] (Guideline Section 5.9.2.) We appreciate the Department moving forward with action that implements recommendations from the STRONGER Review. Pursuing action based on the STRONGER Review is one important aspect of addressing regulations in an organized and fluid manner. We support the adoption of these provisions at a minimum as written. (660a)

Response: The Department acknowledges the comment.

- 1028.** Comment: Prohibition of open-air frack pits so that wastewater is stored on site in a closed loop system before being treated or recycled. This will reduce the potential for unintentional runoff of contaminated water and exposure of wildlife to toxic waters. (1033)

Response: The Department acknowledges the comment.

- 1029.** Comment: 78.57(c) – This one size fits all regulation is excessive when applied to many conventional wells. The associated volumes and chemistry/salinity of conventional well brine are different than that of unconventional brine, therefor this regulation should make a distinction as well. We agree that wells that produce liquid hydrocarbons or wells within an agreed-upon distance from surface waters should have tanks equipped with secondary containment. However, wells that produce small amounts of brine with moderate to low salinity located safely away from surface

waters should not need costly and aesthetically unpleasing dikes or double wall tanks. For example, a conventional well with adequate distance from any surface water that produces less than 10 bbl/month of low salinity brine (used for dust suppression and de-icing on local roads) does not need a double wall tank or a tank equipped with a dike. On one hand, the Department encourages the road spreading of conventional brine, but on the other hand, the Department perceives that the environmental risk is great enough that secondary containment is necessary in all cases of new, refurbished, or replaced tanks associated with conventional wells.

This rule should focus on the need for secondary containment on wells, both conventional and unconventional, whose production includes a liquid hydrocarbon component and/or is located within a certain distance from surface water.

Suggested Regulatory Language:

(c) New, refurbished or replaced tanks or other aboveground containment structures approved by the Department, including their associated manifolds, that contain brine and other fluids produced during operation of wells that produce oil, condensate, or other liquid hydrocarbons and are located within 100 feet of surface waters shall be equipped with secondary containment capable of preventing tank contents from entering surface waters. If one tank in a series of tanks is added, refurbished or replaced, secondary containment is required for the entire series of tanks. The secondary containment area provided by dikes or other methods of secondary containment open to the atmosphere shall have containment capacity sufficient to hold the volume of the largest single tank, plus an additional 10% of volume for precipitation. Compliance with § 78.64 (relating to containment around oil and condensate tanks) or using double walled tanks capable of detecting a leak in the primary container shall fulfill the requirements in this subsection. (1153)

Response: See response to comment 1016.

1030. Comment: 78.57(c) (includes Conventional Drillers) – The Commonwealth’s extraordinary amount of water resources is only surpassed by the much larger state of Alaska. Many of us fully didn’t recognize the quantity of water resources all around us until we began noticing in the early years of Marcellus Shale that it almost seemed more common than not to have a well pad located nearby a pond, small stream, creek, wetland, river or some other water body. In order to fully protect our water resources, environmental protection has grown towards the use of secondary containment in many industrial facilities. It is time to implement the use of secondary containment for all aboveground structures which hold brine or other fluids. We realize that the legacy of these structures is primarily a liability of the conventional drillers, whom at times have been complacent to move forward and utilize modern environmental protection methods. According to the regulatory analysis, on a per well basis, this additional cost to the conventional drillers is \$3,000. Given the fact that oil prices/barrel have continually been hovering around \$100, it does seem the time is right to finally address these potential environmental risks. We therefore, support this provision for adoption at the minimum as it is written. (660a)

Response: The Department acknowledges the comment.

1031. Comment: 78.57(c)(1) -This form needs to be produced and reviewed prior to establishment of this section. (411)

Response: The form referenced in the comment is contained in a portion of the existing rulemaking that is being deleted.

1032. Comment: 78.57(c)(2)(vii) - Why should a liner under this section be required to satisfy EPA Method 9090 whereas as liner under section 78.56(a)(9)(iii) must meet ASTM Method D5747? (411)

Response: The standard referenced in the comment is contained in a portion of the existing rulemaking that is being deleted.

1033. Comment: 78.57(c) – This section is rather confusing. Is the section regarding secondary containment for any tanks or above ground structures that contain brine? It seems as though the secondary containment section needs to be a separate clause from 78.57(c). Subsection (c) should only be for pits and not tanks or above ground structures per the succeeding sections. Also, there should be construction guidelines for diking/secondary containment. Is a liner required, etc? (411)

Response: All references to pits as an acceptable structure for storing fluids produced during operation of the well are being eliminated from §§ 78.57 and 78a.57. This subsection applies for all new, refurbished or replaced tanks or other above ground containment structures approved by the Department that contain brine and other fluids produced during production of the well. Compliance with §§ 78.64 and 78a.64 (relating to containment around oil and condensate tanks) fulfills the requirements of this subsection. To be in compliance with §§ 78.64 and 78a.64, diking or other method of secondary containment must satisfy the requirements under 40 CFR Part 112 (relating to oil pollution prevention).

1034. Comment – This section requires secondary containment “sufficient to hold the volume of the largest tank, plus an additional 10% of volume for precipitation.” Considering the likelihood of extreme weather events coupled with the possibility of events resulting in the rupture of more than one tank in any given secondary containment area, the NPS suggests the Department adopt a standard of requiring a secondary containment “with the sufficient perimeter and height to hold 1.5 times the volume of the largest tank.” We believe this enhanced requirement will better protect lands and waters of the Commonwealth and adjacent areas and has long been employed by the National Park Service for nonfederal oil and gas operations conducted under our regulations found at 36CFR Part 9B. We are happy to discuss our experiences with this section of the 9B regulations with PA regulators. (1062, 1133)

Response: If secondary containment is properly designed, constructed, maintained & operated in compliance with these regulations, the Department believes the volume of the largest tank plus an additional 10% of volume for precipitation secondary containment capacity requirement is adequate to protect the environment.

1035. Comment: § 78.57(c): We also request clarification on whether this subsection applies to all existing operations or only new operations? We suggest this more protective standard be required of both existing and new drilling operations. (1062, 1133)

Response: This subsection applies to both new and existing operations at the time when any new, refurbished or replaced tanks or other Department-approved aboveground containment structures are used at the well site.

1036. Comment: Commentators express concern that section 78.57(c) only applies to threats of pollution to the waters of Pennsylvania, whereas the Section 3218.2(a) of Act 13 expressly states that containment also applies to “the ground surface or spills off the well site.” This concern also applies to Section 78.66(b)(1)(i). We ask EQB to ensure that all containment provisions align with intent of the General Assembly and the standards set forth in Act 13. (1099)

Response: The Department acknowledges the comment. Section 3218.2(a) of the 2012 Oil and Gas Act only applies to unconventional wells during drilling and hydraulic fracturing operations, and does not explicitly include fluids produced during the operation of the well in its list of materials subject to the section. Subsection (c) applies to all wells that are in production, whether conventional or unconventional and by its terms only applies to fluids produced during operation of the well.

1037. Comment: 78.57(c) – A requirement of secondary containment for brines would necessitate a large effort on the Commentator’s part to comply with the proposed standard if a large number of those tanks are required to be repaired, upgraded, or retrofitted simultaneously. In order to make this standard more attainable, include language that allows flexibility for the Operator to develop a plan (to be approved by the Department) to upgrade the containment at their locations in a phased, risk based approach. (1103)

Response: Sections 78.57(c) and 78a.57(c) require secondary containment for new, refurbished and replaced tanks at well sites. Operators must employ secondary containment when conducting such operations and the language is retained in the final rulemaking.

1038. Comment: The original rule provided that compliance with section 78.57(c) constituted compliance with section 78.64a. The proposed changes to section 78.57 remove any discussion of pits as an option to control, store, or dispose of production fluids. The proposed changes to section 78.64a caused that section to only apply to unconventional well sites. It is not clear how the Department plans to address operation, maintenance, and closure of existing production pits in the new regulations. (852a)

Response: The Department has added language to the final rulemaking requiring any pit for storage of production fluids in operation at the time of the effective date to be identified and properly closed in accordance with restoration standards with a set timeframe (one year).

1039. Comment: 78.57: The commentator strongly advocates that open top structures be prohibited for the containment of all produced fluids, flowback, volatile organics, and other wastes. (980, 1098)

Response: Section 78.57 and Section 78a.57 eliminate the use of open top structures for the collection of brine and other fluids during the operation of the well.

1040. Comment: 78.57(c): This should be without exception. No pit should be allowed – even under the Clean Streams Law – except for a very limited time (no more than 30 days) during an emergency. (980, 1098)

Response: The Department acknowledges the comment. Section 78.57 and Section 78a.57 eliminate the use of pits for the collection of brine and other fluids during the operation of the well, without exception.

1041. Comment: 78.57(d) – All liners and waste products must be disposed using best practices at off-site locations certified for hazardous materials. (980, 1098)

Response: The Department does not agree with the commenter’s assertion that all liners and waste products generated at well site are characteristically hazardous. See response to comment 1493 regarding on-site disposal. Off-site disposal of waste materials is managed by the Department’s Waste Management program and such materials must be handled in

accordance with applicable statutes and regulations.

- 1042.** Comment: 78.57(e): In addition to the secondary containment and additional safeguards around tanks to prevent unauthorized access, all tanks must be installed above ground for easy access and monitoring (980, 1098).

Response: See response to comment 1016.

- 1043.** Comment: Supplemental precautions must be added to avoid consequences like those from the January 2014 chemical tank leak in West Virginia. (980, 1098)

Response: The Department acknowledges the comment.

- 1044.** Comment: We applaud the DEP for amending § 78.57 to specifically: (1) prohibit the storage of brine and other fluids produced during operation of a well in an open top structure or in permanent pits; (2) require secondary containment for all new, refurbished or replaced tanks or other associated manifolds, or for additions to an existing series of tanks, for brine or other fluids produced during operation of well; and (3) prohibit the future use of underground or buried storage tanks, and removal of existing underground or buried storage tanks within three years. (1157)

Response: The Department acknowledges the comment. See response to comment 1016.

- 1045.** Comment: We recommend the adoption of the improvements regarding secondary containment. (1035)

Response: The Department acknowledges the comment.

- 1046.** Comment: § 78.57(c), (d), (f), and (g) – There is no indication of when flowback water is considered to be “brine or other fluids produced during operation of the well.” For the waste regulations, flowback (804) waste is generated for 30 days after fracturing. After that, it is considered to be production fluids (801).

Response: The distinction in waste fluids is driven by determining which stage of well development generated the fluids. Section 78.57 and section 78a.57 only apply to brine and other fluids produced when the well is in operation. Section 78.56 and section 78a.56 apply to substances and wastes from the drilling, alteration, completing, recompleting, servicing and plugging of the well. This distinction is clear enough and the Department has not amended this section.

- 1047.** Comment: § 78.57(c), (d), (f), and (g) – At what point, if any, is flowback water considered “brine or other fluids produced during operation of the well”? For the waste regulations, flowback (804) waste is generated for 30 days after fracturing. After that, it is considered production fluids (801). The manifolding and security requirements especially will become cumbersome if intended to apply during the initial flowback period. (124a, 913a)

Response: See response to comment 1046.

- 1048.** Comment: 78.57(d) -This requirement is too vague and leaves too many specific requirements up to interpretation. (411)

Response: See response to comment 1051.

1049. Comment: 78.57(d) C.O.G.E.N.T. recommends the adoption of this provision which creates design standard for tanks and above ground storage structures. (660a)

Response: The Department acknowledges the comment.

1050. Comment: Replace “fluids” with “liquids” wherever the term is used in this section. (1135)

Response: The term “produced fluids” is a common industry term used to describe all fluids produced from a wellbore.

1051. Comment: **Engineer’s certification and submissions of plans.** Section 78.57(d) should require that design plans for the tank system and secondary containment are certified and sealed by a licensed professional engineer. The design plans should be submitted to the Department as part of the permit application with a narrative explaining how the system is compatible with all stored production fluids, controls gas emissions, and otherwise complies with the regulations. (852a)

Response: The Department’s standards are performance based, and do not require review prior to permitting. The Department’s waste management regulations concerning tank storage of residual waste in 25 Pa. Code § 299.122 do not require prior review or licensed professional engineer certification for storage of residual waste in tanks. The final rulemaking includes language establishing these and other appropriate standards.

1052. Comment: Flowback should be stored in more secure, close-loop systems to prevent groundwater and air contamination.(24, 909)

Response: This section only applies to fluids produced during the operation of the well, and not flowback. Section 78.57 and section 78a.57 eliminate the use of pits for the collection of brine and other fluids during the operation of the well, without exception.

1053. Comment: **78.57(e)** – This section states that an operator must remove underground or partially buried tanks within 3 years of the effective date of the subsection and go on to say you must schedule the removal within 6 months of the effective date. The time frames are conflicting. (411)

Response: See response to comment 1016.

1054. Comment: 78.57(e): Underground tanks are allowed at gas stations and other industry facilities so why should tanks at well sites not be allowed? (411)

Response: See response to comment 1016.

1055. Comment: **78.57(e)** – The DEP intends to force operators to remove below ground brine storage tanks with this proposed regulation. Operators typically use buried brine tanks for gravity draining to minimize pumping, valves, and fittings. If above ground brine tanks are installed next to oil tanks, brine must be pumped from one tank to another, increasing the risk of pollution from vandalism or from freezing. I recommend the DEP study the potential environmental effects of freezing pipes and pumps associated with above ground brine tanks and fluid transfer. If the environmental benefits associated with removing buried brine tanks outweighs the potential pollution caused by frozen pipes and pumps, only then should this portion of regulation should be implemented.(450)

Response: The Department acknowledges the economic impact of the provision requiring removal of underground storage tanks at well sites and has amended the final rulemaking accordingly. Continued use of underground storage tanks at oil and gas well sites will be allowed under the final rulemaking. However, there are thousands of these underground storage tanks at well sites across the Commonwealth and proper standards for operation and maintenance of these storage tanks are critical for protection of the environment from spills and releases. For example, Section 3218.4(b) of the 2012 Oil and Gas Act establishes that permanent aboveground and underground tanks must comply with the applicable corrosion control requirements in the department's storage tank regulations. The final rulemaking includes language establishing these and other appropriate standards.

- 1056.** Comment: **78.57(e)** (includes Conventional Drillers) - We hereby emphasize our support for 78.57(e). We recognize that this provision mainly pertains to conventional drillers. With the advent of conventional horizontal drilling, it is of significant importance that attention be paid to underground or partially buried storage tanks. It is unclear at this point how conventional horizontal drilling will affect the conventional driller's operations.

It is well documented that underground and partially buried storage tanks create greater environmental risks than above ground storage tanks with secondary containment. Providing operators with a three year time frame provides them with adequate opportunity to do appropriate and needful business planning. Many of these tanks are very old. They are subject to weather and seasonally changing soil conditions and thus corrosion. The environmental harm that may be created by old and leaky tanks far outweighs the replacement cost.

Considerable discussion occurred during the TAB subcommittee meeting regarding removal and replacement of these tanks. There was not sufficient, factual information put forward that effectively demonstrated why these tanks need not be removed. During the meeting it was suggested that a certification of discontinuation of use should be accepted in lieu of tank removal. This is not acceptable. In cases where former gas stations have ceased operations, tanks most often are removed. Often, upon removal of these old tanks it is discovered that they had been leaking. Filing certificates for dotted fields of abandoned "tank litter" is not an acceptable environmental practice.

The September, 2013 STRONGER review noted that there may be as many as 200,000 tanks currently in statewide. "The review team has determined that a large number of tanks exist throughout Pennsylvania and that the state does not have standards for tank closure and removal. They further recommended that the DEP consider adopting regulations that address tank inventory, structural integrity, siting, and the use of open top tanks, secondary containment, tank security and removal." (Guideline Section 5.9.2.)[page 39] Much of what is proposed here meets that recommendation.

We support the recording initiative that will essentially create a partially underground and buried tank inventory. We strongly urge the adoption of this provision with the intent as it is presently written. This provision aids the Department in ensuring that our environment, especially that our water resources are adequately protected. (660a)

Response: The Department acknowledges the comment. See response to comment 1055.

- 1057.** Comment: Our production system consists of a number of wells producing oil, water and gas into gathering lines that are tied into a tank battery which typically includes 2 - 210 barrel above ground oil storage tanks, 1buried or bunkered 200 barrel brine storage tank, a gas separator and a gas meter

all contained within an area surrounded by a berm (dike) 2.5 to 3.0 feet in height. Brine produced into the oil storage tanks is transferred to the brine storage tank by gravity drainage. A Spill Prevention control and Countermeasure (SPCC) Plan certified by a professional engineer is prepared and implemented for each lease. The plan includes recommendations for periodic inspections of all production equipment including the storage tanks to ensure there are no fluid or gas leaks.

Proposed regulation § 78.57(e) states that underground or partially buried storage tanks may not be used to store brine or other fluids produced during operation of the well unless approved by the Department and that existing underground or partially buried storage tanks shall be removed within 3 years of the effective date of this subsection. To date, Dallas Energy has not experienced any leaks from its buried brine storage tanks and believes that the periodic inspections it carries out ensures the brine storage tanks are well maintained.

We recently prepared an estimate to remove the buried brine storage tanks and replace them with an alternate oil-brine separation system which would comply with the applicable corrosion control requirements. The low end of the estimate was \$12,000.00 which works out to 130 barrels of oil at today's price of \$90 per barrel. This in turn works out to over 4 months production from one of our 1 barrel of oil per day wells (not including operating costs). (885)

Response: See response to comment 1055.

1058. Comment: 78.57(e) – Underground or partially buried tanks that store brine have to be identified and exemption required to be requested to preclude the required removal within 3 years is a significant concern given the reason that most buried or partially buried tanks exist. These tanks have been sited in this matter to accept gravity flow from production tanks, provide resistance to freezing and for surface right of ways. Removal of these tanks results in many additional costs including tank removal (and likely replacement from damage during removal) new tanks, secondary containment construction, larger use of the surface and concerns over how to prevent the production water from freezing. (998)

Response: See response to comment 1055.

1059. Comment: 78.57(e) is new language addressing the removal of existing underground or partially buried storage tanks. Commentators assert that this new requirement is unnecessary and unjustified, and that EQB did not consider the cost of replacing the tanks in its analysis of the fiscal impact of the regulation. Other commentators state that this new requirement contradicts the grandfathering provision of Act 13. We ask EQB to explain how this provision aligns with the intent of the General Assembly and Act 13. We also ask EQB to explain in the Preamble and RAF of the final-form regulation how this subsection reasonably and adequately balances protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: The Department acknowledges the economic impact of the provision requiring removal of underground storage tanks at well sites and has amended the final rulemaking accordingly. Continued use of underground storage tanks at oil and gas well sites will be allowed under the final rulemaking. However there are thousands of these underground storage tanks at well sites across the Commonwealth and proper standards for operation and maintenance of these storage tanks are critical for protection of the environment from spills and releases. For example, Section 3218.4(b) of the 2012 Oil and Gas Act establishes that permanent aboveground and underground tanks must comply with the applicable corrosion control requirements in the department's storage tank regulations. The final rulemaking

includes language establishing these and other appropriate standards.

- 1060.** Comment: 78.57(e) - The obligation to remove existing underground or partially buried storage tanks within three years of the effective date of this subsection imposes excessive and unnecessary costs on legally adopted and utilized equipment and procedures for the storage of brine or other production fluids. The Department has not provided justification for a blanket rule that would impact hundreds of existing operations. Such justification would require analysis and review of a highly factual and site specific nature, which is entirely absent. Nor has the Department included any cost estimate in the Regulatory Analysis Form associated with removal and replacement of those tanks; only an estimate for registering those tanks (RAF19). Suggested language: (e) A well operator utilizing u underground or partially buried storage tanks as of the effective date of this section shall provide the Department with a list of the well sites where the underground or partially buried storage tanks are located within six months from the effective date of this subsection. (1137, 1174)

Response: See response to comment 1055.

- 1061.** Comment: The proposed Section 78.57(e) would require the removal of all underground or partially buried brine tanks. PADEP fails to realize that these underground tanks serve as a gravity drain from above ground oil tanks. If you force us to put these tanks at the same elevation as oil tanks, many more lines, fittings, and pumps would need to be in place to transfer brine. In the winter, these lines and pumps will freeze and pose a pollution hazard. Leaving tanks below ground is much less of a potential environmental hazard. (613)

Response: See response to comment 1055.

- 1062.** Comment: Production Fluid Corrosion Control Requirements- Support with Risk-Based Guidance : Subsection 78.57(f)'s requirement that all new, refurbished or replaced tanks that store brine or other fluid produced during operations of the well must comply with the applicable corrosion control requirements in 25 Pa. Code §§ 245.531-245.534 is a major expansion on Pennsylvania tank regulations and, therefore, the Board should provide a protocol or guidance for a risk-based implementation schedule. We ask for guidance on how an operator can reasonably manage and prioritize inspections based on the vast expansion of tanks falling under the scope of the Department's Chapter 245 Administration of the Storage Tanks and Spill Prevention Program. Under Chapter 245, the Department currently exempts tanks which are used to store brines, crude oil, drilling or frac fluids and similar substances or materials and are directly related to the exploration, development, or production of crude oil or natural gas regulated under Act 13. In its current proposal, the Department is interpreting § 3218.4(b) of Act 13, which requires all permanent aboveground and underground tanks to comply with the applicable corrosion control requirements in the Department's storage tank regulations, to mean compliance with §§ 245.531-245.534 (relating to corrosion and deterioration prevention).

An internal tank inspection, after the tank has been producing, requires specialist inspectors, in-depth cleaning and waste disposal procedures, confined space permits as well as other additional precautions and procedures to ensure safe and environmentally responsible inspection. Excessive inspection of tanks can result in damage to the internal coating of tank systems via access of personnel and inspection to the tank. This damage can exacerbate corrosion in the tank due to introduction of coating holiday tests. The overall cost to inspect atmospheric storage tanks on-site, considering the various requirements necessary to inspect the tank in a safe and environmentally prudent manner can easily exceed 50% of the cost to simply replace the existing tank with a new tank.

Therefore, to provide the maximum environmental gain of the proposal, while avoiding unnecessary risks, costs and inefficiencies, we advocate that the Board provide language addressing the following: (1) options for phased implementation with tank operators whose tanks are currently exempt from Chapter 245, (2) a method for providing data from the Department outlining issues seen from recently installed Marcellus-dedicated production tanks specifying that the tanks are experiencing rapid deterioration, and (3) a method in which the Department will work with operators to obtain inspection data with operators to ascertain whether there is a pronounced “risk” to tank integrity on new Marcellus infrastructure. In summary, we suggest the Board consider a risk-based inspection approach to better focus inspection activities on atmospheric storage tanks where a leak could create a tangible environmental, personal safety, and/or negative impact on the community. (1085)

Response: Section 3218.4(b) of the 2012 Oil and Gas Act requires corrosion control for tanks. The requirements build on established regulations governing aboveground storage tanks. The established regulations are based on industry standards and best practices. Routine inspections are a standard part of every tank installation program and are retained in the final rulemaking; however the timeframes have been adjusted to more closely match the inspection timeframes in Chapter 245.

- 1063.** Comment: 78.57(f) - Corrosion is an important factor with both the tanks and the brines and other fluids that may be stored. Commentator recommends the adoption of this provision as written. (660a)

Response: The Department acknowledges the comment.

- 1064.** Comment: 78.57(g): As previously referenced in our general comments about the drawbacks of overly prescriptive language, it is our suggestion that the prescriptive language be stricken. The requirement for reasonable protection from unauthorized acts of third parties should suffice while allowing the operator the flexibility to determine the best approach for each particular circumstance that avoids inadvertently creating occupational safety concerns. (1071)

Response: See response to comment 1217. The Department agrees that changes to § 78.57(g) to remove the requirement to install equipment to prevent unauthorized access by third parties are appropriate for conventional operations.

- 1065.** Comment: 78.57 (g): We support requiring security around storage vessels at well pads (113)

Response: The Department acknowledges the comment.

- 1066.** Comment: 78.57(g) - Landowners are concerned about third parties gaining access to sites and tank areas. Tanks may contain a variety of substances that in the event of an authorized action may place at risk our water supplies or even nearby properties. C.O.G.E.N.T. recommends that these security measures and all others be adopted in order to provide for adequate protections for our water supplies and properties. (660a)

Response: The Department acknowledges the comment.

- 1067.** Comment: All of our well sites are visited at least once per week by company personnel. Routine site inspections are made regarding well conditions as well as onsite containment. Tank measurements are tracked to ensure no fluid is being lost. If there are any issues regarding tanks or

valves they are caught very early. We disagree with the need to construct dikes around our tank facilities as we believe it will disguise any early signs of deterioration from being detected. Specifically, during the rainy season the dikes will collect rain water and during the winter months drifting snow; both of which will obscure the lower portions of the tank and make early detection of problems impossible. Earthen dikes around tanks associated with oil bearing wells make some practical sense as oil will float to the surface of pooled water. Earthen dikes around brine tanks associated with gas wells do not as it will be very difficult to distinguish pooling rain water from tank discharges.

It has always been our goal to reduce our well site foot print as much as practicable, the addition of a tank dike will require the tank to be placed farther from the well head, drip and meter. The proposed regulation requires a dike large enough to hold the largest tank plus 10%. On a standard gas well there is typically one - 100 barrel brine tank, the dike area required to contain this 110% capacity will encompass a very large area and will necessitate a large finished platform. For existing wells where a producer needs to change or fix a tank it will require enlarging the existing location which will create more disturbed areas and potential run off. The environmental impacts resulting from disturbing this stabilized existing location for the relocation of a tank and construction of a dike far outweighs the benefits. (416, 418)

Response: The Department believes that secondary containment provides a necessary environmental protection measure in the event of a tank rupture.

- 1068.** Comment: With regard to 78.57 (g) we see many safety issues with what is proposed. The use of locks on tank valves and access lids create a hazard especially in the winter months when they are prone to freeze. Thawing of locks in a potentially gaseous environment around a well head will certainly lead to a higher percentage of accidents. The Department's primary concern should be at the tank discharge and the most prudent and safe way for all Involved to secure tanks are through the use of solid hex head plugs in the drain valve outlet and removal of the handle from the drain valve body. (416, 418)

Response: The Department agrees that changes to § 78.57(g) to remove the requirement to install equipment to prevent unauthorized access by third parties are appropriate for conventional operations.

- 1069.** Comment: Additional safety concerns with 78.57 (g) involve the use of retractable ladders on tanks. Currently the industry standard incorporates a step type system (double handrail) which allows personnel to access the top of a tank to obtain needed measurements of fluid levels. Use of a retractable ladder will only add to fall hazards and accidents especially during the winter months when the retractable ladder becomes frozen or the rungs iced over. The double handrail stair system is the best and safest way to protect our employees from fall hazards. If the main concern driving the use of retractable ladders is the general public than tank signage should continue to serve the purpose of putting them on notice as to potential hazards. (416, 418)

Response: See response to comment 1068.

- 1070.** Comment: § 78.57 should prohibit the burial of tanks used to store liquid waste as the tanks may corrode and leak.(853a)

Response: See response to comment 1016.

1071. Comment: 78.57: The Department should impose a time limit, such as 60 days, for on-site storage of production fluids. (997a)

Response: The Department does not believe an arbitrary time limit is necessary for on-site storage of production fluids so long as the requirements of this section are being followed.

1072. Comment: 78.57: If storage (of production fluids) exceeds one year, the same pit/tank integrity inspection requirements we recommend in our comments for § 78.56 should be applied here as well. (997a)

Response: The Department acknowledges the comment. Section 78.57 and section 78a.57 eliminate the use of pits for the collection of production fluids. The current and proposed regulations adequately address the inspection of tanks for the storage of production fluids.

1073. Comment: Commentator is calling for a complete ban on open wastewater impoundments.(119)

Response: The Department acknowledges the comment.

1074. Comment: Waste water from drilling must have very strict handling procedures enforced by stiff fines if not explicitly followed. A trust fund needs to be established for any necessary cleanup. (186)

Response: The Department has regulations that cover the handling of wastewater and require operators to perform any necessary cleanup. The Department has the authority to order cleanups or corrective action to be conducted or impose fines in the event noncompliance.

1075. Comment: 78:57: Please refer back to Pages 3-5 of these comments under “Temporary Storage” and comments pertaining to the “Seasonal High Water Table” as most, if not all, of the suggestions and considerations there also apply as to what comments should be made here. (189) Cross reference comments in 78.56 from this commentator.

Response: Seasonal high water table in § 78.56 applies to pits. Section 78.57 and section 78a.57 eliminate the use of pits for the collection of brine and other production fluids.

1076. Comment: Be assured that I care deeply for the earth. Please make sure that laws reflect proper disposal of the chemicals and liquids that are used to drill deep into our earth. (584)

Response: The Department acknowledges the comment.

1077. Comment: Fumes, Mists and Liquids Discharged from Storage Tanks: There should be no legally allowed leakage or release of vapors, mists or fluids. (609, 938, 938a)

Response: Air quality is regulated under Article III and is beyond the scope of this rulemaking.

1078. Comment: Containers that might accumulate vapors, such as condensate tanks or produced water tanks, must have vapor capture mechanisms that prevent the escape of any fumes, especially known toxins such as benzene. (609, 938, 938a)

Response: See response to comment 1077.

1079. Comment: Air quality monitors that operate continuously must be installed to verify and report to

the DEP that harmful gases are not escaping from the site. (609, 938, 938a)

Response: See response to comment 1077.

1080. Comment: Limits for chemical emissions from tanks must take into account

(1) The density of tanks in an area as aggregate air pollution sources.

(2) Their proximity to buildings with sensitive populations (e.g., schools, hospitals). (609, 938, 938a)

Response: See response to comment 1077.

1081. Comment: A major concern has to be our water supplies - particularly after the poorly regulated situation in Charleston, WV that just occurred. A simple chemical spill took out the water supply for 300,000 people because of the lack of regulations and oversight. Open pits and wastewater impoundments, also lacking sadly in WV, have a tendency to fail - from poor construction or by forces of nature - which imply that the safest feature that would minimize environmental hazards would be the requirement for a closed loop system as a basic water handling technique. It must be appreciated that somewhere between 1 million and 7 million gallons of water are needed to frack a single well - which may be tracked over the course of its lifetime possibly up to 6 or 7 additional times. Water - even abundant here in PA compared to the western part of the US is still a valuable resource and must be protected from inadvertent mishaps. (916)

Response: The Department acknowledges the comment. Section 78.57(a) and section 78a.57(a) ban the use of open-top structure to store brines and other fluids produced during operation of the well.

1082. Comment: Sections 78.56 and 78.57 strengthen the standards for the storage of liquid and solid wastes, but do not set forth a regulatory scheme that will adequately protect the residents and resources of the Commonwealth from the risks associated with contaminated waste products. These sections should require DEP to apply US RCRA Subtitle C standards to regulate hazardous materials contained in pits, and should prohibit the use of any pits and open tanks. The bottom line is that the use of pits and open tanks is an irresponsible practice that must not be allowed to continue. (918)

Response: The Department acknowledges the comment. Section 78.57(a) and section 78a.57(a) ban the use of open-top structure to store brines and other fluids produced during operation of the well.

1083. Comment: Open storage pits, of any kind, should never be allowed. A pit lined with plastic has an inevitability of failure. For example, WPX contaminated the well water of at least one family in Donegal Twp, Westmoreland County through the tearing, or forming of holes, in the liner of a waste pond. For over a year the impacted family has been utilizing a temporary source of water and the DEP has yet to issue a determination, in spite of having ample water tests which show an increase in barium after drilling activities began. From my review of O&G compliance reports, including inspector comments from site visits and violations issued, problems with waste pits are very common. Eliminating these pits would allow inspectors to spend more time monitoring other areas of concern and would remove the waste pit as a source of contamination. (919, 943)

Response: The Department acknowledges the comment. Section 78.57(a) and section 78a.57(a) ban the use of open-top structure to store brines and other fluids produced during operation of the well.

- 1084.** Comment: Produced Water (i.e. water returned from fracking well) All facilities used to hold fluids that may contain potential water pollutants should be closed and specifically engineered for the task.

Produced water contains chemicals from the prior shale deposits (e.g., salts, heavy metals, organic compounds and radio nucleotides) as well as chemicals introduced by the tracking company (e.g., acids and preservatives). Produced water poses a threat to the water, soil and air.

- Water threat: Concentrations of the chemicals listed above are up to 1000 times the allowed limits in surface or drinking water supplies. Numerous cases of harm to well water, municipal water, and stream life have been recorded in PA and in every formation in the US where deep shale operations have occurred.
- Soil threat: The heavy metals and radio nucleotides will permanently contaminate any soil where produced water is spilled. The salts might be washed out, but this simply transfers the problem to water supplies.
- Air threat: Produced water often contains organic compounds released as volatiles such as the carcinogen, benzene, that travel in plums off site. These toxic clouds are hard to measure, but scientists have begun to document their presence downwind from operations, resulting in a prediction of increased cancer risk to residents living near shale gas operations.

The many threats to water, soil and air will not be eliminated with containers and closed loop systems, but this will reduce the most obvious problems. The US Department of the Interior, advises of pits: “Use of enclosed tanks and closed loop or semi-closed loop systems is environmentally preferable to the use of open pits and is to be encouraged by the BLM. Open production pits are to be strongly discouraged. Closed tanks and systems minimize waste, entry by wildlife, fugitive emissions that affect air quality, and reduce the risk of soil and groundwater contamination. In addition, the use of tanks instead of pits expedites the ability to complete interim reclamation. Costs may be reduced with the use of tanks, particularly when the pit requires solidification or netting.” Waste pits are banned in New Mexico. According to news articles: Antero in Colorado does not utilize pits, but a closed loop system. Chief and Rex Energy have moved to all closed loop systems. Andarko Petroleum uses close loop systems in Pennsylvania. The EPA Star program recommends a closed loop system. But Pennsylvania’s *new proposed* regulations allow the continuance of frack pits, inviting further pollution and contamination of waters. (938, 938a)

Response: The Department acknowledges the comment. Section 78.57(a) and section 78a.57(a) ban the use of open-top structure to store brines and other fluids produced during operation of the well.

- 1085.** Comment: Produced Water (i.e. water returned from fracking well)
- A. Regulations should not permit any open containers.
 - B. Produced water should be in closed tanks and closed loop systems designed for the broad array of chemicals possible in produced water.
 - C. The tanks and closed loop systems should be permitted only for a designated, limited time, e.g., during weeks of fracking.

Note that the requirement for closed containers/closed loop systems will avoid the use of “natural topographic depressions” within the definitions of an allowed “pit” and/or “freshwater impoundment.” No regulations should allow fluids related to oil and gas operations to be managed in “natural depressions.” (938a)

Response: The Department acknowledges the comment. Sections 78.57(a) and 78a.57(a) ban the use of open-top structure to store brines and other fluids produced during operation of the well.

1086. Comment: Fumes, Mists and Liquids Discharged from Storage Tanks

Discharges of vapors and mists during tank checks and leaks during storm water flow are common sources of pollutants. These are occasionally detected by citizens or the DEP, and receive little penalty. Such chronic, small releases add up for the people and animals near the well or industry facility.

The proposed regulations will not prevent flooding, spills, and leak violations that are commonly occurring, but they will motivate operators to plan ahead with a greater margin of safety for liquid and vapor releases. For example, allowing open pits and tanks cordoned off within some general freeboard space, allows a company to receive a lower penalty for a discharge of chemicals if storm water exceeds the freeboard. Even now, violations due to overflow of the required freeboard occur on a regular basis, companies repeatedly are charged with the same violations, and fines are limited or non-existent. (938, 938a)

Response: See response to comment 1077. Sections 78.57(a) and 78a.57(a) ban the use of open-top structure to store brines and other fluids produced during operation of the well.

1087. Comment: These amendments do offer better choices for storage and disposal of production fluids, but language is not clear regarding the use of advanced leak detection systems, secondary capture strategies, and significant bonding practices to promote deterrence and improved operation and maintenance to achieve full compliance was the hazardous waste program, under RCRA Subtitle C, 40 CFR- Parts 260-282. (1063)

Response: The Department believes that the requirements in this section combined with § 78a.64a are adequate to provide necessary protection to the environment and public health and safety.

1088. Comment: Frack fluid should be made a “hazardous waste” since it contains chemicals that are shown on the Governments list of hazardous chemicals to be dangerous to our health and with some highly carcinogenic. Mixing of chemicals is also a very dangerous act since no one can be sure what kind of reaction or toxic soup you will render. It also exhibits radioactive characteristics that are above allowed exposure limits in some of the flowback.(Thanks mr cheney). (1072)

Response: The Department believes that the requirements in this section combined with § 78a.64a are adequate to provide necessary protection to the environment and public health and safety.

1089. Comment: A full and documented cradle to grave chain of custody must be implemented for all drill cuttings, produced water, flowback, and misc. waste materials. (1078)

Response: See response to comment 1747.

1090. Comment: Monitor radioactivity of all oil and gas well products– solids, liquids, and gases on an on-going basis. Include tracers to all chemicals used to frack wells for liability purposes (1098)

Response: The Department acknowledges the comment.

1091. Comment: Prohibit wastewater storage in open pits or impoundments. (1106)

Response: Sections 78.57(a) and 78a.57(a) ban the use of open-top structure to store brines and other fluids produced during operation of the well.

1092. Comment: 78:57: The residents of this Commonwealth have expressed their concerns regarding the impact that fracking has on their communities. Due to the fact that fracking produces enormous volumes of toxic wastewater, there is great concern that the toxins that are stored in open-air waste pits contain cancer-causing and radioactive material. Banning all toxic waste pits and restricting the pumping of toxic materials from fracking into wells would ensure that PA residents are not exposed to these toxic substances. As such, it is my hope and desire that PA DEP will mitigate any negative effects that fracking may have on the wastewater of this Commonwealth and protect our residents. (1112, 10328 – 17454)

Response: Sections 78.57(a) and 78a.57(a) ban the use of open-top structure to store brines and other fluids produced during operation of the well.

1093. Comment: Commentator supports the prohibition on using pits to manage brine and production fluids. (852a)

Response: The Department acknowledges the comment.

1094. Comment: 78:57: The proposed language related to open-top storage of brine and other production fluids should be clarified to reflect that such storage containers may be used during the drilling and completion of oil and gas wells. (1113, 1118, 1120, 1115a, 1176-1188)

Response: Sections 78.56 and 78a.56 cover drilling and completion of wells. Sections 78.57 and 78a.57 are strictly for produced fluids.

1095. Comment: Four years ago, before retiring, I owned a manufacturing and wholesale canvas business. I learned of the gas industry's need for pit liners. I was familiar with liners of waste lagoons for dairy operations. And we had the equipment to handle rolls of films and fabric up to 3,000 lbs. This new opportunity seemed a natural for our business. In order to make an intelligent sales proposal, I studied lining design and materials. To my surprise, the Pennsylvania regs. were so lax compared with liners engineered for safety, like it was of consequence. The 30 mil and sometimes 20 mil, single layer, un-monitored, plastic liner is weak planning. But weaker still are the rules for cleaning up after drilling. In most cases, PA regs. Allow the operator to bury the drill cuttings, sludge of flow back chemical waste, and the liner on site in a shallow grave. I guess that is what is meant by, "cradle to grave" toxic material responsibility. Someone aptly compared this practice to creating thousands of little Love Canals. (1126)

Response: Section 78.57(a) and section 78a.57(a) ban the use of open-top structure to store brines and other fluids produced during operation of the well.

1096. Comment: The Department provides no rational explanation for its restricted use of open topped containment.(1172)

Response: Under § 78.56 open pits are allowed to temporarily store regulated substances and wastes from the drilling, altering, completing, recompleting, servicing and plugging wells at the well site where the substances or wastes are generated or will be beneficially used.

However, under §§ 78.57 and 78a.57 open top structures are not allowed to store brine and other fluids produced during the operation of a well. The Department notes this section of the regulations is focused on control, storage and disposal of production fluids at a well site. The scope of this section applies to well sites where wells have been put into production which is fundamentally different than §§ 78.56 and 78a.56. Those sections are focused on temporary storage at a well site which is in the phase of developing oil and gas wells. It is appropriate to restrict the use of open topped containment in §§ 78.57 and 78a.57 because closed containers are less likely to spill or overtop and require less maintenance to ensure they are in proper working condition. In addition, closed containers do not allow precipitation to enter the waste which reduces the volume of wastewater that must be managed at the operation.

1097. Comment: The complexity of the impoundment standards as well as the restrictions on open top tanks will either discourage reuse and recycling or make it more expensive.(1172)

Response: see response for 1766

1098. Comment: We all strongly oppose any permits to open and maintain frack waste pits. (1034)

Response: The Department acknowledges the comment.

§ 78.58 Onsite processing

1099. Comment: 78.58 (a) thru (f) – The regulations should encourage and facilitate the processing, recycling and beneficial reuse of fluids and other waste materials at well sites. The Department has maintained on several occasions that it is a goal for the Commonwealth, where appropriate, to promote the responsible recycling and reuse of oil and gas wastes to reduce the demand on fresh water resources for oil and gas well development and operations. The establishment of regulatory provisions to govern the recycling and reuse of oil and gas wastes will protect public health, safety and the environment, as well as be a benefit to the oil and gas industry. The commenters' suggested language below clarifies that operators may conduct processing, recycling and beneficial reuse activities at well sites and such operations under the jurisdiction of the Department's Office of Oil and Gas Management. The commentators support the Department's proposed Subsection 78.58(b), and suggest that the physical removal of free phase hydrocarbons and the addition of biocides to reuse fluids be included as activities that would not require approval from the Department. Additionally, the commentators are in favor of allowing the Department to post other activities on its website, as appropriate, that would not require approval from the Department if conducted at a well site or centralized impoundment permitted pursuant to Section 78.59c. Processing of drill cuttings under Subsection 78.58(c) should be included as one of the activities in Subsection 78.58(d) that does not require compliance with the requirements of the Solid Waste Management Act. See suggested regulatory language below. (1137, 1174)

Response: The Department does support the processing, recycling and beneficial reuse of fluids and other waste materials at well sites. However, certain activities present enough of an environmental hazard that the Department should have the opportunity to review and approve those activities prior to implementation. Therefore, the Department has retained the rulemaking language in this section. The Department notes that operators may receive deemed approval for use of a prior approved fluid processing procedure under subsection (g) with only notice to the Department.

1100. Comment: **78.58** – We support deletion of alternative rules for pits constructed prior to July 29, 1989. We support the proposed notification and reporting requirements for the operator to keep the

PADEP informed of onsite processing plans or transportation of materials to another well site. (1143)

Response: The Department acknowledges the comment.

1101. Comment: We do not support the use of centralized impoundments because of the potential for air and water pollution. (1143)

Response: Air emissions from oil and gas facilities are regulated under Article III. Changes to Article III are beyond the scope of this rulemaking. Additionally, the final rulemaking requires all centralized impoundments to comply with permitting requirements in Article IX which will ensure that Chapter 78 does not result in disparate requirements or disproportionate costs on one particular economic or extractive sector.

1102. Comment: We recommend that the operator provide more information in its notification to the PADEP about the procedures and tests used to characterize waste. This will ensure the waste is properly treated, handled, and disposed. (1143)

Response: The Department acknowledges the comment. The Department believes that the §§ 78.58(h) and 78a.58(h) requirement to characterize sludges, filter cake, or other solid waste remaining after the processing or handling of fluids under § 287.54, along with other waste characterization requirements (see, e.g., § 78.62(b)) is sufficient for proper handling of the wastes. Waste characterization procedures are relatively standardized and do not need to be identified by the operator at the time the processing approval request is submitted.

1103. Comment: Pre-approval to aerate fluids should be limited to non-volatile materials and wastes. Aeration of volatile materials and wastes can contribute to air pollution and should be conducted only in closed-loop tank systems capable of capturing air pollution and using vapors for power (preferably), or alternatively routing them to an incinerator or flare. (1143)

Response: Air emissions from oil and gas facilities are regulated under Article III. Changes to Article III are beyond the scope of this rulemaking.

1104. Comment: Based on the information contained in comments 1100 through 1103, above, Commentator recommends the following changes to the proposed regulations at §78.58:

§ 78.58. Onsite processing.

(a) The operator may request approval by the Department to process fluids generated by the development, drilling, stimulation, alteration, operation or plugging of oil or gas wells at the well site where the fluids were generated or at the well site where all of the fluid is intended to be beneficially used to develop, drill or stimulate a well. The request shall be submitted on forms provided by the Department and demonstrate that the processing operation will not result in pollution of land or waters of the Commonwealth.

(1) The operator shall provide the Department with a copy of the procedures and tests that will be used to characterize waste, to ensure it is properly treated, handled, and disposed.

(2) Onsite processing of volatile materials and wastes shall be conducted in closed-loop tank systems capable of capturing air pollution and using vapors for power (preferably), or, upon a showing of good cause, routing vapors to an incinerator or flare.

(b) Approval from the Department is not required for the following activities conducted at a well site within lined containment areas:

(1) Mixing fluids with freshwater.

(2) Aerating of non-volatile fluids.

(3) Filtering solids from fluids.

(c) The operator may request to process drill cuttings only at the well site where those drilling cuttings were generated by submitting a request to the Department for approval. The request shall be submitted on forms provided by the Department and demonstrate that the processing operation will not result in pollution of land or waters of the Commonwealth.

(d) Processing residual waste generated by the development, drilling, stimulation, alteration, operation or plugging of oil or gas wells other than as provided for in subsections (a) and (b) shall comply with the Solid Waste Management Act (35 P.S. §§ 6018.101—6018.1003).

(e) Processing of fluids in a manner approved under subsection (a) will be deemed to be approved at subsequent well sites provided the operator notifies the Department of location of the well site where the processing will occur prior to the beginning of processing operations. The notice shall be submitted electronically to the Department through its web site and include the date activities will begin.

(f) Sludges, filter cake or other solid waste remaining after the processing or handling of fluids under subsection (a) or (b), including solid waste mixed with drill cuttings, shall be characterized under §287.54 (relating to chemical analysis of waste) before the solid waste leaves the well site. (1143)

Response: See responses to comments 1100 through 1103.

1105. Comment: **78.58** – Chapter 78 should encourage the processing, recycling and beneficial reuse of fluids and waste at well sites. Regarding waste and water management at a well site, the natural gas industry has been recycling and/or reusing water and minimizing fresh water use for quite some time now, and unfortunately the new regulations are forcing operators to rethink this option. In order to increase the amount of water being reused/recycled in the Commonwealth, the regulations need to provide an avenue for the operator to document, move, or reuse water from one site to another. In addition, the Office of Oil and Gas should have its own regulations concerning water management, which should not conflict or be confused with those of the Office of Waste Management.

Details regarding the approval process of processing fluids by the Department are needed, as is a reference to the storage or reuse of fluids consistent with §78.56. The regulations should encourage and facilitate the processing, recycling and reuse of water at well sites. The changes suggested above would clarify that operators may conduct such processing at well sites and such operations are under the jurisdiction of the Department's Office of Oil and Gas Management and do not require approval under the Solid Waste Management Act and the Department's Waste Management program. See suggested regulatory language that follows. (1153)

Response: The Department does support the processing, recycling and beneficial reuse of fluids and other waste materials at well sites. However, certain waste management activities present enough of an environmental hazard that the Department believes additional oversight is appropriate. The rulemaking language balances ease of recycling and reuse with necessary environmental protections and has been retained in the final rulemaking. The rulemaking is consistent with and implements section 3273.1 of the 2012 Oil and Gas Act, which establishes the relationship between the Solid Waste Management Act and the Oil and Gas Act oversight of waste management activities on well sites.

1106. Comment: **§78.58** – The regulations should encourage and facilitate the processing, recycling and beneficial reuse of fluids and other waste materials at well sites. The establishment of regulatory provisions to govern the recycling and reuse of oil and gas wastes will protect public health, safety and the environment, as well as be a benefit to the oil and gas industry.

Processing of drill cuttings under Subsection 78.58(c) should be included as one of the activities in

Subsection 78.58(d) that does not require compliance with the requirements of the Solid Waste Management Act.

Suggested amendatory language:

(a) The Department supports the processing, recycling, and beneficial reuse of fluids and other materials generated by the development, drilling, stimulation, alteration, operation or plugging of oil or gas wells, where the processing of the fluids or other materials for recycling or beneficial reuse will not result in pollution of land or waters of the Commonwealth. The operator may process fluids generated by the development, drilling, stimulation, alteration, operation or plugging of oil or gas wells at the well site where the fluids were generated or at the well site where all of the fluid is intended to be beneficially used to develop, drill or stimulate a well. Such processing may not result in pollution of land or waters of the Commonwealth.

(b) Approval from the Department is not required for the following activities conducted at a well site or centralized impoundment permitted under § 78.59c:

- (1) mixing fluids with freshwater;
- (2) aerating fluids;
- (3) filtering solids from fluids;
- (4) physical removal of free phase hydrocarbons;
- (5) the addition of biocides to reuse fluids; or
- (6) any other activity approved by the Department and posted on its website.

(c) An operator may temporarily store and/or process fluids generated by the development, drilling, stimulation, alteration, operation or plugging of an oil or gas well at a well site other than the well sites where the fluids were generated or are to be ultimately reused, so long as the following conditions are met:

- (1) The well site where the storage or processing is to occur is permitted and bonded;
- (2) The well site maintains a current PPC plan that is consistent with the Department's regulations;
- (3) The operator maintains accurate transportation records of the fluids entering and leaving the well site, consistent with Section 3218.3 of Act 13 ;
- (4) Temporary storage complies with applicable requirements of the act and regulations relating to tanks;
- (5) Temporary storage occurs in approved storage structures in accordance with applicable requirements of Sections 78.56 and 78.57;
- (6) Processing of fluids is conducted in accordance with this section;
- (7) Temporary storage and/or processing will not exceed a single consecutive twelve month period; all onsite activity incidental to temporary storage and/or processing must occur within this timeframe;
- (8) The operator must notify the Department of locations where temporary storage and/or processing will occur a minimum of three (3) days prior to the commencement of activity. This notice shall be submitted electronically to the Department through its website and include the intended date(s) of activity commencement;
- (9) An operator that stores, processes or beneficially reuses fluids pursuant to this section in accordance with this paragraph shall be deemed to have a residual waste permit by rule under Article IX of Title 25;
- (10) An operator subject to a permit by rule under this section is not required to apply for a permit under Article IX of Title 25 or comply with the operating requirements of Article IX of Title 25 so long as the authorized storage, processing and beneficial reuse activities are conducted in accordance with this Chapter.

(d) An operator may request approval from the Department to temporarily store and/or process fluids generated by the development, drilling, stimulation, alteration, operation or plugging of an oil or gas well at a location other than a well site or centralized impoundment. The request shall

be submitted on forms provided by the Department, accompanied by a written consent from the landowner, and subject to the following conditions:

- (1) The operator prepares and maintains a current PPC plan that is consistent with the Department's regulations for the location;
 - (2) The operator maintains accurate transportation records of the fluids entering and leaving the location consistent with consistent with Section 3218.3 of Act 13;
 - (3) Temporary storage complies with applicable requirements of the act and regulations relating to tanks;
 - (4) Temporary storage occurs only in above ground tanks subject to applicable requirements of Section 78.56 and 78.57;
 - (5) Any processing is conducted in accordance with this section;
 - (6) Temporary storage and/or processing will not exceed a single consecutive twelve month period and all onsite activity incidental to temporary storage and/or processing must occur within this timeframe;
 - (7) The operator must notify the Department of the locations where temporary storage will occur a minimum of three (3) days prior to the commencement of activity. This notice shall be submitted electronically to the Department through its website and include the intended date(s) of activity commencement;
 - (8) An operator that stores, processes, or beneficially reuses fluids pursuant to this section in accordance with this paragraph shall be deemed to have a residual waste permit by rule under Article IX of Title 25;
 - (9) An operator subject to a permit by rule under this section is not required to apply for a permit under Article IX of Title 25 or comply with the operating requirements of Article IX of Title 25 so long as the authorized storage and beneficial re-use activities are conducted in accordance with this Chapter.
- (e) An operator may process drill cuttings at the well site where those drill cuttings were generated where such processing will not result in pollution of land or waters of the Commonwealth.
- (f) Sludges, filter cake or other materials remaining after the processing or handling of fluids pursuant to this Section, including materials mixed with drill cuttings, shall be characterized pursuant to 25 Pa. Code § 287.54 before the material leaves the well site. (1147, 1153)

Response: See response to comment 1105.

1107. Comment: This provision was discussed at length at the TAB subcommittee meetings this past summer. We are supportive of recycling efforts, as they greatly benefit our community, environment and the industry. Industry suggestions during the TAB subcommittee meetings regarding the duration of on-site processing at well sites in many cases near our homes, schools and perhaps hospitals provide us with concerns. These concerns are not without substance. The MAZZARRA site, Washington Township, Wyoming County during 2013 had a 9,000 gallon spill of treated flowback water that was contained in a basement of a nearby home. That is not proper secondary containment. North Dakota has had a number of brine spills just in the recent months alone. We need to be adequately prepared so we can avoid these situations.

It is important to note, that while these are temporary onsite processing facilities, with the long-term view and fluctuations in drilling due to a variety of reasons, centralized WMGR123 facilities are the preference. Regulations need to encourage the use of these facilities over the temporary on-site processing.

We want to be clear, whatever the end result that facilitates the industrial onsite processing, equal consideration needs to be given to locations where there are nearby homes, schools or hospitals.

This is imperative in locations where there are no local ordinances that would supply basic guidelines providing nearby residents measures that would extend to them being comfortable within their homes. Thus, as an attempt to provide a pathway towards reaching that delicate balance where all may thrive, we offer these recommendations on this section.

- As proposed, these sites are somewhat different than either the OG-071 or WMGR123 facilities. In the case of 78.58, we recommend that the Department develop two new permits and a corresponding guidance document.
- The first permit is the EZ permit. These are facilities located either at an adjacently expanded area to a well site to accommodate processing or on an existing well site. Regardless, in either case, the distance from the edge of the pad or expanded area to the nearest occupied dwelling is 1500' or greater. This is a more isolated location and thereby processing is more respectful towards the community and local impact. We need to give the industry an incentive to make better location choices. This is a way of achieving that goal. These are intermittent facilities. These locations the operator obtains a one year permit. With a minimum of nine months of absence or no activity, they can apply for a renewal for another year period. In that fashion, they can renew the permit up to two times, facilitating a total of 3 years of processing at that location. This provides sufficient opportunity to service wells nearby.
- The second permit is a restricted permit.
 - This permit is only issued for locations that are less than 1500' from the nearest occupied dwelling. There are cases where well pads have been sited too near homes and have resulted with unreasonable local impacts to the nearby neighbors. Often, it is these same cases where municipalities lack local zoning and planning. It is even more likely that these same municipalities will not address planning and zoning for a number of localized reasons, one being it may be very few families affected. However, the fact remains that well sites are located too near some homes and the impacts are unreasonable in terms of intolerable noise and at times air quality issues due to diesel exhaust fumes. Since there is a regulatory opportunity here, we are recommending that the opportunity be taken. If the operator is able to obtain waivers from all the neighbors within the 750' then they do not have to do the required mitigations as outlined below.
 - This permit is a one-time temporary permit, three months with an option for a three month renewal. However, in the case of the neighbor's waving the mitigations, for the three month renewal the operator will need to obtain renewal waivers from all occupied dwellings within the 750'. This is to provide the neighbors with the opportunity to have mitigations in place now that they've had the experience, and perhaps an unreasonable impact.
 - Due to variations in topography, temperature, season and localized wind patterns there is a variety of experiences in which noise and air quality impacts affect the nearby neighbors. There are cases where homes at a 300' distance from a well site are not that inconvenienced. On the other hand, there are cases where a 500' distance is not adequate. It is not unusual for the nearby homeowner to not have had any contact with the operator regarding the site location since it is not located on their property, but rather on their neighbor's property. Generally, only the landowner where the well site is located had input into the well site location. It is clear that in some cases, based on experienced localized impact, neither 300' nor

500' distance is adequate. Now, there is a necessity to do more industrial activities on these sites that in some case may not be such a desirable location in regards to impacting the nearby neighbors. We are not opposed to the activity, but rather we desire to address impacts in such a way that all may thrive. This is the exact reasoning for these two options.

- Notification – this is a different type of facility. Neighbors within 750' need to be given a notice that the permit is being applied for, what the facility is, and a contact person – name & phone number to contact in case of a problem. Presently, not all operators return calls of their neighbors. A neighbor may have a legitimate need to contact them. For example, in case of too much idling diesel traffic and the result is they are having air impacts inside their home. This situation has been experienced the gas fields and it is one that an operator can handle with proper vehicle queuing. They may not necessarily know what is happening in the field lacking that phone call from an impacted neighbor. Included in this mailing is a fact sheet created by the Department that outlines noise and lighting impacts and available mitigations. The fact sheet also outlines the waiver process.
- Lighting – needs to be respectful of the neighbors. The lighting needs to be directed on the facility not a thousand feet to the neighbor's homes. Some operators are employing the use of Lunar Lighting while many are not. Lunar Lighting is an emerging technology in the oil and gas fields. When operators choose to establish sites in close proximity to homes, within 750' they are simultaneously choosing to mitigate their impacts in every possible way to ensure that the neighbors are comfortable within their homes and that our rural and agricultural integrity remain in place. The fact is that operators have determined most often to comply with local ordinances at a minimum, or have not taken any steps towards mitigation regarding either lighting or noise issues in communities where there are no local ordinances. If the Commonwealth of Pennsylvania is going to be a leader in a world class shale gas play, then the operators need to be functioning as world class, appreciating and respecting the communities where they operate regardless of whether local ordinances exist. We know from experience that we are not able to be effective with every operator 'doing it right' every time. Therefore, the Department needs to create a basic floor of regulations that consider those whom now dwell within 750' of well pads and facilities and have experienced unreasonable impacts related to such issues as lighting and noise. The zoned communities may choose to build upon these mitigation regulations, but nevertheless, those that dwell within non- zoned communities still deserve and need these basic and reasonable mitigations should their municipality or county fail to act upon doing so.
- Noise - it is difficult to assess what types of noise beyond traffic may be created by a temporary waste fluids processing facility. We note that C.F.R. has a basic and reasonable regulation that applies to drilling, and in reality, should also apply to drilling and fracturing well sites in Pennsylvania. The regulation we refer to is C.F.R. Title 18, Chapter I, Subchapter E, Subpart F, 157.206 Standard Conditions (b)(5)(iii) Any horizontal directional drilling or drilling of wells which will occur between 10 p.m. and 7 a.m. local time must be conducted with the goal of keeping the perceived noise from the drilling at any pre-existing noise-sensitive area (such as schools, hospitals, or residences) at or below a night level (Ln) of 55 dBA. This may require the operator to erect a temporary, portable sound barrier or sound

curtain. There is a Pennsylvania based company that offers such services. Oeler Industries, Inc. offers portable sound barrier products that may be used in both drilling and fracturing sites. Their products would also be useful at temporary waste fluids processing sites. When such products are indeed available, the neighbors need to be considered. The operator needs to do such mitigations. The fact of the matter is the operator chose the well site location, and they will be choosing the temporary waste fluids processing location. When they choose to operate within 750' of occupied dwellings, they have determined in the same mode to utilize noise abatement technologies. The Department needs to protect the environment of the neighbors who live within 750' of an active site.

- Volume – there needs to be a maximum processing volume attached to the permit to avoid these from becoming the size, scope and activity of a WMGR123 facility.
- Leak detection – we recommend the operator perform daily visible inspections and employ leak detection technologies along with secondary containment. Secondary containment requirements need to be consistent with the Department's most stringent and effective tank secondary containment requirements.
- We desire that more consideration be given to those that dwell within 750' of well site locations. This is a first step in doing so. We are very seriously engaged in advocating the attainment of a delicate balance that allows all - public health and safety, community, the environment and the industry, to thrive. The flexibilities we have built into our recommendations create that opportunity. With consideration and adoption of our recommendations, we are able to support this provision. (660a)

Response: The Department believes that the OG-71 and WMGR 123 waste processing permits adequately address the risks associated with waste management at or related to well sites. OG-71 is only available for operators to use when processing wastes generated at the well site or processing wastes brought to the well site and completely used at the well site (typically, flowback or produced water being used in the stimulation of wells at that site). By its nature, OG-71 only allows for temporary and limited processing during the period of well development. The rulemaking language is consistent with section 3273.1 of the 2012 Oil and Gas Act. For more permanent processing facilities, approval under WMGR 123 and the Solid Waste Management Act is required. The setbacks and other conditions associated with each of these authorizations adequately address the potential risks and disruptions posed by the authorized activity.

Regarding noise, see response to comment 2913.

- 1108. Comment: 78.58(a)** The permit should specifically require that the processed fluids be either generated at the site or are intended to be used at the site.

We recommend that recordkeeping be involved in order that fluids are tracked. For example, in cases where fluids are generated at the site, there is recordkeeping of where the fluids are taken/used. In cases where the fluids are transported to the well site for use there is recordkeeping detailing the source of the fluids? This information needs to be interfaced with the Department's wastewater tracking system. (660a)

Response: As written, subsection (a) provides the requirement that the processed fluids be either generated at the site or is intended to be used at the site. Operators are required to

report to the Department the waste volumes produced and ultimate disposal/reuse location for that waste (both fluids and solids) on a monthly basis. In addition, unconventional operators are required to account for wastewater in their water management plans.

1109. Comment: **§ 78.58(a)** The operator may request approval by the Department to process fluids generated by the development, drilling, stimulation, alteration, operation or plugging of oil or gas wells at the well site where the fluids were generated or at the well site where all of the fluid is intended to be beneficially used to develop, drill or stimulate a well. It is suggested that the following language is added to encourage the beneficial reuse of fluids:

(a) An operator may request authorization from the Department to process and beneficially reuse fluids generated by the development, drilling, stimulation, alteration, operation or plugging of an oil and gas well to develop, drill or stimulate an oil and gas well. The Department shall approve of an operator's request to process and beneficially reuse fluids so long as the following conditions are met:

- (1) The well site where the fluids are to be reused is permitted and bonded under the Act;
- (2) The operator provides prior notice to the Department on forms prepared by the Department, which notice shall be submitted electronically to the Department through its web site and include the date(s) processing activities will commence at the site;
- (3) The operator possesses an approved water management plan that meets the criteria set forth in Section 78.69 and the operator conducts processing activities in compliance with its approved plan; and
- (4) The operator has prepared and maintains a site specific Preparedness. Prevention and Contingency (PPC) Plan that meets the criteria set forth in Section 78.55.

(b) An operator may manage fluids described in Section 78.58(a) in an impoundment registered under 78.59b or permitted under Section 78.59c so long as any such impoundment is operated and maintained in accordance with those sections and any applicable permit or registration.

(c) An operator may manage fluids described in Section 78.58(a) in an aboveground storage tank located at the well site so long as the tank is operated and maintained in accordance with Section 78.56 and 78.57.

(d) An operator that processes and beneficially reuses fluids pursuant to this section at a well site in accordance with this paragraph shall be deemed to have a residual waste processing permit by rule under Article IX.

(e) An operator subject to this section is not required to apply for a permit under Article IX or comply with the operating requirements of Article IX so long as the authorized processing and beneficial reuse activities are conducted in accordance with this Chapter.

(f) The Department may require an operator to apply for and obtain an individual or general permit under Article IX or take other appropriate action when the Department determines that the processing activity harms or threatens to harm the health, safety or welfare of the people of the Commonwealth or results in pollution of land or waters of the Commonwealth.

It is further recommended that the existing **§ 78.58 (b) through (f)** be retained and renumbered as **§ 78.58 (g) through (k)**. (913a, 124a, 1057)

Response: The amendments are unnecessary because the additional requirements are already addressed in other portions of the 2012 Oil and Gas Act or Chapter 78 and Chapter 78a.

- 1110.** Comment: Section 78.58(a) appears to formalize the current practice of using form OG-71 to approve the processing of residual waste on well-sites to promote reuse of production fluids. Commentator supports the incorporation of this practice into regulations. However, the regulations should set out the process in greater detail and include the more detailed standards that must be met for approval.

The Department should use this opportunity to establish by regulation what the applicant must demonstrate to obtain the Department's approval, beyond that there will no harm to the environment. The Department should be using some objective standard for determining what constitutes legitimate beneficial reuse. The Department may want to consider establishing by rule and plainly stating in the rule that reuse of certain fluids in a specific list of on-site processes constitute beneficial reuse. Beyond that, the regulation should require the application address what processing will occur, what measures will be taken to ensure the processing does not result in environmental harm, how the wastewater will be transported, storage at the receiving site if transported, how any waste such as sludges from the treatment process will be managed, management of air emissions such as volatile hydrocarbons during aeration, and final disposition.

The Department should use this opportunity to establish the standards against which the application will be measured and approval will be granted. A requirement that a person request approval without an explanation of what standard will be used to grant or deny approval is no requirement at all. (852a)

Response: The regulation sets an appropriate performance standard which must be met to obtain approval prior to onsite waste processing. Because waste processing technology evolves over time, the performance standard allows the necessary flexibility in the approval process.

- 1111.** Comment: §78.58 addresses processing activities that may take place in conjunction with oil and gas operations. As such, the provision will play a critical role in the ability of the oil and gas industry to maximize the potential for recycling and reuse of materials associated with oil and gas operations. In certain instances, such materials can be reused or recycled "as is." In other instances, however, some level of processing is necessary before the materials can be reused.

Regulations that encourage the beneficial reuse of fluids and drill cuttings in an efficient, environmentally-responsible, and cost-effective manner that is practicable to implement in the field should be a shared objective of both the EQB and the regulated community. Section 3273.1(a) of Act 13, 58 Pa.C.S.A. § 3273.1(a), circumscribes the applicability of requirements under the Solid Waste Management Act ("SWMA") that might otherwise hinder the recycling and beneficial use of materials from oil and gas operations. This provision was lifted largely unchanged from the Oil and Gas Act of 1984 and reflects a long-standing legislatively-endorsed approach for streamlining the regulatory process relating to the disposal, processing and storage of residual wastes at oil and gas well sites by placing those activities within the purview of the oil and gas program rather than under the SWMA. Specifically, Section 3273.1(a) of Act 13 provides that requirements for permits and bonds under the SWMA are deemed to be satisfied for "any pit, impoundment, method, or facility employed for the disposal, processing or storage of residual wastes generated by the drilling of an oil or gas well or from the production of wells which is located on the well site" if the well site is permitted and bonded under Act 13, and the requirements of Act 13 and regulations thereunder are met.

While the proposed version of §78.58 contains certain positive features, it falls short of the framework envisioned in Act 13. As drafted, §78.58(a) authorizes the processing of fluids at the well site where they are generated or at the well site where they will be beneficially used, provided that such processing is approved by PADEP on a case-by-case basis. Under the proposed version of §78.58(b), the mixing of fluids with freshwater, aerating fluids, and filtering solids from fluids are activities that do not require prior approval from PADEP. Both of these provisions are good steps but do not fulfill the vision that the General Assembly had in mind for streamlining the interface between the oil and gas program and requirements under the SWMA. This is particularly evident under the proposed version of §78.58(d) which states that except as provided in Sections 78.58(a) and (b), all processing of residual waste must be done in accordance with the SWMA, regardless of whether the processing takes place at a well site.

To address these concerns, we recommend that the proposed version of §78.58(a) be expanded to include processing of solids, including drill cuttings, that occurs at the well site where they are generated. We also recommend that the universe of activities identified in the proposed version of §78.58(b) be expanded to include the physical removal of free phase hydrocarbons, the addition of biocides to fluids that will be reused, and other activity that PADEP has evaluated and determined to be appropriate as indicated by a posting on its website. If these changes are made, the proposed version of §78.58(c) can be eliminated as redundant. In any event, the proposed version of §78.58(d) should be removed because it is inconsistent with the streamlined approach reflected in Section 3273.1(a) of Act 13.

The Marcellus Shale Coalition in its comments on behalf of the oil and gas industry relating to the proposed version of §78.58(a) has recommended that the proposed regulations be modified to include two separate permits-by-rule for activities that would otherwise require, in PADEP's view, a permit under the SWMA. We support this proposal. (1173)

Response: See response to comment 1105.

- 1112.** Comment: These proposed amendments add a new section to address onsite processing. However, the amendments lack any detail on what criteria DEP will use to approve onsite processing facilities. Commentator recommends adding language clarifying what conditions DEP may place on an operator who requests to process fluids generated by the development, drilling, stimulation, alteration, operation or plugging of oil and gas wells, to ensure that the processing operation will not result in pollution of land or waters.(1157)

Response: See response to comment 1110.

- 1113.** Comment: Under §78.58(e), after an operator is initially approved for onsite processing at one site, the operator is deemed to have approval for onsite processing on all subsequent sites, as long as the operator notifies DEP. We are concerned that the automatic approval of subsequent onsite processing facilities will not factor in site-specific factors—such as whether subsequent wells are located in HQ or EV watershed or a water supply area, the proximity to a stream, or other sensitive environmental features.(1157)

Response: Site specific factors are accounted for at the time of initial siting of the well site during the well permit review.

- 1114.** Comment: As written, the amendments do not appear to reserve the right of DEP to withdraw the approval for future onsite processing activities. We strongly recommend that this section be revised to require approval, on a case-by-case basis, for all onsite processing operations and that a

reservation clause be added to ensure that DEP has the authority to withdraw approval of onsite processing operations, if needed. (1157)

Response: The review process strikes an appropriate balance between process and performance. Where the Department has already completed a technical review on a given process, a second review is redundant. The Department has ample authority to withdraw approval of onsite processing operations, if needed.

1115. Comment: The Commentator objects to new requirements that are not justified by a compelling environmental need and impose unnecessary additional costs on oil and gas operations. The edits below are consistent with an appropriate balancing of costs and benefits.

Suggested amendatory language:

(c) The operator may ~~[request to]~~ process drill cuttings ~~[only]~~ at the well site where those drilling cuttings were generated~~[, by submitting a request to the Department for approval. The request shall be submitted on forms provided by the Department and demonstrate]~~ where that the processing operation will not result in pollution of land or waters of the Commonwealth.
~~[(d) Processing residual waste generated by the development, drilling, stimulation, alteration, operation or plugging of oil or gas wells other than as provided for in subsections (a) and (b) shall comply with the requirements of the Solid Waste Management Act.]~~ (1135)

Response: See response to comment 1105. Additionally, subsection suggested to delete is appropriate to clarify requirements under §3273.1 of the 2012 Oil and Gas Act which are intended to prevent operation of unpermitted centralized waste treatment facilities.

1116. Comment: 78.58(d) improperly alters a legislatively created exemption from Solid Waste Management requirements for activities conducted on bonded and permitted well sites. The subsection must be stricken. Suggested regulatory amendments:

~~[(d) Processing residual waste generated by the development, drilling, stimulation, alteration, operation or plugging of oil or gas wells other than as provided for in subsections (a) and (b) shall comply with the requirements of the Solid Waste Management Act.]~~

~~[(e)]~~ (d) Processing of fluids in a manner approved pursuant to subsection (a) shall be deemed to be approved at subsequent well sites provided the operator notifies the Department of location of the well site where the processing will occur prior to the commencement of processing operations. This notice shall be submitted either electronically to the Department through its website or by hard copy U.S. Mail if the operator is a Small Business registered with the Department. and include the date activities will commence.

~~[(f)]~~ (e) Sludges, filter cake or other solid waste remaining after the processing or handling of fluids pursuant to subsections (a) or (b), including solid residual waste mixed with drill cuttings, shall be characterized pursuant to 25 Pa. Code §287.54 before the ~~[solid]~~ waste leaves the well site. Such characterization is not required for every well where operator knowledge can be utilized to confirm waste constituents. (1135)

Response: See responses to comments 216, 1105 and 1115. Residual waste characterization requirements are established under Chapter 287. Revisions to residual waste characterization requirements are beyond the scope of this rulemaking.

1117. Comment: The Proposed Rulemaking would revise 25 Pa. Code §78.58(a) to empower the Department to authorize a well operator to process fluids generated or used in a well at the well site. The Proposed Rulemaking would also add to a Section 78.58(e), pursuant to which the Department's authorization for a well operator to process fluids at one of its well sites would be deemed approval for that operator to process fluids at any of its subsequent well sites, provided only that the operator notify the Department of its intent to process fluids at such sites. There are many reasons why it might be inappropriate for an operator to process drilling fluids at a given well site. Accordingly, Section 78.58(e) should be deleted from the Proposed Rulemaking. Instead, Section 78.58 should require an operator that wishes to process fluids at a particular well site to seek the Department's authorization to do so on a case-by-case basis. (1159)

Response: See response to comment 1113.

1118. Comment: We support regulations that encourage operators to beneficially reuse fluids and drill cuttings in an efficient, environmentally-responsible, and cost-effective manner. As such, Subsection 78.58(b) should be expanded to include other activities that can be conducted without prior approval. These should include settling as well as filtration of solids and removal of free-phase hydrocarbons. In addition, the regulations should include a residual waste storage and processing permit-by-rule option pursuant to the Marcellus Shale Coalition's (MSC's) suggested modifications to the PADEP's proposed Section 78.58 provided by the MSC to the Technical Advisory Board (TAB) for consideration at the August 14-15, 2013 Subcommittee Meeting. This permit-by-rule would provide unconventional operators with authority and flexibility to store and process fluids generated by the development, drilling, stimulation, alteration, operation, or plugging of a well for reuse by the operator. Additionally, the permit-by-rule would significantly reduce truck traffic and air pollution, caused by additional handling and by unnecessary transport of fluids by operators. (1103, 1147, 1174)

Response: See response to comment 1105.

1119. Comment: **78.58(b)** – The Board should amend this provision to specify that solidification and bulking of waste on the well site is permissible; thus, codifying the Department-approved practice. The Board could also ask the Department to publish a list of pre-approved bulking agents on their website. Accordingly, Commentator recommends the following amendatory language: “(4) bulking waste with Department- approved bulking agents.” (1085)

Response: The notice-only approach contemplated by subsection (g) addresses the commentators concerns. In addition, see response to comment 1105.

1120. Comment: Section 78.58(b) should be expanded to allow adding lime or other non-hazardous substances (as approved by DEP) to flow-back in order to neutralized in pH level for disposal, where necessary without prior approval from DEP. (1154)

Response: See responses to comments 1105 and 1119.

1121. Comment: **78.58(b)** Activity approval – these are standard processing operations. Any are suitable under these prospective permits. (660a)

Response: The Department acknowledges the comment.

1122. Comment: **78.58(c)** Process of drill cuttings – We are agreeable to the processing of cuttings at the well site. (660a)

Response: The Department acknowledges the comment.

1123. Comment: **78.58(c)** – What is meant by “process drill cuttings”? Does that mean adding solidification material such as sawdust or wood pellets? Solidification material should be permitted to be used without Department approval. The form for this process should be produced and reviewed prior to establishment of this section. (411, 1153)

Response: See responses to comments 1105 and 1119.

1124. Comment: Even though Department approval is not required for mixing fluids with freshwater or filtering them, DEP should at a minimum be informed if any of this activity is occurring. However, DEP approval should be required for any aeration of fluids. Due to the potential composition of these fluids, aeration can lead to the release of concentrated, volatile and toxic gases, that will eventually precipitate back to the surface. The Department approval should be contingent upon the composition of the fluids to be aerated, the method and rate of aeration so it does not allow the fluids to spill out of the container and to include a provision that prohibits the aeration prior to so many hours of a precipitation event.

This approval could also incorporate the provisions for storing mine influenced water, 78.59b(g), that addresses the concern of air, land and water pollution and testing of the water. If these measures are utilized for mine water, it should also apply to process fluids. (1149, 1150)

Response: The activities described in subsection (b) pose a minimal risk of environmental harm and are standard industry practice related to oil and gas wastewater. Therefore the Department does not need to be notified every time one of these activities occurs. Air emissions from oil and gas facilities are regulated under Article III. Changes to Article III are beyond the scope of this rulemaking. The Department does not believe that fluid aeration poses a significant risk of spills.

1125. Comment: Prohibit the onsite processing of shale drill cuttings, which often contain hazardous substances and radioactive materials and require thorough analysis and special handling.(17, 18, 79, 102, 148, 160, 161, 168, 169, 195, 475, 492a, 564, 565, 626, 649, 808, 843, 865, 884, 912, 922, 926, 947, 1000, 1039, 1058, 1102, 1161, 1168, 4582 – 4584)

Response: Onsite processing as authorized under subsection (e) is limited to processing drill cuttings only at the well site where the drill cuttings were generated. Therefore, this processing is temporary in nature and is intended to facilitate proper handling and disposal of the drill cuttings. In addition, the Department has revised §§ 78.58 and 78a.58 to require operators that conduct waste processing activities on a well site to develop an action plan specifying procedures for monitoring, for and responding to radioactive material produced by the treatment processes. The Department believes the existing and new regulations for on-site processing ensures the protection of the environment.

1126. Comment: **78.58(d)** Residual waste – We are agreeable that the processing of generated residual waste shall comply with the requirements of the Solid Waste Management Act, including waste characterizations. (660a)

Response: The Department acknowledges the comment.

- 1127.** Comment: Drill cuttings should not be processed on site, nor should they be buried in waste pits; instead the cuttings should be properly transported to special radioactive waste sites as proposed by the DEP. Gas companies should be held responsible to properly dispose of waste and contaminants. (104)

Response: The Department agrees that operators should be held responsible to properly dispose of waste and contaminants that they generate. The Department believes the existing and new regulations for on-site processing ensures the protection of the environment.

- 1128.** Comment: While we recognize the principle behind §78.58(e), operators should be required to submit, and the Department should review, requests to process drill cuttings at each individual well site. Although operators may use standard processes, the suitability of each site for fluids processing depends on a variety of site-specific facts that must be considered on a case-by-case basis. (997a)

Response: See response to comment 1113.

- 1129.** Comment: 78.58(e) Ease of operation – Any effort the Department may make to do electronic permitting to assist the industry is reasonable. It is also reasonable that the public be able to access this information online rather than have to do an in-person visit to the regional office. (660a)

Response: The Department acknowledges the comment and agrees that public access to information online is important and is working to develop those capabilities.

- 1130.** Comment: There should be no processing of drill cuttings on site nor should cuttings should be stored in pits. Disposal of brine, drill cuttings, and any residual waste should not be allowed for wells drilled on property not previously designated as a waste site.
No burial of waste should occur on private or public forests, farms, parks, airport buffer, school property, etc. Any burial of materials should occur only in sites designated as waste sites and, when burial is thus validated, it should meet the standards of the US Resource Recovery and Conservation Act. (609, 938, 938a)

Response: See response to comment 1125.

- 1131.** Comment: Section 78.58(e) should be eliminated or make clear that any changes to how the fluid is processed or used must require a separate approval. We oppose the proposition that an approval need only be granted on one occasion, and can then that same process can be used by the same company throughout the Commonwealth at an unlimited number of sites. The Department's experience demonstrates that the geology encountered at well sites will differ, as will the chemical composition of production fluids. This will likely necessitate changes in processing prior to reuse, and this should trigger a requirement for a new approval. The proposed regulation provides that processing of fluids "in a manner approved" at one well site will be deemed to approved, if notification is made to the Department; however, it is unclear how the Department will determine how the bounds of any particular "manner" of processing. If a manner of processing uses the same equipment but different chemicals, or significantly different amounts of the same chemicals, is it the same "manner"? If the Department seeks to allow successive uses of a particular approval, then the regulation should specify that any changes to how the fluid is processed or used must require a separate approval. (852a)

Response: The Department believes the comment actually pertains to 78.58(g). Section 78.58(g) eliminates the need for redundant approvals for the on-site processing of fluids for

beneficial reuse or disposal. The Department only needs to review and approve the same treatment process once for an operator. As long as there is not significant deviation(s) with the process and notification occurs in 3 days as to where it is occurring, the Department is confident it will be able to field inspect the process to ensure it is in accordance with the approved process. Should any significant changes be made to the treatment process, the operator will need to apply for a new approval.

1132. Comment: Section 78.58(f) - Onsite Processing - states “(f) Sludges, filter cake, or other solid waste remaining after the processing or handling of fluids pursuant to subsections (a) or (b), including solid waste mixed with drill cuttings, shall be characterized pursuant to 25 Pa. Code §287.54 before the solid waste leaves the well site.”

- This section refers to Residual Waste regulation which requires a full chemical analysis that can take up to approximately 27 days to get the results for certain parameters. Keeping this material onsite for this length of time is not practicable or would require much larger well pads be built.
- If an operator is taking this residual waste to a recycling facility rather than a landfill, it does not make sense to do a chemical analysis where the liquid waste will be mixed with other liquid waste and then treated. Therefore, we suggest that DEP adds to the end of this paragraph “for disposal.”
- In TAB meetings, it was unclear if these tests were to be completed on every truck load or once per waste stream based upon the justification for the proposed rule. (636a)

Response: Residual waste characterization requirements are established under Chapter 287. Revisions to residual waste characterization requirements are beyond the scope of this rulemaking. Characterization must be conducted in accordance with Chapter 287.

1133. Comment: **78.58(f)** – Sludges, filter cake or other solid waste remaining after the processing or handling of fluids at a well site may still be considered liquid waste if it fails the paint filter test. Thus if the material is classified as liquid waste, then this material may be taken to a treatment or recycling facility for further treatment. If this is the case, it can take up to approximately 27 days to get the results for certain parameters needed to characterize a waste for disposal. If an operator takes the residual waste to a recycling facility rather than a landfill, it makes sense to do simply the chemical analysis the recycling facility needs for its permit, where the liquid waste will be mixed with other waste and then treated for either reuse and/or disposal. The recycling facility must complete its own characterization pursuant to the residual waste regulation. Requiring that an operator keep this material onsite until a full chemical analysis can be done (up to 27 days) is not practicable or would require much larger well pads be built in order to store this material or would cause massive delays in operations. Therefore, we suggest that DEP adds to the end of this paragraph “for disposal.” (1153)

Response: The subsection requires a waste characterization to be conducted in accordance with Chapter 287.54. The Department believes that this is an appropriate cross-reference, as the subsection only concerns those wastes that will be leaving the well site where they were generated. Once the waste leaves the well site, the exemptions under section 3273.1 no longer apply and the Waste Management program regulations govern testing and handling of the waste. Amendment of the Waste Management requirements in this section is beyond the scope of the rulemaking.

- 1134.** Comment: **78.58(f)** requires an operator to hold sludges, filter cake or other solid waste remaining after the processing of certain fluids at the well site until they are characterized. A commentator states that requiring an operator to hold these solid waste remains during this timeframe is not practical and suggests revising the provision to add “for disposal” to the end of the paragraph. We ask EQB to explain why this requirement is reasonable or consider revising it. (1099)

Response: The subsection requires a waste characterization to be conducted in accordance with Chapter 287.54. The Department believes that this is an appropriate cross-reference, as the subsection only concerns those wastes that will be leaving the well site where they were generated. Once the waste leaves the well site, the exemptions under section 3273.1 no longer apply and the Waste Management program regulations govern testing and handling of the waste. Amendment of the Waste Management requirements in this section is beyond the scope of the rulemaking. The Department believes that the requirement to characterize the waste before it leaves the well site is appropriate. This is reasonable and necessary to ensure that waste is properly transported and disposed of off the well site. .

- 1135.** Comment: **78.58(f)** Characterization of waste – During the TAB meetings, the industry questioned the number of characterizations to be completed. One per well, or per truck; also noted was the time lag in obtaining the results and the transporting of the waste. They had discussed transfer stations, and one member of the public noted that present transfer stations were not working well in their county. Thus, this needs to have further discussion. There needs to be more information provided – what are the current characterizations indicating? Lacking this information, we recommend the Department err on the side of more stringent rather than less in the number of required characterizations. Concerning the time lag, that needs to be considered with the characterizations. It may be possible to pull all the samples as the solid waste is accumulating such that by the time the results are available the waste is ready to be hauled out. That may eliminate the need for a transfer station. Another option would be to ensure the temporary processing site is large enough to contain the waste until the waste may be hauled. Finally, the Department could review the appropriateness of transfer stations and possibly develop yet one more permit and guidance for such a location. (660a)

Response: See responses to comments 1132 and 1133.

- 1136.** Comment: No waivers to waste disposal regulations should be issued. There is no evidence that DEP actually checks whether “alternative waste management practices” are “equivalent or superior” to Chapter 78 regulations- or in practice anything but a convenience for operators. (853)

Response: The Department reviews all requests to utilize alternative waste management practices to ensure that they provide equivalent or superior protection.

- 1137.** Comment: **78.58** – Onsite processing is unacceptable. Processes, such as aerating fluids, should not be done at all in an open storage unit, pit or other unenclosed structure since it has the potential of adverse health impacts on humans, animals and possibly crops growing nearby. Methods of processing drill cuttings here and elsewhere in the document must address impacts on air, land and water and mandate best practice techniques. Because of federal loopholes that categorize oil and gas wastes as non-hazardous, the Solid Waste Management Act fails to provide adequate protection. Further, the Department cannot assess the risks involved due to the unknown results of combining injected solutions with heavy metals, radioactive materials and other substances from deep below the earth. We support full disclosure of pollution data. Given expanding number of wells, the magnitude of unknown byproducts, and the numerous processing techniques, more staff must be hired to monitor and enforce all the proposed rules. (980, 1098)

Response: The provisions in the section are appropriate. Onsite processing as authorized under this section is limited to processing fluids or drill cuttings only at the well site where the fluids or drill cuttings were generated or where the fluids will be beneficially reused. Therefore, this processing is temporary in nature and is intended to facilitate proper handling and disposal of the fluid and drill cuttings and facilitate recycling of the fluid. In addition, operators must make a demonstration that the processing will not result in pollution of the land or waters of the commonwealth prior to obtaining approval. The Department believes the existing and new regulations for on-site processing ensures the protection of the environment.

- 1138.** Comment: We recommend that onsite requests to process waste from drill cuttings from the borehole be considered on a case-by-case basis so that site-specific conditions can be considered in determining the suitability for processing on site. (1031)

Response: See response to comment 1113.

- 1139.** Comment: While we are favorable to industry recycle/reuse, we are also cautious about onsite processing. We are aware that the TAB meetings revealed the industry is interested in doing more processing at sites, potentially located within our watershed and near our homes. We request that DEP be very clear on both the OG071 and WMGR123 permits such that the most stringent requirements be in place when operating within watersheds such as Mehoopany and near our homes. In the long run centralized processing facilities are the preferred option over sites located too close to homes. (1035)

Response: See response to comment 1137.

- 1140.** Comment: Commentator requests that this section provide for the temporary offsite treatment and/or processing of 804 and/or 802 fluids for the express purpose of recycling/beneficial use in other fracing/completions operations without obtaining a transfer station permit for the offsite location. Offsite is defined as a location other than where the residual waste was generated and/or where it will be re-used. This language would also fill the existing gap associated with the OG71 process that hinders recycling: OG71s are specific to the generating waste location and/or the receiving, re-use location. They also only apply for the drilling and completions phases of well development.

This language could be added to the current 78.57; it would also be appropriate to utilize the currently reserved 78.59. If neither, it could be added to 78.58 but with change to the 78.58 title. This proposed language is NOT to be confused with, nor intended to replace, the existing allowance to (and associated regulation of) temporarily store residual waste offsite per 25 Pa Code Chapter 299. Rather, it creates a transfer station “lite” process that recognizes the spatial diversity, mobile nature, and temporal brevity of upstream oil and gas operations; the current transfer station permitting process does not facilitate oil and gas wastewater recycling.

An operator may temporarily store and /or process brines and/or fracing fluid at a wellsite to be beneficially used at a wellsite other than where the fluids were generated, so long as the following conditions are met:

- a. The wellsite:
 - i. is permitted and bonded under the Act; and
 - ii. maintains a current Preparedness, Prevention and Contingency (PPC) plan that is

- consistent with the Department's regulations; and
- b. Operators maintain accurate transportation records to demonstrate that fluids are being temporarily stored and /or processed for beneficial re-use, consistent with Section 3218.3 of the Act;
- c. Temporary storage and/or processing:
 - i) complies with the applicable requirements of the Act and regulations promulgated thereunder;
 - ii) occurs in approved storage structures in accordance with applicable requirements of sections 78.56 and 78.57;
 - iii) is conducted in accordance with subsections (a) or (b) of 78.58; and
 - iv) will not exceed a single consecutive twelve month period (all onsite activity incidental to temporary storage and/or processing must occur within this timeframe);
- d. The operator must notify the Department of locations where temporary storage and/or processing will occur a minimum of three (3) days prior to the commencement of activity. This notice shall be submitted electronically to the Department through its website and include the intended date(s) of activity commencement; and
- e. An operator that stores, processes and /or beneficially reuses brine or fracturing fluids pursuant to this section in accordance with this paragraph shall be:
 - i. deemed to have a residual waste permit by rule under 25 Pa. Code Chapters 287-299 (Article IX); and
 - ii. is not required to apply for a permit under Article IX or comply with the operating requirements of Article IX so long as the authorized storage, processing and beneficial reuse activities are conducted in accordance with this chapter. (1049)

Response: The Department disagrees and believes that the language appropriately implements section 3273.1 of the 2012 Oil and Gas Act and the Solid Waste Management Act. See response to comment 1105.

1141. Comment: The Department has maintained on several occasions that it is a goal for the Commonwealth to promote the responsible recycling and reuse of oil and gas wastes to reduce the demand on fresh water resources for oil and gas well development and operations. We share this goal and believes regulations that encourage and facilitate this practice will ultimately protect public health, safety and the environment, as well as be a benefit to the oil and gas industry. As such, we suggest the language below to clarify that operators may conduct processing, recycling and beneficial reuse activities at well sites and related operations under the jurisdiction of the Department's Office of Oil and Gas Management.

Suggested regulatory language:

(a) The Department supports the processing, recycling, and beneficial reuse of fluids and other materials generated by the development, drilling, stimulation, alteration, operation or plugging of oil or gas wells, where the processing of the fluids or other materials for recycling or beneficial reuse will not result in pollution of land or waters of the Commonwealth.

(b) Approval from the Department is not required for the following activities conducted at permitted sites related to oil and gas development operations:

- mixing fluids with freshwater;
- aerating fluids;
- filtering solids from fluids;
- physical removal of free phase hydrocarbons;
- the addition of biocides to reuse fluids; or

- any other activity approved by the Department and posted on its website. (1071)

Response: See response to comment 1105.

1142. Comment: The new language of this section governs the disposal, processing and storage of residual wastes generated at well sites. Commentators express concern that the requirements of this section should align with the requirements of the Solid Waste Management Act in order to simplify compliance requirements and avoid conflicting management standards between the Department's oil and gas management and its solid waste management programs. We ask EQB to ensure that the provisions of this section do not conflict with or duplicate statutes or existing regulations. We also ask EQB to explain in the Preamble and RAF of the final-form regulation how the requirements for onsite processing in this section reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry.(1099)

Response: The Department has ensured that the provisions of this section do not conflict with or duplicate statutes or existing regulations. While the provisions of this section and the Solid Waste Management Act both allow for processing of residual wastes from oil and gas operations, they allow for different modes of operation and allow appropriate flexibility for operators while still providing environmental protection.

1143. Comment: The processing of fluids on site allows and prolongs the handling and reuse of hazardous materials at the well site. Due to the current exemption of oil and gas activities from the U.S. Resource Conservation and Recovery Act Subtitle C standards, these materials are not classified as hazardous and are not required to be handled as hazardous substances despite their hazardous properties. we oppose the reuse and injection of liquid and solid waste produced by hydraulic fracturing ("fracking") or by the development, drilling, stimulation, alteration, operation, or plugging of oil or gas wells on a well site unless Safe Drinking Water Act standards are applied to the reused or "recycled" materials.

Safe Drinking Water Act water quality standards must be applied to ensure the fluids being reused do not exceed safe limits because these fluids are being injected through the aquifer and can leak into the groundwater from pits or tanks or as a result of casing or cement leakage or construction flaws, can spill on the surface and seep into the ground or migrate through underground fissures and fractures to groundwater, surface water, or the surface of the land. This exposes aquifers, water supplies, and the environment to an unacceptable risk of contamination.

As explained in a report by hydrogeologist Paul Rubin, aquifers need to be protected into the future and the long life of aquifers and their irreplaceable nature require that the measures used to isolate gas and pollutants from water must be long-lived as well. Cement and steel casing now available and employed will fail in 100 years or less. This means that wells will inevitably leak gas and contaminated fluids into aquifers within 100 years, adversely impacting the use of groundwater by future generations.

Even if cement were to successfully isolate contaminants from aquifers and surface waters and land, naturally occurring and seismically induced vertical fractures or other conduits such as water wells or abandoned gas wells, or frack-induced fractures that leave the target zone and enter other formations can be expected to allow contaminated fluids and gas to migrate to water supplies, to the land surface, and to other non-target receptors.

As explained by hydrogeologist Tom Myers, fluids can be expected to migrate from the Marcellus formation to aquifers and the surface from fracked shale gas wells, potentially contaminating water

sources.

The lack of water quality standards for produced water or flowback that is reused poses a substantial water quality problem. Operators reported to the GAO that they “treat the water to meet their own operating requirements” and that “...they had previously treated the water to a very high quality before reusing it for hydraulic fracturing, they are currently experimenting with lower levels of treatment.” For example, one operator reported that they used to remove the salt but no longer go to that expense to reduce operating costs and are considering eliminating other treatment if the reused wastewater can still meet their individual operating needs.

One problem caused by reuse is the resulting concentration of certain contaminants. Reuse of this produced water will generally increase the contaminant load in the produced water in the subsequent well, both from additives and formation contaminants because there will be no dilution of the contaminants. If a leak occurs in the top few hundred feet in the well being fractured, the leak will contain very contaminated water under high pressure, and even a small leak can release large amounts of contaminants that can pollute aquifers and usable domestic water.

Fluids containing chemicals come along with formation fluids and the toxic contaminants they naturally contain during the construction, drilling, stimulation (such as fracking), and extraction and production of gas from the gas well. Drill cuttings and muds that are produced by drilling and fracking also mix with these fluids during well development and may be stored together in pits or tanks. The chemical additives used in fracking are examined in New York State’s Draft Supplemental Generic Environmental Impact Statement (DSGEIS). Table 5-3 lists many of the fracking chemicals, which include biocides, friction reducers, scale inhibitors, proppants, stabilizers, gelling agents, surfactants, corrosion inhibitors, cross linkers, iron control, and acids.

Chemical suppliers operating in Pennsylvania’s Marcellus Shale, West Virginia, and other states provided additive product compositional information to New York which includes approximately 260 unique chemicals whose CAS numbers have been disclosed to the New York Department of Environmental Conservation (DEC) and an additional 40 compounds which require further disclosure since many are mixtures. Table 5.4 of the DSGEIS lists products which only partial chemical composition information has been provided to the DEC. Table 5.6 is a list of chemical constituents and their CAS numbers that have been extracted from complete chemical compositional information and MSDS information submitted to New York and includes nearly 200 products used or proposed for use in hydraulic fracturing operations. Compound specific toxicity data are limited for many of the chemical additives so chemicals are grouped together based on their chemical structure in Table 5-7.

According to the GAO, produced water is “generally of poor quality, with levels of contaminants varying widely”. Fracking can yield poorer quality produced water than other extraction processes. A previous study from the U.S. Department of Energy concludes that produced water from gas drilling is 10 times more toxic than those from off shore oil drilling.

Adding to pollution dangers posed by the reuse or recycling of frack fluids, Marcellus Shale contains radionuclides including uranium-238, thorium-232, and their decay products. Radioactive concentrations in the Marcellus Shale formation are at concentrations 20 to 25 times background, making shale gas wastewater extremely radioactive. The produced water from Marcellus Shale has higher levels of radionuclides than water from Barnett Shale wells, according to the GAO.

In a letter to PADEP in 2011, EPA highlighted the presence of radionuclides, along with other contaminants, as present in wastewater resulting from gas drilling operations and emphasized the

importance of investigating the presence of radionuclides in public water supplies and their persistence in wastewater effluent.

Sampling and data-gathering by New York State detected radiological parameters in Marcellus Shale flowback, including Radium-226, the longest lived isotope of radium with a half-life of 1600 years. Gross Alpha, Gross Beta, Total Alpha Radium and Radium-228 were also found. Radioactivity levels may more often than not exceed safe drinking water levels but with no testing or treatment required before reuse, these dangerous contaminants will not be controlled.

Reused frack fluid may also contain constituents found in frack wastewater. New York's DSGEIS contained a list of constituents in gas drilling Marcellus shale wastewater from Pennsylvania and West Virginia. Many are hazardous, some have known harmful health impacts, some are carcinogenic. New York tested flowback from these shale gas extraction operations in Pennsylvania and West Virginia and found 154 parameters.

Attached is a table with 20 chemicals commonly used in fracking with data culled from a Marcellus Shale Coalition Report (the Hayes Report) (Attachment 1). These chemicals were also disposed of at the Love Canal site in Niagara Falls, New York, one of the most infamous hazardous waste health disasters in the U.S. in the last 50 years. It is important to note the levels detected in flowback water as reported in the Hayes Report compared to maximum contaminant levels for the regulated chemicals listed. This table illustrates the public health risks that arise from the handling, use and reuse of these dangerous and toxic materials.

Furthermore, there may be constituents in flowback and produced waters from gas development that are not regulated under the Safe Drinking Water Act even though they have human health risks and ecosystem/environmental impacts. Some substances are chemicals that are unregulated and for which there is no maximum contaminant level (MCL) yet set by U.S. Environmental Protection Agency (EPA) or the State for drinking water quality. Many of these are known as "emerging contaminants" and have known harmful human health effects but standards are still in the process of being developed. These pose additional unacceptable risks because they may be released into the environment without detection or any requirement for monitoring, detection, or treatment. Some of these are endocrine disruptors (EDC) or pharmaceuticals that may occur in gas drilling wastewater.

EDCs used in hydraulic fracturing fluids and found in flowback are of special concern due to the biological effects of these constituents at extremely low concentrations. Suspected EDC's found in gas drilling wastewater include arsenic and selenium; hydraulic fracturing fluids may contain others such as 2BE, 2-Ethylhexanol, and Crystalline Silica. Scientists and health professionals are beginning to analyze these materials and measure their impacts on human health in a different way, testing these compounds at very low levels in the range of human exposures and at various endpoints.

In an effort to protect human health from these very dangerous materials, scientists are concluding that there are no safe doses for endocrine disruptors; the fact that they have biological effects proves that EDC's have biological activity – what the induced effects are is the question. As stated by Linda Birnbaum, Director, National Institutes of Health, "It is time to start the conversation between environmental health scientists, toxicologists, and risk assessors to determine how our understanding of low-dose responses influence the way risk assessments are performed for chemicals with endocrine-disrupting activities. Together, we can take appropriate actions to protect human and wildlife populations from these harmful chemicals and facilitate better regulatory decision making".

The track record of the industry in terms of spills, well bore failures, and other pollution incidents as reported in numerous investigative reports, on *SKYTRUTH* and *FRACKTRACKER*, and as evidenced by PADEP's on-line reporting platform, is poor in terms of compliance and frequency of accidents that result in adverse environmental impacts and/or pollution to the waters of the Commonwealth..

Pollution incidents from accidents and the mishandling of frack fluids and other produced fluids that would be reused or recycled on site in Pennsylvania continue to occur. The poor record of operators reinforces our lack of support for the handling and reuse of this material on well sites. Unless Safe Drinking Water Act water quality standards are required to be met for fluids that are reused and unless the handling is done with maximum oversight and in highly controlled conditions, it is an unacceptable risk to Pennsylvania's public and the environment to allow the processing and use, reuse or recycling of any materials that are produced by natural gas drilling or fracking.

Table 2: Partial comparison of chemicals buried at the Love Canal site in NYS, USA with gas industry flowback water chemicals used in hydraulic fracturing on 19 gas wells. Chemical migration occurred outward from Love Canal, as it does from state regulated gas wells. DW: Drinking Water

Love Canal/Gas Well Contaminant (Chemical Parameter)	Love Canal Data Source	2009 Gas Industry Data Source (ASWCMC ²)	Flowback water – high concentration examples (ug/L or ppb)	DW: Legally Enforceable Fed. Maximum Contaminant Level (ppb)	Potential Health Effects from Long-Term Exposure above the MCL
Benzene*	EPA 1982	Hayes Report ¹	2,000	5	Anemia; increased cancer risk
Ethylbenzene	EPA 1982	Hayes Report	270	700	Liver or kidney problems
1,2,3-Trichlorobenzene*	EPA 1982	Hayes Report	170	-----	
1,3,5-Trichlorobenzene	EPA 1982	Hayes Report	11,000	-----	
Toluene*	EPA 1982	Hayes Report	6,200	1,000	Nervous system, kidney, liver problems
Xylenes (total)*	EPA 1982	Hayes Report	6,500	10,000	Nervous system damage
Acetone	EPA 2003	Hayes Report	66,000	-----	
Bis(2-chloroisopropyl)ether	EPA 1982	Hayes Report	4,300	-----	
Bis (2-ethylhexyl) phthalate	EPA 1988	Hayes Report	870	6	Liver problems; increased cancer risk
Arsenic*	EPA 1982	Hayes Report	124	10	Skin damage; increased cancer risk
Aluminum	EPA 1988	Hayes Report	47,200	200	
Barium	EPA 1982	Hayes Report	13,900,000	2,000	Increase in blood pressure
Calcium	EPA 1988	Hayes Report	33,000,000	-----	
Chromium*	EPA 1982	Hayes Report	460	100	Allergic dermatitis
Lead*	EPA 1982	Hayes Report	970	Action level: 15 MCL goal: 0	Developmental delay; kidney problems; high blood pressure
Iron	EPA 1988	Hayes Report	223,000	300	
Magnesium	EPA 1988	Hayes Report	2,020,000	-----	
Manganese	EPA 1988	Hayes Report	18,600	50	
Sodium	EPA 1988	Hayes Report	95,500,000	-----	
Zinc*	EPA 1982	Hayes Report	247,000	5,000	

*: U.S. EPA Love Canal Contaminant of Concern selected by the health assessor. U.S. National Library of Medicine. ¹: Report prepared for the Marcellus Shale Coalition (with involvement of 17 member companies; test plan development by ASWCMC, PA DEP and WV DEP). ²: ASWCMC: Appalachian Shale Water Conservation and Management Committee. Table prepared by HydroQuest for Delaware Riverkeeper Network. 1-30-14

(1156)

Response: The Department disagrees that hydraulic fracturing should only be conducted using water meeting safe drinking water act water quality standards. The Department recognizes that flowback and produced water may pose a threat of environmental harm. In order to address that potential harm, the rulemaking establishes an approval process and safe handling and storage requirements. The Department reviews all requests to utilize alternative waste management practices to ensure that they provide equivalent or superior protection to

the standards specified in §§ 78.56(a) and 78a.56(a).

- 1144.** Comment: The Department proposes to provide approvals to process drill cuttings at the well site where they were generated (§ 78.58(c)). The Department should consider a permit-by-rule for this activity. (1172)

Response: See response for comment 1124.

- 1145.** Comment: The Department would similarly consider permit-by-rule approvals to process fluids generated during well completion activities at the well site (§ 78.58(a)). The Department should expand the list of approved activities listed under Section 78.58(b) to include activities to remove solids and the removal of hydro-carbons. (1172)

Response: See response to comment 1105.

- 1146.** Comment: The broad requirement to characterize, in the manner set forth by the residual waste regulations, residue remaining after the on-site processing or handling of drilling fluids is potentially unnecessary and will be very expensive to operators. (1172)

Response: Characterization requirements are necessary to properly transport and dispose of this waste material.

§ 78.59a. Impoundment embankments

- 1147.** Comment: This section prevents the industry from making quick changes when improved designs and materials are made available. The Department should establish “performance standards” and allow the industry to propose methods and alternatives to meet the standards. (1103)

Response: The regulations allow operators to request approval for alternatives to the regulatory standards. Approvals will be granted when proposed alternatives are shown to provide equivalent or superior protection to the requirements provided.

- 1148.** Comment: 78.59a – We support improved design and construction standards for freshwater impoundments. We oppose the use of centralized impoundments for waste handling, as is explained above.

We recommend that § 78.59a and § 78.59b be combined into one regulation that addresses freshwater impoundments. However, for simplicity we have kept the freshwater impoundment embankment regulations (§ 78.59a) separate from the freshwater impoundment registration, performance, safety and security standards regulations (§ 78.59b) in our comments below. The regulations can be combined by the PADEP in the final draft.

Impoundments that include construction of embankments should be subject to the requirements of Chapter 105, Subchapter B, Dams and Reservoirs. Specifically, impoundments should be subject to the requirements of § 105.91 - § 105.99 related to classification and design criteria for approval of construction, operation, modification, and maintenance; § 105.101 - § 105.109 related to construction requirements and procedures; § 105.111 related to the commencement of storage of water, fluid, or semifluid; § 105.123 related to the restoration of aquatic life; and § 105.131 - § 105.136 related to operation, maintenance, and emergencies.

We recommend that existing impoundments that do not meet these new standards be removed within one year from the date the regulations are approved, and be replaced to meet the new standard.

We recommend the following changes to the proposed regulations at § 78.59a:

§ 78.59a. Freshwater Impoundments Embankments.

New embankments constructed for freshwater impoundments for oil and gas activities shall meet the applicable requirements of 25 Pa. Code Chapter 105, Subchapter B. Dams and Reservoirs. (1143)

Response: The regulations impact only dams that are not regulated under Chapter 105. Therefore all applicable requirements in Chapter 105 are addressed by the regulation.

- 1149.** Comment: Subsections 78.59a and 78.59b unnecessarily target the oil and gas industry with respect to the storage of freshwater, in a manner that would impose excessive cost with unclear environmental benefit. The Department has not provided any justification or harms analysis with respect to freshwater impoundments. These sections should be deleted from the proposed rule. (1135)

Response: The scope and type of use of well development impoundments by the oil and gas industry is significantly different than the scope and type of use of impoundments by other industries in such a manner that the Department has determined that the regulations are appropriate. Subsection 78.59a relates to the structural integrity of the impoundment to provide adequate public safety. Subsection 78.59b provides reasonable assurances that the water placed in the impoundments does not pose an environmental hazard.

- 1150.** Comment: **78.59a** – The proposed regulations have extensive new requirements for impoundment embankments, freshwater impoundments, and centralized impoundments beyond those any other industry must follow for impoundments, regardless of what is contained in them. The Dam Safety and Encroachments Act extensively regulated freshwater impoundments and the Solid Waste Management Act extensively regulates residual waste impoundments. DEP has significantly underestimated the cost of designing, constructing and maintaining impoundments to the standards in sections 78.59a through 78.59c. Further, no other industry has been singled out for specific rules on the use of impoundments; persons conducting operations in any non-oil and gas context are governed by the existing laws and regulations of general applicability. Delete Section 78.59a entirely. (1153)

Response: See response to comment 1149.

- 1151.** Comment: The Department is proposing new regulations for activities that have been implemented through forms, approvals and policies for several years. As a regulation, flexibility must be added to address changes that may become necessary to address unforeseen issues that may arise or to address other practical issues that may be very onerous if implemented as absolute regulatory requirements. Specific requirements should remain in guidance documents and forms.(1071, 1137, 1174)

Response: See the reply to comment 1147.

- 1152.** Comment: Under this proposal, the Department will be regulating freshwater impoundments which are not regulated under Chapter 105 or any other portion of Title 25 Environmental

Protection. Regulating only Oil & Gas freshwater impoundments and no other person, group, or industry's freshwater impoundments is arbitrary and capricious. Consequently, freshwater impoundments must either be removed from the proposed Oil & Gas regulations, or Title 25 needs to be revised to regulate all persons, groups, or industries equally. (1137, 1147, 1174)

Response: See response to comment 1149.

1153. Comment: The requirements of Section 78.59a are too prescriptive and do not provide the Department with the flexibility to approve alternate methods. (1137, 1174)

Response: See response to comment 1147.

1154. Comment: Both freshwater and centralized impoundments are defined in this Chapter and do not need to be qualified in this section as being used “for oil and gas activities.” (1137, 1174)

Response: There is a possibility that an operator could install a freshwater and/or centralized impoundment for use other than for oil and gas related activities, therefore the statement “for oil and gas activities” is retained.

1155. Comment: §78.59a(a) should be modified to allow alternate methods to be approved by the Department. (1137, 1147, 1174)

Response: See response to comment 1147.

1156. Comment: The industry has a huge need for water. Our rural, farmland and forested communities benefit from impoundments where in some cases due to freshwater withdrawal directly flowing freshwater lines, inbound water hauling may be eliminated from our roads. This greatly improves traffic congestion and air quality issues related to heavy diesel traffic. Impoundments also provide a storage component for the industry providing opportunities to store water for use during the seasonal low water periods when they may desire to fracture wells and any water withdrawal locations may be placed on pass-byes. C.O.G.E.N.T. fully supports the impoundment embankment standards and recommends their adoption at a minimum as is written. (660a)

Response: The Department acknowledges the comment.

1157. Comment: §78.59a(a)(1) should be revised to explicitly allow deviation from the stripping and grubbing standards if approved by the Department. (1147)

Response: See response to comment 1147.

1158. Comment: §78.59a(a)(2) should be revised to allow for the use of coarse aggregate with a permeability of 1×10^{-3} cm/sec or an alternate material approved by the Department in any embankment foundation drain in addition to PennDOT Type A sand. (1137, 1147, 1174)

Response: Type A sand provides a filter for all types of soils in PA. So not only does it drain occasional seeps, it also filters out any soil particles that would flow with the spring.

1159. Comment: §78.59(a)(5) should be revised to change the required soil sampling frequency from 1 sample per 1,000 cubic yards to a frequency of 1 sample per soil type. (1137, 1147, 1174)

Response: See response to comment 1173.

- 1160.** Comment: §78.59a(a)(5) should be revised to clarify that the soils used in embankment should have a minimum of 20 percent retained on a No. 200 sieve. (1137, 1147, 1174)

Response: While the wording concerning the percent of fines in the soil has been confusing in past standards/requirements, the current wording is more descriptive and seems to be understood by the designers. The Department has not changed the wording for this standard. See response to comment 1175.

- 1161.** Comment: §78.59a(a)(5) should be revised to allow use of other soil types as part of an alternate design. (1147)

Response: See response to comment 1147.

- 1162.** Comment: §78.59a(a)(9)(ii) should be revised to allow to require a geotextile underlayment only when a coarse aggregate with very few fines is used as fill. (1147)

Response: The geotextile underlayment provides protection for the embankment materials.

- 1163.** Comment: (a)(1) - This section is overly detailed and prescriptive. If not altered to allow performance based standards, flexibility must be provided in the rule. In many cases this requirement would cause an unnecessary excavation through suitable subgrade material. In some cases this requirement may allow unsuitable subgrade material to remain. It is suggested that the citation be revised to require the removal of unsuitable material prior to fill placement, and add a suggestion to retain a Professional Engineer to provide foundation construction oversight. Suggested Language: (1) The foundation for each embankment must be stripped and grubbed to a minimum depth of 2 feet below existing contour prior to any placement and compaction of fill, or as otherwise approved by the Department. (1137, 1174)

Response: See response to comment 1147. Additionally, under no circumstances should this provision be interpreted to allow unsuitable subgrade material to remain. If stripping and grubbing to a minimum depth of 2 feet below existing contour does not reveal suitable subgrade material, excavation should continue until all unsuitable subgrade material is removed prior to any placement or compaction of fill.

- 1164.** Comment: Section 78.59a(a)(2) impliedly allows impoundments and/or embankments to be constructed on top of springs. The regulation should prohibit construction of embankments over springs because it increases the potential for erosion and spills. (852a)

Response: Section 78.59a(a)(2) accommodates drainage of springs and seeps encountered during construction using appropriate engineered controls. In some cases springs and seeps are not revealed until construction begins. Additionally, the engineered controls prescribed by §§ 78.59c and 78a.59c prevent erosion and ensure stability of the embankment.

- 1165.** Comment: (a)(2) - This section is overly detailed and prescriptive. If not altered to allow performance based standards, flexibility must be provided in the rule. The use of PennDOT Type A sand in this application poses the following design issues: (1) Due to the small grain size of the sand particles, those particles can migrate into the pipe perforation of piping typically used in the drain. Sand migration/erosion could cause void space to develop in the pipe bedding. Or, sand could block the pipe perforations or block flow in the pipe; and (2) the sand's permeability is low as compared to other more available aggregates. The sand is a slower draining material that could cause adjacent

soils to become saturated. It is suggested that “coarse aggregate” and minimum permeability of 1×10^{-3} cm/sec be specified.

The use of a geotextile wrap around the aggregate should be allowed when designed by a Professional Engineer. Geosynthetic design calculations for geotextiles used as a separator, such as this application, are available.

Suggested Language: (2) Any springs encountered in the embankment foundation area shall be drained to the downstream toe of the embankment with a drain section 2 foot by 2 foot in dimension consisting of PennDOT Type A sand, compacted by hand tamper; coarse aggregate with a minimum permeability of 1×10^{-3} cm/sec; or an alternate material approved by the Department. Geotextiles shall not be used around sand, unless approved by the Department. The last 3 feet of this drain at the downstream slope shall be constructed of AASHTO #8 material. (1137, 1174)

Response: See response to comments 1147 regarding design flexibility and 1158 regarding type A sand.

- 1166.** Comment: In addition to pollution hazards, impoundments result in significant compaction of the soil due to the weight of stored liquids. (980, 1098)

Response: Proper impoundment construction requires compaction of embankment and sub-base material.

- 1167.** Comment: The embankments, as specified [78.59a], are problematic in the draining of streams to downstream locations rather than moving the embankment to another site. [78.59a (a)(2)] (980, 1098)

Response: The Department acknowledges the comment. The embankment standards accommodate drainage of springs and seeps encountered during construction but do not allow for stream relocation.

- 1168.** Comment: The stabilization practices [78.59a (9)] should be enhanced to prevent erosion and sedimentation problems stemming from cumulative impact of development and frequent severe weather emergencies.(980, 1098)

Response: The stabilization practices in § 78.59a meet the requirements of Chapter 102.

- 1169.** Comment: There are no generally accepted Engineering standards that require/mandate a top width of 12 feet nor are there any that require slopes no steeper than 3 horizontal to 1 vertical. Thousands of impoundments have been and continue to be constructed by various Government agencies and others without these construction limitations. These design standards are normally determined by a registered Professional Engineer and are not standards that should be made up by Regulation writers who are NOT Registered Engineers.(92)

Response: The design standards were developed by registered engineers. See response to comment 1147.

- 1170.** Comment: My belief is that this section should only apply to unconventional well sites. In (4) of this section it states that the slopes should be no steeper than 3 horizontal to 1 vertical. This is impossible to achieve on a small conventional well site measuring 150'x150' total. The conventional operators, in the last 20 years have been trying to reduce the size of the well pads, which in turn have

obviously reduced the drill/frac pit size on location. We've had a great deal of success drilling conventional wells on smaller pads, while pleasing everyone involved, including the PADEP, landowners as well as the investors and operators. A smaller pad means less money to build. Win, win for all parties. This section would need rewritten to accommodate the conventional operator's needs.(145)

Response: See response to comment 1147. Additionally, the provisions in §§ 78.59a, b and c address centralized impoundment which are not required to be located on a well site. On-site pits for temporary storage are regulated under § 78.56. The specifications are appropriate for centralized impoundments regardless of whether they are utilized for conventional or unconventional well development.

1171. Comment: 78.59a(4) -The inside slope should be allowed to be 2:1 to try and cut down on the overall earth disturbance. (411)

Response: The soil types prescribed by the regulation have not been proven to be stable when placed steeper than a 3:1 slope.

1172. Comment: 78.59a(5) -The rate of soil sampling of one sample per 1,000 cubic yards is unreasonable and cost prohibitive to the operator. A single composite sample from the embankment material should suffice. (411)

Response: The Department does not agree that a single composite sample from the embankment material is sufficient to classify soil embankment materials. See response to comment 1173.

1173. Comment: 78.59a(a)(5) - The testing frequency specified is excessive and in most cases would generate redundant results. At the proposed frequency, preconstruction sampling would not be economically feasible. Consequently, sampling and testing at 1 per 1,000 cubic yards would need to be performed during the course of the earthwork and could cause expensive construction delays while waiting for test results. For a typical impoundment, approximately 70,000 cubic yards of earthwork would be required. Pursuant to the proposed section, 70 samples would be required for testing. It is suggested that the specification be change to state "Soil samples shall be classified at a frequency of 1 sample per soil type." (1137, 1174)

Response: The Department agrees that laboratory soil testing at a rate of 1 per 1,000 cubic yards of placed fill may not be necessary in all cases. The regulatory language has been revised to require laboratory testing at a minimum rate of 1 sample per 10,000 cubic yards of placed fill, 1 sample per soil source and one sample when the soil type changes for a given source. To ensure oversight of source material quality the regulation will also require soils to be visually classified (ASTMD-2488) at a rate of 1 sample per 1,000 cubic yards of placed fill.

1174. Comment: **78.59a(a)(6)** – Acceptable slope stability factors of safety can be achieved using soils with less than 20% of the particles retained on the No. 200 sieve, and an acceptable factor of safety can be achieved with soils that do not meet the textural classifications specified. Therefore, it is recommended that the section be modified to allow site-specific soils to be evaluated within the proposed design by an appropriately qualified professional utilizing laboratory analysis (if needed) and supporting calculations. (1137, 1174)

Response: See response to comment 1147.

1175. Comment: Section 78.59a(a)(6) should read “soils shall contain 20% or more material passing the #200 sieve.” (852a)

Response: Often soils are described by the weight of material passes certain sieve sizes; however, for this standard, the requirement is that the soil contain at least 20% of material larger than the No. 200 sieve for the following reasons. The acceptable soils listed in § 78.59a(6) by the Unified Soil Classification System (USCS) must already meet certain criteria related to the No. 200 sieve. In other words, GM and GC soils (gravels with fines) must have at least 12% fines, and SM and SC soils (sands with fines) must also have at least 12% fines. Also CL and ML soils (Inorganic fines) must have at least 50% fines. The amount of fines for these materials, as specified by USCS, is sufficient for dam embankment construction. The reason for this standard, is for CL and ML soils that contain more than 80% fines and may result in embankments with instable side slopes. In other words, ML and CL soils must have between 50%-80% fines to meet this requirement.

1176. Comment: Section 78.59a(a)(8) does not include field quality control/quality assurance requirements such as in-situ compaction density and optimum moisture tests to confirm that these larger impoundments are built with suitable structural integrity. (852a)

Response: The Department agrees. An additional standard for field density testing has been added to the regulation. The regulation will require a satisfactory density test for every lift and for every 2,000 square yards on a single lift.

1177. Comment: § 78.59a(9)(i) – To ensure consistency across Commonwealth regulations, § 78.59a(9)(i) should refer to requirements found at 25 PA Code, Chapter 102, Section 102.4, Erosion and Sediment Control. Additionally, we recommend the use of native trees and shrubs. Requiring the use of native plant species to stabilize impoundment embankments will reduce the introduction of non-native invasive species on oil and gas sites and would help limit the potential spread of non-native or other invasive species to adjacent private or public lands such as units of the National Park System. (1062, 1133)

Response: Section 78.59a(a)(9)(i) requires compliance with § 102.22 which address permanent stabilization requirements. The Department encourages the use of native plant species for all projects where vegetative cover is used for permanent stabilization.

1178. Comment: 78.59a(a)(9) - In most cases the rock layer placed on the out-slope of the embankment will consist of a well graded soil consisting of oversized rock with fines from the site excavation , which will not be susceptible to stormwater infiltration and erosion of the embankment-to-rock-fill interface. Due to the time consuming effort necessary to install a geotextile separation layer and the added cost, it is recommended that Class 2, Type A geotextile is only necessary when a course aggregate with very few fines is used as fill.” (1137, 1174)

Response: See response to comment 1162.

1179. Comment: The new language of this section establishes requirements related to impoundments and has generated significant interest from the regulated community. Commentators express concern that the requirements of this section are much more stringent than the design criteria for residual waste or hazardous waste under the SWMA. Commentators also note that the Dam Safety and Encroachments Act regulates freshwater impoundments. Some commentators assert that EQB has significantly underestimated the cost of the standards imposed by these requirements. Other commentators suggest additional requirements regarding soil testing and volume limits. We ask EQB to ensure that

the provisions of this section do not conflict with or duplicate statutes or existing regulations. We also ask EQB to explain in the Preamble and RAF of the final-form regulation how the requirements in this section reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry. We have similar concerns related to impoundment requirements in Sections 78.59b and 78.59c, and ask EQB to ensure that these sections do not conflict with or duplicate statutes or existing regulations. We also ask EQB to explain in the Preamble and RAF of the final-form regulation how the impoundment requirements in these sections reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: The Department believes that centralized impoundments should be regulated in the same manner as other waste transfer facilities are regulated under Article IX. Therefore, in order to ensure consistency the Department has revised § 78.59c to require any new centralized impoundments to be authorized by a residual waste permit under Article IX. In addition, § 78.59c also requires operators of existing centralized impoundments permitted under a Dam Permit for a Centralized Impoundment Dam to either submit a closure plan to the Department within 6 months and close the centralized impoundment within 3 years of the effective date of the rulemaking or obtain a residual waste permit for the operation of the centralized impoundment within 3 years of the effective date of the rulemaking. Regarding the need to regulate well development impoundments, the scope and type of use of well development impoundments by the oil and gas industry is significantly different than the scope and type of use of impoundments by other industries in such a manner that the Department has determined that the regulations are appropriate. Subsection 78.59a relates to the structural integrity of the impoundment to provide adequate public safety. Subsection 78.59b provides reasonable assurances that the water placed in the impoundments does not pose an environmental hazard.

- 1180.** Comment: The regulation should establish, but does not have, a height and total volume limit for minimum embankment construction standards. (852a)

Response: By definition, well development impoundments are not regulated under §105.3. Therefore the regulations do establish height and volume limits for well development impoundments.

- 1181.** Comment: Soil test results should be reported to the Department rather than only having the results submitted ‘upon request’. The Department’s failure here and elsewhere to require the submission of information that must be generated by the operator prevents the public from obtaining access to the information. (852a)

Response: The embankment standards are applicable to only well development impoundments. The Department does not review or authorize construction of well development impoundments.

- 1182.** Comment: The Department should consider tying berm width to the height of impoundment built above grade – with wider widths for taller impoundments. (852a)

Response: The specified standards are appropriate to ensure structural integrity of impoundment embankments. See response to 1180.

- 1183.** Comment: Requires an engineer to certify construction of any proposed impoundment - essentially requiring full time supervision by the engineer of the construction phase.(1172)

Response: As a result of the modifications to §§ 78.59c and 78a.59c, the certification reports identified by the commenter have been deleted.

1184. Comment: The design criteria and construction standards for impoundments are more stringent than those required for residual and hazardous waste containment.(1172)

Response: Chapters 78 and 78a have been revised to require oil and gas operators to construct and operate centralized impoundments under the SWMA. See response to comment 1251.

§ 78.59b Well development impoundments

1185. Comment: 78.59b – We support improved registration, performance, safety, and security standards for freshwater impoundments. (1143)

Response: The Department acknowledges the comment.

1186. Comment: We oppose the use of centralized impoundments for waste handling, including mine influenced water. We do not support the storage of mine influenced water in a freshwater impoundment. A “freshwater” impoundment by its title is only designed to store uncontaminated “freshwater” that meets the definition that we proposed at § 78.15 above. (In our comments at § 78.15 above, we recommended that following definitions. Freshwater means “fresh surface water” and “fresh groundwater.” Fresh Groundwater means: “Uncontaminated water in that portion of the generally recognized hydrologic cycle which occupies the pore spaces and fractures of saturated subsurface materials and all underground sources of drinking water, as defined in 40 CFR §§ 144.3, 146.4, including all primary and principal aquifers.” Fresh surface water means “Uncontaminated water in that portion of the generally recognized hydrologic cycle which occupies the surface of the Earth.) Mine influenced water should be handled as wastewater. All water stored in a freshwater impoundment should be tested and verified to meet a “freshwater” standard prior to storage, and that test data should be provided to the PADEP. (1143)

Response: The Department has modified Chapters 78 and 78a to change “Freshwater Impoundment” to “Well Development Impoundment” to clarify the meaning of the term. In regards to storage of mine influenced water in a well development impoundment, the quality of mine influenced water varies greatly throughout the Commonwealth and the term includes mine influenced water that has been treated, which may be very high quality. Before mine influenced water is allowed to be stored in a well development impoundment, the Department must review and approve the storage based on a variety of factors including the quality of the water and the risks of storage of the water.

1187. Comment: We recommend that § 78.59a and § 78.59b be combined into one regulation that addresses freshwater impoundments. (1143)

Response: The sections address different issues.

1188. Comment: We recommend that existing impoundments that do not meet these new standards be removed within one year from the date the regulations are approved, be replaced to meet the new standard. (1143)

Response: The provision has been revised to require a certification that the existing

impoundments meet the new standards when registering existing impoundments.

1189. Comment: We recommend improvements in the liner design, quality, installation, and maintenance requirements. (1143)

Response: The Department acknowledges the comment.

1190. Comment: We do not support § 78.59b(e), allowing for the artificial lowering of the seasonal high water table. The use of an artificial underdrain system is likely to affect the adjoining groundwater system beyond the impoundment, including potentially damaging impacts on wetlands and headwater streams through the lowering of the groundwater. Soil moisture conditions are almost certain to be affected by the centralized impoundment construction, and an artificial underdrain system would further exacerbate these impacts. Altered groundwater and soil moisture conditions will directly impact established woodland vegetation. Additionally, the presence of a seasonal high groundwater table indicates a hydrologic connection to adjacent streams and wetlands, and hence, an additional path for direct contamination, should a leak or discharge from the impoundment occur.

Chapter 73 of the Pennsylvania Code (related to Standards for On-lot Sewage Treatment Facilities) prohibits the installation of on-lot sewage facilities if the seasonal high water table is within 20 inches (§ 73.14(5)). There is no option for an alternate underdrain system if a seasonal high-water table condition exists. The same standards should apply to impoundments.

Impoundments should not be permitted within 20 inches of a seasonal high groundwater table, and should not be allowed to artificially lower the seasonal high groundwater table. The water quality implications from an impoundment can be far more significant than an on-lot sewage treatment system; the standards should not be less stringent. (1143)

Response: The comparison between on-lot sewage treatment facilities and well development impoundments is not appropriate because on-lot sewage treatment systems are disposal facilities that rely on soil to effectively treat wastewater. Well development impoundments are not waste disposal facilities and do not rely on soil to provide treatment of wastes. The 20 inch separation requirement allows for a physical barrier between the seasonal high groundwater table and the bottom of the impoundment to prevent mixing of impounded water and groundwater and to ensure structural integrity of the impoundment. The Department does not anticipate any significant environmental harm from passive drainage systems that are installed to divert seasonal high groundwater tables away from well development impoundments.

1191. Comment: We do not support impoundment site waivers, even if the landowner consents. Sites must be fully restored to protect interconnected water supplies, forests, and habitats. The impoundment site should be restored based on a survey of existing conditions prior to disturbance, to ensure that the ecological integrity and habitat values of a forested or naturally vegetated area are fully restored. Impoundments require maintenance and inspection for continued safety of the structure, and the landowner may not be fully aware of these requirements. The required removal of the liner will alter the impoundment capacity to retain water and the impoundment structure itself. The PADEP should require restoration to original contours. (1143)

Response: This section allows landowners to make a request to the Department to waive the requirement to restore a well development impoundment site to approximate original conditions provided that the liner is removed from the impoundment. Since, by definition, well development impoundments do not require a dam permit under Chapter 105,

landowners could potentially construct identical impoundments on their property without any notification to the Department at all. The Department believes that it is appropriate to allow a landowner to maintain a dam embankment which was used for a well development impoundment on their property if they choose and notes that there would likely be a greater environmental impact should the operator be required to restore the well development impoundment site to approximate original conditions just to have the landowner reconstruct the impoundment.

In addition, restoration to approximate original conditions, capable of supporting original uses to the extent practicable is the best practice to achieve site restoration within reasonable operational parameters. It is not necessary to include technical performance standards including requirements for type and density of perennial vegetation, soil characteristics and drainage patterns in this section because those issues are already appropriately addressed by the requirements. Projects meeting the requirements will satisfy the statutory restoration requirements and include performance requirements that will protect waters of the Commonwealth.

1192. Comment: Suggested amendatory language: § 78.59b(a) Impoundments may be constructed for freshwater (as defined in § 78.15). Only freshwater may be stored in a freshwater impoundment. Centralized waste impoundments are prohibited. (1143)

Response: See response to comment 1186.

1193. Comment: Suggested amendatory language §78.79b(b) In addition to meeting the requirements of § 78.59a (relating to impoundment embankments), all new freshwater impoundments must be in compliance with this section and any existing freshwater impoundments must meet these standards by _____. (Editor's Note: The blank refers to one year after the effective date of adoption of this proposed rulemaking.). (1143)

Response: See response to comment 1188.

1194. Comment: Suggested amendatory language: §78.59b(e) Unless the operator or its contract staff is continuously present at a freshwater impoundment, a fence must completely surround the freshwater impoundment to prevent unauthorized acts of third parties and damage caused by wildlife. (1143)

Response: The Department disagrees that specifying that the individual present at the site must be the operator or contract staff.

1195. Comment: Suggested amendatory language: §78.59b(f) Freshwater impoundments shall be restored by the operator by removing excess water and the synthetic liner and returning the site to approximate original baseline conditions to ensure that the ecological integrity and habitat values of a forested or naturally vegetated area are fully restored, including preconstruction contours, and can support the land uses that existed prior to oil and gas activities to the extent practicable within 9 months of completion of drilling the last well serviced by the impoundment. A 2-year restoration extension may be requested under section 3216(g) of the act (relating to well site restoration). If written consent is obtained from the landowner, the requirement to return the site to approximate original contours may be waived by the Department if the liner is removed from the impoundment. (1143)

Response: See response to comment 1191.

1196. Comment: Suggested amendatory language: §78.59b(g) The Department may require the operator to test water sources proposed to be stored in a freshwater impoundment prior to storage to verify that the water quality meets the § 78.15 freshwater standard. The water test data must be provided to the Department 10 days prior to storing freshwater in the freshwater impoundment. (1143)

Response: The existing proposal adequately addresses water quality testing prior to storage.

1197. Comment: To truly safeguard the groundwater and reduce the risk of a pit liner floating, all pits and impoundments should be required to have a professional determine the seasonal high groundwater table. This is not mentioned under all of the potential pit applications. (1150)

Response: The Department agrees. The section has been amended to require a soil scientist or other similarly trained person to determine the depth to seasonal high groundwater.

1198. Comment: The 2' freeboard is not mentioned under freshwater or centralized impoundments. It is important that some space is provided for all pits and impoundments. (1150)

Response: The Department agrees that maintaining freeboard is important for safe operation of pits and impoundments. Given the benign nature of liquids stored in well development impoundments, however, the Department is not adding the 2' freeboard requirement to sections 78.59b or 78a.59b.

1199. Comment: Fencing should also be required for all pits and impoundments for human and wildlife safety. (1150)

Response: Section 78.59b(e) requires fencing or continuous presence at the site to prevent unauthorized acts of third parties and damage caused by wildlife.

1200. Comment: Because there is not a clear definition for freshwater, freshwater impoundments should not be allowed as proposed. (649)

Response: See the response to comment 1186 regarding the change from “freshwater impoundment” to “well development impoundment”

1201. Comment: Section 78.59b allows an operator or owner to store mine influenced water in a freshwater impoundment, with DEP approval. By DEP’s own definition, mine influenced water is water that pollutes, or may create a threat of pollution to, waters of the Commonwealth. We recommend prohibiting the storage of mine influence waters in freshwater impoundment, and rather requiring that mine influenced water be stored in centralized impoundments, which have stronger environmental requirements and protections. (1142, 1157)

Response: See response to comment 1186.

1202. Comment: 78.59b – The proposed regulations have extensive new requirements for impoundments storing freshwater that are often unnecessary and go beyond those any other industry must follow for storing fresh water. Regulating freshwater impoundments for only the oil and gas industry, despite their use by many other industries, is arbitrary and capricious. Freshwater impoundments should either be removed from the proposed oil and gas regulations, or Title 25 needs to be revised to regulate all persons, groups, or industries equally. (952, 1071, 1137, 1147, 1153, 1174)

Response: The scope and type of use of well development impoundments by the oil and gas

industry is significantly different than the scope and type of use by other industries in such a manner that the Department has determined that the regulations are appropriate.

1203. Comment: 78.59b – The proposed regulations have extensive new requirements for impoundments storing fresh water, beyond those any other industry must follow for storing fresh water. Freshwater impoundments are already regulated under the Dam Safety and Encroachments Act. (1153)

Response: See response to comment 1202. The regulations supplement the existing requirements under the Dam Safety and Encroachments Act.

1204. Comment: We are interested in these particular provisions because FWIs are becoming more common in our rural, farmland and forested communities. The water contained within the FWI may not in all cases be similar to that of the local aquifer. We need to ensure that our groundwater is adequately protected maintaining the integrity of our private water supplies. FWIs are a large part of the industry recycling methods. FWIs also provide water storage areas to prepare for seasonal low water periods. We certainly want to encourage recycling. In some cases where waterlines connect water source withdrawals with FWIs local residents greatly benefit from reduced truck traffic. (1035)

Response: The Department acknowledges the comment.

1205. Comment: Suggested amendatory language: §78.59b(d) For unconventional well sites, unless an individual is continuously present at the well site, a fence or fences shall completely surround all pits to discourage unauthorized acts of third parties and damage caused by wildlife. (1147)

Response: It is appropriate to regulate all well development impoundments in the same manner.

1206. Comment: §78.59b(e) - This subsection requires the same groundwater table determination practices for freshwater impoundments as for produced water pits. This proposal seems unreasonable for freshwater. This subsection should be removed. (1147)

Response: The 20 inch separation requirement allows for a physical barrier between the seasonal high groundwater table and the bottom of the impoundment to prevent mixing of impounded water and groundwater and to ensure structural integrity of the impoundment. It is appropriate to ensure that this requirement is met in order to prevent significant environmental harm.

1207. Comment: §78.59b(f) Freshwater impoundments, when not needed for operations and not wanted by the surface owner, should be restored in accordance with applicable site restoration plans.

Suggested amendatory language: Freshwater impoundments shall be restored by the operator to whom the impoundment is registered by removing excess water and the synthetic liner and restoring the site in accordance with a site restoration plan within nine months of completion of the last well serviced by the impoundment. A restoration extension may be requested consistent with the extension requirements described under section 3216(g) of the act (58 Pa.C.S. § 3216(g)) that apply to well site restoration obligations. (1147)

Response: The restoration period and standards are defined by the 2012 Oil and Gas Act. Restoration must occur within 9 months of completion of drilling. Additionally, the regulation allows well development impoundments to remain unrestored if consent is obtained from the

landowner and the liner is removed from the impoundment.

1208. Comment: Suggested amendatory language:§78.59b(g)(1)(i)

A demonstration that the escape of the mine influenced water stored in the freshwater impoundment will not result in water or land pollution or endanger persons or property and include the following; (1147)

Response: The language in this section is consistent with language in § 105.3(a)(3) which is used to determine if an impoundment requires a permit under the Dam Safety and Encroachments Act. Any impoundment that contains fluids or semifluids other than water, the escape of which will result in air, water or land pollution or endanger person or property requires a permit under the Dam Safety and Encroachments Act. Therefore the language regarding air pollution is appropriate.

1209. Comment: 78.59b(b) – The form for this process should be produced and reviewed prior to establishment of this section. (411)

Response: The Department agrees that forms required by the regulations should be developed prior to the regulations being finalized.

1210. Comment: 78.59b(b) – We recognize and appreciate the Department’s effort to create an inventory of existing freshwater impoundments. While some counties such as Bradford County has done an excellent job in mapping Marcellus Shale infrastructure that is not true of all counties. The Department recently introduced a new mapping system, and ideally all oil and gas infrastructure, including impoundments and compressor stations etc. need to become part of that mapping system. Achieving such a statewide mapping will provide an accurate resource for counties that have not created current mapping of facilities. Ideally, we’d also like to see an as built gathering line layer available. Many operators would willingly provide such valuable information to the Department. It will also assist those that dwell within the gas fields to have access to information concerning their changing rural, farmland and forested communities. We are also glad to see the Department recognizing the transfer of impoundments as we do know such cases have already occurred. (660a)

Response: The Department acknowledges the comment. The Department will continue to work to improve online data availability.

1211. Comment: 78.59b(b) – I agree with the DEP proposal to have freshwater impoundments be registered with the department and I suggest this information also be made available online along with open pits, temporary open pits, and underground/partially buried storage tanks etc. (848)

Response: The Department acknowledges the comment.

1212. Comment: 78.59b(c) – There is no valid reason to mandate synthetic liners be used for the storage of freshwater. If however, the PA DEP insists on calling “mine influenced water” as freshwater then liners should only be required for impoundments that will contain such polluted water. Due to normal high levels of Total Dissolved Solids.(92)

Response: See response to comment 1186.

1213. Comment: 78.59b(c) – This subsection should not be included. Synthetic liners should not be required because onsite soils may provide sufficient permeability for use as a liner for freshwater.

Suggested amendatory language:

(c) Freshwater impoundments shall be designed to hold water without significant leaks that could affect the integrity of the embankment. (1103, 1137, 1147, 1174)

Response: The Department acknowledges that some native PA soils have sufficiently low permeability to contain water without significant leaks however, the Department declines to make this change because the revisions would require extensive planning, oversight and demonstrations to ensure that appropriate soils and procedures were utilized. This revision would exacerbate concerns raised by commenters in comment 1202.

1214. Comment: Section 78.59b(c) requires a ‘synthetic impervious liner’ without providing maximum permeability or allowable seepage or a type of liner material. The regulations should establish parameters for the synthetic liner. (852a)

Response: The section provides adequate protection without being overly prescriptive.

1215. Comment: 78.59b(c), (e), (f) – We support these well needed construction and restoration provisions. As the industry continues to expand in our region, impoundments are an integral part of the development infrastructure and therefore construction and restoration regulation are necessary to adequately protect our water resources. (660a)

Response: The Department acknowledges the comment.

1216. Comment: 78.59b(d) – We are concerned about unauthorized individuals gaining access to the many sites located within our region. Landowners have been dismayed by third parties trespassing on well pads and impoundments fully knowing that such locations may be dangerous for the general public. Landowners have not readily understood why it is that some consider it their prerogative to not only trespass on their lands but also, an industrial work site at that. Landowners also have concerns about a variety of third party damage issues some of which have occurred that resulted in environmental damage on their property. Such an occurrence was recorded in March, 2012 regarding a spill of diesel fuel at a gas well in Bradford County’s Springfield Township, Houseknecht 3H well site. Ten to Twenty gallons of diesel fuel were found in a farm field around the well, and some was discovered in a nearby unnamed tributary. In our region, where agriculture does continue to play a role in our regional economy, and includes organic producers, unauthorized third party access is an important concern. Therefore, we fully support the fencing provision at a minimum as it is written. (660a)

Response: The Department acknowledges the comment.

1217. Comment: 78.59b(d) – Since no fence can absolutely ensure “prevention” of unauthorized acts by third parties or damage by wildlife, the Department should replace “prevent” with “discourage.” (1137, 1174)

Response: The intent of the section is to prevent unauthorized acts by third parties. The Department acknowledges that fencing will not prevent unauthorized acts of third parties in all cases but replacing “prevent” with “discourage” would not satisfy the intent of the section.

1218. Comment: 78.59b(d) – Commentator is concerned related to the timeline for implementation, the

reasonableness of equating the presence of a person to a fence, the cost of installing a fence, and whether a person or fence can ensure prevention of damage or access. EQB should clarify the implementation procedures related to this provision. EQB should also explain in the Preamble and RAF of the final-form regulation how the security requirements in this section reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: The Department has clarified the intent of the section in the RAF and the Preamble.

- 1219.** Comment: 78.59b(e) –Impoundments and pits that contain any type of chemical should not be located anywhere near the high seasonal water table. Additional reasoning includes concern for plausible health impacts, “Although most additives are greatly diluted in the drilling process, organic compounds (with the exceptions of DBNPA and DBAN) tend to be lighter than water; therefore they float to the surface of holding pits, where they concentrate to essentially 100% of the surface. From there they volatilize or aerosolize into the air, from which they may be inhaled by neighbors and on-site industry workers. Partly for this reason, the states of Colorado (58) and New Mexico (59) have prohibited the use of impoundments for flowback fluids.”(189)

Response: The section referred to by the commentator relates to well development impoundments. See response to comment 1206.

- 1220.** Comment: 78.59b(e), 78.59c(d) – Anticipated climatic factors call for additional distances between the bottom of an impoundment and the seasonal high groundwater table. To permit engineering controls to alter the ground water table erodes drinking water protection. (980, 1098)

Response: See response to comment 1190.

- 1221.** Comment: More stringent parameters must be put in place regarding restoration of impoundment areas. Restoration to “approximate” original conditions and “to the extent practical” is not adequate. Restoration should be to set to best-known practice or standards. (980, 1098)

Response: Restoration to approximate original conditions to the extent practicable is the best practice to achieve site restoration within reasonable operational parameters.

- 1222.** Comment: The regulation does not provide any additional setback from seasonal high groundwater when storing ‘mine influenced water’. The Department should increase the setback from groundwater if the operator plans to store acid mine drainage or “mine influenced water” in the impoundment. (852a)

Response: See responses to comments 1186 and 1190

- 1223.** Comment: 78.59b(e) – This section requires the same groundwater table determination practices for freshwater impoundments as for produced water impoundments. This proposed subsection is excessive and unreasonable for freshwater. The cost in time, resources, and capital funding will be excessive to perform the studies required by this subsection and it is unreasonable to require the separation. This proposed subsection is excessive and unreasonable. The comentators recommend that it be removed. (1071, 1137, 1174)

Response: See response to comment 1206.

1224. Comment: 78.59b(f) - Freshwater impoundments, when not needed for operations and not wanted by the surface owner, should be restored in accordance with applicable site restoration plans. There is no obligation to return such sites to approximate original contours. In addition, the use of impoundments for operations at multiple well sites requires additional flexibility in the rule. For example, the phrase “completion of drilling” should be changed to “completion of the last well.” Also, section 3216(g) does not directly address freshwater impoundments, so extensions would not be limited to two years. Suggested Language: (f) Freshwater impoundments shall be restored by the operator to whom the impoundment is registered by removing excess water and the synthetic liner and restoring the site in accordance with a site restoration plan within nine months of completion of the last well serviced by the impoundment. A restoration extension may be requested consistent with the extension requirements described under section 3216 of the act (58 Pa.C.S. § 3216(g)) that apply to well site restoration obligations. (1071, 1137, 1174)

Response: See response to comment 1207.

1225. Comment: § 78.59b(f)(4): Seasonal High Groundwater Table (SHGT) is not engineerable. The whole concept that SHGT can be “engineered” is simply fallacious on its face. The clause “or if the seasonal high water table will be adjusted using engineering controls in order to accommodate the impoundment” must be stricken. The whole concept of SHGT is based on an understanding that “water will do what water wants to do” notwithstanding a well operator’s engineering. SHGT can no more be “engineered” than can floodplains. There is simply no environmental protection rationale for allowing a measurement of “engineered” SHGT under any circumstances. All such wording must be stricken. (869a)

Response: Drainage structures are commonly installed around and beneath structures to direct groundwater away from the structure.

1226. Comment: 78.59b(f) Stringent requirements to line and fence FRESH water impoundments really are counterproductive as these site features would be great for long-term post development use as farm ponds, irrigation ponds, and fire water supply ponds if not lined and made useless for such uses. (404)

Response: See response to comment 1202. Additionally, in accordance with the regulations, if requested by the surface land owner and the liner is removed, the impoundment may remain unrestored.

1227. Comment: 78.59b(f) addresses restoration of freshwater impoundments. Commentators state that these impoundments should be restored in accordance with applicable site restoration plans rather than to “approximate original conditions.” (1099)

Response: The Department agrees that impoundments should be restored in accordance with site restoration plans but the applicable site restoration plans should specify restoration to approximate original conditions unless otherwise allowed by the regulations.

1228. Comment: Commentators state that the provision does not address how or where the removed water is to be disposed. We ask EQB to clarify for the regulated community how this provision is to be implemented and to what standards. (1099)

Response: The Department has sufficient policies, guidance and regulations in place to address the handling and proper disposal of excess water from well development impoundments.

1229. Comment: 78.59b(f) also provides for a two-year restoration extension under Section 3216(g) of Act 13. Commentators assert that Act 13 does not directly address freshwater impoundments, so extensions under this subsection should not be limited to two years. We ask EQB to explain how this provision aligns with the intent of the General Assembly and Act 13. We also ask EQB to explain in the Preamble and RAF of the final-form regulation how the restoration requirements in this subsection reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: The basic restoration requirement is 9 months after completion of drilling of the last well serviced by the impoundment. The two year extension provides a reasonable and balanced amount of time to account for industry operations while setting an outside time limit on restoration and is consistent with requirements for well site restoration in §3216(g).

1230. Comment: 78.59b(f) include additional precautions related to restoration of freshwater impoundments that held mine influenced water, given that Subsection (g) allows for such storage. We ask EQB to explain in the Preamble and RAF of the final-form regulation how the requirements related to restoration of impoundments that held mine influenced water in this section reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: See response to comment 1186.

1231. Comment: Restoration should address mine influenced waters. Section 78.59b(f) allows for ‘restoration’ of the impoundment by removing excess water, but it does not address how and where the water would be disposed and any additional precautions that must be taken if ‘mine influenced water’ was stored in the impoundment, or if precipitate and heavy metals deposit at the bottom of the impoundment. (852a)

Response: See responses to comments 1186 and 1228.

1232. Comment: While we support the principle that use of mine influenced water can offset freshwater consumption when performed pursuant to proper safeguards, we believe Section 78.59b (g)- which permits storage of mine influenced water in designated freshwater impoundments - fails that protection standard. At a minimum, the safeguards for storage of mine influenced water should equal those required for wastewater. (997)

Response: See response to comment 1186.

1233. Comment: 78.59b(g): Although the Proposed Regulations do require testing of the mine influenced water prior to storage in the impoundment, this does not provide enough protection from potential breaches of the impoundment system. Breakdown of a mine influenced water containment system has potential impacts that far exceed those for a breach of containment of freshwater. As such, pre-treatment standards for mine influenced water must be developed to allow the use of freshwater impoundment systems for storage, or more stringent containment standards must be required for the storage of mine influenced water which are equivalent to wastewater containment systems. (1142)

Response: See response to comment 1186.

- 1234.** Comment: 78.59b.(g) We support the use of AMD in fracturing operations. When storing mine influenced water in a freshwater impoundment, we do have some concerns. We do not want to create new environmental issues created due to inadequate handling of MIW in freshwater impoundments. Frankly, we are concerned about AMD leaking into areas that are not historical coalfields where such pollution would be a new point source. We do agree with the testing of MIW at its source along with the record keeping component. Raw AMD, MIW of necessity must not be stored in a freshwater impoundment lacking testing that indicates that there is no contamination risk to nearby water resources. It is reasonable to store AMD, MIW in freshwater impoundments near the source as it would not create a new environmental problem considering the historic nature of the location.

According to the definition of freshwater impoundment, the FWI is designed to only contain fluids such as surface water, ground water and other Department approved sources. Our only concern is that in consideration of AMD and MIW a reliable standard is applied that sufficiently and adequately protects our water resources in the event the FWI succumbs to unintended leakage. We also desire that appropriate consideration be given to the seasonal high groundwater table as indicated. We request that the Department consider our concerns with the aspects of this provision. (660a)

Response: See response to comment 1186.

- 1235.** Comment: 78.59b(g): In addition to the impoundments, this article also advises proposed storing regulations to ensure mine influenced water in freshwater impoundments does not result in pollution to the water of the Commonwealth. This is simply another reason why the previous statements above need to be taken into high consideration. If there is the risk, the chance, the small possibility, that contaminated water and chemicals can pollute the waters of our Commonwealth then we need to simply figure out a way to completely avoid this process all together. If a multi-billion dollar company can figure out how to horizontally fracture the earth, at depths greater than 7,000 feet down and across, then we need for them to be accountable in developing responsible means for the waste that they create. They need to be responsible and accountable prior to any adverse events. This process is not for the state of Pennsylvania to create, they need to create alternative methods and then submit their proposals to the State and Federal government for review followed by independent research, followed by public hearings and approvals. The time frame could be unknown and vast, but the time frame of delivering water to the 300,000 residents of West Virginia recently was not quite known either. (189)

Response: See response to comment 1186.

- 1236.** Comment: 78.59b(g) - Mine influenced water does not always have to be a pollutant or a threat of pollution to waters of the Commonwealth. An example is a limestone mine pool that contains water that meets or exceeds drinking water standards. (411)

Response: The Department acknowledges the comment. See response to comment 1186.

- 1237.** Comment: 78.59b(g)(1) - The form for this process should be produced and reviewed prior to establishment of this section. (411)

Response: The Department agrees that all necessary forms and guidance should be finalized prior to promulgation of these regulations.

- 1238.** Comment: § 78.59b(g): Mine influenced water is not “fresh water” and should not be stored in a “freshwater impoundment”. To a citizen, describing mine influenced water as “fresh water” is quite

simply an Orwellian travesty. It stands the meaning of the word ‘fresh’ on its head. Does the Environmental Quality Board really intend for the word ‘fresh’ to mean “contaminated by prior industry” as opposed to “contaminated by current industry”? (869a)

Response: See response to comment 1186.

1239. Comment: The freshwater impoundment requirements are not sufficient for the storage of “mine influenced water.” Absent explicit requirements for pre-treatment of the mine influenced water, the standards for the storage of freshwater would be wholly inadequate for the storage of mine influenced water. We recommend that standards for the storage of mine influenced water should meet those for wastewater and that requirements should be similar to those for leachate at municipal waste landfills. (1142)

Response: See response to comment 1186.

1240. Comment: We believe it is wholly inappropriate to apply freshwater impoundment standards for storage of “mine influenced water” in impoundments without express criteria for pretreatment. The language provided in § 78.59b(g) is currently insufficient as it only requires testing of the mine influenced water prior to storage. Unless there are pretreatment standards provided in rulemaking, the standard applied for storage of mine influenced water should be at least as stringent as those used for storage of wastewater. (997a)

Response: See response to comment 1186.

1241. Comment: “Freshwater” must be clearly defined for the purposes of regulation. Otherwise, operators will improperly use, process, and dispose of harmful substances such as effluent, mining water, and flowback. (853)

Response: See response to comment 1186.

1242. Comment: Freshwater impoundments must not be used for the storage of mine-influenced water. [78.59b(f) (g)(h)]. If used, this mine drainage or mine pooling water must be stored in closed tanks. Operators should be required to pretest these hazardous fluids to determine their composition and radioactivity. Tracers should be added so that liability can be assigned when contamination occurs. (980, 1098)

Response: See response to comment 1186.

1243. Comment: We recommend pre-treatment standards for storage of “mine influenced water” in impoundments at least as stringent as those used for storage of wastewater to protect the waters of the commonwealth. Applying freshwater impoundment standards for storage of “mine influenced water” is unsuitable. (1031)

Response: See response to comment 1186.

1244. Comment: § 78.59b (g) (1)(i) - This section includes the requirement to demonstrate that the impoundment will prevent air pollution. It is suggested that, since air pollution control falls within the jurisdiction of another program, the reference to air pollution be deleted. (124a)

Response: See response to comment 1208.

1245. Comment: 78.59b(g) allows for storing mine influenced water in a freshwater impoundment. Commentators question whether the storage standards in this provision are sufficiently stringent with regard to mine influenced water. We ask EQB to explain in the Preamble and RAF of the final-form regulation how this provision reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: The Department has modified Chapters 78 and 78a to change “Freshwater Impoundment” to “Well Development Impoundment” to clarify the meaning of the term. In regards to storage of mine influenced water in a well development impoundment, the quality of mine influenced water varies greatly throughout the Commonwealth and the term includes mine influenced water that has been treated, which may be very high quality. Before mine influenced water is allowed to be stored in a well development impoundment, the Department must review and approve the storage based on a variety of factors including the quality of the water and the risks of storage of the water.

1246. Comment: 78.59b(g)(1)(i) requires a demonstration that the escape of mine influenced water stored in the freshwater impoundment will not result in air pollution. Commentators assert that the regulation of air falls under the jurisdiction of another program. We ask EQB to provide its authority and to ensure that the provisions of this section do not conflict with or duplicate statutes or existing regulations. (1099)

Response: See response to comment 1208.

1247. Comment: 78.59b(g) -- Given the current efforts of the industry, the DEP and legislature to develop a strategy for the reuse of mine influenced water, there needs to be more flexibility in the storage if it is located within the same watershed as the site of the MIW. (1103)

Response: The regulation provides sufficient operational flexibility to allow reuse of mine influenced water. See response to comment 1186.

1248. Comment: 78.59b(g) - The reference to air is unnecessary and should be removed. Chapter 78 is not the place to insert obligations related to air emissions, which are addressed at length in other State and Federal regulations. Suggested Language: (i) a demonstration that the escape of the mine influenced water stored in the freshwater impoundment will not result in water or land pollution or endanger persons or property include: (945, 1137, 1174)

Response: See response to comment 1208.

1249. Comment: Precipitate. The regulation does not address how the precipitate, which will likely result from mixing acid mine water with other less polluted water, must be managed. At the very least, the operator should be required to prepare for such an event. (852a)

Response: See response to comment 1186. The Department has sufficient policies, guidance and regulations in place to address the handling and proper disposal of excess water and wastes from well development impoundments.

1250. Comment: “Mine influenced water is defines as -Water contained in a mine pool or a surface discharge of water caused by mining activities that pollutes, or may create a threat of pollution to, waters of the Commonwealth. The term may also include surface waters that have been impaired by pollutional mine drainage as determined by the Department.”

The industry has been working with DEP and the legislature to be able to use MIW, commonly referred to as Acid Mine Drainage Water or AMD, for fracking to help offset the use of high quality stream water through legislation and a White Paper. Both attempt to limit the liability for the use of this water with respect that if a company takes MIW from a source, that company is not responsible to continue to treat that water for forever. Current law states once you touch it, you are responsible for it forever. The industry appreciates both efforts; however, the proposed regulation has very strict standards for testing, storing and monitoring that continues to make the use of MIW non-economical. I am familiar with one gas company that has an impoundment next to the stream in which it withdrawals the MIW. It doesn't make sense to monitor the stream from which the water came from. To encourage the use of MIW, there needs to be more flexibility in storage if the storage is located in the same watershed. (636a)

Response: The Department's concern and need for strict standards for testing, storing and monitoring of mine influenced water is based on the potential for mine influenced water to cause pollution to both surface waters and groundwater. Even when stored in the same watershed as it was withdrawn, mine influenced water has the potential to impact groundwater in the vicinity of the storage facility.

§ 78.59c Centralized impoundments

- 1251.** Comment: Because centralized wastewater impoundments may not be considered to be on “well sites,” the requirements for these impoundments in section 78.59c must be at least as stringent as the applicable requirements for wastewater impoundments in 25 Pa. Code Chapters 287- 299.

As the Department has previously recognized, centralized impoundments are – by virtue of not being located on well sites – subject to regulation under the Department's Solid Waste Management Act (SWMA) regulations set forth at 25 Pa. Code Chapters 287-299. Under section 287.2(g) of the Department's SWMA regulations, pits and impoundments are regulated exclusively under Chapter 78 (and not also under Chapter 287) *only* when they are located on well sites. The Department recognized that centralized wastewater impoundments do not qualify for the section 287.2(g) exemption in a 1993 Fact Sheet titled “The Residual Waste Regulations for Off-Site Disposal of Wastes from Oil and Gas Wells,” which appears as Appendix E to a 1994 Department report titled “Characterization and Disposal Options for Oilfield Wastes in Pennsylvania.” PennFuture received this report from the Department in response to a Right to Know Law request. In the Fact Sheet, the Department stated: “Storage impoundments which are not located on the well site are subject to the ... requirements and standards of 25 Pa. Code 287.111, 287.112, and 299.141-299.145.” The Fact Sheet also notes that operators of centralized impoundments “must comply with the operating requirements of 25 Pa. Code 299.144 (operating requirements).”

Under 25 Pa. Code § 299.142, a person storing residual waste in a surface impoundment must hold a valid permit from the Department under the Clean Streams Law, and must comply with 25 Pa. Code Chapter 105. Application requirements for impoundment permits are set forth in section 299.143, and operating requirements, which largely track the operating requirements for disposal impoundments set forth at 25 Pa. Code Chapter 289, are set forth in section 299.144.

The Department must revise proposed section 78.59c to ensure that all of the requirements for centralized wastewater impoundments therein are at least as stringent as the applicable requirements in Chapters 299 and 289. One example of how proposed section 78.59c is currently *not* as stringent as these chapters is subsection 78.59c(n), which proposes restoration requirements for centralized wastewater impoundments.

Subsection 78.59c(n) states that an impoundment must be restored within nine months of the date that the last well serviced by the impoundment is drilled, and establishes four restoration criteria. First, “any impermeable membrane, concrete and earthen liner” must be removed “so that water movement to subsoils is achieved.” Second, the site “shall be restored to approximate original conditions including preconstruction contours.” Third, the site “shall support the original land uses to the extent practicable.” Fourth, excavated impoundments shall be backfilled above finished grade to allow for settlement and so the impoundment will no longer impound water.”

Proposed section 78.59c(n)(1) also provides the extension of the nine-month restoration period: “A two year restoration extension may be requested pursuant to section 3216(g) of the act.”

There are two problems with these restoration criteria. First, as noted above, centralized wastewater impoundment cannot be considered to be located on “well sites”; consequently, the restoration extension provision of section 3216(g) is inapplicable. Second, the other restoration criteria are inconsistent with, and less stringent than, 25 Pa. Code § 299.144(a)(7) (“relating to closure”). This provision requires compliance with 25 Pa. Code § 289.312 (“Closure”), and section 289.312 in turn requires compliance with 25 Pa. Code § 289.172 (“Closure Plan”).

Sections 289.312 and 289.172 together establish a comparatively thorough and protective planning and execution process for the closure and restoration of wastewater storage impoundments. These criteria are no less applicable to centralized wastewater impoundments used in oil and gas operations than they are to wastewater impoundments used in other industrial operations. Section 78.59c must either incorporate these criteria (and all applicable requirements under 25 Pa. Code Chapters 287-299), or establish criteria and requirements that comply with these criteria by being even more stringent. (852a)

Response: The Department agrees that centralized impoundments should be regulated in the same manner as other waste transfer facilities are regulated under Article IX. Therefore, in order to ensure consistency the Department has revised §§ 78.59c and 78a.59c to require any new centralized impoundments to be authorized by a residual waste permit under Article IX. In addition, §§ 78.59c and 78a.59c also require operators of existing centralized impoundments permitted under a Dam Permit for a Centralized Impoundment Dam to either submit a closure plan to the Department within 6 months and close the centralized impoundment within 3 years of the effective date of the rulemaking or obtain a residual waste permit for the operation of the centralized impoundment within 3 years of the effective date of the rulemaking.

1252. Comment: 78.59c: I am emailing you because I am very much against the open wastewater pits that you currently are deciding about. I believe that the wastewater, full of toxic chemicals such as benzene and even radioactive material, must be disposed of in an environmentally responsible way, and it is up to you to make that happen. I have lots of family in northern PA, and they hear the rumble of the Water trucks running day and night, and it is not a pleasant thing. But if these same water trucks are hauling away waste water to a treatment facility that will clean the water in a responsible way, all of us can sleep better at night. (1059)

Response: See response to comment 1251 regarding construction and operations of centralized impoundments. Impoundments are not used for disposal, but rather storage prior to reuse, recycling, treatment or eventual disposal. Engineered impoundments play an important role in the reuse and recycling system for oil and gas waste water. When used in conjunction with well development pipelines, centralized impoundments can actually reduce the amount of truck traffic necessary to stimulate an unconventional well.

1253. Comment: Wastewater from fracking operations contains toxic chemicals that have been linked to a variety of negative health effects. The chemical components of fracking fluids, for example, have been linked to cancer, endocrine disruption, and neurological and immune system problems. Wastewater brought to the surface by drilling can contain substances such as volatile organic compounds (VOCs) with potential impacts on air quality and human health. The practice of storing such substances in open air pits is a threat to the environment and our health. These wastewater pits can, and do fail. When they do, they may put the quality of our drinking water at risk, and present hazards to wildlife and our environment. In some cases, they are so volatile that they may catch on fire or explode, putting the lives of nearby residents and their property in danger. Best industry practices use closed loop systems which utilize tanks to store wastewater. The DEP can, and should, hold the industry to this same standard. (1110, 1139, 1160)

Response: See response to comment 1251 regarding centralized impoundments. Air emissions from oil and gas facilities are regulated under Article III. Changes to Article III are beyond the scope of this rulemaking. See responses to comments 855 and 976 regarding the use of open pits on well pads.

1254. Comment: Another area where the EQB's proposed regulations fall short concerns the use of open pits on the well pads to store the waste water from the fracking process (Sections 78.56, 78.57, 78.58, and 78.59). Waste water returns to the surface contaminated with toxic chemicals, as well as buried salts and naturally occurring radioactive material and as such needs to be contained to avoid contamination of nearby water sources. To date, Consol Energy has been cited twice for leak violations where, thankfully, the toxic fluids did not enter the reservoir and the ground contaminated was removed from the reservoir site. Also, to Consol Energy's credit, the operator is using a double layer of plastic to line pits.

The proposed regulations will do little to prevent flooding, spills, and leak violations that may continue to occur at Beaver Run Reservoir and are now commonly occurring at shale gas drilling sites throughout the Commonwealth. Stating a required footage of freeboard provides little protection. Violations due to overflow of the required freeboard occur on a regular basis; companies repeatedly are charged with the same violations; and fines are limited or non-existent. DEP currently permits leakage of toxic chemicals onto residential properties and farmlands from pits, the amount of leakage permitted being determined by the depth of the fluid in the pits. I call on DEP to stop permitting such leakage of fluid on surrounding land and to impose fines that will discourage repeat violations. (402)

Response: See responses to comments 855 and 976 regarding the use of open pits on well pads. See response to comment 1251 regarding construction and operations of centralized impoundments.

1255. Comment: 78.59c – The proposed regulations have extensive new requirements for centralized impoundments that in several respects are more stringent than the requirements for residual waste and even hazardous waste impoundments. The proposed standards may be in direct conflict with the Act 97/Chapter 287 standards, including siting limits. Another example is the proposed synthetic liner permeability standard in section 78.59c(e)(2), which is three orders of magnitude more stringent than residual waste impoundments. These proposed requirements are beyond those any other industry must follow to manage produced water and residual waste. Moreover, DEP's cost estimate considers only the cost of fencing around existing impoundments, ignoring all the other requirements associated with both existing impoundments and the construction of new impoundments. Likely costs may be five times DEP's figure.

The overall review of this section and its associated requirements makes it impractical, if not impossible, to construct a centralized impoundment. The up-front costs and site evaluation places the operator in a high risk position with no guarantee of permit issuance for central impoundment construction. Given the potential time frame of up to one year lead time for such an evaluation, the operator will likely seek other options for fluid management. Delete Section 78.59c entirely. (1153)

Response: The Department disagrees that Section 78.59c should be deleted entirely but agrees that Centralized Impoundments should be regulated in a manner consistent with requirements in Article IX. See response to comment 1251 and 1252.

- 1256.** Comment: § 78.59c(h)(6): Water samples must be tested at least to the standard of DEP Suite Code 944. DEP conducted extensive tests of produced water, and created a water testing standard based on actual emissions from unconventional wells known as Suite Code 944. This research is already available to DEP. They should use it. There is no excuse for the testing standard for monitoring wells under this clause to be any less stringent than Suite Code 944. The Environmental Quality Board must require DEP to enumerate the parameters of Suite Code 944 and insert them into this clause. (869a)

Response: The Department believes that it is not appropriate to reference a particular laboratory suite code in a regulation. Form 26R identifies specific chemical analyses for listed compounds that operators of centralized impoundments must conduct and the samples must be representative of the volume of wastewater stored in the impoundment.

If multiple loads of wastewater are removed from the same impoundment or tanks for transfer, processing, treatment or disposal, the same chemical analysis of the wastewater may be used repeatedly without further analysis, provided the analysis remains representative of the impoundment. If large volumes of water, wastewater or other fluids are added to the impoundment, a new chemical analysis must be performed that is representative of the impoundment.

- 1257.** Comment: 78.59c – We oppose the use of centralized impoundments for waste handling. The PADEP can promote recycling, reduce the need for freshwater, and reduce disposal requirements without permitting centralized impoundments. We recommend that § 78.59c replaced with the following text:

§ 78.59c. Centralized Impoundments.

Centralized impoundments, as defined in this chapter and used to hold contaminated fluids or semi-fluids associated with oil and gas activities are prohibited. All existing centralized impoundments must be removed and the impoundment site remediated by ____ (Editor's Note: The blank refers to one year after the effective date of adoption of this proposed rulemaking). (1143)

Response: See response to comment 1251 and 1252.

- 1258.** Comment: 78.59c – If the EQB disagrees with comment 1257 and considers the continued use of centralized impoundments, we request that the EQB provide a written scientific and technical analysis justifying the proposal, including:

(1) A quantitative technical assessment of the amount of air pollution (by pollutant type) that will

be emitted to the atmosphere from these impoundments and estimate the corresponding impact on human health and the environment;

(2) The amount of pollution that could potentially impact groundwater sources from these pits;

(3) Data on the historic use of centralized impoundments in Pennsylvania, including those known to have leaked or overflowed, and quantification of the cumulative adverse impact of these impoundments on air, soil, surface water, groundwater and animal life; and

(4) A projection of future cumulative impact if the use of pits continues. (1143)

Response: See response to comment 1251 regarding centralized impoundments. Air emissions from oil and gas facilities are regulated under Article III. Changes to Article III are beyond the scope of this rulemaking.

1259. Comment: Maximum Impoundment Size: The use of large centralized impoundments requires large areas of surface excavation (cut) and embankment placement (fill). The proposed regulation does not include any upper limit on the size or depth of centralized impoundment. We request limits be set as follows:

the greatest water depth at maximum storage is limited to 15 feet, and the greatest storage capacity at maximum storage elevation is less than or equal to 50 acre feet. (1143)

Response: See response to comment 1251.

1260. Comment: Stream Setbacks: None of the proposed setback distances in § 78.59c provide sufficient protection for water quality in the event of a centralized impoundment overtopping or surface discharge. A dam breach analysis should be required for all centralized impoundments, including a water quality analysis component to determine the appropriate project specific setbacks for centralized impoundments on an individual structure basis.

Stream setbacks should use the watercourse definition in 25 Pa. Code Chapter 105.1. Chapter 105 defines a watercourse as: “A channel or conveyance of surface water having defined bed and banks, whether natural or artificial, with perennial or intermittent flow.” The United States Geological Society 7.5 minute topographic quadrangle map blue lines do not have a formal process associated with their determination or documentation. Topographic blue lines should not provide a minimum setback standard for Pennsylvania streams.

Each centralized impoundment should provide documentation and analysis to support and justify the project-specific setbacks for that installation, sufficient to protect water quality. (1143)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1261. Comment: Distances separating impoundments from wetlands, dwellings, and other vital resources are too small. (153)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1262. Comment: Seasonal High Water Table: 25 Pa. Code Chapter 73 (Standards for Onlot Sewage Treatment Facilities) prohibits the installation of onlot sewage facilities if the seasonal high water

table is within 20 inches (§ 73.14(a)(5)). There is no option for an alternate underdrain system if a seasonal high water table condition exists. The presence of a seasonal high groundwater table indicates a hydrologic connection to adjacent streams and wetlands, and hence, an additional path for direct contamination, should a leak or discharge from the impoundment occur. At a minimum, the Chapter 73 standards should apply to centralized impoundments under Chapter 78.

Centralized impoundments should not be permitted within 20 inches of a seasonal high groundwater table, and should not be allowed to artificially lower the seasonal high groundwater table. The water quality implications from a centralized impoundment can be far more significant than an on-lot sewage treatment system; the standards should not be less stringent. Additionally, 25 Pa. Code §§ 289.121—289.123 define site analysis requirements for geology, soils, and hydrology for Residual Waste Impoundments. The data collection does not negate the potential impacts of constructing a centralized impoundment within 20 inches of soil mottling and potential seasonal high water table. We strongly oppose the allowance of any centralized impoundment within 20 inches of a seasonal high water table.

The use of an artificial underdrain system is likely to affect the adjoining groundwater system beyond the impoundment, including potentially damaging impacts on wetlands and headwater streams through the lowering of the groundwater. Soil moisture conditions are almost certain to be effected by the centralized impoundment construction, and an artificial underdrain system would further exasperate these impacts. Altered groundwater and soil moisture conditions will directly impact established woodland vegetation. (1143)

Response: The comparison between onlot sewage treatment systems and centralized impoundments is not appropriate because onlot sewage treatment systems are disposal facilities that rely on soil to effectively treat wastewater. Centralized impoundments are not intended for the final disposal of waste and do not rely on soil to provide treatment of wastes. See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the groundwater separation requirements specified in those chapters.

- 1263.** Comment: Recordkeeping and Reporting: Centralized impoundments should be subject to the full recordkeeping and reporting requirements of §§ 289.301—289.303, including with respect to the type and amount of material stored in the centralized impoundment, records of activity, transporters and generators, materials rejected and reason, material removed from the centralized impoundment, etc. (1143)

Response: See response to comment 1251.

- 1264.** Comment: Site Restoration Plan: A centralized impoundment site restoration plan should be a required permitting and approval component. This restoration plan should document existing (preconstruction) site conditions with supporting photographs, and include data related to existing soils types, depth of topsoil, organic content and compaction, type and extent of vegetation within a 100-foot perimeter of the disturbed area. Existing topographic conditions should be documented and restored to the 2-foot contour level. A post-construction topographic survey should be required to confirm restoration. (1143)

Response: See response to comment 1251. New centralized impoundments constructed under Article IX will be required to meet the restoration requirements specified in those chapters. Site restoration for existing centralized impoundments is addressed under subsection (b). Restoration to approximate original conditions, capable of supporting original uses to the

extent practicable is the best practice to achieve site restoration within reasonable operational parameters. It is not necessary to include technical performance standards including requirements for type and density of perennial vegetation, soil characteristics and drainage patterns in this section because those issues are already appropriately addressed by the requirements. Projects meeting the requirements will satisfy the statutory restoration requirements and include performance requirements that will protect waters of the Commonwealth. Projects that trigger the Chapter 102 requirements for an erosion and sediment control permit must submit a Site Restoration/Post Construction Stormwater Management Plan to the Department for review and approval prior to construction of the site. Additionally, this section has been revised to require operators to submit an impoundment closure to the Department 60 days after the effective date of this rulemaking which will address many of the site restoration issues raised by the commentator.

- 1265.** Comment: Chapter 105 Compliance. The proposed regulation exempts centralized impoundments of hazard potential 4 and size Category C (up to 40 feet embankment) from the regulatory and permitting requirements of the Chapter 105, Subchapter B, dam safety and waterway management. The proposed regulation would require compliance with the requirements of Chapter 105 only for impoundments of 40 feet or greater in depth (Size Category A or B) or hazard potential 1, 2, or 3. All other centralized impoundments used for oil and gas operations would be required only to obtain a Chapter 78 permit. The Chapter 78 permit does not address most of the important elements of Chapter 105. For example, Subsection § 78.59c(l) proposes that an engineer certify that the impoundment was built in accordance with the construction standards of Chapter 105; however, this certification does not provide the same standard of design, regulatory review, and construction oversight required by Chapter 105, nor does it assure that the certifying engineer is qualified in the area of impoundment design and construction.

Pennsylvania's history of dam failure has resulted in rigorous regulatory requirements for the design, review, and construction of impoundments under Chapter 105. The PADEP staff in the Dam and Waterways section is experienced in the issues related to impoundment design, construction, and maintenance. We do not support by-passing the important requirements of Chapter 105 for oil and gas impoundments. The proposed Chapter 78 regulations do not guarantee an equivalent level of review to protect public health, safety, and welfare.

Given the EQB's proposal to store regulated substances in centralized impoundments, it is imperative that all requirements of Chapter 105 related to dam safety be applied as a minimum baseline standard for all impoundments. The implications of an impoundment failure or overtopping for a centralized impoundment have all of the same health, safety, and welfare concerns as any other impoundment, with the added concern that the contents of a centralized impoundment can include compounds that are hazardous to both human and ecological health.

The EQB has not provided justification for the proposed Chapter 78 permit process, which seeks to streamline and eliminate key components of the Chapter 105 permit process for most oil and gas impoundments, including all of the Chapter 105 regulations listed below. We request that all centralized impoundments used for oil and gas operation be required to apply for a Chapter 105 permit, or that the key components of the Chapter 105 requirements listed below be included in Chapter 78 for centralized impoundments used for oil and gas operations:

§ 105.81. Permit applications for construction and modification of dams and reservoirs.

(a) ~~In addition to the information required under § § 105.13, 105.13a, 105.13b and 105.15,~~ permit applications under this subchapter for the construction or modification of dams and reservoirs must provide the following information:

- (1) Reports and data detailing the conduct and results of investigations and tests necessary to determine the safety, adequacy, and suitability of design, including:
 - (i) Data concerning subsoil and rock foundation conditions.
 - (ii) Data concerning exploratory pits, drilling, coring and tests to determine seepage rates.
 - (iii) Data concerning the strength tests necessary to measure the physical properties and behavior of foundations and embankment materials at the dam or reservoir site.
 - (iv) Data concerning the geology of the dam site or reservoir area, indicating possible hazards such as faults, weak seams and joints.
 - (v) Data concerning availability and quality of construction materials.
 - (vi) A "Dam Stability Report" ~~as required under § 105.97~~ (relating to stability of structures).
 - (vii) Other information as may be necessary to determine the safety, adequacy and suitability of the design, including the design calculations for the dam, which shall be made available to the Department on request.
- (2) Site plan and cross sectional ~~views required under § 105.13(d)(1)(i) (relating to permit applications information and fees).~~
- (3) Construction plans, specifications and design reports to evaluate the safety, adequacy and suitability of the proposed dam, reservoir and appurtenant works in order to determine compliance with this chapter.
- (4) A schedule indicating proposed commencement and completion dates for construction.
- (5) For projects involving storage of fluids or semifluids other than water, information concerning the chemical content, viscosity and other pertinent physical characteristics of the fluid or semifluid impounded.
- (6) An instrumentation plan including justification and design for the installation of permanent monitoring instruments to measure the performance of the dam. If no instrumentation is considered necessary, justification shall be provided.
- (7) A hydrologic and hydraulic analysis, submitted as a separate report, which includes:
 - (i) The size, shape and characteristics of the drainage basin.
 - (ii) Current precipitation data and precipitation distribution information as required by the Department.
 - ~~(iii) Streamflow records.~~
 - ~~(iv) Flood flow records and estimates.~~
 - (v) An incremental dam breach analysis, storage capacity and reservoir surface area for normal pool and maximum storage elevations.
 - (vi) Other hydrologic and hydraulic determinations necessary for the design and operation of the dam.
- (8) For existing dams, copies of the structure's most recent inspection reports.
- ~~(9) EAP if required under § 105.134 (relating to EAP).~~
- ~~(10) Proof of title or adequate flowage easements for land area below the top of the dam elevation that is subject to inundation.~~
- (11) An Operation and Maintenance Manual for the dam ~~as required under § 105.131 (relating to operation, maintenance and monitoring).~~
- (12) Other information the Department may require.
- (b) The Department may waive specific information requirements of this section in writing, if the Department finds that specific information is not necessary to review the application.

§ 105.92. Foundations.

- (a) The foundation of a dam or reservoir must be stable under all probable conditions.
- (b) In analyzing the stability of the foundation of a proposed or existing dam or reservoir, the applicant shall consider the following factors:
 - (1) The seismic forces and liquefaction potential at the site.
 - (2) The shear strength of the foundation.

- (3) Settlement, subsidence, and carbonate karst solution features, such as sinkholes and solution channels.
- (4) Seepage potential through the soil and rock components of the foundation.
- (5) The dispersive characteristics of the soil foundation and borrow areas.

§ 105.93. Design stress.

In the construction of dams and reservoirs, allowable stresses must conform to the current standards accepted by the engineering profession.

§ 105.95. Freeboard.

Sufficient freeboard may be required to prevent overtopping of the dam and to allow for wave and ice action.

§ 105.97. Stability of structures.

(a) Dams must be structurally sound and be constructed of sound and durable materials. The structure must be stable during and at the completion of construction.

(b) As part of the permit application for the construction or modification of a dam, the design engineer shall submit to the Department, under professional seal and certification, a report entitled “Dam Stability Report” which clearly demonstrates to the Department that the requirements of subsection (a) have been satisfied. At a minimum, this report must address the following considerations:

- (1) The physical properties of the materials available for construction.
- (2) A stability analysis based on the properties of the structure’s materials and on the seismic forces and seepage conditions affecting the structure.
- (3) The methods of construction.
- (4) The conditions of operation of the dam and reservoir.
- (c) Earthfill dams must be demonstrated to be stable for the following conditions:
 - (1) Normal pool with steady-state seepage conditions with a factor of safety of 1.5.
 - (2) Maximum pool with steady-state seepage conditions with a factor of safety of 1.4.
 - (3) Sudden drawdown from normal pool conditions with a factor of safety of 1.2.
 - (4) Normal pool with steady-state seepage conditions under seismic forces produced by the maximum credible earthquake with a factor of safety of 1.1.
 - (5) Completion of construction with no pool with a factor of safety of 1.3.
- (d) Gravity dams must be demonstrated to be stable for the following conditions:
 - (1) Normal pool with appropriate uplift pressures, ice loads and silt loads with a factor of safety of 2.0.
 - (2) Maximum pool with appropriate uplift pressures and silt loads with a factor of safety of 1.7.
 - (3) Normal pool with appropriate uplift pressures and silt loads under seismic forces produced by the maximum credible earthquake with a factor of safety of 1.3.
- (e) For gravity dams, the overturning stability is acceptable when the resultant of all forces acting on the dam is located as follows:
 - (1) Within the middle third of the structure for normal pool conditions.
 - (2) Within the middle half of the structure for maximum pool conditions.
 - (3) Within the structure for earthquake conditions.
- (f) For gravity dams, the foundation bearing pressures must be less than or equal to the allowable for no pool, normal pool and maximum pool conditions and less than 133% of the allowable for earthquake conditions.
- (g) The factors of safety for earthfill dams or gravity dams must be the higher of:
 - (1) The factors of safety in subsections (c) and (d).
 - (2) The factors of safety in the most recent Engineering Manuals developed by the United States Army Corps of Engineers relating to stability of dam structures.

(h) The Department may, in its discretion, consider a revised factor of safety for a class of dams or reservoirs when it can be demonstrated that the factor of safety provides for the integrity of the dams or reservoirs and adequately protects life and property.

§ 105.102. Personnel and supervision.

(a) The permittee or owner shall file with the Department, at least 15 days prior to the commencement of construction, a statement setting forth the name and employer, including contact information, of the following:

(1) The professional engineer responsible for oversight and supervision of construction.

(2) Representatives of the professional engineer.

(3) Contractors conducting the work authorized by the permit, Letter of Amendment or Letter of Authorization as required by the Department.

(b) Work must be conducted under the oversight and supervision of a professional engineer. The professional engineer or a representative of the professional engineer shall be on the work site during significant construction activities until the completion of the dam.

§ 105.103. Weather and ground conditions.

(a) No earth or other embankment material may be covered, placed, compacted, or graded when in a frozen condition.

(b) Masonry and concrete may not be placed in freezing weather except under conditions approved by the Department.

§ 105.104. Removal and disposal of vegetation.

(a) Work shall be conducted in a manner to minimize the destruction of or damage to trees and other vegetation on and adjacent to the construction site.

(b) Vegetation cleared and removed from the site shall be disposed of in accordance with applicable laws and regulations.

§ 105.106. Activities and facilities on the construction site.

Activities and facilities on the construction site must be conducted and operated in a manner to avoid pollution of the air and waters of this Commonwealth and in accordance with applicable laws and the provisions of this title.

§ 105.107. Final inspection.

Within 10 days after the completion of work on a dam authorized by the Department, the permittee or owner shall schedule a final project inspection with the Department. The final inspection must include the permittee or owner, the permittee or owner's supervising engineer, and the Department's field representative. Upon conclusion of this final inspection, the Department's field representative will present the permittee or owner with a list of any deficient items, if necessary. A follow-up final inspection may be required by the Department. At the discretion of the Department, the final inspection may be waived for projects authorized by Letter of Amendment or Letter of Authorization.

§ 105.111. Commencement of storage of water, fluid or semifluid.

(a) The permittee shall notify the Department, in writing, at least 7 days in advance of the date proposed for the commencement of storage of water, fluid or semifluid in the reservoir created by the dam for which the permit is issued.

(b) The Department may require that a reservoir filling plan be developed and approved by the Department prior to commencement of storage of water, fluid or semifluid. This plan will provide the acceptable rate of rise of the reservoir and, if necessary, elevations and durations for constant reservoir levels within the filling period. This plan may also require lowering of the reservoir level

if the prescribed rate of rise is not controlled or attained. The plan may also require monitoring of instrumentation of the dam.

(c) The Department may require that a representative of the Department be at the site before or during the filling of the reservoir.

(d) The initial storage in the reservoir of new dams and refilling of reservoirs of rehabilitated dams may not commence prior to the submission of the information required in § 105.108 (relating to completion certification and project costs) and the acceptance of the certification, in writing, from the Department.

§ 105.131. Operation maintenance and monitoring.

(a) ~~In addition to the requirements of § § 105.51—105.54 (relating to operation, maintenance and inspection), the permittee or owner of a dam shall follow the operation and maintenance manual for the dam, and the emergency action plan if required under § 105.134 (relating to EAP), as approved by the Department and shall implement a monitoring plan as required under § 105.81(a)(4) (relating to permit applications for construction and modification of dams and reservoirs).~~

(b) A permittee or owner of a dam or reservoir may not modify or cease implementation of all or part of the approved plans and methods of operation or monitoring without the prior approval of the Department by permit, Letter of Amendment, or Letter of Authorization. ~~The permit will be issued in accordance with § 105.82 (relating to permit applications for operation and maintenance of existing dams and reservoirs).~~ The Letter of Amendment or Letter of Authorization will be issued only after review and approval of necessary engineering calculations, construction plans and construction specifications. If the project impacts wetlands or exceptional value waters, or if the project requires 401 water quality certification, an environmental assessment shall also be submitted to the Department for review and approval ~~under § 105.15 (relating to environmental assessment).~~ Modifications of a dam are subject to the construction requirements and procedures under Subchapters A and B (relating to general provisions; and dams and reservoirs), unless specifically waived by the Department.

(c) The permittee or owner of a dam or reservoir shall operate and maintain the dam in accordance with the authorized plans and specifications. Routine maintenance of the dam and the reservoir's design storage capacity will not require further authorization under this chapter except as relating to drawdown of impounded waters.

§ 105.133. Directed repairs.

The permittee or owner shall immediately take steps that the Department may prescribe as necessary to preserve the structural stability and integrity of the dam and protect health, safety, property and the environment.

§ 105.135. Dam hazard emergencies.

(a) For the purposes of this section, a dam hazard emergency means a condition which the Department, permittee or owner of the dam reasonably finds constitutes an imminent threat to life or property above or below a dam, whether arising from the condition of the dam and appurtenant works or extraordinary natural conditions, affecting the safety and stability of the dam, including flood, earthquake and ice jam.

(b) ~~The emergency procedures and the EAP required under § § 105.63 and 105.134 (relating to emergency procedures; and EAP)~~ shall be followed by the permittee and owner of a dam or reservoir in the event of an actual or potential dam hazard emergency.

(c) If a dam hazard emergency exists, the permittee or owner of the dam shall immediately notify appropriate emergency management officials identified in the emergency action plan ~~required under § § 105.63 and 105.134~~ of the existence of the hazard and request the authorities to initiate appropriate action to assure protection of life and property; and the permittee or owner shall immediately take actions as authorized by the Department necessary to prevent dam failure or loss

of life or property.

(d) The Department, upon determining that a dam hazard emergency exists, will notify the owner immediately to take actions the Department determines are necessary to prevent dam failure or loss of life or property.

§ 105.136. Unsafe dams.

(a) For purposes of this section, an unsafe dam means a dam which meets one or more of the following criteria:

(1) A dam with deficiencies of such a nature that if not corrected could result in the failure of the dam with subsequent loss of lives or substantial property damage. This determination is based on good engineering judgment or the application of the guidelines established for the National Dam Inspection Program.

(2) A dam classified as unsafe under the National Dam Inspection Program.

(3) A dam declared as unsafe by the Department.

(b) The owner of an unsafe dam shall do the following:

(1) Immediately notify the Department upon receipt of any information indicating the dam is unsafe.

(2) Drain the reservoir as required and approved by the Department ~~and in accordance with § 105.122 (relating to drawdown of impounded waters).~~

(3) Within time limits established by the Department, submit a plan for removal of the dam, a plan for repair of the dam or an application for a permit authorizing modification of the dam under subsection (c).

(4) Following approval of the plan or permit by the Department, undertake and complete actions to remove or repair the dam or implement the modifications to the dam within the time limits set by the Department.

(c) The Department may issue a permit for modification of an unsafe dam, ~~under section 9 of the act (32 P. S. § 693.9),~~ which authorizes the owner of an unsafe dam to modify the dam within the time prescribed in the permit to meet the requirements of the act and this chapter. The permit shall be conditioned upon:

(1) Compliance by the owner of the dam with a prescribed schedule for correction or modification of the unsafe condition within the shortest time period technically feasible and economically achievable.

(2) Implementation by the owner of the dam of measures deemed necessary by the Department to reduce risks to health, safety and the environment pending correction or modification of the unsafe condition, including, but not limited to, special provisions relating to operation, emergency planning, monitoring and warning systems, and development of an alternative source of water supply if the dam serves as a water supply dam.

(d) In determining whether to require removal of an unsafe dam or to permit the owner to modify the dam, the Department will consider whether there is a substantial adverse impact to the public health, safety and the environment which will result from the draining and removal of the dam. If the Department determines that this adverse impact outweighs the danger to public health, safety and the environment resulting from leaving the dam in place, the Department may decide to allow the unsafe dam to remain until it has been modified.

(e) At the discretion of the Department, a public hearing may be held in the affected area prior to the issuance of a permit authorizing modification of an unsafe dam over a period of more than 6 months, to inform affected communities of the risks which may result from allowing the unsafe dam to remain standing or to impound water during the time necessary to complete the modifications.

(f) If the Department finds that conditions upon which the permit, Letter of Amendment, or Letter of Authorization was issued have substantially changed or that the owner does not meet the schedule for modification contained in the permit, Letter of Amendment, or Letter of Authorization, the Department will review the status of the dam. An extension of the time period for completion of

a modification may be issued by the Department if the owner has proceeded in good faith with the previous schedule of modification and the requirements of subsections (c) and (d) are met.

(g) Nothing in this section may be construed to limit the power of the Department to take immediate action, prior to public hearing, to do one or more of the following:

(1) Revoke or suspend a permit, Letter of Amendment, or Letter of Authorization when deemed necessary by the Department to protect public health, safety and the environment.

(2) Order correction or abatement of a dam hazard emergency.

(3) Take another action authorized by law. (1143)

Response: See response to comment 1251 and 1252. Accordingly, centralized impoundments constructed under Article IX will be required to meet the structural requirements specified in those chapters.

1266. Comment: 78.59c – We oppose the use of centralized waste impoundments. Centralized impoundments cause unnecessary large-scale surface disturbance, present an unnecessary risk of ground and surface water contamination, and contribute to local air pollution. We encourage the Board to eliminate the use of centralized waste impoundments altogether. (649, 1152)

Response: See response to comment 1251.

1267. Comment: Engineer On-site. A properly trained Department engineer should be onsite during construction of all centralized impoundments and during placement of liner and leachate collection systems. (852a)

Response: See response to comment 1251.

1268. Comment: While it is understood why the proposal includes regulation for centralized wastewater impoundments, after lengthy discussion, our members determined that this is a method that needs to be prohibited. Our watershed has been fortunate to this point, to not have flowback centralized waste impoundments. The primary operator uses 100% closed loop system. However, we have a new operator in town; Southwestern now owns many former Chesapeake Energy leases. Chesapeake did not utilize centralized flowback impoundments in our watershed. However, Southwestern, we've discovered, does have permits for such facilities in both Bradford and Susquehanna Counties. We do not desire to see this practice in our watershed or anywhere in Pennsylvania for that matter when superior practices are available. DEP needs to have an inventory of these CI's and inspect them for compliance with the upgraded regulations. Any deficient CI needs to be closed post haste, followed by soil and water sampling for nearby homeowners. (1035)

Response: See response to comment 1251. The Department does maintain facility and permit files for each centralized impoundment and regularly inspects these facilities. Where an inspection or incident reveals non-compliance with the Act, regulations or permit conditions, the Department can and does take appropriate enforcement action.

1269. Comment: This section should only affect unconventional operators. I know of very few conventional operators that use one large, (2 million gallon) central impoundment. Most of our work is done right on the conventional well pad, again about 150'x150'. It is not cost effective to build a large impoundment pit for smaller conventional well drilling. This relates back to my first point, which in an attempt to cover what the PADEP feels is "all the bases" they have overlooked the needs and work already done by the small conventional operators. *Remove this section for conventional operators. (145)

Response: To the extent that a conventional operator constructs a centralized impoundment, the standards for construction, operation and maintenance of centralized impoundments are appropriate.

1270. Comment: 78.59c – I am concerned about the holding water pool that could poison wildlife and surface soil and water. (584)

Response: See response to comment 1251.

1271. Comment: 78.59c – As a better environmental and community friendly practice, we support the use of modular above ground containment structures rather than centralized impoundments (CWI). We prefer the use of 100% closed loop systems whereby all fluids are appropriately contained in a manner that eliminates risks to public health and safety and the environment. There are operators that recycle 100% of their fluids without the use of centralized wastewater impoundments. We are not aware of any recent permits for centralized wastewater impoundments our region.

These provisions are most needful indeed. We support the requirements of monitoring wells, secondary liner and a leak detection system. We are however, concerned about operator's inadequate attention paid to the leak detection system and the opportunity to recirculate leaked fluids rather than correct the problem. The leak detection system actively engaged must be the exception not the daily method of operation. We are also concerned that the Department may not have adequate staffing to maintain as close an eye as may be necessary to such facilities due to the recirculation issue. The field staff generally is focused on the sites of action, drilling and fracturing, and rightly so. Often the CWI is located off the focus of risk activity, thus a leak detection system engaged and not regularly inspected by the Department may provide the operator with opportunities to be complacent rather than actively concerned about the environment in which they operate. After all, it is the same operator who is choosing to use antiquated centralized wastewater impoundments as opposed to 100% closed loop systems. This is not to imply that these standards are antiquated, as they are in part at least currently recommended construction practices being codified. To be clear, what we do mean is that the concept of CWI is a method of the old ways. This is a world class shale play as has been pointed out many times. We, the residents whom live near such facilities, deserve them to be world class as well, and thus, 100% closed loop systems are the preferred practice.

While we are in support of these provisions, we also note that there are better practices utilized by many unconventional operators and therefore, we prefer to see the industry be encouraged to move away from this practice through regulation. There is one operator, Southwestern, that we are aware continues to apply for permits for such facilities in our region. There are other operators across the state, such as Range Resources who are complacent in not moving towards better technology than these CWIs. This practice, in terms of shale gas and the great strides that have been made in our Commonwealth since the drilling began with a variety of technologies can be considered an antiquated process. We advocate that all CWIs at a minimum be evaluated and where deficient, be upgraded to meet these provisions or the CWI be closed. Ideally, we prefer to see the practice of CWIs cease in practice. When most operations are not utilizing these facilities, it makes sense to create more stringent requirements as are noted here, and move towards creating a level playing ground where public health and safety and the environment is equally considered by all operators with such facilities.

Generally, operators have definite terms with landowners as to the longevity of the agreement, such as ten years for example. We recommend that the landowner be provide with a fact sheet/ information prior to the renewal of such an agreement that explains alternative procedures that may be employed to reach the same goal, and that is the processing of waste water. An informed

landowner may prefer to have the impoundment location converted into a facility with aboveground storage containment or a series of tanks which provide for superior environmental protection. Generally, in more recent times, CWIs have been permitted with reference to servicing specifically named gas wells. We urge the Department to review the CWI inventory for where this information may be lacking and require the operator to provide such information. We urge the Department to create a linking database in order that once the named wells have been placed into production, that the CWI be restored to its prior land use/function. In the event the Department is unable to completely prohibit the CWI practice, we urge that a gradual phase out be initiated. In the view of adequately protecting water resources, it just makes no sense to allow this antiquated method to continue when closed loop and superior aboveground containment systems are fully capable of processing and storing large quantities of water with less environmental risk to our water resources, public health and safety and the environment. We request that the Department consider our concerns with this provision. We request as a better protection the elimination of CWIs, but at a bare bones minimum, reluctantly recommend the provisions as written. (660a)

Response: See response to comment 1251.

1272. Comment: 78.59c – Consideration should be given to ruling out the use of open impoundments for storage of produced liquids, treated water, hydraulic fracturing fluid or industrial waste. (846, 1109)

Response: See response to comment 1251.

1273. Comment: 78.59c – Existing impoundments and pits should not be grandfathered under the old regulations and be ordered to convert them to closed systems. (884)

Response: See response to comment 1251.

1274. Comment: 78.59c – One area of explicit concern to my constituents is the use of open air impoundments to hold hydraulic fluids until permanent disposal. My understanding is that the Department of Environmental Protection has already cited drillers more than 200 times for improper construction of wastewater impoundments. In the case of an improperly constructed liner failing, toxic chemicals may enter into our groundwater system, with negative health consequences far downstream from the original leak. An impacted water supply can have disastrous consequences for our communities, while restoring water quality can be difficult, and expensive. It is in the best interest of the Commonwealth that these leaks are prevented, rather than having DEP addresses leaks and contaminated water after an event occurs. (1100)

Response: See response to comment 1251.

1275. Comment: 78.59c – Centralized impoundments should be eliminated entirely and not permitted. This section was the lengthiest in the Proposed Chapter 78 changes document- ten pages of regulations on this section alone. The storing of flowback fluids in an impoundment area provides inadequate protection of groundwater resources. Industry can do better and has done better. Many operators do not use centralized impoundments. The industry should be required to use the above ground containment systems outlined in Section 78.57 of the Code. Protection of groundwater and other water resources should be one of the Commonwealth's greatest concerns. Leaks can go undetected in these centralized impoundments, why take the chance? Since there are other methods available to the industry- why not require them to do the safer alternative? (870)

Response: See response to comment 1251.

- 1276.** Comment: The overall review of this section and its associated requirements makes it impractical, if not impossible, to construct a central impoundment. The up-front costs and site evaluation places the operator in a high risk position with no guarantee of permit issuance for central impoundment construction. Given the potential time frame of up to one year lead time for such an evaluation, the operator will likely seek other options for fluid management.

The requirements of 25 PA Code 289.121-123 are extremely stringent requiring a minimum of a year of water quality and quantity testing as well as the requirements of boring and cores. The time frame set forth for the investigation and up-front costs for an evaluation makes this section impractical for the operator. As strict as the construction requirements are with a series of liners and a leak detection system, there should be no effect of the hydrologic system at any depth below the central impoundment. (411)

Response: The planned operational life of a centralized impoundment as well as the potential for environmental harm requires strict attention to design, operation and maintenance standards. See response to comment 1251.

- 1277.** Comment: **78.59c** – A commentator questions why EQB does not require security measures for centralized impoundments as EQB requires security for temporary storage in Section 78.56(a)(5). We note that EQB requires security for freshwater impoundments in Section 78.59b(d). We ask EQB to explain in the Preamble and RAF of the final-form regulation how this provision adequately protects public health and natural resources without a provision for security. If a security provision is added in the final-form regulation, we ask EQB to explain in the Preamble and RAF of the final-form regulation how the security requirements in this section reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: See responses to comments 1251 and 1252. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the site access and security requirements specified in those chapters.

- 1278.** Comment: **78.59c** – Consideration should be given on the type of fencing utilized around impoundments to prevent unauthorized access to third parties and wildlife. Some operators utilize four foot high orange plastic snow fencing around impoundments which does not effectively deter public and wildlife access. The PGC has developed best management practices to help operators deter wildlife use of impoundments on State Game Lands. (1170)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the site access and security requirements specified in those chapters.

- 1279.** Comment: **78.59c** – The Department should require air monitoring and reporting requirements for any centralized impoundment used for storage of produced, flowback, or wastewater. This is consistent with § 3227 of Act 13. (997a)

Response: See response to comment 1253.

- 1280.** Comment: **78.59c** – To remain consistent with Section 3227 of Act 13, the Department should require air monitoring and reporting requirements for any centralized impoundments used for the storage of produced, flowback, or wastewater. See. 58 Pa.C.S. § 3227. The Department should also consider pre-treatment, or other control standards, of stored wastewater to minimize or eliminate air

emissions from centralized impoundments. (1142)

Response: See response to comment 1253.

1281. Comment: 78.59c – The Department should consider pre-treatment, or other control standards, of stored wastewater to minimize or eliminate air emissions from centralized impoundments. (997a)

Response: See response to comment 1253.

1282. Comment: 78.59c – Centralized impoundments should be prohibited because they are inefficient, cause large-scale surface disturbance, pose a risk of surface and ground water contamination, and contribute to local air pollution. (1068)

Response: See response to comments 1251, 1252 and 1253.

1283. Comment: 78.59c – This section is an example where regulations and standards should be performance oriented rather than prescriptive. The prescriptive nature of this section limits operator the flexibility to determine the best approach for each particular circumstance. (1071)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the requirements specified in those chapters.

1284. Comment: 78.59c – Centralized impoundments should be replaced by enclosed tanks because of the nature of hazardous substances stored within them. Proposed regulations are inadequate to prevent catastrophic risks to public health and the environment. Oversight of liner installation by manufacturers rather than Department inspectors is not appropriate. Even the most sophisticated detection systems, sump pumps, monitoring wells, and requirements to fill out forms to monitor leakage cannot prevent irreparable damages from impoundment releases. Water testing parameters need to be expanded throughout the document to include petroleum distillates, heavy metals, and radiation levels [78.59c(6)]. This is particularly true when provisions provide for “allowable” leaks through the primary liners that in some instances are dealt with “case by case!” [78.59c(4)(ix)]. Such language is not the intent of our recommendation for “site-specific” plans. To prompt strict compliance, certified statements vouching for the testing, construction, and integrity must be tied to personal as well as corporate accountability with direct liability for any contamination. [78.59 (l)]. Pictures and drawings submitted by operators can be deceptive [78.59(m) (4, 7)].

When it comes to restoration, centralized impoundments should be treated as superfund sites [(78.59 (n)]. The possible 2-year restoration period beyond the 90-day timeline is unacceptable and fails to remove public risk in a timely manner. To meet citizen expectation, words such as “approximate” and “to the extent practical” must be eliminated in regard to restoration. Further, the ability of operators to ask for deviations from these requirements is asking for trouble [(78.59 (o)]. Best practices in restoration must be the standard. (1093, 1098)

Response: See response to comment 1264.

1285. Comment: Section 78.59c should specify that operators of centralized wastewater impoundments must post bonds in accordance with 25 Pa. Code Chapter 287.

Under the Department’s SWMA regulations, a person may not own or operate a “residual waste disposal or processing facility” unless the person has obtained a permit from the Department under Chapter 287, and the Department may not issue a permit “unless the applicant first submits to the

Department a bond in accordance with this subchapter, and the bond is approved by the Department.” The term “residual waste disposal or processing facility” is defined as “[a] facility for disposing or processing of residual waste” and the term “processing” includes residual waste transfer facilities. Bonds submitted under section 287.311 must “provide for continuous liability from the initiation of operations at the facility,” and bond amounts must be calculated under section 25 Pa. Code § 287.331.

Centralized wastewater impoundments constitute residual waste disposal or processing facilities within the meaning of section 287.101 of the Department’s regulations because they are both “transfer facilities” and disposal facilities. An impoundment is a transfer facility because it “receives and processes or temporarily stores ... residual waste at a location other than the generation site, and ... facilitates the transportation or transfer of ... residual waste to a processing or disposal facility.” An impoundment is a disposal facility because invariably, some amount of the waste stored in centralized wastewater impoundment enters the environment – if not by leaks, then by the evaporation of pollutants dissolved in the wastewater.

It follows that operators of centralized wastewater impoundments used for oil and gas operations must obtain bonds under Chapter 287. The bonding exception in section 3273.1 of Act 13 that applies to pits and impoundments on well sites does not apply because, again, centralized impoundments are by nature (if not currently by Department definition) not located on well sites. Proposed section 78.59c should be revised accordingly. (852a)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the bonding requirements specified in those chapters.

- 1286.** Comment: Standards for storing mine influenced water. Chapter 105 standards were designed for dams built to store freshwater, and not mine influenced water. The Department should assess whether the construction standards in Chapter 105 require any changes or modifications for the storage of mine influenced water. (852a)

Response: The hazard potential category of a dam under Chapter 105 takes into consideration the potential economic impacts and loss of life in the event of a dam breach. The hazard potential category of a dam is not dependent upon the materials impounded by the dam.

- 1287.** Comment: Setbacks should be progressive. To protect public health and safety, the setback requirements to occupied dwellings and businesses should be commensurate with the size of the impoundment and volume the water retained, with larger impoundments having larger setbacks. In addition, the rule should provide for variable setbacks for downgradient structures, as compared to upgradient structures. (852a)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

- 1288.** Comment: Elimination of municipal notification and other requirements. Currently a checklist is required to be completed and enclosed with the dam permit application for a centralized impoundment dam that includes proof of municipal notification, cultural resource notice, natural heritage program notice, color photographs and maps, erosion and sediment control plan adequacy letter, proof of title/flowage easements, maps/plans/profiles/cross-sections, impacts from dam failure

statement, construction information, groundwater protection requirements, monitoring plan, professional engineer's seal and certification, and applicant certification and signature. It appears that the vast majority of these requirements were not included in the language of section 78.59c. The Department should ensure these requirements are set forth in Chapter 78. (852a)

Response: See response to comments 1251 and 1252.

- 1289.** Comment: Our concern regarding this section requires reference back to the proposed definition of centralized impoundments in § 78.1. The definition of centralized impoundments expressly includes "mine influenced water." Hence, the EQB seems to be equating mine influenced water to wastewater, which is an inappropriate classification. Also, including mine influenced water in the definition for centralized impoundments conflicts with § 78.59b(g), which allows for mine influenced water to be stored in a *freshwater* impoundment upon submission and approval of a water storage plan to DEP. To clarify this matter, We recommend that the EQB delete the reference to mine influenced water from the definition of centralized impoundments. Besides, contrary to the definition of centralized impoundment, mine influenced water is not a "fluid or semi-fluid associated with oil and gas activities." (1140)

Response: The quality of mine influenced water varies greatly throughout the Commonwealth and the term includes mine influenced water that has been treated, which may be very high quality. Before mine influenced water is allowed to be stored in a freshwater impoundment, the Department must review and approve the storage based on a variety of factors including the quality of the water and the risks of storage of the water. Mine influenced water that is not of sufficient quality to be stored in a freshwater impoundment may be stored in a centralized impoundment.

- 1290.** Comment: Section 78.59c incorporates comprehensive requirements to limit the threat of an impoundment causing soil or water pollution or contamination, but does not include any requirement or limitation that would directly address the air pollution (including malodors) that centralized impoundments can produce. Section 78.59c should require the installation of air pollution control devices and/or other practices to avoid malodors and other air pollution at centralized impoundments. (1159)

Response: See response to comment 1253.

- 1291.** Comment: § 78.59c(a) – A permit is required prior to construction of a centralized impoundment, but we do not see any notification requirements to neighbors, adjacent landowners or those downstream or downhill of such an impoundment. We believe the regulations should clearly specify such notification, especially since all size and hazard potential categories under 25 PA Code 105.9 are allowed, even where substantial loss of life or substantial economic loss is possible. As managers of units of the National Park System which attract visitors and include our own staff and volunteers, as well as buildings and resources of national importance, we request notification of the application for a centralized impoundment within one mile of all National Park System units and affiliated areas in the Commonwealth so that we can assess possible impacts; ensure safety for our visitors, staff and volunteers; and so that we might engage in discussion with the applicant and the state to ensure safety and lessen potential impacts. We recommend one mile as the notification distance as it corresponds to the application information requirements for a permit to construct a dam or other waterway management structure under 25 PA Code 105.13(e)(1)(ii). (1062, 1133)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the public notice requirements specified in those chapters.

1292. Comment: The proposed regulations should prohibit the storage of fluids related to oil and gas operations in all natural depressions, notably to the extent that these open impoundments create a high risk of contamination of the air, the water and the soil. These provisions conflict with section 78.57, presented as banning open top storages. Indeed, the storage of waste in larger, open top pits such as “centralized impoundments” are much more dangerous than smaller ones. The proposed regulation should instead state that wastewater, brine, flowback, and mine influenced water should always be stored in closed systems, with a secondary containment and a leak detection system, without exceptions. (1161)

Response: The provisions in §§ 78.57 and 78a.57 address on-site production facilities and §§ 78.59c and 78a.59c address centralized impoundments. See response to comment 1251.

1293. Comment: The Dam Safety and Encroachments Act and the regulations promulgated by the Environmental Quality Board pursuant thereto reiterate the General Assembly’s intent to protect both perennial and intermittent streams. (1152)

Response: The Department acknowledges the comment.

1294. Comment: We appreciate the addition of a new section regulating centralized impoundments and the extensive detail included in § 78.59c. To protect water resources, the proposed amendments prohibit the placement of centralized impoundments in the 100-year floodplain and within 100 feet of a stream, spring or body of water. We recommend increasing the distance required between a centralized impoundment and a stream, spring or water body, to at least 500 feet, to reduce the risk of contamination should the centralized impoundment breach or fail. (1157)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1295. Comment: § 78.59c(c)(1) – Given the importance of floodplains in protecting the waters of the Commonwealth, we recommend a more detailed description, and more protective measure, for avoidance of floodplains be used. We recommend additions (in bold italics) to subsection (1) read, “At least 300 feet from a floodplain of waters of this Commonwealth as defined in section 3215(f)(5) of the act.” The definition at 58 PA C.S. 3215(f)(5) would still serve as the base measurement, but the additional distance would serve to account for more recent periods of increased precipitation and flooding due to increasingly erratic weather events. Additionally, we contend that centralized impoundments pose at least as great a threat to water quality as an unconventional well site and as such the use of the greater set-back distance would provide greater consistency with the minimum set-back distances proposed in PA Act 13 Section 3215. (1062, 1133)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1296. Comment: Sections 78.59c(c)(2-7) contains multiple references directing measurements, but clarity is needed as to the measurement points. For example, between what two points should horizontal measurements be taken? Additionally, section 78.59c(c)(3) appears to have been copied

from Pennsylvania 's Solid Waste Regulations , which include this provision due to the acidic nature of landfill leachate. Flowback, production brine, and other waters encountered during operations are pH neutral, however, and would not affect limestone in the same fashion. Additionally, duplicative requirements for activities already addressed through other regulatory programs should not be added to Chapter 78. It is our suggestion that subsection (c)(3) be deleted.(1071)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1297. Comment: § 78.59c (c)(3): The proposed excerpt appears to have been copied from Pennsylvania's Solid Waste Regulations, which include this provision due to the acidic nature of landfill leachate. Duplicative requirements for activities already addressed through other regulatory programs should not be added to Chapter 78.(1103, 1137, 1147, 1174)

Response: See response to comment 1251.

1298. Comment: § 78.59c (c)(4) Suggested amendatory language: Within 500 feet measured horizontally from an occupied dwelling to the inside crest of the impoundment's embankment without the written consent of the owner of the building. (1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1299. Comment: § 78.59c(c)(4) - This section is focused on "occupied dwellings", which is undefined in the regulations. We are concerned that this term not be construed to preclude protection of historic buildings and structures, which are not always "occupied" in a residential sense, but are nonetheless deserving of protective measures. We prefer the term "existing building" as used in § 78.62(a)(6), or "existing structure" in order to more accurately account for the presence and protection of historic structures. These structures may be temporarily occupied by park visitors and NPS staff and volunteers, or they may be "out buildings" at historic sites which are integral features of the historic character of the site though rarely or never occupied. The NPS owns or manages a large number of historic structures throughout the Commonwealth. We also partner with private property owners to ensure their continued protection. In the case of National Historic Landmarks (NHLs), we are an active partner with the State Historic Preservation Office (SHPO) at the Bureau for Historic Preservation (BHP). Should there be a federal nexus in any Commonwealth oil and gas development we have an obligation under Section 106 of the National Historic Preservation Act (NHPA) to participate in consultation if there is a potential for an adverse effect to an NHL. Absent a federal nexus we are still concerned with reducing impacts and adverse effects to the historic structures we own or manage.

We are concerned that 500 feet may not be a sufficient distance to protect historic structures, including those we own or manage. Leaving aside the impacts from catastrophic failure of the impoundment, there are numerous potentially adverse effects to historic structures from the truck traffic and construction activities that take place in building an impoundment. The water truck traffic to and from such an impoundment during its operation could also result in adverse effects. Historic structures feature a wide range of foundation and structural systems, many of which are vulnerable to vibration and other potential impacts from construction and operation activities.

We would recommend a generally greater distance, but adequate setback distances are best determined on a case-by-case basis. This is where the addition of a notification requirement and the application requirements at 25 PA Code 105 could potentially resolve our concerns. 25 PA Code 105.13(e)(1)(ii) requires submission of a location map in an application to build a dam or other water feature. “The location map must show all natural features including the names and boundaries of regulated waters of this Commonwealth, natural areas, wildlife sanctuaries, natural landmarks, political boundaries, locations of public water supplies and other geographical or physical features including cultural, archeological and historical landmarks within 1 mile of the site.” (25 PA Code 105.13(e)(1)(ii), emphasis added.)

Were a notification requirement added to the provisions of § 78.59c, we might then have the time for our structural engineer and historical architect to identify potential effects, suggest mitigation measures and set up monitoring protocols. The applicant would have already completed the identification and mapping work, so there wouldn’t be an additional data collection burden. The inclusion of these features in the application requirements under 25 PA Code 105 makes it clear the Commonwealth has an interest in protecting cultural, archeological and historic landmarks. A notification provision for centralized impoundments would allow us to carry on a dialogue with the applicant to reduce effects and/or implement appropriate monitoring, and allow the NPS, the SHPO and other managers and owners of historic structures to fulfill our responsibilities to protect these important features. We would be interested in further discussion with PA regulators on this topic. (1062, 1133)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

- 1300.** Comment: 78.59c(c)(4): The term “occupied dwelling” needs to be explained as to whether it refers only to buildings occupied by human inhabitants or also agriculture buildings which may house livestock, for example. (1071)

Response: See response to comment 1251. As a result of changes described in that response, the term “occupied dwelling” is no longer used in the regulation.

- 1301.** Comment: 78.59c(c)(4) - A point of reference is needed for consistency. Suggested Language: (4) Within 500 feet measured horizontally from an occupied dwelling to the inside crest of the impoundment’s embankment without the written consent of the owner of the building.(1137, 1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

- 1302.** Comment: 78.59c(c)(5) - A point of reference is needed for consistency. Suggested Language: (5) Within 100 feet measured horizontally from any solid blue line stream, spring or body of water, except wetlands, identified on the most current 7.5 minute topographic quadrangle map of the United States Geological Survey to the limit of disturbance unless a stream encroachment permit is acquired.(1137, 1174, 1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1303. Comment: 78.59c(c)(5)The Department must fulfill its statutory obligation to protect all of the Commonwealth’s water resources by prohibiting centralized impoundments within 100 feet of any stream, not just perennial streams. (1152)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1304. Comment: We acknowledge that Act 13 referred to “solid blue line streams,” which are streams that flow continuously. However, we believe that this reference is imprudent and contrary to existing law and regulation. The legislative declarations of both the Encroachments Act and the Clean Streams Law make it abundantly clear that the General Assembly sought to protect large and small streams, continuously flowing or not, without exception to the type of activity. For these reasons, the Section 78.59c of the Proposed Rulemaking must be revised to prohibit centralized impoundments within 100 feet of any water of the Commonwealth. (1152)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1305. Comment: The prohibition on construction of fluid storage areas within 100 feet of certain water bodies should be extended to all water bodies. (Section 78.59c). The DEP should not allow natural springs to take the place of engineered monitoring wells used to measure the effects of fluid storage areas. (Section 78.59c(g)(2)). The DEP should strengthen its regulatory mechanisms for ensuring that pits and impoundments are constructed in a structurally sound manner and according to regulation. (Section 78.59c(m)) (19, 21, 23, 26, 55, 165, 180, 181, 391, 429a, 609, 843, 851, 938, 946, 958, 1005)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the groundwater monitoring requirements specified in those Chapters.

1306. Comment: I think impoundment pits for brine storage should be further away than 100 feet from a stream or other body of water. Is there any independent oversight on how these new regulations will be implemented? I think we need independent, honest oversight to avoid corruption and ensure that the PA State constitution is not further violated by the gas industry, and by the politicians that cater to them. (98)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters. The Department believes the revisions to Chapters 78 and 78a are consistent with the Constitution and applicable statutes, and provide appropriate protections for public health and safety.

1307. Comment: The current draft regulations prohibit well operators from building “centralized impoundments” for wastewaters within 100 feet of any “solid blue line stream” identified by the United States Geological Survey. Solid blue line streams flow consistently year round. This 100 foot buffer is important, but it should be extended to other streams that do not flow continuously. Although we recognize that Act 13 unwisely referred to “solid blue line streams,” intermittent and ephemeral streams need to be protected as well. Some of our most vulnerable waters are intermittent portions of high quality streams. Those waters would not be adequately protected by these

regulations. Furthermore, the DEP has an obligation to protect intermittent streams under the Clean Streams Law. Rather than attempt to make that decision on a case by case analysis, the DEP should extend this buffer to all Pennsylvania streams. (23, 26, 90, 142, 189, 192, 391, 843, 938, 938a, 946, 958, 1005)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1308. Comment:

- A. “(c) Centralized impoundments may not be constructed in any portion of the following areas:
(1) In a floodplain of waters of the Commonwealth as defined in section 3215(f)(5) of the act (relating to well location restrictions)”.
- Numerous Impoundments holding Industrial wastewater or holding sewage are located in floodplains in Pennsylvania. Locating similar structures to hold water for gas well operations in a floodplain is regulated by local floodplain ordinances and should not be regulated by PA DEP.

- B. “(c) Centralized impoundments may not be constructed in any portion of the following areas:
(2) In or within 100 feet measured horizontally of a wetland greater than 1 acre in size.”

Why not? How is the impoundment going to adversely affect a wetland?

- C. “(c) Centralized impoundments may not be constructed in any portion of the following areas:
(5) Within 100 feet measured horizontally from any solid blue line stream, spring or body of water, except wetlands, identified on the most current 7.5 minute topographic quadrangle map of the United States Geological Survey.”

The term, “any solid blue line” is NOT a commonly accepted term in any Engineering, Environmental, or Hydraulic Profession. Topographical maps are not always correct. Due to Flooding, Restoration activities, or unauthorized construction work, many waterways are NOT in the location noted as a “Blue Line” on a Topographical map. In addition, on many older topographical maps, small headwater waterways, which may be designated High Quality or Exceptional Value, are NOT shown as “Blue lines” on Topographical maps. (92)

Response: The Department regulates floodplain development under a number of environmental statutes and regulations to protect the waters of the Commonwealth as well as the structural integrity of the permitted facility.

Wetlands 1 acre in size or greater are environmentally significant and play an important role in the hydrologic cycle as well as maintaining and enhancing water quality. Development in the vicinity of such wetlands can disrupt the hydrologic regime leading to degraded water quality.

As for siting restrictions for centralized impoundments, see response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1309. Comment: Section 78.59(c) prohibits building impoundments for wastewaters within 100 feet of “solid blue line” streams, but does not extend the 100 foot buffer to intermittent and seasonal streams. Obviously, this oversight must be corrected.(108)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1310. Comment: The prohibition of construction of fluid storage within 100 feet of certain water bodies should be extended to ALL water bodies! (951,1019)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1311. Comment: The current draft regulations prohibit well operators from building “centralized impoundments” for wastewater within 100 feet of any “solid blue line stream” identified by the United States Geological Survey. Although we recognize that Act 13 unwisely referred to “solid blue line streams,” which are streams that run continuously, intermittent and ephemeral streams that do not necessarily run at all times of the year need to be protected as well. Some of our most vulnerable waters are intermittent portions of high quality streams. Those waters would not be adequately protected by these regulations. Furthermore, the DEP has an obligation to protect intermittent streams .under the Clean Streams Law. Rather than attempt to make that decision on a case by case analysis, the DEP should extend this buffer. (113, 165)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1312. Comment: We generally support the idea behind § 78.59(c) to prohibit fluid storage areas in close proximity to water, however, we call on you to strengthen this requirement by increasing the 50 foot buffer zones on intermittent streams, as described in § 3215(f)(5), to at least100 feet, which science shows to be the minimum distance required to see protective benefits. Intermittent streams are a primary source of drinking water for back country hikers and trail users. By improving this section of the proposed regulations, we can ensure that hikers and other outdoor recreationists continue to safely enjoy spending time in Pennsylvania’s wilderness. (188)

Response: Section 3215(f)(5) of the 2012 Oil and Gas Act controls the setbacks for well sites and wells drilled in floodplains. The provisions in this section is consistent with the Act. See response to comment 1260.

1313. Comment: Section 78.59c, of the current draft regulations; prohibit well operators from building “centralized impoundments” for wastewaters within 100 feet of any “solid blue line stream” identified by the United States Geological Survey. Having a fluid storage area as close as 100 feet of ANY stream, whether the Allegheny River or an intermittent seasonal stream, is way too close. If there’s a leak, the 100 foot buffer could be completely inadequate to assure that the leakage does not enter the stream. Even if it’s a dry creek 364 days a year, once leaked frac fluid gets into it, it becomes a stream and that frac fluid will flow downhill, eventually to a solid blue-line stream. A dry creek bed is a channel into the water system and frac fluid must be kept out of it. Even 1000 feet is too close if the impoundments are at a higher elevation than freshwater sources. (808)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1314. Comment: The current draft regulations in Section 78.59c prohibit well operators from building “centralized impoundments” for wastewater within 100 feet of any “solid blue line stream” that flows year round. The buffer should be extended to intermittent streams as well. The DEP has an obligation to protect intermittent streams under the Clean Streams Law. (846, 1109)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1315. Comment: § 78.59c(c)(5); Not all solid “blue line streams” shown on a 7.5 minute topographic quadrangle represent actual streams. Many of these features can have intermittent flow or only flow as a result of surface runoff. This rule should be expanded to allow for verification of streams based on actual site specific conditions determined from field surveys. (175)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1316. Comment: Impoundments should NOT be permitted AT ALL in the Commonwealth of Pennsylvania. They are not industry best practice, they are not allowed in some other states. The risk that they bring to the groundwater and also to the air is just too substantial. Regarding the disposal of wastewater, sludge, and drill cuttings, it should be noted that in addition to the toxic chemicals and heavy metals these contain, radioactivity is also a concern. To allow disposal of these materials 200 feet from a building or water supply or 100 feet from a stream is less than responsible and will result in unnecessary soil and water contamination. Given the toxic and radioactive nature of these materials, they should not be disposed of on or in the land or water, and should be dealt with as a hazardous, radioactive waste. (945)

Response: See response to comment 1251.

1317. Comment: One of my concerns is 78.59c which prohibits fluid storage areas within 100 feet of certain bodies of water. “Intermittent and ephemeral streams”-- streams which do not run all year long also need to be protected, under the Clean Streams Act. Like vulnerable wildlife and plant life, vulnerable water sources are not protected by these regulations. (1003)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1318. Comment: § 78.59c(c)(5) – Protection for blue line (perennial) streams is provided, but we believe intermittent streams should be protected from impacts as well. Intermittent streams typically do not appear on standard USGS 7.5 minute topographic quad maps, but nonetheless provide critical seasonal habitat for aquatic flora and fauna and connect to blue line streams which flow into many of our National Park System units and affiliated areas. Intermittent streams could be identified during on-the-ground surveys needed to determine the suitability of an area for a centralized impoundment. As such, we recommend centralized impoundments not be constructed within 100 feet of intermittent streams. (1062, 1133)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1319. Comment: 78.59 (c)(5) It is common knowledge that not all streams are depicted as a blue line on a 7.5 minute topographic quadrangle map of the United States Geologic Survey. We recommend changing the language in this item from “Within 100 feet measured horizontally from any solid blue line stream, spring or body of water”, to “Within 100 feet measured horizontally from the bank of any watercourse or body of water or wetland” as defined in 25 Pa Code § 105.1 Dam Safety and Waterway Management. (1006)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1320. Comment: This section appears to lack the fencing clause present for pits and freshwater impoundments. The clause needs to be added and revised as recommended for 78.56(5).
78.59 (c)(5) Not all streams are depicted as a blue line on a 7.5 minute topographic quadrangle map of the United States Geologic Survey. The Service recommends changing the language in this item from “Within 100 feet measured horizontally from any solid blue line stream, spring or body of water .., to “ Within 100 feet measured horizontally from the bank of any watercourse or body of water or wetland”“ as defined in 25 Pa Code § 105.1 Dam Safety and Waterway Management. (1134)

Response: See responses to comments 1260 and 1277.

1321. Comment: § 78.59c (c)(6) Suggested amendatory language: Within 500 feet measured horizontally from a private water supply to the inside crest of the impoundment’s embankment without the written consent of the owner of the water supply. (1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1322. Comment: Setbacks to water supplies should not be capable of being waived. Section 78.59c(c)(6) allows property owners to waive setbacks. If the purpose of the setback is to protect water supplies and the aquifer for this and future generations, then the property owner should not be allowed to waive the setback requirement. (852a)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1323. Comment: 78.59c(c)(6) - A point of reference is needed for consistency . Suggested Language: (6) Within 500 feet measured horizontally of a private water supply to the inside crest of the impoundment’s embankment without the written consent of the owner of the water supply.(1137, 1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1324. Comment: 78.59c(7) - A point of reference is needed for consistency. Suggested Language: (7) Within 1,000 feet measured horizontally of an existing water well, surface water intake, reservoir or other water supply extraction point used by a water purveyor to the inside crest of the impoundment's embankment without the written consent of the water purveyor.(1137, 1147, 1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the setback requirements specified in those chapters.

1325. Comment: Groundwater protection. 78.59c(d): As with disposal pits, the Department should increase the distance between the centralized impoundments and shallow groundwater. Twenty (20) inches is not sufficient distance to protect shallow groundwater from any seepage from the secondary liner (i.e., allowable seepage that leaves the liner system rather than flowing towards the sump pump). Generally such a small separation is intended to protect the liner from backpressure only. The separation distance should be analyzed by a licensed professional engineer to determine if 20 inches is sufficient to guarantee that backpressure from rising shallow groundwater will not damage the liner and that the removal of shallow groundwater can be documented with perimeter tile drainage system. (852a)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the groundwater separation requirements specified in those chapters.

1326. Comment: Wastewater storage. Section 78.59c(e) should require operators to state in their submissions whether they intend to store in the centralized impoundment any wastewater processed under WMGR123. (852a)

Response: See response to comment 1251 and 1252.

1327. Comment: The new language of this section provides requirements for centralized impoundments and generated significant interest from the regulated community. Commentators note that certain provisions, such as Clause (e)(3)(viii)(B) which allows operators to direct leak collection from failed impoundment systems back into the same failed system, are improper or inadequate. Other commentators express concern that certain requirements, such as Subparagraph (e)(2)(vi) which requires an authorized representative of a liner manufacturer to supervise the installation of the liner, are unreasonable or excessive. We ask EQB to explain in the Preamble and RAF of the final-form regulation how the requirements in this section reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: The final rulemaking requires all centralized impoundments to comply with permitting requirements in Article IX which will ensure that Chapter 78 does not result in disparate requirements or disproportionate costs on one particular economic or extractive sector. Therefore, in order to ensure consistency the Department has revised §§ 78.59c and 78a.59c in the final-form rulemaking to require any new centralized impoundments to be authorized by a residual waste permit under Article IX. In addition, §§ 78.59c and 78a.59c also require operators of existing centralized impoundments permitted under a Dam Permit for a Centralized Impoundment Dam to either submit a closure plan to the Department within 6 months and close the centralized impoundment within 3 years of the effective date of

the rulemaking or obtain a residual waste permit for the operation of the centralized impoundment within 3 years of the effective date of the rulemaking. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements and liner installation requirements specified in those chapters.

1328. Comment: Capacity of the leak detection system. Section 78.59c(e)(3) should require that the leak detection system be designed for the anticipated allowable seepage rate for the liner, and shown in engineering plans and specifications to be capable of collecting and transporting that leakage volume to the sump pump. The plans and specifications should include calculations of daily leakage flow to the sump and the capability of the sump to store said leakage volume without spillage. (852a)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

1329. Comment: § 78.59c (e)(1) Suggested amendatory language: A sub-base that meets the following, or is otherwise approved by the Department: (1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the construction requirements specified in those chapters.

1330. Comment: 78.59c(e)(1) -- The soil quality specified below may not be available on or near many proposed locations. Consequently, this subsection should include an allowance for the use of alternative materials such as Geosynthetic Clay Liners (GCLs) and/or soil amendments.

Suggested amendatory language:

(1) A sub-base that meets the following, or is otherwise approved by the Department: (1071, 1103, 1137, 1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the construction requirements specified in those chapters.

1331. Comment: 78.59c(e)(1)(vi) - Can the material on site be used as a sub-base? What is the definition of a natural clay material? Can material on location be screened to meet this requirement? (411)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the construction requirements specified in those chapters.

1332. Comment: 78.59c(e)(1)(vi)(C) -- The soil compaction test (i.e., moisture/density testing) frequency is excessive, where one test per 2,500 square feet results in 18 tests per acre. Typically, the 6-inch thick subbase layer in a landfill liner system is tested at a frequency of one test per acre. We recommend that the test frequency be one test per acre per soil type.

The soil permeability testing in the proposed subsection is excessive. In addition, the subsection could be misinterpreted to require field permeability testing which is impractical. We recommend that laboratory permeability testing be performed at a frequency of 1 sample per soil type. In addition, it is suggested that the proposed subsection be changed to utilize a correlation between

laboratory Proctor and Permeability testing that is used to specify parameters for field compaction testing.

Suggested amendatory language:

§ 78.59c (e)(vi) (C) No more permeable than 1.0×10^{-6} cm/sec. Laboratory Standard Proctor and Permeability testing shall be used to delineate limits for field moisture/density testing. Field limits shall be delineated for each soil type used, and at least one Standard Proctor and Permeability test per soil type shall be performed. Field moisture density testing shall be performed at a frequency of one sample per acre per 6-inch thick lift per soil type. (1071, 1103, 1137, 1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the construction requirements specified in those chapters.

1333. Comment: § 78.59c (e)(1)(vii)(C) Comment: Typically, the 6-inch thick sub base layer in a landfill liner system is tested at a frequency of one test per acre. We recommend that the test frequency be one test per acre per soil type. (1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the construction requirements specified in those chapters.

1334. Comment: § 78.59c (e)(1)(vii)(C) Suggested amendatory language: No more permeable than 1.0×10^{-6} cm/sec. Laboratory standard Proctor and permeability testing shall be used to delineate limits for field moisture/density testing. Field limits shall be delineated for each soil type used, and at least one Standard Proctor and Permeability test per soil type shall be performed. Field moisture density testing shall be performed at a frequency of one sample per acre per 6-inch thick lift per soil type. (1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the construction requirements specified in those chapters.

1335. Comment: In § 78.59c(vi)(D), it is standard practice to capitalize the P in Proctor. Suggested Language: (D) Is compacted to a density of at least 95% standard Proctor. (1137)

Response: See response to comment 1251. Due to the changes described in that response, the term “Standard Proctor” is no longer used in this section.

1336. Comment: 78.59c(e)(2) - Manufacturers in the geosynthetics industry utilize geomembrane manufacturing standards specified by the “Geosynthetic Institute,” which utilize nominal and not minimum values. It is suggested that manufacturing specifications follow the “Geosynthetic Institute’s” manufacturing standards.(1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the construction requirements specified in those chapters.

1337. Comment: 78.59c(e)(3)(ix)(D): The requirement that centralized impoundment lines be installed under the supervision of an authorized representative of the manufacturer in sections

78.59c(e)(2)(vi) and 78.59c(e)(4)(xii) raises a significant concern for an operator's ability to comply without potentially causing significant delays. It is unknown how many manufacturer representatives exist and are available to perform this supervision. We suggest that this requirement be removed. (1071)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

- 1338.** Comment: § 78.59c (e)(2)(vi) Suggested amendatory language: Is installed according to manufacturer's specifications under the supervision of an appropriately trained professional. A Department approved quality assurance and quality control plan shall be implemented in the field during the installation of the liner. (1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

- 1339.** Comment: § 78.59c (e)(2)(vi) -This section requires an authorized representative of the liner manufacturer to supervise the installation of the liner, and then goes on to require a Department approved quality assurance and quality control plan to be implemented during construction. This is overkill. It would be more reasonable to require either the manufacturer representative supervision or a Department approved plan, but not both. It is recommended that this section be revised to allow either, but not require both. (124a, 861)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

- 1340.** Comment: 78.59c(e)(2) (vi): The requirement that centralized impoundment lines be installed under the supervision of an authorized representative of the manufacturer in sections 78.59c(e)(2)(vi) and 78.59c(e)(4)(xii) raises a significant concern for an operator's ability to comply without potentially causing significant delays. It is unknown how many manufacturer representatives exist and are available to perform this supervision. We suggest that this requirement be removed and replaced with the requirement that installation be performed under the direction of an appropriately trained professional. (1071)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

- 1341.** Comment: In § 78.59(e)(2)(vi), the commentator recommends that an appropriately trained professional can supervise installation. Requiring an authorized representative of the manufacturer imposes an unnecessarily strict and potentially expensive requirement. Suggested Language: (vi) Is installed according to manufacturer's specifications under the supervision of an appropriately trained professional. A Department approved quality assurance and quality control plan shall be implemented in the field during installation of the liner. (1137)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1342. Comment: 78.59c (e)(2)(vi) -- An appropriately trained professional can supervise installation. Requiring an authorized representative of the manufacturer imposes an unnecessarily strict, and potentially expensive, requirement.

Suggested amendatory language:

(vi) Is installed according to manufacturer's specifications under the supervision of an appropriately trained professional. A Department approved quality assurance and quality control plan shall be implemented in the field during the installation of the liner. (1103)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1343. Comment: 78.59c(e)(2)(vi) - The proposed section, as written, gives governing supervision or authority to geosynthetics manufacturers. It is suggested that the section be changed to indicate that Quality Assurance shall be performed under the direction of an appropriately trained professional. Due to the unique nature of geosynthetics manufacturing and construction, a Construction Quality Assurance and Quality Control Plan (CQAQC Plan) needs to be prepared under the direction of a qualified professional with geosynthetics experience. It is recommended that the Department work with the MSC to develop a standard CQAQC Plan. If the standard plan were to be used, review and approval would not be required for each application. (1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1344. Comment: 78.59c(e)(3): Field testing of the flow zone would require an extremely complex testing scenario that would be very difficult to develop and acquire approval at the Department's regional office. The proposed subsection as written is therefore impractical. The permeability/permittivity of geosynthetic flow zone products and aggregate meeting standard AASHTO gradation are well known and documented. Suggested language: "(vii) Creates a flow zone between the secondary liner and the primary liner equal to, or more permeable than, 1.0×10^{-2} cm/sec., based on manufacturer/supplier's published specifications." (1103, 1137, 1071, 1147, 1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

1345. Comment: 78.59c(e)(3)(i) – A leak detection system is required that rapidly detects and collects liquid entering the leak detection zone, and rapidly transmits the liquid to a sump. Though it is not specified how the system to run the monitoring and pump is powered, it is recommended to have a backup power system requirement. (846, 1109)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

- 1346.** Comment: 78.59c(e)(3)(viii)(B) – This paragraph improperly allows a “[d]ischarge from the sump pump [to] be directed back into the impoundment....” A discharge that occurs should not be redirected back into a failing containment system. (997a, 1142)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

- 1347.** Comment: 78.59c(e)(3)(viii) – Due to the extremely high flow volumes that can be transmitted through geosynthetic flow zone products and many aggregates, they can, in nearly every instance, more than adequately transmit flow without piping. The requirement for the use of transmission piping significantly complicates grading and liner configurations to accommodate piping. Suggested Language: (viii) If the leak detection zone cannot adequately transmit detection zone flow, the system shall contain a perforated piping system capable of detecting and intercepting liquid within the leak detection zone and conveying the liquid to a collection sump.(1071, 1103, 1137, 1147, 1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

- 1348.** Comment: Capacity calculations. Section 78.59(e)(3)(viii)(B) should require the engineering design plans and specifications to include calculations that support the size of the sump and the pump capacity for the maximum allowable seepage rate. (852a)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

- 1349.** Comment: 78.59c (e)(3)(ix)(B) Suggested amendatory language: The pipes shall be installed as close to perpendicular to the flow as practicable and shall have a minimum post-settlement grade of at least 1%. (1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

- 1350.** Comment: 78.59c(e)(3)(ix)(B) - A minimum slope of 2% was borrowed from the solid waste regulations, which was specifically developed for landfills due to the limitations of aggregates that were originally used in their designs. In the last 25 years, geosynthetic drainage layers have been developed that have superior performance to aggregates. For oil & gas impoundments, pipes can be operated with a 1% slope with the use of geosynthetics. Consequently, it is suggested that the minimum slope be changed to 1%. Suggested Language : (B) The pipes shall be installed as close to perpendicular to the flow as practicable and shall have a minimum post-settlement grade of at least 1%. (1137, 1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

1351. Comment: 78.59c(e)(3)(ix)(C) - The wall thickness specified is significantly over designed for most impoundments that the industry is expected to design and build. Suggested Language: (C) The pipe (if needed) shall be designed under the direction of an appropriately trained professional, or if a design is not prepared, the minimum diameter of the perforated pipe shall be 4 inches with a wall thickness of Schedule-80 or greater as specified by ASTM, or equivalent.(1137, 1147, 1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

1352. Comment: 78.59c(e)(4)(ix): We are concerned that the requirement that operators document leakage rates weekly is overly burdensome. Additionally, the language refers to making available upon request twice - redundant and one should be deleted. (1071)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

1353. Comment: 78.59c (e)(3)(x) Suggested amendatory language: A minimum bottom slope of 1%. (1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

1354. Comment: Repairs and design. Section 78.59c(e)(4)(x) implies that the centralized impoundment containing millions of gallons of wastewater could easily be drained for repairs. The rule does not provide guidance on how that wastewater will be held or disposed of during liner repair. The rule does not address the difficulty of putting the centralized impoundment off-line for repairs. One solution would be to require a minimum of two cells for centralized impoundments to allow for the repair of one cell liner system while still being able to collect and contain wastewater generated from active drilling sites. It should be noted that dividing up the total storage capacity of the centralized impoundment into smaller subsections or cells would reduce the catastrophic risk of berm failure. (852a)

Response: See response to comment 1251 and 1252.

1355. Comment: 78.59c (e)(3)(xii) Comment: The waters handled in the oil and gas industry are typically pH neutral and would not affect a carbonaceous aggregate. For an oil and gas impoundment, detection zone problems can be repaired because the contents are not permanently stored. Therefore, it is recommended that this proposed subsection be deleted. (1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

1356. Comment: 78.59c (e)(3)(xii) Suggested amendatory language: Delete subsection (e)(3)(xii). (1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

1357. Comment: Section 78.59c(e)(3)DEP inspectors should routinely review the operator’s leak detection system weekly monitoring reports, and plan unscheduled inspections to ensure that centralized impoundments are not leaking, beyond allowable leakage rates. (1157)

Response: The Department acknowledges the comment.

1358. Comment: 78.59c (e)(4)(ix) describes allowable leakage rates for the primary liner, and we recommend adding language in this section that specifies that the secondary liner shall not allow leakage. (1157)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

1359. Comment: 78.59c(e)(3)(xii) -Under normal construction standards, a drain system installation would require the use of carbonate stone to allow for permeability. Why prohibit the use of this type of material? What is the alternative? (411)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

1360. Comment: 78.59c (e)(3)(xii) -- This subsection was borrowed from the solid waste regulations, and “not contain carbonate” is a specification relevant to that industry where the acidic nature of landfill leachate can dissolve carbonate aggregate and affect leachate collection systems. Due to the fact that all aggregate has some carbonatious content and “not contain carbonate” is an impractical specification, a small percentage of carbonate content in aggregates is allowed in solid waste projects.

The waters handled in the oil and gas industry are typically pH neutral and would not affect a carbonatious aggregate. In addition, landfills permanently store waste. For an oil and gas impoundment, detection zone problems can be repaired because the contents are not permanently stored. Therefore, it is recommended that this proposed subsection be deleted. Suggest deletion of subsection (3)(xii). (1103, 1137, 1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

1361. Comment: Monitoring frequency/reporting. Section 78.59(e)(3)(xiii) requires the operator to monitor the leak detection system weekly without regard to the expected volume of allowable seepage that could be collected during that week and the ability of the sump and pump to properly transfer that volume back into the impoundment. The leak volume collected and pumped should be documented and submitted to the department quarterly along with discussion of whether or not the leakage rate is exceeding the allowable seepage rate and if repairs to the liner or leak detection system are warranted. (852a)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the leak detection requirements specified in those chapters.

- 1362.** Comment: 78.59c (e)(4)(vi) -- An appropriately trained professional can supervise installation. Requiring an authorized representative of the manufacturer imposes an unnecessarily strict, and potentially expensive, requirement.

Suggested amendatory language:

(vi) Installed according to manufacturer's specifications under the supervision of an appropriately trained professional. A Department approved quality assurance and quality control plan shall be implemented in the field during the installation of the liner. (1103)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

- 1363.** Comment: 78.59c(e)(4)(vi) - The proposed subsection empowers geosynthetics manufacturers where that industry should not have any governing supervision or authority. It is suggested that the subsection be changed to indicate that Quality Assurance shall be performed under the direction of an appropriately trained professional. Due to the unique nature of geosynthetics manufacturing and construction, a Construction Quality Assurance and Quality Control Plan (CQAQC Plan) needs to be prepared under the direction of a qualified professional with geosynthetics experience. It is suggested that the Department work with the MSC to develop a standard CQAQC Plan. If the standard CQAQC Plan were to be used, review and approval would not be required in each application. Suggested language: (vi) Installed according to manufacturer's specifications under the supervision of an appropriately trained professional. A Department approved quality assurance and quality control plan shall be implemented in the field during the installation of the liner.(1174)

Response: See responses to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

- 1364.** Comment: In § 78.59c(e)(4)(iv) the commentator recommends that an appropriately trained professional can supervise installation. Requiring an authorized representative of the manufacturer imposes an unnecessarily strict, and potentially expensive, requirement.

MSC's suggested amendatory language:

(vi) Installed according to manufacturer's specifications under the supervision of an appropriately trained professional. A Department approved quality assurance and quality control plan shall be implemented in the field during the installation of the liner (1137).

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

- 1365.** Comment: 78.59c(e)(4)(x) -Have the necessary electronic reporting setup in GreenPort prior to the implementation of this section. (411)

Response: The Department agrees and will ensure that the electronic reporting system will be in place prior to implementation of the regulations.

1366. Comment: 78.59c (e)(4)(vi) Suggested amendatory language: Installed according to manufacturer’s specifications under the supervision of an appropriately trained professional. A Department approved quality assurance and quality control plan shall be implemented in the field during the installation of the liner. (1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1367. Comment: § 78.59c (e)(4)(vi) - This section is similar to § 78.59c (e)(Z)(vi) above, so the comment is the same. (124a)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1368. Comment: 78.59c(f): We ask that the Department clarifies its expectations with the requirement that an operator perform a second “round” of hydrogeologic investigation. “Round” needs to be defined for example; is it referring to 1 additional set of samples? (1071)

Response: See response to comment 1251.

1369. Comment: Qualified geologist. Section 78.59c(f) should require that the baseline hydrogeologic study be performed by a licensed professional geologist or certified hydrologist familiar with the local geology and aquifer formations. The study should be based on a sufficient number of soil borings that can be used to describe the subsurface materials located below the intended location of the centralized impoundment and to identify soil properties indicative of high seasonal groundwater. (852a)

Response: See response to comment 1251 and 1252.

1370. Comment: Submission of results. Section 78.59c(f)(1) and (2) should require that the analytical results shall be submitted to the Department with all applicable chain of custody forms, a map that clearly shows the sampling locations, the depth of groundwater sampled, the distance from the water well tested and the location of the centralized impoundment, and the laboratory analytical reports. (852a)

Response: See response to comment 1251 and 1252.

1371. Comment: Parameters for water tests. Section 78.59c(f)(3) establishes the parameters for water quality testing. The list in (i)(6) should include methane, total petroleum hydrocarbons, BTEX, and any pollutants associated with the expected hydraulic fracturing fluid recipe. The parameters should also include a water quality suite that includes all traditional cations and anions instead of just chlorides and sulfates. (852a)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the groundwater monitoring requirements specified in those chapters.

1372. Comment: 78.59c(f)(4): The requirement for an extension of four quarterly tests if soil mottling is apparent is burdensome and could add a year to the already lengthy permitting process. Soil mottling

does not provide conclusive evidence of the seasonal high water table. Suggested amendatory language:

“(4) If during the groundwater elevation study, groundwater elevation determined by surface water or wells, or soil mottling in the absence of surface water or well data, is apparent within the intended confines of the impoundment or within 20 inches of its base, or if the seasonal high water table will be adjusted using engineering controls in order to accommodate the impoundment, the requirements of 25 Pa. Code §§ 289.121-289.123 (relating to phased application requirements -site analysis) must be followed and the groundwater elevations data must be collected within the first five months of the year.” (1071, 1147)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the groundwater monitoring requirements specified in those chapters.

- 1373.** Comment: 78.59c(f)(4) -- Soil mottling does not provide conclusive evidence of the seasonal high water table . In fact, 289.432(a)(1), of the solid waste regulations, states “Soil mottling may indicate the presence of a seasonal high water table .” Therefore, it is recommended that this section be revised to allow groundwater elevation data in place of soil mottling, as an option, to delineate the seasonal high water table.

Regarding the period over which groundwater elevation data is needed prior to its manipulation, “four quarterly tests” is not required by the solid waste regulations for permanent waste disposal facilities, and is excessive for the temporary storage of flowback and production water. Based on empirical evidence, the seasonal high groundwater condition occurs within the first five months of the year. Consequently, it should be sufficient to proceed with manipulation if groundwater data has been collected during that period. Or, at the very least, data from that period should be sufficient to proceed with the permitting process (including permit issuance). (1103)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the groundwater monitoring requirements specified in those chapters.

- 1374.** Comment: § 78.59c(f)(4); Soil mottling can occur as a result of infiltration from precipitation or be an artifact of past geologic conditions that are no longer relevant (such as the affects from glaciation). Additional groundwater sampling requirements should be based solely on water table measurements and impoundment design specifications. (175)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the groundwater monitoring requirements specified in those chapters.

- 1375.** Comment: 78.59c(f)(4) - Soil mottling does not provide conclusive evidence of a seasonal high water table. In fact, Section 289.432(a)(1), of the solid waste regulations, states “Soil mottling may indicate the presence of a seasonal high water table.” Therefore, it is recommended that this section be revised to allow groundwater elevation data in place of soil mottling, as an option, to delineate the seasonal high water table. Regarding the period over which groundwater elevation data is needed prior to its manipulation, “four quarterly tests” is not required by the solid waste regulations for permanent waste disposal facilities, and is excessive for the temporary storage of flowback and production water, based on empirical evidence that the seasonal high groundwater condition occurs within the first five months of the year. Consequently, if groundwater data has been collected during

that period, it should be sufficient to proceed with manipulation. Data from that period should be sufficient to proceed with the permitting and approval process.

Suggested Language: (4) If during the groundwater elevation study, groundwater elevation determined by surface water or wells, or soil mottling in the absence of surface water or well data, is apparent within the intended confines of the impoundment or within 20 inches of its base, or if the seasonal high water table will be adjusted using engineering controls in order to accommodate the impoundment, the requirements of §§ 289.121-123 (relating to description of geology, soils and hydrology; general requirements; geology and groundwater description ; and groundwater quality description) shall be followed and the groundwater elevations data must be collected within the first five months of the year.(1137, 1174)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the groundwater monitoring requirements specified in those chapters.

- 1376.** Comment: 78.59c(g) - The requirements in Subsection 78.59c(g) below would prevent the use of Best Available Technology. Due to the size of centralized impoundments (approximately 4 acres or less), a drainage layer beneath the impoundment with discrete monitoring points would provide complete coverage, provide leak information in the shortest possible time, and could be used as a control. (1147)

Suggested amendatory language: An operator that operates a centralized impoundment shall install, operate and maintain a water quality monitoring system that can detect the entry of substances contained in the impoundment into the groundwater or surface water. The water quality monitoring system shall accurately characterize groundwater flow, groundwater chemistry and flow systems on the site and adjacent area. (1147)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the groundwater monitoring requirements specified in those chapters.

- 1377.** Comment: Section 78.59c(g) does not clearly state whether the operator has to install the water quality monitoring system prior to filling the centralized impoundment. The proposed amendments are silent on when the monitoring wells must be constructed and installed, and functioning, and whether or not monitoring has to be completed prior to when the final certification report is approved. We recommend clarifying this section to ensure that monitoring systems are in place, and functioning, prior to final approval by DEP. (1157)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the groundwater monitoring requirements specified in those chapters.

- 1378.** Comment: 78.59c(g): Monitoring wells near “centralized impoundments” are essential tools for determining whether the stored fluids are polluting groundwater in the surrounding area. The draft regulations wisely require three monitoring wells, but give the DEP the discretion to allow the operator to substitute natural springs for monitoring wells. This is inappropriate. Natural springs are not engineered to provide reliable and repeatable data on groundwater conditions because, among other things, they are susceptible to variability based on precipitation events and subject to contamination from surface flow. Monitoring of natural springs down gradient of centralized impoundments is appropriate, but that monitoring should be done in addition to, not instead of,

construction and maintenance of monitoring wells. (23, 26, 90, 142, 189, 192, 391, 843, 938, 946, 958, 1005)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the groundwater monitoring requirements specified in those chapters.

- 1379.** Comment: 78.59c(g) -While you propose the installation of monitoring wells, nothing is noted about the long term management or responsibility of the monitoring wells. Once the central impoundment is reclaimed, the existing monitoring wells pose a risk of contamination entry. Permanent monitoring wells will not fit back into the prior land use, especially agriculture. Will the department require the operator to plug these wells? As strict as the construction requirements are with a series of liners and a leak detection system, there should be no effect of the hydrologic system at any depth below the central impoundment that should require monitoring well installation. (411)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the groundwater monitoring requirements specified in those chapters.

- 1380.** Comment: 78.59c(g): As previously referenced in our general comments we believe this section is an example where regulations and standards should be performance oriented and flexible rather than prescriptive. The prescriptive nature of this section prevents the use of Best Available Technology. It is our belief that the language should be revised to allow alternatives. In addition, the use of the term “regulated substance” in this subsection creates a confusing and perhaps impossible standard to meet. A centralized impoundment may have a system that detects leaks, but it is not clear what monitoring system could detect “the entry of regulated substances into the groundwater or surface water” if those substances are not from the impoundment itself, and it is equally unclear why an operator would be obligated to detect the entry of all such substances. Suggested amendatory language:

“(g) An operator that operates a centralized impoundment shall install, operate and maintain a water quality monitoring system that can detect the entry of substances contained in the impoundment into the groundwater or surface water. The water quality monitoring system shall accurately characterize groundwater flow, groundwater chemistry and flow systems on the site and adjacent area. The system shall include the following:” (1071)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the groundwater monitoring requirements specified in those chapters.

- 1381.** Comment: 78.59c(g) - The requirement in this subsection would prevent the use of Best Available Technology. Due to the size of centralized impoundments (approximately 4 acres or less), a drainage layer beneath the impoundment with discrete monitoring points would provide complete coverage, provide leak information in the shortest possible time, and could be used as a control. The proposed subsection is too definitive for regulation and should be in a Department issued guidance document. At the very least, the language should be revised to allow alternatives.

The design and operating methods for monitoring wells are still evolving. Considering the inflexible, static nature of regulations, it does not make sense to include such detailed specifications. It is strongly recommended that the design, construction and operation of groundwater monitoring wells be specified in guidance and not be included in regulation.

In addition, the use of the term “regulated substance” in this subsection creates a confusing and perhaps impossible standard to meet. A centralized impoundment may have a system that detects leaks, but it is not clear what monitoring system could detect “the entry of regulated substances into the groundwater or surface water” if those substances are not from the impoundment itself, and it is equally unclear why an operator would be obligated to detect the entry of all such substances.

Suggested Language: (g) An operator that operates a centralized impoundment shall install, operate and maintain a water quality monitoring system that can detect the entry of substances contained in the impoundment into the groundwater or surface water. The water quality monitoring system shall accurately characterize groundwater flow, groundwater chemistry and flow systems on the site and adjacent area. The system shall include the following: (1103, 1137, 1174)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the groundwater monitoring requirements specified in those chapters.

1382. Comment: § 78.59c(g)(1); Expand this rule to allow for intra-well data evaluation. Intra-well evaluations are well specific and eliminate the need for an upgradient well (inter-well evaluations).(175)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the groundwater monitoring requirements specified in those chapters.

1383. Comment: In Section 78.59c(g)(2) the draft regulations require one monitoring well hydraulically upgradient from a centralized impoundment and a minimum of 3 three monitoring wells downgradient. Due to the allowable definition of “freshwater” to contain pollutional substances, those ponds built to lesser construction standards should too require the minimum monitoring wells described for the higher standard of construction centralized impoundments.(846, 1109)

Response: See response to comment 1251. Accordingly, new centralized impoundments constructed under Article IX will be required to meet the groundwater monitoring requirements specified in those chapters.

1384. Comment: 78.59c(h)(2) - What is the definition of ‘routine operations’? (411)

Response: See response to comment 1251. As a result of the changes described in that response, the term “routine operations” is no longer used in this section.

1385. Comment: § 78.59c(e)(4)(vi) - This section is similar to § 78.59c(e)(2)(vi) above, so the comment is the same. (861)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1386. Comment: § 78.59c(i)(4)(i) - This section should be written more clearly. First, it requires the monitoring well casing to be enclosed in a protective casing that will protect the well from damage by heavy equipment. There are few, if any, protective well casings that can stand up to heavy equipment, especially when it is to be around the upper 10 feet of the monitoring well. Most heavy

equipment will make short work of any casing that is constructed around a monitoring well as described. It is recommended that this standard be made more realistic.(124a, 861)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

- 1387.** Comment: § 78.59c(i)(4)(v) requires the protective casing to protrude above the monitoring well casing. If that is done, it will be difficult to do any maintenance on the well, sample the well, repair the well, and eventually plug the well, especially if the protective casing will withstand heavy machinery. It is recommended that this section be rewritten in a manner that is practical and reasonable. (124a, 861)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

- 1388.** Comment: § 78.59c(h)(5); In cases where seasonal aquifers outcrop and the depth to groundwater is >50 feet, groundwater monitoring wells may not detect a release from an impoundment. Surface inspection for seeps and or other design considerations may be needed in these cases. (175)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

- 1389.** Comment: § 78.59c(i)(3)(iv) - This section requires monitoring wells to be “filter-packed” with chemically inert materials. It is recommended that the term “filter-packed” should be defined or more descriptive text should be used.(124a, 861)

Response: See response to comment 1251. As a result of the changes described in that response, the term “routine operations” is no longer used in this section.

- 1390.** Comment: **78.59c(i):** Typically a 2-inch diameter pipe is used for groundwater monitoring wells. It is our understanding that a 4-inch diameter pipe is being specified solely to allow the well to be used as an extraction well point, if needed, for a future remediation. However, it is unlikely that a monitoring well itself would be used for this purpose. We are concerned that the added cost to drill a larger bore and for increased materials to construct a well are not reasonable. We recommend that the minimum well diameter be changed to 2-inches. (1071)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

- 1391.** Comment: 78.59c (i)(2) A 2-inch diameter pipe is often used for groundwater monitoring wells. We recommend that the minimum well diameter be changed to 2-inches. (1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1392. Comment: 78.59c (i)(2) Suggested amendatory language: The minimum casing diameter shall be 2 inches unless otherwise approved by the Department in writing. (1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1393. Comment: § 78.59c.(i)(2); Two inch wells are more than adequate for monitoring purposes and can be equipped with dedicated sampling equipment. Eliminate 4-inch well requirement. (175)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1394. Comment: 78.59c(i)(2) - A 2 inch diameter pipe can and is often used for groundwater monitoring wells. It is our understanding that a 4 inch diameter pipe is being specified solely to allow the well to be used as an extraction well point, if needed, for a future remediation. Since it is unlikely that the wells in and of themselves would be used for this purpose, the added cost to drill a larger bore and for increased materials to construct a well are not reasonable. In addition, standard groundwater monitoring procedures include well purging. Use of a 2 inch well increases the likelihood of being able to collect a sample from a well. Consequently, it is strongly recommended that the well diameter be changed to 2 inches. Suggested Language: 2) The minimum casing diameter shall be 2 inches unless otherwise approved by the Department in writing.(1103,1137, 1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1395. Comment: Depth of screened interval. Regarding section 78.59c (i)(3), the minimum depth of the screened interval should intercept the top of the shallow groundwater aquifer to ensure that changes in water table do not affect the ability to take a sample quarterly. (852a)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1396. Comment: 78.59c(i)(4): Conditions are often encountered where 10 feet of casing cannot be installed, therefore it is our suggestion that this requirement be removed. Guidance could be included in the Department's policy document for well construction. (1071)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1397. Comment: § 78.59c.(i)(4)(ii); The requirement for a ten foot long outer protective steel casing is excessive. A five foot length is adequate. (175)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1398. Comment: 78.59c(i)(4)(ii) - Sites are evaluated often through the use of a groundwater monitoring well in advance of any correspondence with the Department. Considering that conditions are often encountered where 10 feet of casing cannot be installed, this requirement should be removed, and guidance should be included in a Department guidance document for well construction. Suggested Language : Delete Subsection (4)(ii). (1137, 1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1399. Comment: § 78.59c(i)(4)(iii) – A three foot deep cement collar is not necessary to secure an outer steel casing. It is suggested that this rule be revised to require “be held firmly in place”.(175)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1400. Comment: 78.59c (i)(4)(ii) Considering that conditions are often encountered where 10 feet of casing cannot be installed, this requirement should be removed. Guidance could be included in the Department’s policy document for well construction. (1103, 1147)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1401. Comment: Chain of custody for water samples. Section 78.59c (i)(5) should require the operator to maintain and submit to the Department chain of custody forms for each sampling event. (852a)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1402. Comment:78.59c(i)(6): The water samples collected from monitoring wells should be tested for, at minimum, the same parameters as the road application brine. Since the brine testing includes these parameters, it must be expected that the brine will contain them. Therefore, there is reason to believe the fluids in the CIs would also contain these compounds. (1149, 1150)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1403. Comment: Groundwater samples for impoundments storing acid influenced water. Section 78.59c (i)(6) establishes minimum parameters for analyzing groundwater samples. This list should be expanded to a full suite of heavy metals if the operator proposes to store acid influenced water in the impoundment. Otherwise, the Department will not have an adequate baseline for determining whether the facility adversely affected groundwater. Additionally, because of the heavy equipment that will be used to construct these facilities, and the increased truck traffic often associated with centralized impoundments, the operator should analyze the groundwater samples for total petroleum hydrocarbons or total organic carbon, turbidity, odor, and color, as well as methane. (852a)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

- 1404.** Comment: 78.59c(j) -- An appropriately trained professional can prepare and certify plans, specifications and reports for site characterization and groundwater testing systems required by this section. Requiring preparation and certification (seal) from a registered professional geologist imposes an unnecessarily strict, and potentially expensive, requirement. (1103)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

- 1405.** Comment: In § 78.59c(j) An appropriately trained professional can prepare and certify plans, specifications and reports for site characterization and groundwater testing systems required by this section. Requiring preparation and certification (seal) from a registered professional geologist imposes an unnecessarily strict, and potentially expensive, requirement.

Suggested Language: Plans, specifications and reports for site characterization and groundwater testing systems required by this section shall be prepared and certified by an appropriately trained professional. (1137)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

- 1406. Comment:** 78.59c(k): Requiring oversight by “the design engineer” unnecessarily restricts the flexibility of operators to manage the construction of centralized impoundments.

Suggested amendatory language:

“(k) The design engineer, or an appropriately trained professional, shall provide oversight for all aspects of impoundment construction to ensure that construction is completed in accordance with the design and quality assurance and quality control plan.” (1071, 1137, 1174)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the construction and operation requirements specified in those chapters.

- 1407.** Comment: In § 78.59c(l), the commentator recommends that an appropriately trained professional can prepare and certify plans, specifications and reports pertaining mechanical integrity of the structure and function for centralized impoundments required by this section. Requiring preparation and certification (seal) from a registered professional engineer imposes an unnecessarily strict, and potentially expensive, requirement. Suggested amendatory language: (l) Plans, specifications and reports for centralized impoundments required by this section shall reasonably ensure mechanical integrity of the structure and function, shall be prepared by an appropriately trained professional and include a certification which shall read as follows: I (name) do hereby state to the best of my knowledge, information and belief that the information contained in the plans specifications and reports have been prepared in accordance with accepted environmental practices and the design and construction standards for centralized impoundment dams and Chapters 105 and 78 of the Rules and Regulations of the Department of Environmental Protection and is true and correct. (1137)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the construction and operation requirements specified in those chapters..

1408. Comment: 78.59c(l): The rulemaking proposes to allow engineer certifications that pits and impoundments have been correctly constructed in lieu of DEP inspections. If the DEP is not itself capable of ensuring proper construction of facilities such as centralized impoundments, these certifications should be submitted under penalty of law for unsworn falsification to authorities (18 P.S. § 4904) so that any intentional falsification can be prosecuted criminally. The DEP should also mandate better self-monitoring by requiring that photographs or video be taken of the finished construction so that there is evidence of the site construction that can be reviewed after the fact. (22, 26, 55, 90, 142, 192, 391, 483, 946, 958, 1005)

Response: See responses to comments 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the construction and operation requirements specified in those chapters.

1409. Comment: 78.59c(l) -The hydrogeologic investigation should be eliminated in its entirety. The time frame set forth for the investigation and up-front costs for an evaluation makes this section impractical for the operator. As strict as the construction requirements are with a series of liners and a leak detection system, there should be no effect of the hydrologic system at any depth below the central impoundment. (411)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the quality assurance and quality control requirements specified in those chapters.

1410. Comment: 78.59c(f)(l) - This is the first mention of a permit application associated with constructing a central impoundment. (411)

Response: See response to comment 1251.

1411. Comment: 78.59c(l)(2) -Is the time frame of the permit issuance consistent with the Permit Decision Guarantee Program? (411)

Response: See response to comment 1251. The regulations do not contemplate the Permit Decision Guarantee Policy.

1412. Comment: 78.59c(m): Subsections 78.59c(m)(5-7) list detailed requirements for the impoundment construction final certification report. As the engineer is required to certify already, For the purpose of this section, the engineer stamp should suffice. (1071)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the construction and operation requirements specified in those chapters.

1413. Comment: 78.59c(m)(8): The requirement prohibiting an impoundment's use until certification is received by the Department should be limited to "wastewater" as there is no reason , nor environmental exposure associated with an impoundment's use for fresh water storage. (1071)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the construction and operation requirements specified in those chapters.

1414. Comment: 78.59c(m)(8) -Indication that there is considerable risk to be shouldered by the operator if the central impoundment is already built, monitoring wells installed, etc. and the Department then denies the use of the impoundment. Who at the Department is qualified to review and evaluate such plans? If there is a requirement for the operator to utilize licensed professionals to oversee and evaluate the site, then a licensed professional from the Department should be required to review the report. Does the department employ licensed professionals? (411)

Response: The Department employs licensed professionals.

1415. Comment: 78.59c(n): The language should be modified to allow for an existing temporary impoundment to be reused for a new well pad location. Allowing for reuse can help facilitate less a water storage program that is less impactful on the landscape. Otherwise a larger operation would be forced to build more impoundments. We also request clarification on the Department's expectations for an operator to maintain records of existing well permits or well servicing activities. Additionally, in subsections 78.59c(n)(2-4) regarding restoration of temporary impoundment sites, Language should be modified to allow for circumstances where a landowner does not wish to have the land returned to preconstruction contours or original condition. (1071)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the construction and operation requirements specified in those chapters.

1416. Comment: In § 78.59c(m)(1), An appropriately trained professional can complete and certify a facility completion and final certification report upon completion of construction of the impoundment. Requiring completion and certification (seal) of the report from a licensed Pennsylvania professional engineer imposes an unnecessarily strict, and potentially expensive, requirement.

Suggested amendatory language:

(m) Upon completion of construction of the impoundment, a facility completion and final certification report must be submitted to the Department. The report must be completed and sealed by an appropriately trained professional who provided oversight for construction and must contain the following items at a minimum:

(1) A statement that the appropriately trained professional provided oversight for all aspects of construction. (1137)

Response: See response to comment 1251. Accordingly, centralized impoundments constructed under Article IX will be required to meet the construction and operation requirements specified in those chapters.

1417. Comment: Proposed section 78.59c unlawfully assumes that centralized impoundments are located on well sites, and must be revised to provide that the Department will not consider centralized impoundment sites to be well sites *even when a centralized impoundment is co-located with one or more oil or gas wells.*

Proposed section 78.59c(n) provides that an impoundment must be restored within nine months of

the date that the last well serviced by the impoundment is drilled, but also provides that “[a] two year restoration extension may be requested pursuant to section 3216(g) of the act.” This provision is contrary to law because section 3216 of Act 13 governs only the restoration of “well sites,” and centralized impoundment sites cannot reasonably be considered to be “well sites” within the meaning of section 3216(h).

Section 3216(h) provides that “[a]s used in this section, the term ‘well site’ means areas occupied by all equipment or facilities necessary for or incidental to drilling, production or plugging a well.” Centralized impoundments – i.e., impoundments that serve multiple well sites – cannot be well sites under this definition because they are neither “necessary for” nor “incidental to” drilling, production, or plugging activities. That centralized wastewater impoundments are not *necessary* for the drilling, production, or plugging activities goes without saying: many, if not most of the gas wells that have been drilled and hydraulically fractured in the Commonwealth have been developed without the use of centralized impoundments. Nor may centralized wastewater impoundments be considered “incidental to” drilling and fracturing operations, because “incidental” means “happening as a *minor* part or result of something else” or “being likely to ensue as a chance or *minor* consequence.” Not only are centralized impoundments too large to be considered “minor” in any sense; their function is by definition to serve many well sites and therefore to function independently of any particular well site. Consequently, a centralized wastewater impoundment cannot reasonably be considered to be a “part” of a well site requiring restoration under section 3216 of Act 13 – let alone a “minor part.”

There may be cases in which centralized wastewater impoundments are co-located with oil or gas wells. The Department should not consider the co-location of an oil or gas well to convert the centralized impoundment site into part of a well site, because the presence of the oil or gas well will change neither the size nor the functionality of the impoundment. (852a)

Response: See responses to comments 1251.

- 1418.** Comment: 78.59c(n)(2) - There is no obligation under Act 13 or elsewhere to return impoundments to approximate original conditions or to preconstruction contours. Such sites should be restored in accordance with approved site restoration plans. Suggested Language: Delete subsection (2). (1103, 1137, 1174)

Response: See response to comment 1251. The Department disagrees that there is no obligation under the 2012 Oil and Gas Act or elsewhere to return impoundments to approximate original conditions. Site conditions need to be as near as possible to preconstruction contours once the site is stabilized to mimic pre-existing drainage patterns and to minimize accelerated erosion on all reclaimed areas.

- 1419.** Comment: 78.59c(n)(2) Such sites should be restored in accordance with approved site restoration plans. (1147)

Response: See response to comment 1251.

- 1420.** Comment: 78.59c(n)(3) - This proposed Subsection 78.59c(n)(3) addresses only the restoration of centralized impoundments. To avoid any confusion, we propose that the Department avoid use of the Chapter 102 defined term “oil and gas activities” in this subsection. Suggested Language: (3) The site shall support the land uses that existed prior to construction of the impoundment to the extent practicable. (1137, 1174)

Response: See response to comment 1251.

- 1421.** Comment: 78.59c(n)(3) Suggested amendatory language: The site shall support the land uses that existed prior to construction of the impoundment to the extent practicable. (1147)

Response: See response to comment 1251.

- 1422.** Comment: 78.59c(n)(4) -- Clarification is required for the phrase “above finished grade.” The interpretation that could be made is that restoration fill must be placed to an elevation higher than the predevelopment contour. Replacement of fill may result in a soil density higher than the soil density prior to site development. Consequently, the soil could be packed into a smaller volume and never reach “finished grade.”

Suggested amendatory language:

(4) During impoundment reclamation, backfill shall be placed to promote positive post-settlement drainage. (1103, 1137, 1147, 1174)

Response: See response to comment 1251.

- 1423.** Comment: § 78.59c(o): A request for alternate practice must be subject to Public Comment. § 78.59(o) as drafted provides a complete “escape hatch” from the rules of § 78.59. It is unacceptable that such deviations can simply be approved by DEP on an ad hoc basis. Why do we even have a rulemaking if a well site operator can simply apply to use whatever rules the operator desires and DEP rubber stamps? This provision is simply unacceptable. If the Environmental Quality Board is unwilling to simply strike § 78.59(o) in its entirety, it must amend this clause and allow deviations from the rules only after Public Comment and a hearing. (869a)

Response: See response to comment 1251.

§ 78.60 Discharge requirements

- 1424.** Comment: The proposed amendments to this section specify that operators discharging tophole water by land application shall document compliance with the regulatory requirements, including those under the Dam Safety and Encroachments Act, make the records available to the Department upon request, and submit the relevant information in the well site restoration report. This seems to be a reactive regulation rather than a proactive regulation. Per the Pennsylvania State University College of Agricultural Sciences, Cooperative Extension, School of Forest Resources, while top hole water is usually representative of groundwater used for local water wells and springs, the remaining water encountered during gas well drilling (bottom hole, stimulation and production fluids) may be contaminated with various water pollutants (3). Operators should not be permitted or allowed to discharge tophole water by land application as it poses a risk for contamination. (189)

Response: Tophole water is isolated from the well bore during well construction and, by definition in the regulations, is fresh groundwater or water from a body of surface water that does not contain additives, brine, oil or man induced conditions other than drill cuttings from the formation being penetrated. Therefore, tophole water does not present an environmental harm when land applied.

- 1425.** Comment: 78.60 – We do not support discharge of tophole water, unless it meets the standard of “uncontaminated freshwater.” Tophole water that is contaminated must be classified, handled, and

disposed of as “wastewater.” We recommend, therefore, that the quality of tophole water and precipitation that accumulates in clean, uncontaminated storage areas be tested and verified prior to discharge and that the test data be provided to the PADEP. (1143)

Response: Land application of tophole water can only occur if the operator determines that the tophole water meets the quality requirements specified in the regulations. It is necessary for the operator to test tophole water to ensure that it is not contaminated and meets applicable requirements prior to discharge. The operator is required to document compliance with these requirements and submit that documentation to the Department upon request.

- 1426.** Comment: We do not support the use of a sheen test to determine whether tophole water can be discharged to land. Water can contain some amount of oil and grease and still pass a sheen test. Water also can contain contaminants that do not leave a sheen. Water discharged to land must contain no oil or grease at all or any other contaminant introduced by Oil and Gas Operations. (1143)

Response: The absence of a sheen on the tophole water, in combination with the other requirements of §§ 78.60 and 78a.60 in the final regulations, ensure that this water can be safely applied to the land. The “sheen test” is a reliable means to quickly determine the presence of hydrocarbons in water.

- 1427.** Comment: No land application of tophole water, pit water, fill, or dredged material from drilling and fracking. The chemicals and sediments in this material should not be allowed to pollute the air we breathe, the soil in which we grow food, and the water we drink.(5936-6089)

Response: See response to comments 1426 and 1493.

- 1428.** Comment: The waiver provision of § 78.60(b)(7) must be deleted, and the wetland setback must be retained, pursuant to the Pennsylvania Supreme Court’s recent decision in Robinson Township v. Pa., 2013 WL 6687290. (1143)

Response: The Department has deleted the waiver provision and has revised §§ 78.60(b)(7) and 78a.60(b)(7) to restrict waste disposal from within 100 ft of a water course or body of water or within the floodplain. Also see response to comment 1431.

- 1429.** Comment: We recommend the following changes to the discharge requirements at § 78.60.

§ 78.60. Discharge requirements.

(a) The owner and operator may not cause or allow a discharge of a substance, fill or dredged material to the waters of this Commonwealth unless the discharge complies with this subchapter and Chapters 91—93, 95, 102 and 105, The Clean Streams Law (35 P. S. §§ 691.1—691.1001), the Dam Safety and Encroachments Act (32 P. S. §§ 693.1—693.27) and the act.

(b) The owner and operator may not discharge tophole water or water in a pit as a result of precipitation that accumulates in clean, uncontaminated storage areas by land application unless only if the discharge is in accordance with the following requirements:

(1) Tophole water shall not contain any of the following in excess of Pennsylvania Safe Drinking Water Act standards: No additives, chemicals, brine, oil, grease, drilling muds, pollution materials, regulated substances, Naturally Occurring Radioactive Material (NORM), Technologically Enhanced Naturally Occurring Radioactive Material (TENORM), or other

toxins, or any drilling fluids other than air or fresh water that have been added to or are contained in the water.

(2) The pH is not less than 6 nor greater than 9 standard units, or is characteristic of the natural background quality of the groundwater.

(3) The specific conductance of the discharge is less than 1,000 µmHos/cm.

(4) The discharge water shall be spread over an undisturbed, vegetated area capable of absorbing the tophole water and filtering solids in the discharge, and spread in a manner that prevents a direct discharge to surface waters and complies with § 78.53 (relating to erosion and sedimentation control).

(5) Upon completion, the area complies with § 78.53.

(6) The area of land application is not within 200 feet of a water supply or within 100 feet of a watercourse, body of water or a wetland.

(7) If the water does not meet the requirements of paragraphs (1) – (4) of this subsection, discharge to the land surface is prohibited.

(8) The operator shall test water proposed to be discharged prior to discharge to verify that the water quality meets the § 78.60 standards. The water test data must be provided to the Department within 7 days of the test.

(c) Compliance with subsection (b) shall be documented by the operator and made available to the Department while conducting activities under subsection (b) and submitted under § 78.65(f)(1) (relating to site restoration). (1143)

Response: Most of the suggested changes weaken the protections currently provided under §§ 78.60 and 78a.60. The Department has clarified that tophole water or accumulated precipitation cannot contain any regulated substance as defined in the Land Recycling and Environmental Remediation Act. In addition, the Department has prohibited land application of such water within a floodplain and has eliminated the ability to waive these requirements. For these reasons, as well as those provided in responses to comments 1424 and 1425, tophole water and accumulated precipitation can be safely applied to the land under the final regulation.

1430. Comment: If the Department does not reflect and agree with the above recommendation, the release of tophole water by land application should be greater than 500 feet from a water supply, stream, watercourse or body of water [or a wetland], and there should be no exceptions regardless of well location restrictions. The Department proposals of 100-200 feet from these locations are not as substantial as they should be when taking into account the possible risks involved as stated above. (189)

Response: See response to comment 1424.

1431. Comment: The reference in section 78.60(b)(7) to section 3215(b) and setbacks from watercourses and wetlands should be stricken per *Robinson Twp. et al. v. Commonwealth of Pennsylvania et al.* (1135)

Response: The Department has retained setbacks from a water supply, watercourse or body of water for land application of tophole water or accumulated precipitation, and has prohibited land application within a floodplain. The Department has authority to impose these restrictions to protect waters of the Commonwealth through the Clean Streams Law and the Dam Safety and Encroachments Act. The Department has eliminated the language in this section that provided an exception if a waiver had been granted by the Department under section 3215(b) of the act.

1432. Comment: 78.60(b)(7) – In *Robinson Twp. et al. v. Commonwealth of Pennsylvania et al.*, the Pennsylvania Supreme Court invalidated Section 3215(b) in Act 13. All references to this section should be deleted from Chapter 78. However, Commentator supports a setback of 100 feet from the edge of the well site measured horizontally to any solid blue lined stream, spring or body of water as identified on the most current 7 ½ minute topographic quadrangle map of the United States Geological Survey, together with provisions for reasonable waivers upon submission of a plan identifying additional measures to protect these waters. This comment applies wherever section 3215(b) is referenced in these draft regulations. (1153)

Response: See responses to comments 265 and 1431.

1433. Comment: In *Robinson Twp. et al. v. Commonwealth of Pennsylvania et al.*, the Pennsylvania Supreme Court invalidated Section 3215(b) in Act 13. Commentator supports setback distances from surface waters as previously provided in Section 3215(b) of Act 13, in addition to the Department’s provision that reasonable waivers may be granted where appropriate. The references to this Section 3215(b) should be deleted from Chapter 78 as a matter of legal accuracy. (1137)

Response: See responses to comments 265 and 1431.

1434. Comment: We fully support the inclusion of Chapter 105 requirements in conjunction with proposed provisions regulating CWIs. This includes the referenced definition in 105.1 for watercourse which is consistently applied in this proposed revision. We therefore, recommend this provision for adoption as presented. (660a)

Response: The Department acknowledges the comment.

1435. Comment: In Sections 78.60, 78.61, 78.62, 78.63, and 78.70, wherein the issue of Disposal of Brine, Drill Cuttings, and Residual Waste is referenced, we recommend the DEP should include the following statement:
Prohibit the disposal of any “flowback water” or any materials associated with the drilling industry into current coal mines, abandoned coal mines, slurry impoundments, coal mine discharges and coal refuse piles. (492a)

Response: Sections 78.60, 78.61, 78.62, 78.63, 78a.60, 78a.61, 78a.62, 78a.63 address waste management on well sites. Disposal of wastes into active or abandoned coal mines, slurry impoundments, coal mine discharges and coal refuse piles is beyond the scope of these sections. Section 78.70 addresses road-spreading of brine for dust control and road stabilization.

1436. Comment: 78.60 – In examining discharge requirements and other sections of the proposal, Commentator requests that references to other related Pennsylvania codes by number be excerpted and placed as footnotes to promote understanding. (1093, 1098)

Response: Cross referencing other statutes and regulations is a necessary and acceptable practice in drafting regulations. All of the cross referenced authorities are made available electronically by the Commonwealth. Chapters 78 and 78a would be unreasonably long and repetitive if all of the other applicable statutes and regulations were repeated in these chapters. Finally, cross referencing other applicable authorities allows immediate updating of Chapter 78 and Chapter 78a should those cross referenced authorities be amended or changed in the future.

1437. Comment: Land application of any residual waste substance, fill, or dredge must be prohibited. In most cases, the composition of these wastes and their risks are unknown. We cannot afford to poison our land. It is the source of our leading industry – agriculture. (1093, 1098)

Response: See response to comment 1424.

1438. Comment: Bonds must be set higher to cover potential costs of consequences over a minimum of one hundred years. (1093, 1098)

Response: Discharges under this section must either comply with statutes and regulations designed to protect waters of the commonwealth and prevent pollution or consist solely of tophole water or water in a pit as a result of precipitation. Discharge of uncontaminated tophole and precipitation water does not present a threat to the environment.

1439. Comment: Finally, restoration to lands where residual wastes have been applied should go beyond “revegetation” to best practice. While the regulations include compliance for chemical analyses based on documentation by the operator, consistent, boots-on-the-ground monitoring and enforcement promotes greater public trust [78.60 (d)]. (1093, 1098)

Response: Restoration to approximate original conditions, capable of supporting original uses to the extent practicable is the best practice to achieve site restoration within reasonable operational parameters. It is not necessary to include technical performance standards including requirements for type and density of perennial vegetation, soil characteristics and drainage patterns in this section because those issues are already appropriately addressed by the requirements. Projects meeting the requirements will satisfy the statutory restoration requirements and include performance requirements that will protect waters of the Commonwealth.

1440. Comment: 78.60(b)(7) -- The Pennsylvania Supreme Court invalidated Section 321 S(b) in Act 13 in Robinson Twp. et al v. Commonwealth of Pennsylvania et al.

Remove “or within 100 feet of a [stream] watercourse [,] or body of water [or a wetland] unless approved as part of a waiver granted by the Department under section [205(b)] 321S(b) of the act [(58 P. S. § 601.205(b))] (58 Pa.C.S. § 321 S(b)).” (1103)

Response: See responses to comments 265 and 1427.

§ 78.61 Disposal of drill cuttings

1441. Comment: One area of concern is the revised regulations in 78.61 and 78.62. Under conventional well current practice, drill cuttings (from both above and below the casing seat) are disposed of on site without any special notification requirements. Under the new regulations, the conventional operator is required to ascertain the ground water table (using a geologist or soil scientist) and provide 3 business days’ notice to DEP before disposing of cuttings. This means that the entire site will pretty much have to shut down and wait for the soil scientist to assess the ground water elevation and then wait three business days before completing the well. The regulations were proposed without addressing the additional cost to the operator for the soil scientist or for waiting. (84a)

Response: The determination as to the depth to the groundwater table should take place

prior to, or during construction of the drill pit. Therefore, the 3 business day notice would come after drilling was complete and the pit dewatered but prior to disposing of the cuttings (i.e. burial of the drill cuttings).

- 1442.** Comment: 78.61 – We oppose the land application of all drill cuttings. We oppose long-term onsite burial of any drill cuttings generally contaminated with chemicals, oil, grease, pollutational materials, regulated substances, water-based drilling muds that contain chemical additives, oil-based drilling muds, polymer based drilling muds containing mineral oil lubricants, NORM, TENORM, mercury, heavy metals, and other chemical additives or toxins. (1143)

Response: Drill cuttings from above the casing seat do not create a significant threat to the environment if the requirements in §§ 78.61 or 78a.61 are met. The requirements include that the drill cuttings are not contaminated with a regulated substance, including brines, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids or drilling fluids other than tophole water, fresh water or gases.

- 1443.** Comment: Apply regulations related to the disposal of ALL drill cuttings, no matter where they were obtained (865)

Response: Drill cuttings from above the casing seat do not create a significant threat to the environment if the requirements in §§ 78.61 or 78a.61 are met. The requirements include that the drill cuttings are not contaminated with a regulated substance, including brines, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids or drilling fluids other than tophole water, fresh water or gases.

Section 78.61 only allows uncontaminated drill cuttings to be buried or land applied at the well site while contaminated drill cuttings may be buried on site in accordance with section 78.62(a)(5)-(16) and (b) (relating to disposal of residual waste – pits) or land applied at the site in accordance with Section 78.63(a)(5)-(20) and (b) (relating to disposal of residual waste – land application). Burial or land application of cuttings at an unconventional well site may only occur with a permit or other approval obtained from the Department.

- 1444.** Comment: We recommend the following changes to the discharge requirements at §78.61.

(a) Closed-loop tank systems shall be used to handle and store drilling muds and cuttings. All drill cuttings must be disposed of at an offsite approved waste disposal facility or injected into an EPA-approved subsurface waste disposal well using cuttings reinjection technology. (1143)

Response: See response to comment 1443.

- 1445.** Comment: Disposal of all drilling muds and drill cuttings, regardless if from above or below the surface casing seat, in pits is prohibited. (1143)

Response: See response to comment 1443.

- 1446.** Comment: 78.61(a)(2) – The use of the term “regulated substance” in this subsection provides unclear direction to the oil and gas industry and is unnecessarily broad in this context. The use of the term “regulated substances” here produces the unintended and unreasonable result that no drill cuttings, regardless of content, can be disposed under this section. Regulated substances, as defined in Act 2, could include the drill cuttings themselves and the use of the term here would effectively prohibit the disposal of drill cuttings at the well site, which is contrary to the intent of the section.

The provision should be revised to reflect the intent that drill cuttings not be contaminated with the substances listed in this section, all of which are reasonably related to oil and gas operations.

Suggested Regulatory Language:

78.61(a)(2) The drill cuttings are not contaminated with brines, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids or drilling fluids other than tophole water, fresh water or gases. (1135, 1137, 1147, 1153, 1174)

Response: Drill cuttings are not considered “contaminated” unless they are incorporated with material other than drill cuttings.

- 1447.** Comment: The reference in §§ 78.61(a)(3) and (b)(3) to section 3215(b) and setbacks from watercourses and wetlands should be stricken per *Robinson Twp. et al. v. Commonwealth of Pennsylvania et al.* (1135)

Response: The Department has retained setbacks from a water supply, watercourse or body of water for land application of tophole water or accumulated precipitation, and has prohibited land application within a floodplain. The Department has authority to impose these restrictions to protect waters of the Commonwealth through the Clean Streams Law and the Dam Safety and Encroachments Act. The Department has eliminated the language in this section that provided an exception if a waiver had been granted by the Department under section 3215(b) of the act.

- 1448.** Comment: Subsection (f) is unnecessary for conventional operations where notice of drilling and disposal of drill cuttings is essentially the same thing because both activities will occur together. Delete this subsection or amend it to exclude conventional operators from this requirement. (1135)

Response: Drilling must be completed before the drill pit can be dewatered which could take a number of days depending upon the condition of the drill cuttings in the drill pit.

- 1449.** Comment: Prohibit the burial or land application of drill cuttings, which can contain polluting and radioactive substances. DEP proposes different conditions for disposal of drill cuttings from above and below the well casing, but neither makes the practice safe. Cuttings from deep underground may contain more pollutants, but chemical additives and contaminated fluids are also found in drill cuttings from shallower areas.(17, 18, 19a, 72, 73, 79, 102, 104, 125, 160, 161, 168, 169, 195, 402, 475, 564, 565, 626, 808, 843, 884, 912, 922, 926, 938, 947, 492a, 1000, 1039, 1058, 1102, 853a, 1161, 4582 – 4584)

Response: See response to comment 1442.

- 1450.** Comment: Section 78.61 – Drill cuttings should not be processed onsite and onsite burial of the cuttings should not be permitted.(163, 185, 187, 1106, 1148, 1215)

Response: Onsite processing, when done properly, can reduce truck traffic with its environmental and safety concerns and save sometimes limited space in local approved landfills. Regarding onsite disposal, see response to comment 1443.

- 1451.** Comment: Section 78.61 – No disposal of drill cuttings containing any amount of radioactivity above background levels should be permitted. It is well known that the Marcellus Shale is radioactive, and that hydraulic fracturing chemicals can leach radionuclides from the shale. Drill cuttings, produced water, and any other material from unconventional gas production which contain

radioactivity should be treated as what they are: hazardous radioactive materials. These materials should only be disposed of in a facility designed to handle such material, and should only be transported in trucks properly labeled according to the actual (tested at the point of origin) radioactive content. (869a)

Response: Drill cuttings from above the casing seat do not create a significant threat to the environment if the requirements in §78.61 or §78a.61 are met. The requirements include that the drill cuttings are not contaminated with a regulated substance, including brines, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids or drilling fluids other than tophole water, fresh water or gases.

Section 78.61 only allows uncontaminated drill cuttings to be buried or land applied at the well site while contaminated drill cuttings may be buried on site in accordance with section 78.62(a)(5)-(16) and (b) (relating to disposal of residual waste – pits) or land applied at the site in accordance with Section 78.63(a)(5)-(20) and (b) (relating to disposal of residual waste – land application). Burial or land application of cuttings at an unconventional well site may only occur with a permit or other approval obtained from the Department.

Additionally, the Department's 2015 TENORM Study Report presented several observations and recommendations regarding radioactive material associated with the oil and gas industry. While the study outlines recommendations for further study, it concluded there is little potential for harm to workers or the public from radiation exposure due to oil and gas development. The Report observed that there is little potential for radiological exposure to workers or members of the public from the handling, hauling, and temporary storage of vertical and horizontal drill cuttings on natural gas well sites and recommended that the Department conduct research and investigation of vertical and horizontal drill cuttings for beneficial use, onsite disposal, and future landfill disposal protocols. The Department remains committed to protecting the public from unnecessary exposure to radiation and is actively pursuing the recommendations of the 2015 TENORM study report. The Department has added § 78.58(d) to this rulemaking which requires an operator processing fluids onsite to develop a radiation protection action plan which specifies procedures for monitoring and responding to radioactive material produced by the treatment process. This section also requires procedures for training, notification, recordkeeping, and reporting to be implemented.

- 1452.** Comment: Sections 78.61 and 78.62. – Any disposal of waste materials at well sites should require that representative samples of the material be taken and analyzed and submitted to the agency to demonstrate that, for example, the drill cuttings are not contaminated, or that residual waste meets the regulatory standards. Disposal practices should be subject to on-site inspections by the Department. The regulations do not currently require that the operator use any scientific methodology to demonstrate compliance. (1, 19, 23, 26, 90, 142, 165, 189, 192, 391, 843, 851, 946, 958, 997a 1005)

Response: Section 78.61 only allows uncontaminated drill cuttings to be buried or land applied at the well site while contaminated drill cuttings may be buried on site in accordance with section 78.62(a)(5)-(16) and (b) (relating to disposal of residual waste – pits) or land applied at the site in accordance with Section 78.63(a)(5)-(20) and (b) (relating to disposal of residual waste – land application). Burial or land application of cuttings at an unconventional well site may only occur with a permit obtained from the Department.

1453. Comment: Section 78.61 distinguishes between drill cuttings from above, and below the casing seat. While we agree that disposal options for drilling wastes may differ for the various types of waste, we suggest regulatory distinctions that accurately reflect the primary issue of concern. For example, water- or air-based mud cuttings vs. oil-based mud cuttings may be a more accurate and durable distinction for regulatory purposes. (997a)

Response: The section has been revised to clarify that referenced casing seat is the surface casing seat. Section 78.83c and Section 78a.83c requires use of air, freshwater or freshwater based drilling fluids when drilling the surface hole which is the portion of the hole above the surface casing seat.

1454. Comment: If the Department is concerned about cuttings from a particular formation, the regulations should specifically address disposal of cuttings from those formations. Using the casing seat as a proxy for either of these issues—drilling mud or formation constituents—may be useful in some situations, but it does not necessarily lead to a proper result. (997a)

Response: Section 78.83c and Section 78a.83c requires use of air, freshwater or freshwater based drilling fluids when drilling the surface hole which is the portion of the hole above the surface casing seat. With regard to drill cuttings, the Department does not believe there is currently a technical basis for introducing regulations beyond those that already exist or were proposed for topole cuttings.

1455. Comment: Section 78.61 – Drill cuttings need to be tested for radioactivity. By its nature, unconventional gas drilling released naturally occurring radioactive material, which then comes to the surface in the drill cuttings. It doesn't make logistical sense to permit radioactive wastes to travel to recycling centers, only to be turned away; nor does it make sense to send them to landfills that are not licensed to handle such waste. Haulers of drilling waste should be directed to the nearest appropriate disposal site. All drill cuttings should be tested for radioactivity before being disposed of and should be properly disposed of in waste disposal sites that handle radioactive material. With the estimated amount of unconventional gas drilling to occur in PA, this could prove to be a big public health issue. (10, 129, 182, 185, 187, 399, 400, 401, 891, 916, 922)

Response: The Department's 2015 TENORM Study Report presented several observations and recommendations regarding radioactive material associated with the oil and gas industry. While the study outlines recommendations for further study, it concluded there is little potential for harm to workers or the public from radiation exposure due to oil and gas development. The Report observed that there is little potential for radiological exposure to workers or members of the public from the handling, hauling, and temporary storage of vertical and horizontal drill cuttings on natural gas well sites and recommended that the Department conduct research and investigation of vertical and horizontal drill cuttings for beneficial use, onsite disposal, and future landfill disposal protocols. The Department remains committed to protecting the public from unnecessary exposure to radiation and is actively pursuing the recommendations of the 2015 TENORM study report. Landfill disposal is outside of the scope of this rulemaking.

1456. Comment: The drill cuttings contain heavy metals and radioactive elements that leach out after every rainfall. I am concerned that EQB's proposed changes (Sections 78.60, 78.61, 78.62, and 78.63, and 78.70) do not address the risks posed by hazardous materials and do little to improve current regulations or ensure safe disposal. (402)

Response: Drill cuttings from above the casing seat do not create a significant threat to the environment if the requirements in §§ 78.61 or 78a.61 are met. The requirements include that the drill cuttings are not contaminated with a regulated substance, including brines, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids or drilling fluids other than top-hole water, fresh water or gases.

Section 78.61 only allows uncontaminated drill cuttings to be buried or land applied at the well site while contaminated drill cuttings may be buried on site in accordance with section 78.62(a)(5)-(16) and (b) (relating to disposal of residual waste – pits) or land applied at the site in accordance with Section 78.63(a)(5)-(20) and (b) (relating to disposal of residual waste – land application). Burial or land application of cuttings at an unconventional well site may only occur with a permit or other approval obtained from the Department.

Additionally, the Department's 2015 TENORM Study Report presented several observations and recommendations regarding radioactive material associated with the oil and gas industry. While the study outlines recommendations for further study, it concluded there is little potential for harm to workers or the public from radiation exposure due to oil and gas development. The Report observed that there is little potential for radiological exposure to workers or members of the public from the handling, hauling, and temporary storage of vertical and horizontal drill cuttings on natural gas well sites and recommended that the Department conduct research and investigation of vertical and horizontal drill cuttings for beneficial use, onsite disposal, and future landfill disposal protocols. The Department remains committed to protecting the public from unnecessary exposure to radiation and is actively pursuing the recommendations of the 2015 TENORM study report. Landfill disposal is outside of the scope of this rulemaking.

1457. Comment: Section 78.61(a) deals directly with drill cuttings that are generated at the well site from above the casing seat and disposed into pits. With the precautions that are provided for as part of the casing and cementing plan § 78.83c the cuttings may be disposed of in a pit at the well site providing they are not contaminated with a regulated substance as detailed and the disposal is not within 100' of a watercourse as noted in the language change. As noted above, and throughout this entire rulemaking, we support the definition of watercourse as noted in Chapter 105.1 as it lends to consistency across the regulations.

In regards to drill cuttings that are generated at the well site above the casing seat which are not contaminated with any regulated substance and the disposal is not within the stipulated setback of a watercourse or water supply providing they meet all other requirements such as removing the liquid fraction, etc. a land application is reasonably suitable. The new provision, which provides for a soil ratio along with the requirements of not spreading in saturated, snow covered or frozen ground lends success to an environmentally sound land application disposal method. (660a)

Response: The Department acknowledges the comment.

1458. Comment: For drill cuttings generated at the well site from below the casing seat, where such waste is considered residual waste, it is necessary to take a closer look into what this actually means in concert with the quantity of cuttings generated and the environmental practice of safe and responsible disposal methods. These are contaminated drill cuttings that may qualify for both disposal as residual waste in pits or land application at the well site. The proposal is to create an approved listing of solidifiers, which certainly makes the process easier for both the Department and the operator. The proposal also provides for a three day advanced notification prior to disposal which may allow for adequate planning for the Department's staff to be onsite and perform an inspection of

the work. Standing alone, those two provisions are both reasonable, and therefore, we do recommend both provisions for adoption. (660a)

Response: The Department acknowledges the comment.

- 1459.** Comment: The burial and land application of drill cuttings should be prohibited. Different regulations are proposed for drill cuttings from above and below the well casing seat, but this distinction does not make the practice safe. Drill cuttings contain chemicals and-as demonstrated by alarms often going off at landfills- can be radioactive. (842, 853)

Response: See response to comment 1443.

The Department’s 2015 TENORM Study Report presented several observations and recommendations regarding radioactive material associated with the oil and gas industry. While the study outlines recommendations for further study, it concluded there is little potential for harm to workers or the public from radiation exposure due to oil and gas development. The Report observed that there is little potential for radiological exposure to workers or members of the public from the handling, hauling, and temporary storage of vertical and horizontal drill cuttings on natural gas well sites and recommended that the Department conduct research and investigation of vertical and horizontal drill cuttings for beneficial use, onsite disposal, and future landfill disposal protocols. The Department remains committed to protecting the public from unnecessary exposure to radiation and is actively pursuing the recommendations of the 2015 TENORM study report. Landfill disposal is outside of the scope of this rulemaking.

- 1460.** Comment: According to news articles: “Fracking industry truck drivers have been blowing the whistle for some time, saying that radioactivity alarms are going off “all the time.” Workers report that the radioactivity levels are sky-high, even in empty trucks that have already dumped their load of drill cuttings at landfills. Mac Sawyer, a former fracking truck driver and environmental cleanup worker in the Marcellus Shale industry in Pennsylvania, has stated that sometimes “they just disable the alarm” rather than treating flowback or drill cuttings waste with the special care required of radioactive waste. Uranium and Radium 226 are mobilized by fracking.”

Because Marcellus shale is more radioactive than other shale plays, the drill cuttings can be more radioactive, as evidenced by alarms activated at waste disposal sites and the high measurement of radioactivity in a study downstream from the Josephine Treatment Plant in Indiana County which treats wastewater from oil and gas drilling. Radium levels of sediment samples collected in Blacklick Creek, downstream from the plant, were 200 times greater than background samples. Researcher Vengosh noted that levels exceed thresholds for radioactive waste disposal and pose “potential environmental risks of radium bioaccumulation in localized areas of shale gas wastewater disposal.” (912, 926)

Response: The Department’s 2015 TENORM Study Report (Report) presented several observations and recommendations regarding radioactive material associated with the oil and gas industry. While the study outlines recommendations for further study, it concluded there is little potential for harm to workers or the public from radiation exposure due to oil and gas development. The Report observed that there is little potential for radiological exposure to workers or members of the public from the handling, hauling, and temporary storage of vertical and horizontal drill cuttings on natural gas well sites and recommended that the Department conduct research and investigation of vertical and horizontal drill cuttings for beneficial use, onsite disposal, and future landfill disposal protocols.

The Report also observed that there is little potential for radiological exposure to workers or members of the public from sediment-impacted soil at publically owned treatment works (POTWs) that have received wastewater from the oil and gas industry and at centralized wastewater treatment plants (CWTs) that treat wastewater from the oil and gas industry. The 2015 TENORM Study Report observed that there is a radiological environmental impact to soil from the sediments from these POTWs and CWTs. The Report recommended that the Department 1) conduct additional radiological sampling and analyses and radiological surveys at all POTWs and CWTs accepting wastewater from oil and gas operations to determine if there are areas of contamination that require remediation; 2) determine if it is necessary to establish radiological effluent discharge limitations; and 3) determine if the development and implementation of a spill policy is necessary. The Department remains committed to protecting the public from unnecessary exposure to radiation and is actively pursuing the recommendations of the 2015 TENORM study report.

Landfill disposal is outside of the scope of this rulemaking.

1461. Comment: Include standards for testing drill cuttings for radioactivity. (1106)

Response: The Department's 2015 TENORM Study Report presented several observations and recommendations regarding radioactive material associated with the oil and gas industry. While the study outlines recommendations for further study, it concluded there is little potential for harm to workers or the public from radiation exposure due to oil and gas development. The Report observed that there is little potential for radiological exposure to workers or members of the public from the handling, hauling, and temporary storage of vertical and horizontal drill cuttings on natural gas well sites and recommended that the Department conduct research and investigation of vertical and horizontal drill cuttings for beneficial use, onsite disposal, and future landfill disposal protocols. The Department remains committed to protecting the public from unnecessary exposure to radiation and is actively pursuing the recommendations of the 2015 TENORM study report.

1462. Comment: § 78.61: On-site disposal of drill cuttings without the written permission of the surface landowner must be prohibited. On-site disposal of waste materials of any kind can have serious financial, property, and health implications for the surface landowner. *The surface landowner must be afforded the opportunity to provide informed consent.* This section should include language such as the following:

- Disposal of drill cuttings or residual waste at the well site without permission of the surface landowner is not permitted. The request for permission of the surface landowner for disposal, burial, or containment of drill cuttings shall be by certified mail, and must contain the following notice:
NOTICE: Disposal of waste material on your property may have financial implications for your ability to obtain a mortgage or insurance. Waste materials may potentially have an effect upon human health. By consenting to this disposal, you are indicating that you have informed yourself regarding these risks and consider them acceptable. (869a)

Response: The Department disagrees that the regulations should include a requirement for landowner permission or consent. Prior to entering into a lease agreement with the well operator, the landowner may discuss and agree upon the terms and conditions that relate to the type of operations that will occur on the property. Additionally, the Department believes that the provisions of §§ 78.61 and 78a.61 are sufficiently protective that an operator meeting

those requirements should not be required to obtain prior consent. The Department does believe that transparency and notice are important concerns, however, and has added language to sections 78.61 and 78a.61 requiring operators to provide notice to surface landowners of the location of cuttings disposal or land application.

- 1463.** Comment: The disposal of various wastes through burying on site or spreading via land or road application should not be allowed. There is not adequate testing or oversight to keep hazardous chemicals, residual waste and radioactive material from contaminating our water. At the very least, the landowner should be notified and given the opportunity to stop these practices from being carried out. (1066, 1089, 1229)

Response: See response to comment 1462.

- 1464.** Comment: § 78.61(a) and § 78.62(a) allow certain drill cuttings and residual wastes to be disposed of in pits at the well site. We recommend that the Department require operators who choose to dispose of drill cuttings and residual wastes in onsite pits first obtain surface owner approval. Approval should be expressed in a written expression of informed consent, and presented to the Department. Surface owner consent should not be presumed to imply or assume liability for the pit and its contents unless specifically stated. Landowner consent shall not absolve the operator from compliance with other Department requirements. (997a)

Response: See response to comment 1462.

- 1465.** Comment: § 78.61(a) and § 78.61(b) -These sections on the disposal of drill cuttings talks about “drill cuttings from above the casing seat ...” It is suggested that this be clarified to read “drill cuttings from above the surface casing seat ...” (861a)

Response: See response to comment 1453.

- 1466.** Comment: 78.61(a)(3) - The definition of watercourse is very broad, “a channel or conveyance of surface water having defined bed and banks, whether natural or artificial, with perennial or intermittent flow.” Every channel and diversion ditch around a farmer’s field, along every farm road can be considered a watercourse. This broad definition places substantial limitations on disposal areas. (1174)

Response: Use of this definition is appropriate to protect waters of the Commonwealth.

- 1467.** Comment: **78.61(a)(6)** – The term “waste” should not be used in reference to uncontaminated drill cuttings from above the casing seat. These materials are not residual wastes.

Suggested Regulatory Language:

(6) The free liquid fraction of the uncontaminated drill cuttings shall be removed and disposed under § 78.60 (relating to discharge requirements). (1153)

Response: The Department acknowledges that uncontaminated drill cuttings from above the casing seat do not meet the definition of “residual waste” under the Solid Waste Management Act but believes that use of the term “waste” is appropriate.

- 1468.** Comment: Section 78.61(a)(7) requires that a pit holding drill cuttings from above the casing seat be “backfilled to the ground surface” 78.62(a)(15) provides that a pit containing residual wastes

“shall be backfilled to at least 18 inches over the top of the liner.” Both 78.61 and 78.62 contemplate revegetation of the backfilled pit. A minimum depth of fill should be required between ground surface and drill cuttings or residual waste. This minimum depth should be greater than the rooting zone for expected groundcover. Minimum depth is critical where agriculture is the expected land use. (997a)

Response: The cover depth requirements are minimum requirements. If necessary to support land uses or establish vegetation, additional cover depth will be required.

- 1469.** Comment: The setbacks for land spreading of drill cuttings in § 78.61(b) for water supplies and water bodies and wetlands are so limited as to be meaningless, particularly in the absence of testing or studies showing that such setback are effective. One indication that they are not is Oklahoma’s regulation in place since 2003 that land application of waste is prohibited within 300 feet of private water wells and within ¼ mile from municipal wells. (853a)

Response: The Department has determined that the setback requirements for land spreading of drill cuttings from above the casing seat are appropriate.

- 1470.** Comment: Drill cuttings that are radioactive should not be disposed of, spread on, nor incorporated into the soil § 78.61(b) nor in pits § 78.62, 78.63. (609, 944, 938, 938a)

Response: The Report observed that there is little potential for radiological exposure to workers or members of the public from the handling, hauling, and temporary storage of vertical and horizontal drill cuttings on natural gas well sites and recommended that the Department conduct research and investigation of vertical and horizontal drill cuttings for beneficial use, onsite disposal, and future landfill disposal protocols. The Department remains committed to protecting the public from unnecessary exposure to radiation and is actively pursuing the recommendations of the 2015 TENORM study report.

- 1471.** Comment: § 78.61(b)(4) does not allow land application of drill cuttings and residual wastes within 200 feet of a water supply. This protective buffer should explicitly include active water wells for domestic, irrigation and stock uses. (997a)

Response: The Department disagrees that amending this section is necessary. Water supply is defined in 78.1 as *a supply of water for human consumption or use, or for agricultural, commercial, industrial or other legitimate beneficial uses.*

- 1472.** Comment: It is imperative that the Department continued use of solidifiers, dusting, unlined pits, attenuation or other “alternative practices for the onsite storage or disposal of drill cuttings allowed under § 78.61(d). Statements in the proposed revisions that the DEP will provide a list of approved solidifiers and has to approve the material and the installation procedure to be used are simply too vague to be effective. The proposed regulations do not contain an information, procedures, protocols and analytical data on which the Department would base its determinations and issuance of permits. It is impossible to know whether the alternative practices and materials provide equivalent or superior protection as is required in §§ 78.56(b), 78.59(o), 78.58 and 78.61(d). As currently written, there is no reason to presume that the standards would be met – leaving unanswered question of whether operator convenience or preference for particular products would become the determining factor for DEP in allowing numerous “exceptions to the rules”. (853a)

Response: The Department disagrees that the standards to be used to evaluate solidifiers should be clarified directly in the regulation. Standards that will be used to evaluate solidifiers are more appropriately developed in technical guidance or other similar means.

1473. Comment: Section 78.61 – Every day, sites in Ohio and New York are taking thousands of tons of drill cuttings from gas wells drilled in Pennsylvania. Instead of having other states collect enormous amounts of money for disposal of drill cuttings, the PA DEP should make it easier for gas companies working in Pennsylvania to dispose of drill cuttings in our state. Pennsylvania has thousands of acres of abandoned coal strip mines that should be reclaimed using drill cuttings. No agency has indicated that drill cuttings contain any pollutants of concern that would make drill cuttings unsuitable for filling of abandoned mines. PA DEP should, at least, allow the use of drill cuttings which are mixed with coal ash from Coal refuse power plants to be used to fill abandoned mines.(92a)

Response: Disposal of drill cuttings outside of the well site is beyond the scope of this rulemaking.

1474. Comment: 78.61 (b), 78.61 (c) (2), and 78.63 (a) – I don't think any surface rights owner should have land application of anything forced on them. The regulations should require a specific written agreement from the surface rights owner to permit land applications. The land application agreement should tell what is going to be applied, how much and exactly where. (167)

Response: See response to comment 1462

1475. Comment: 78.61 (b), 78.61 (c) (2), and 78.63 (a) Before any land application, the operator should be required to have the material to be applied tested for undesirable components, including such things as arsenic which can be naturally occurring above the casing seat level. The material composition information should be supplied to the surface rights owner as part of the written agreement so they can see it before agreeing to a land application on their property. The material composition results should also be sent to DEP for review before the department allows them to proceed with land application. (167)

Response: See response to comment 1462. Under §§ 78.62 and 78.63, operators must demonstrate that the residual waste meets the regulatory criteria and handle the residual waste in accordance with the regulation in order to dispose of or land apply the residual waste at the well site. Under §§ 78a.62 and 78a.63, the owner or operator of an unconventional well may not dispose of residual waste, including contaminated drill cuttings, at the well site by land application or in a pit unless the land application or the pit is authorized by a permit or other approval is obtained from the Department.

1476. Comment: §78.61(a) – These proposed regulations merit further clarification and further instructions to the oil and gas operators as well as the public. By definition, Drill Cuttings, “Lifted continually to surface during drilling by a circulating-fluid system driven by a pump. To facilitate removal of cuttings, mud is constantly circulated down through drill pipe, out through nozzles in drill bit, and then up to surface through space between drill pipe and well bore through earth (diameter of bit is somewhat greater than that of pipe).” Further clarification is warranted to describe what measures, processes, and equipment is deemed adequate to separate the drilling fluid from the drill cuttings as well as the radio nuclides from the drill cuttings. The clarification should not be submitted by the oil and gas industry and instead be determined by independent researchers including but not limited to: geologists, nuclear engineers, nuclear physicists, and biochemical engineers. The gas and oil industry shall pay the Commonwealth for the data obtained by these

professionals.

Also, in addition to my above statement and/or if the Department chooses to ignore that request, the Agricultural Department must be notified as well as every lease holder and potential lease holder must be informed of research regarding the pros and cons of drill cuttings on land application. “Experiments conducted in France showed that after spreading oil-based mud cuttings on farmland, followed by plowing, tilling, and fertilizing, approximately 10% of the initial quantity of the oil remained in the soil. Phytotoxic effects on seed germination and sprouting were not observed, but corn and wheat crop yields decreased by 10% (6)” Potential concerns include the need for large land areas; the relatively slow degradation process (the rate of biodegradation is controlled by the inherent biodegradation properties of the waste constituents, soil temperature, soil-water content, and contact between the microorganisms and the wastes); and the need for analyses, tests, and demonstrations. Also, high concentrations of soluble salts or metals can limit the use of land spreading (6)” When evaluating land spreading as a drilling waste management option, several items should be considered. These include area-wide topographical and geological features; current and likely future activities around the disposal site; hydro-geologic data (location, size, and direction of flow for existing surface water bodies and fresh or useable aquifers); natural or existing drainage patterns; nearby environmentally sensitive features such as wetlands, urban areas, historical or archeological sites, and protected habitats; the presence of endangered species; and potential air quality impacts. In addition, historical rainfall distribution data should be reviewed to establish moisture requirements for land spreading and predict net evaporation rates. Devices needed to control water flow into, onto, or from facility systems should be identified. Wastes should be characterized during the evaluation; drilling wastes with high levels of hydrocarbons and salts may not be appropriate for land spreading. (189)

Response: Section 78.61 and section 78a.61 allow only uncontaminated drill cuttings to be buried or land applied at the well site while contaminated drill cuttings from a conventional well may be buried on site in accordance with Section 78.62(a)(5)-(16) and (b) (relating to disposal of residual waste – pits) or land applied at the site in accordance with Section 78.63(a)(5)-(20) and (b) (relating to disposal of residual waste – land application). Under §§ 78a.62 and 78a.63, the owner or operator of an unconventional well may not dispose of residual waste, including contaminated drill cuttings, at the well site by land application or in a pit unless the land application or the pit is authorized by a permit or other approval is obtained from the Department. The Department has allowed the disposal of residual wastes including contaminated drill cuttings in a pit at conventional well sites for decades without significant harm to public health and safety or the environment and consequently has not banned the use of pits for temporary waste storage at conventional well sites in this rulemaking.

1477. Comment: 78.61 – The Department is encouraged to conduct a thorough and timely evaluation of the comparative environmental risks associated with available disposal options for drill cuttings. The results of this analysis should be made available for public review and comment. (997a)

Response: The environmental risks associated with the available disposal options for drill cuttings vary from site to site based on site characteristics. If a permit is required for disposal from the Bureau of Waste Management, the environmental risks have been reviewed and addressed in accordance with the permit conditions.

1478. Comment: 78.61(d) – The approved list of solidifiers should be posted to the Department’s website prior to the establishment of this section. (411)

Response: Solidifiers will be posted to the website as they are approved. See response to comment 1479.

- 1479.** Comment: 78.61(f) – Have the necessary electronic reporting setup in GreenPort prior to the implementation of this section. (411)

Response: The Department will ensure that all electronic notification and reporting systems required by the Chapter 78 and Chapter 78a are operational prior to finalizing this rulemaking.

- 1480.** Comment: The proposed amendments to this section would specify the loading and application rate for the land application of drill cuttings. Additionally, this section provides that the Department will maintain a list of approved solidifiers for the disposal of uncontaminated drill cuttings in pits.

Further, this section specifies that the operator shall notify the Department prior to disposing drill cuttings under this section. (566)

Response: The Department acknowledges the comment.

- 1481.** Comment: Contaminated drill cuttings must only be disposed of at landfills properly permitted for such substances. We are favorable to beneficial use of non-contaminated drill cuttings. But, we do not want to see random, non-monitored locations throughout rural Pennsylvania filled with contaminated drill cuttings. The proper burial place for contaminated drill cuttings is a permitted landfill authorized for such residual waste. (1035)

Response: Section 78.61 and section 78a.61 allows only uncontaminated drill cuttings to be buried or land applied at the well site while contaminated drill cuttings may be buried on site in accordance with Section 78.62(a)(5)-(16) and (b) (relating to disposal of residual waste – pits) or land applied at the site in accordance with Section 78.63(a)(5)-(20) and (b) (relating to disposal of residual waste – land application). Under §§ 78a.62 and 78a.63, the owner or operator of an unconventional well may not dispose of residual waste, including contaminated drill cuttings, at the well site by land application or in a pit unless the land application or the pit is authorized by a permit or other approval is obtained from the Department. The Department has allowed the disposal of residual wastes including contaminated drill cuttings in a pit at conventional well sites for decades without significant harm to public health and safety or the environment and consequently has not banned the use of pits for temporary waste storage at conventional well sites in this rulemaking.

- 1482.** Comment: § 78.61 – To provide additional environmental protections to adjacent lands and waters, such as areas owned or managed by the National Park Service, we recommend the following text in bold italics be added to the rest of the text:

“The disposal area is not within 300 feet, of a watercourse or body of water unless approved as part of a waiver granted by the Department under section 3215(b) of the act (58 Pa.C.S. § 3215(b)).”

The 100’ buffer distance (an arbitrary one-size-fits-all figure) described is not considered adequate for keeping floodwaters from nearby streams from impacting the disposal area. The additional distance we recommend would serve to account for more recent periods of increased precipitation and flooding due to increasingly erratic weather events. (1062, 1133)

Response: In accordance with § 3215(f)(1) of the 2012 Oil and Gas Act, no well site may be prepared or well drilled within any flood plain if the well will have a pit or impoundment containing drill cuttings, flowback water, produced water or hazardous materials, chemicals or wastes within the floodplain; or a tank containing hazardous materials, chemicals, condensate, wastes, flowback or produced water within the floodway. The provision has been modified to prohibit disposal of cuttings within the flood plain or 100 feet of a body of water.

1483. Comment: A requirement for the use of native vegetation is recommended:

“The surface of the backfilled pit area shall be revegetated to stabilize the soil surface and comply with § 78.53 (relating to erosion and sediment **[ation]** control). The revegetation shall establish a diverse, effective, permanent, *native* vegetative cover which is capable of self-regeneration and plant succession to help limit the potential introduction and spread of non-native or other invasive species to adjacent private or public lands. Where vegetation would interfere with the intended use of the surface of the landowner, the surface shall be stabilized against erosion.

Revegetating these areas with native vegetation will help to ensure that the objectives for these plantings are achieved, and that other potential economic and ecological impacts associated with the introduction of new non-native, invasive plant species and spread of existing populations are avoided. (1062, 1133)

Response: The Department encourages use of native vegetative cover when possible but it is not appropriate to require use of native vegetation in all circumstances.

1484. Comment: Section 78.61 should contain a statement that “disposal of drill cuttings must comply with the requirements found at Section 78.53, Erosion and Sediment Control.” (1062, 1133)

Response: All activities regulated under Chapter 78 and Chapter 78a must comply with all of Chapter 78 and Chapter 78a.

1485. Comment: 78.61 – The Department should cease the practice of allowing companies to dispose of residual waste, including drill cuttings from below the casing seat, in on-site pits.

Commentator supports the prohibition for on-site disposal of residual waste from hydraulic fracturing. However, the Department’s proposed regulations continue to authorize the creation of mini residual waste landfills across the Commonwealth. The Department does not require companies to publicize the location of these landfills. There is no long-term groundwater monitoring associated with the landfills, and the Department requires no sampling that characterizes what waste before it is disposed at these landfills. These landfills are allowed to be located less than two feet above the seasonal high groundwater table for fresh groundwater on which Pennsylvanians depend for drinking water, even though the Department has evidence that these landfills leak. The Department does not regularly inspect and sample these landfills to ensure there is no environmental harm being caused. The practice is archaic and makes little common sense. The Department should require that the oil and gas industry bear the full financial costs of protecting Pennsylvania’s land and water resources by eliminating this practice and requiring that any residual waste generated at well sites be disposed at facilities with double liners, leak detection, long term groundwater monitoring, and bonding. (852a)

Response: To the extent that this section regulates uncontaminated drill cuttings from above the surface casing seat, the requirements ensure protection of waters of the Commonwealth. For disposal of contaminated drill cuttings or drill cuttings from below the surface casing

seat, section 78.61 provides a reference to §§ 78.62 and 78.63, which require testing of contaminated drill cuttings and drill cuttings from below the casing seat prior to disposal and section 78a.61 provides a reference to §§ 78a.62(a) and 78a.63(a) which require a permit or other approval from the Department. The Department believes that these provisions are adequate to ensure protection of waters of the Commonwealth.

- 1486.** Comment: 78.61 – The DEP Analysis understates costs or in many instances fails to state any cost at all for the proposed changes. One such area of concern is the revised regulations in 78.61 and 78.62. Among other things these sections impose a new notice requirement of three business days. Under conventional well practice extra time will create significant cost. Conventional wells are completed rapidly and the equipment is moved on to the next location. For example, under current practices the pit is often closed the next day following well completion thus freeing the equipment to move on. A waiting period of three days will add the costs of both lost labor and idle equipment. (1123, 1125, 4683 - 4686, 5707 – 5709, 5741 – 5760, 5761 – 5762)

Response: Appropriate planning will allow operators to comply with the notification requirement without delays and additional operational costs.

- 1487.** Comment: The proposed regulations will introduce the new requirement of hiring a soil scientist to provide a certification. This new requirement would be imposed even though the underlying law has been in existence for 30 years without the certification being required. The DEP has not cited any compelling need or estimated cost for these new regulatory burdens, but we estimate that the costs for a soil scientist and lost labor and equipment will be approximately \$3,000 - \$10,000 per well. (1123, 1125, 4683 - 4686, 5707 – 5709, 5741 – 5760, 5761 – 5762)

Response: The revised provision does not add any new requirements because the existing regulation implies that an accurate seasonal high groundwater determination is made. The Department also notes that the rulemaking allows “other similarly trained persons” to make the determination as well, which may represent a substantial cost savings to the operator.

- 1488.** Comment: Virtually all residual waste approved for beneficial use contains regulated substances. However, the “concentrations” are often low, either below Clean Fill or Regulated Fill levels. The mere existence of a regulated substance in drill cuttings or other waste is not a concern and should not trigger any absolute prohibition on placement reuse – whether the drill cuttings are from conventional or unconventional formations. The Department has no factual, scientific or legal basis for distinguishing between conventional and unconventional drill cuttings or prohibiting the land application of drill cuttings from unconventional formations.

The Department has issued General Permits allowing the direct land application of drill cuttings at Act 2 sites as capping or fill material even though they contain regulated substances. On January 2013, DEP approved drill cuttings for fill material at the Palmerton, Carbon County Act 2 site. On March 2013, it approved drill cuttings and stabilized drilling fluids as a coproduct as a replacement for soil in capping at the Palmerton site. On September 2013, DEP approved the beneficial use of drill cuttings as fill material under Act 2 at the Hazleton, Luzerne County mine reclamation/remediation site. In November 2011 DEP approved a General Permit from Clean Earth Inc. for a 3-year demonstration project to beneficially use drill cuttings on a statewide basis at Act 2 brownfield sites as capping material on a site in Bucks County and any subsequent brownfield site subject to public notice. In August 2013, DEP approved the beneficial use of drill cuttings as a substitute for fine aggregate in the production of asphalt.

These uses were approved because the concentrations of the contaminants are low and do not pose

a threat of pollution or harm. Accordingly, Chapter 78 cannot arbitrarily prohibit land application merely because of the existence of “regulated substances.”

Suggested Regulatory Language:

Remove/delete any language defining drill cuttings managed or placed at the well site as a “residual waste.” Remove any language defining on-site management or placement of drill cuttings as “disposal.” (1153)

Response: The terms “residual waste” and “disposal” are used properly in this section. The regulation distinguishes between drill cuttings and residual waste.

- 1489.** Comment: 78.61(f) – Commentator recommends that the Department clarify or explain any additional obligations placed on the operator as a result of this new Section. For example, can an operator proceed without any acknowledgement from the Department? (1174)

Response: The Department requires 3 business days notification prior to planned disposal of drill cuttings to schedule Department personnel to observe the disposal operation. The regulations do not stipulate that the Department has to acknowledge the notification in order for the disposal to proceed.

- 1490.** Comment: We would like to see on-site burial of drill cuttings prohibited. We would like to see the prohibition of open-air pits with liners as well. (862)

Response: Drill cuttings from above the casing seat do not create a significant threat to the environment if the requirements in §78.61 or §78a.61 are met. The requirements include that the drill cuttings are not contaminated with a regulated substance, including brines, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids or drilling fluids other than top hole water, fresh water or gases.

Section 78.61 only allows uncontaminated drill cuttings to be buried or land applied at the well site while contaminated drill cuttings may be buried on site in accordance with section 78.62(a)(5)-(16) and (b) (relating to disposal of residual waste – pits) or land applied at the site in accordance with Section 78.63(a)(5)-(20) and (b) (relating to disposal of residual waste – land application). Burial or land application of cuttings at an unconventional well site may only occur with a permit or other approval obtained from the Department.

§ 78.62 Disposal of residual waste – pits

- 1491.** Comment: The practice of drillers burying waste at the drilling site, without even the consent of a landowner, must be prohibited. (1055)

Response: See response to comment 1462 regarding landowner consent.

- 1492.** Comment: If, against better advice, the Department continues to allow residual wastes to be buried on well sites under sections 78.62 and 78.63, the Department should include mandatory testing requirements in those sections to make them consistent with section 78.65(f).

Section 78.65(f) would require restoration reports to include “[t]he test results required by §§ 78.62 [Disposal of residual waste - pits] and 78.63 [Disposal of residual waste – land application].” Unfortunately, neither of these two subsections appears to *require* test results.

Section 78.62, both in its current form and its proposed revised form, prohibits operators from disposing of residual waste in pits if the concentration of contaminants in the leachate exceed certain limitations. Similarly, both current and proposed 78.63 prohibit the disposal of residual waste by land application if the concentration and contaminants in the leachate exceed certain limitations. Under section 78.63(a)(19), the Department “may” require the well operator to conduct a chemical analysis to determine leachate characteristics – but unless the Department exercises this discretionary power, operators have no duty to do such an analysis. Subsection 78.65(f) is problematic, then, because it assumes the existence of testing requirements that do not exist. We strongly object to the disposal of any residual wastes on well sites. However, assuming that the Department continues to allow such disposal, the Department should require testing of all residual wastes that are to be disposed of. In other words, sections 78.62 and 78.63 should be revised to be consistent with 78.65(f). (852a)

Response: Operators may not dispose of residual wastes including contaminated drill cuttings at the well site unless the waste meets the specified requirements in §§ 78.62(b) and 78.63(b). Chemical analysis must be conducted in order to demonstrate compliance with these requirements.

- 1493.** Comment: Shouldn’t operators be required to remove all the waste from drilling sites instead of leaving these ‘toxic teabags’ scattered across the state? (939)

Response: The Department has amended the final rulemaking to ban the use of pits for temporary waste storage at unconventional well sites. The Department has determined that it is appropriate to remove this practice because it is not commonly used by unconventional operators. Additionally, the typical type and scope of use by unconventional operators is generally incompatible with technical standards for temporary pits prescribed under § 78.56. As a result, unconventional operators will no longer be permitted to dispose of residual waste including contaminated drill cuttings in a pit at the well, unless the pit is authorized by an individual permit, as any other person proposing to dispose of residual waste could obtain. Conversely, the typical type and scope of use by conventional operators is generally compatible with the technical standards for temporary pits prescribed under § 78.56. The Department has allowed the disposal of residual wastes including contaminated drill cuttings in a pit at conventional well sites for decades without significant harm to public health and safety or the environment and consequently has not banned the use of pits for temporary waste storage at conventional well sites in this rulemaking. Additionally, the Department has not banned the disposal of residual waste including contaminated drill cuttings in a pit at the well site. As long as the requirements in § 78.62 are met, the disposal of residual wastes including contaminated drill cuttings at conventional well sites will not result in significant harm to public health and safety or the environment.

- 1494.** Comment: Waste Disposal: No drilling waste should be allowed to be buried onsite. We do not need to create thousands of mini landfills across the state. Ban the use of drilling pits to store drilling wastewater for any period or in any location. These pits threaten water resources and can produce air emissions. It is past time to ban them. (140, 1055)

Response: See response to comment 1493.

- 1495.** Comment: No burial in pits or land application of drill cuttings. Allowing waste to be left at well sites may be convenient for operators, but it risks water resources and creates a toxic legacy for the public to deal with. I don’t want this hidden pollution buried in my community or on my land and near my drinking water. (5936-6089)

Response: See response to comment 1493.

1496. Comment: Underground tanks for managing waste should be prohibited. (140, 1055)

Response: See response to comment 1016 regarding underground tanks.

1497. Comment: 78.62 – We oppose long-term onsite burial of any residual waste contaminated with chemicals, oil, grease, pollutional materials, regulated substances, water-based drilling muds that contain chemical additives, oil-based drilling muds, polymer-based drilling muds containing mineral oil lubricants, NORM, TENORM, mercury, heavy metals, and other chemical additives or toxins.(1143)

Response: See response to comment 1493.

1498. Comment: 78.57(e) – The requirements that operators provide to DEP a list of locations of buried tanks and remove them within three years at least offers an opportunity – albeit limited and insufficient – to prevent or remediate environmental impacts. That aspect of DEPs mandate is completely ignored when it comes to buried pits containing drill cuttings and residual waste. (853a)

Response: See response to comment 1016 regarding underground tanks. Encapsulated pit locations are recorded on the Well Site Restoration Report.

1499. Comment: 78.62 – Contaminated drill cuttings should not be buried onsite or applied to the land surface. Drilling waste should be removed from the drilling location and properly disposed of at an approved waste disposal facility capable of handling the quantity and type of waste generated.

Alternative best practices for waste handling are described in comment 1442, above.

We recommend the following changes to the discharge requirements at § 78.62.

§ 78.62. Disposal of residual waste—pits.

Closed-loop tank systems shall be used to handle and store residual waste. All residual waste must be disposed of at an offsite approved waste disposal facility. (1143)

Response: See response to comment 1493.

1500. Comment: Anything going into or coming out of an industry well should be controlled in a closed containment system and disposed of as a potentially hazardous material with appropriate analysis and treatment for long term disposal or purification off site. None of this material should be surface applied or buried on site. Much of the industry already acknowledges that on site pits are no good for in or out materials and never were.(114)

Response: See response to comment 1493.

1501. Comment: Open pits should not be permitted under any circumstances. (10, 16, 46, 1086)

Response: See response to comment 1493.

1502. Comment: Prohibit the onsite burial of waste pits. Buried pits can leak and pollute groundwater over time, yet burial allows operators to walk away from any responsibility after completing operations.(17, 18, 19a, 67, 72, 73, 79, 125, 148, 160, 161, 168, 169, 195, 402, 475, 477, 492a, 564, 565, 626, 632, 787, 808, 842, 843, 853a, 884, 947, 1000, 1039, 1058, 1068, 1086, 1102, 1161, 1168, 4582 – 4584, 4584 - 4650)

Response: See response to comment 1493.

1503. Comment: The DEP should stop promoting the disposal of residual waste at well sites. (Section 78.62) (19, 21, 23, 55, 90, 113, 142, 165, 189, 391, 429a, 851, 946, 958, 1005, 1152, 1210)

Response: The Department acknowledges the comment. The Department disagrees that section 78.62 promotes the disposal of residual waste at well sites.

1504. Comment: 78.62(a)(1) – Commentator questions the legality and scientific basis for the blanket prohibition of on-site disposal of waste generated by hydraulic fracturing of unconventional wells and solid waste generated by processing of fluids pursuant to § 78.58. On-site disposal should be permitted if the waste meets the requirements of § 78.62(b). Benefits would include conservation of landfill space and reduced heavy traffic on local communities.

Suggested Regulatory Language:

The residual waste is generated by the drilling, or stimulation of an oil or gas well that is located on the well site where the residual waste is disposed. Solid residual waste generated by hydraulic fracturing of unconventional wells and solid residual waste generated by processing of fluids pursuant to § 78.58, may not be disposed of on the well site unless it meets the requirements of § 78.62(b). (1153)

Response: Solid waste generated by hydraulic fracturing of unconventional wells and solid waste generated by processing of fluids pursuant § 78.58 are concentrated waste streams which are not appropriate for disposal in accordance with §§ 78.62 and 78.63.

1505. Comment: 78.62(a)(5) – Allow registered Small Businesses to submit hard copy notification. (1135)

Response: Regarding electronic submission of reports and notifications, see response to comment 219.

1506. Comment: The 3 business day notification period to DEP should be extended to 10 to allow for appropriate monitoring of any disposal process[78.62(a)(5)]. (1093, 1098)

Response: The Department believes that the notification timeframe established in the regulations is sufficient to allow Department field staff to plan inspection schedules.

1507. Comment: 78.62(a)(7) – Delete this subsection per *Robinson Twp. et al. v. Commonwealth of Pennsylvania et al.* (1135)

Response: The setback restriction is appropriate and is unrelated to § 3215(b) of the 2012 Oil and Gas Act.

1508. Comment: Conventional operators should not be required to retain soil scientists for certification of pit bottoms, which would add significant costs to operations. We recommend the adoption of a

performance standard that pit bottoms do not penetrate the seasonable groundwater table, which achieves the same environmental benefit without the significant costs associated with certifications.

Suggested amendatory language:

(9) The bottom of the pit shall not penetrate the seasonal high groundwater table at the time of installation. (1135)

Response: The Department disagrees with the proposed changes to subsection (a)(9) because the 20 inch separation requirement allows for a physical barrier between the seasonal high groundwater table and the bottom of the pit to prevent mixing of impounded materials and groundwater and to ensure structural integrity of the pit.

1509. Comment: 78.62(a)(9) – The term “seasonal high groundwater table” should be defined as provided in Comment 902, above. (1153)

Response: The Department maintains that the seasonal high water table definition is adequate.

1510. Comment: Section 78.62 addresses pits and their contained wastes “generated by the drilling, or stimulation, or production of an oil or gas well.” From time to time in the course of production, a pit will be required in order to responsibly accommodate the maintenance activities related to a service rig. It is unreasonable to require an operator to contract “a soil scientist or other similarly trained person using accepted and documented scientific method s” to verify that the pit bottom is “20 inches above the seasonal high groundwater table” every time they decide it is necessary to put a rig over a well. This requisite should be limited to the drilling and completion phases of a well and not to production. These proposed revisions should be tabled in favor of further consideration. (12, 623)

Response: The 20 inch separation requirement allows for a physical barrier between the seasonal high groundwater table and the bottom of the pit to prevent mixing of impounded materials and groundwater and to ensure structural integrity of the pit. It is necessary to ensure that the 20 inch separation is met every time a pit is used.

1511. Comment: To truly safeguard the groundwater and reduce the risk of a pit liner floating, all pits and impoundments should be required to have a professional determine the seasonal high groundwater table. This is not mentioned under all of the potential pit applications. The 2’ freeboard is also not mentioned under freshwater or centralized impoundments. It is important that some space is provided for all pits and impoundments. Fencing should also be required for all pits and impoundments for human and wildlife safety. (1149)

Response: See responses to comments 1197, 1198 and 1199.

1512. Comment: The draft regulations would allow well operators to dispose of residual waste in pits. Or essentially mini landfills, on well sites as long as they comply with certain minimum requirements. Because oil and gas site waste is exempt from hazardous waste regulations, the result is that this hazardous waste can be managed as residual waste and disposed of onsite with a single synthetic liner and no long-term groundwater monitoring. These minimal protections are inadequate. Given the high risk posed by these many landfills, DEP should prohibit well site disposal waste entirely. (1210)

Response: See response to comment 1493.

1513. Comment: The proposed amendments to this section clarify that solid waste generated by hydraulic fracturing of unconventional wells or processing wastewater under § 78.58 (relating to onsite processing) may not be disposed of in a pit on the well site. However, residual waste, including contaminated drill cuttings, can be disposed of in a pit on the well site. Additionally, the proposed amendments require the operator to notify the Department prior to disposing residual waste. This section also proposes a requirement that operators determine that the pit bottom is 20 inches above the seasonal high groundwater table prior to using the pit and that the determination be certified by a soil scientist or other similarly trained person using accepted and documented scientific methods. Compliance with this section shall be documented and made available to the Department upon request, as well as submitted in the well site restoration report. (566)

Response: The Department acknowledges the comment.

1514. Comment: Disposal of residual waste at well sites should not be allowed (78.82). Instead, operators should be required to provide and comply with plans for off-site residual waste disposal.(153)

Response: See response to comment 1493.

1515. Comment: No burial of fracking waste on-site. All fracking waste should be removed to another location and chemically neutralized before dumping. When transported it should be treated as a toxic chemical.(156)

Response: Section 78a.62(a)(1) disallows solid waste generated by hydraulic fracturing of unconventional wells and solid waste generated by processing of fluids pursuant to §78.58 from being disposed on the well site without an individual permit from the Department.

1516. Comment: There should be no burial or land application of drill cuttings or other residual waste. The ability of liners to last indefinitely and prevent pollution of soil and ground water is not proven. In effect, the burial of any waste from operations represents an unacceptable risk to our water supplies and, as one critic stated, also creates an untold number of “brown fields” for future generations. (148, 182, 402)

Response: See response to comment 1493.

1517. Comment: After the liquid fraction of the drill cuttings is removed, residual waste, including contaminated drill cuttings may be disposed of in pits providing the drill cuttings were generated on that specific site. Excluded from this disposal method is solid waste generated by hydraulically fractured unconventional wells and also, fluids processed in accordance to 78.58. The volume and contaminants make it very impractical to even consider onsite disposal for hydraulically fractured unconventional wells generated solid waste and fluids processed in accordance with 78.58. We therefore, fully support and recommend prohibiting site disposal of solid waste generated by hydraulically fractured unconventional wells and also, fluids processed in accordance to 78.58 as written. (660a)

Response: The Department acknowledges the comment.

1518. Comment: The Penn Future comments address § 78.62, and state that the Proposed Regulations should ban the disposal of residual waste at well sites. I support the Penn Future comments in this regard. However, the Proposed Regulations should also ban both the on-site disposal of drill cuttings

from above the casing seat, and the land application of drill cuttings from below the casing seat. (1070)

Response: The Department acknowledges the comment. See response to comment 1493.

1519. Comment: Long-term storage pits and on-site burial of solid waste should be prohibited, with no waivers issued.(1078)

Response: See response to comment 1493.

1520. Comment: The draft regulations would allow well operators to dispose of residual waste in pits on well sites as long as they comply with certain minimal requirements. Because waste generated at oil and gas sites is exempt from the hazardous waste regulations, the result is that hazardous waste can be managed as residual waste and disposed at well sites with a single synthetic liner and no long-term groundwater monitoring. These minimal protections are inadequate. As the DEP knows, many well-site disposal pits have leaked in recent years, contaminating surface and groundwater and dotting the Pennsylvania countryside with brownfield sites. Given the high risks of these mini-landfills, and the fact that their one and only advantage is fewer truck trips to landfills (and reduced cost for operators), the DEP should prohibit well site disposal of residual waste entirely. To the extent that the DEP continues to allow this method of waste disposal it should, at a minimum, require long-term groundwater monitoring and public notice of existing and future disposal sites. (23, 24, 26, 55, 90, 113, 142, 165, 189, 192, 391, 843, 946, 958, 1005, 1152)

Response: See response to comment 1493. Additionally, under § 78.62(b)(1) the concentration of the contaminants in the leachate from the residual wastes cannot exceed 50 percent of the maximum concentration in 40 CFR § 261.24 as well as 50 times the primary maximum contaminant level in effect under 25 Pa. Code § 109.202. This conservative specification provides assurance that the waste is not hazardous.

1521. Comment: Pit liners are non-exempt waste under the U.S. Resource Recovery and Conservation Act (RCRA) and must be disposed accordingly. Therefore, the proposed regulations cannot allow that these liners be buried on site. (853a)

Response: The exclusion outlined at 40 CFR § 261.4(b)(5) does not apply to pit liners. EPA has determined that “synthetic pit liners used in [gas exploration and production] activities are not covered by the RCRA exemption because they are not intrinsically derived from, or uniquely associated with the exploration, development, or production of crude oil and natural gas.” The liners are not “intrinsic” to drilling operations because they are used for a variety of other operations such as municipal solid waste landfills and industrial waste landfills and impoundments. The material does not meet the exemption criteria under 40 CFR § 261.4(b)(5) and is accordingly subject to regulation under RCRA. The pit liners would be subject to the applicable requirements of the Resource Conservation and Recovery Act, including 40 CFR Part 261 concerning the identification and listing of hazardous waste, which has been incorporated by reference in accordance with 25 Pa. Code § 261a.1. If the materials are not hazardous waste, they would be regulated as residual waste. Residual waste is defined in the Solid Waste Management Act, 35 P.S. §§ 6018.101 *et seq.*, to include wastes from industrial activities. Section 3273.1(a) of the Oil and Gas Act exempts an operator from the obligation to obtain a permit and post a bond under SWMA. Section 3273.1(c) recognizes that the duties or obligations of an owner or operator of a well site under SWMA are not diminished or otherwise affected by Section 3273.1. The substantive requirements in § 78.62 are as equally protective as those in the residual waste regulations.

1522. Comment: DEP is not taking measures to prevent the environmental risks of pit burial to water and soil, nor even keeping track of where these risks might arise. DEP does not require operators to map or list the location and volume of buried pits, maintain a database of buried pits or follow any protocols to monitor whether or not they remain solidified and impermeable over time. The only clear documentation of whether a pit has been buried is well restoration records, which are kept in individual paper well files at the regional DEP offices. But operators are not required to file these reports until after the last well of the site is completed and can request a restoration extension of up to 2 years. As a result it can take years for the Department and the public to have access information about whether pits have been buried on a site even though they may be close to a wetland, stream backyard or farm field.



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Oil and Gas Management

August 20, 2010

Dear well operator:

DEP has recently investigated several significant incidents resulting from leaking pits adjacent to well sites. Due to the frequency of these events and the potentially severe impacts to the environment, I am writing this letter to remind all operators that produce gas from unconventional shale formations such as the Marcellus, Utica, Burket, Mandata, Rhinestreet and other similar formations, of the regulatory requirements governing the use of pits to temporarily store or ultimately dispose of residual wastes generated by well drilling or production.

Pit Construction

Rocks or other debris can tear pit liners. 25 Pa. Code § 78.56 requires pits to be constructed so that the liner subbase is smooth, uniform and free from debris, rock and other material that may puncture, tear, cut or otherwise cause the liner to fail. The liner subbase and subgrade shall be capable of bearing the weight of the material above the liner without settling that may affect the integrity of the liner. If the pit bottom or sides consist of rock, shale or other materials that may cause the liner to fail, a subbase of at least 6 inches of soil, sand or smooth gravel, or sufficient amount of an equivalent material, shall be installed over the area as the subbase for the liner.

Hay or other similar organic material is not a suitable alternative to soil, sand or smooth gravel.

In addition to building a proper subbase, the bottom of the pit must be 20 inches above the seasonal groundwater table. This provision applies to pits used for temporary storage of waste only. Pits may not be used to dispose of residual waste if the bottom of the pit will be within 20 inches of the seasonal groundwater table during any part of the year. 25 Pa. Code 78.62.

Finally, pits used by operators that produce gas from unconventional shale formations to dispose of residual waste must be lined with an impervious liner that is at least 30 millimeters thick. 25 Pa. Code 78.62(a)(10). DEP will be rescinding its approval to use 20 millimeter liners at these sites through a notice in the *Pennsylvania Bulletin*. The volume of material, the length of time the pits are in use, and the potential impacts to the environment from leaking pits necessitate this action.

Disposal of Waste

Only residual waste that is generated by well drilling or production may be disposed of on-site.

Trash, land clearing waste, or other waste that was not generated by well drilling or production may not be disposed of in pits on-site. In addition, only residual waste that meets the

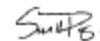
requirements of 25 Pa. Code 78.62(b) may be disposed of on-site. DEP requests that prior to disposing of waste on-site, a chemical analysis of a representative sample of the waste be

performed to demonstrate compliance with this section. Failure to do so may result in an enforcement action by DEP. A list of parameters that must be tested is enclosed with this letter. Because shale formations have the potential to produce an acid discharge, the shale should be analyzed and handled according to the enclosed fact sheet.

The regulations governing the use of pits to store and dispose of waste generated by well drilling or production are minimum standards that, if strictly followed, will protect the environment. Well operators should instruct contractors on proper pit construction and routinely inspect pits prior to liner installation and while the pit is in use to detect and repair any defects. DEP also urges operators to consider using superior waste containment facilities.

Thank you for your attention to this important matter. Please contact me at (717) 772-2199 if you have any questions.

Sincerely,



Scott Perry
Director

enclosures

(853a)

Response: The Department believes that transparency and notice are important concerns and has added language to sections 78.61 and 78a.61 requiring operators to provide notice to surface landowners of the location of cuttings disposal or land application. Additionally, §§ 78.62 and 78.63 require operators to provide 3 days' notice to the Department prior to disposing of residual waste including contaminated drill cuttings on the well site.

1523. Comment: All waste that is produced by the on-site operation must be transported to a secure storage/processing facility that guarantees that no toxic chemicals are released into the environment. They must be forced to adhere to all the current clean water and clean air standards that other industries are held to. No special deals, no special treatment.(52, 1055)

Response: See response to comment 1493.

1524. Comment: It is recommended that the scope of § 78.62 be clarified. It is unclear if or what type of residual waste generated from hydraulic fracturing of unconventional wells might be considered under this section for disposal in on-site pits. Depending on its application, additional safeguards and requirements may be needed. (997a)

Response: Subsection (a)(1) describes the types of residual wastes that may be considered under this section.

1525. Comment: When it comes to waste disposal, drilling company operators should follow the federal regulation of hazardous substances that other industries have to follow. (46, 51, 70, 135, 200-385, 1088)

Response: The US Environmental Protection Agency(EPA) is evaluating this issue. To the extent that the EPA determines that these wastes are hazardous, then the Department will revisit these requirements. Until that time, the Department believes that the proposed regulations are appropriate.

1526. Comments: Operators currently escape the federal regulation of hazardous substances that other industries must follow. To protect water supplies as well as air quality, land, public health, and wildlife, I call on DEP to apply U.S. Resource Recovery and Conservation Act standards to regulate all aspects of the storage, transport, and use of the hazardous materials generated by shale gas extraction activities. (402, 631)

Response: See response to comment 1525.

1527. Comment: Disposal of brine, drill cuttings, and residual waste (Sections 78.60, 78.61, 78.62, and 78.63, and 78.70). Operators currently escape the strict federal regulation of hazardous substances that other industries have to follow. Yet drilling and fracking generate large amounts of solid and liquid waste that can harm water supplies, air quality, land, health, and wildlife. Pennsylvania should apply U.S. Resource Recovery and Conservation Act standards to regulate all aspects of the storage, transport, and use of hazardous materials contained in pits, centralized impoundments, and tanks. In addition, DEP's proposed Chapter 78 changes don't address the risks posed by hazardous waste and do little to improve current regulations or ensure safe disposal. (17, 18, 72, 73, 79, 102, 125, 148, 160, 161, 168, 195, 399, 402, 492a, 564, 565, 626, 632, 808, 843, 947, 1039, 1058, 1102, 4582 – 4584)

Response: See response to comment 1525.

1528. Comment: The planned regulations would allow well operators to dispose of waste in pits on well sites if they follow minimal requirements. Since waste from oil and gas sites is exempt from the hazardous waste regulations, hazardous waste can be disposed at well sites with a single synthetic liner and no long-term groundwater monitoring. This is far from being good enough. Everything corrodes or deteriorates eventually. Please think about what will happen to our water and our health when these facilities leak.

Many disposal pits have leaked, contaminating water. Due to the high risks of these mini landfills, the DEP should prohibit well site disposal of residual waste. If it continues there should be long-term groundwater monitoring and public notice of the locations of these disposal sites. The DEP should strengthen its regulatory mechanisms for ensuring that pits and impoundments are constructed in a structurally sound manner and according to regulation. Any falsification must be prosecuted criminally. (180)

Response: See response to comment 1493. Additionally, under § 78.62(b)(1) the concentration of the contaminants in the leachate from the residual wastes cannot exceed 50 percent of the maximum concentration in 40 CFR § 261.24 as well as 50 times the primary maximum contaminant level in effect under 25 Pa. Code § 109.202. This conservative specification provides assurance that the waste is not hazardous.

1529. Comment: Section 78.62 draft regulations allow well operators to dispose of residual waste including drill cuttings in pits at the well site as long as they comply with certain requirements. As waste generated at oil and gas drill sites is exempt from hazardous waste regulations, the result is hazardous waste can be managed as residual waste and disposed at well sites with a single synthetic liner and no long-term groundwater monitoring. These minimal protections are inadequate. (846, 1109)

Response: See response to comment 1493. Additionally, under § 78.62(b)(1) the concentration of the contaminants in the leachate from the residual wastes cannot exceed 50 percent of the maximum concentration in 40 CFR § 261.24 as well as 50 times the primary maximum

contaminant level in effect under § 109.202. This conservative specification provides assurance that the waste is not hazardous.

1530. Comment: Section 78.62 allows the operator to store residual waste at the drill site. Considering the increasing number of brownfields that have been created by leaking disposal pits, this practice should be disallowed entirely.(108)

Response: See response to comment 1493.

1531. Comment: § 78.62: On-site disposal of “residual waste” without the written permission of the surface landowner must be prohibited. On-site disposal of waste materials of any kind can have serious financial, property, and health implications for the surface landowner. *The surface landowner must be afforded the opportunity to provide informed consent.* This section should include language such as the following:

- Disposal of drill cuttings or residual waste at the well site without permission of the surface landowner is not permitted. The request for permission of the surface landowner for disposal, burial, or containment of drill cuttings shall be by certified mail, and must contain the following notice:

NOTICE: Disposal of waste material on your property may have financial implications for your ability to obtain a mortgage or insurance. Waste materials may potentially have an effect upon human health. By consenting to this disposal, you are indicating that you have informed yourself regarding these risks and consider them acceptable. (869a)

Response: See response to comment 1462 regarding landowner consent.

1532. Comment: § 78.62: No disposal of “residual waste” containing any amount of radioactivity above background levels should be permitted. On-site disposal of waste materials of any kind can have serious financial, property, and health implications for the surface landowner. *The surface landowner must be afforded the opportunity to provide informed consent.* This section should include language such as the following:

- Disposal of drill cuttings or residual waste at the well site without permission of the surface landowner is not permitted. The request for permission of the surface landowner for disposal, burial, or containment of drill cuttings shall be by certified mail, and must contain the following notice:

NOTICE: Disposal of waste material on your property may have financial implications for your ability to obtain a mortgage or insurance. Waste materials may potentially have an effect upon human health. By consenting to this disposal, you are indicating that you have informed yourself regarding these risks and consider them acceptable. (869a)

Response: See response to comment 1462 regarding landowner consent.

1533. Comment: “(a) After the removal and disposal of the free liquid fraction of the waste under § 78.60(a) (relating to discharge requirements), the owner or operator may dispose of residual waste, including contaminated drill cuttings, in a pit at the well site if the owner or operator satisfies the following requirements”

Contaminated drill cuttings should not be disposed of on any land, nor near any type water supply. Please refer back to Pages 3-5 of these comments under “Temporary Storage” and comments pertaining to the “Seasonal High Water Table” as most, if not all, of the suggestions there also apply to what comments should be made here. (189)

Response: See response to 2080.

1534. Comment: 78.62(a)(1)-The operator should be allowed to dispose of unconventional solid waste at the well site. What is the scientific basis for not allowing the disposal of this material? Why prohibit on-site disposal from unconventional wells without data and tests to support the prohibition? The costs associated with disposing this material at a landfill (which would be the only option if this section is implemented) would make it uneconomic to develop the resource with our company's business plan. (411)

Response: See response to comment 1504.

1535. Comment: we support the ban on disposal of residual waste generated during the fracking of unconventional gas wells (Section 78.62(a)(1)). The draft regulations would allow well operators to continue disposing of drill cuttings and residual waste in pits on well sites as long as they comply with certain minimal environmental protection standards. And while the Department has tightened and increased some regulations around this on-site disposal practice, the agency has provided no testimony or evidence to demonstrate that these regulations will adequately protect the environment. (852)

Response: See response to comment 1493.

1536. Comment; § 78.62 Disposal of Residual Waste – Pits :As we noted above (at § 78.1), neither waste, nor residual waste, are defined in these proposed regulations or in the current version of the regulations. The lack of definition has made it difficult to understand what is allowed in this section. We recommend these definitions be addressed at § 78.1 given the attention to these topics in these regulations.

The language in this section is unclear leading to a range of questions that we hope can be addressed through additional definition and clarifications to existing and proposed text. As noted above (at § 78.1), definitions for “residual waste” and “waste” have not been provided. The proposed language in this section introduces the additional term “solid waste” and reads, “Solid waste generated by hydraulic fracturing of unconventional wells and solid waste generated by processing of fluids pursuant to § 78.58 [Onsite Processing] may not be disposed of on the well site.” Without providing definitions it is unclear if the Commonwealth is making a distinction between “waste”, “residual waste” and “solid waste”. A range of questions is raised by the existing language including: Is solid waste included in or covered under the term “residual waste” and/or are they considered one and the same thing? Is there some portion of residual waste that is not solid waste? Residual waste can be generated by well drilling or stimulation - can solid waste be generated by the same means? If solid waste from hydraulic fracturing of unconventional wells can't be disposed of on the well site, what solid and/or residual waste is there left to dispose of onsite? We request clarification of this section so that we can understand what materials may be buried near National Park System lands. (1062, 1133)

Response: The Department agrees that clarification is needed and has revised the subsection to refer to the solid fraction of the residual waste generated by hydraulic fracturing of unconventional wells and the solid fraction of the residual waste generated by processing of fluids pursuant to § 78.58.

1537. Comment: 78.62(a)(1) has been amended to prohibit solid waste generated by hydraulic fracturing of unconventional wells and solid waste generated by processing of fluids to be disposed of on the

well site. What is the need for this prohibition? We raise a similar concern with § 78.63(a)(1), relating to disposal of residual waste via land application. We ask EQB to explain in the Preamble and RAF of the final-form regulation the reasonableness of the requirements in these subsections. (1099)

Response: Solid waste generated by hydraulic fracturing of unconventional wells and solid waste generated by processing of fluids pursuant § 78.58 are concentrated waste streams which are not appropriate for disposal in accordance with §§ 78.62 and 78.63.

1538. Comment: 78.62(a)(1-4,6-8,10) The changes here reflect the addition of residual, stimulation and references to Act 13, all which are needful. We therefore, recommend their adoption at the minimum as is written. (660a)

Response: The Department acknowledges the comment.

1539. Comment: 78.62(a)(5) - Have the necessary electronic reporting setup in Greenport prior to the implementation of this section. The end of this statement should read ‘the operator shall re- notify the Department of the new proposed date of disposal. (411)

Response: The Department will ensure that all electronic notification and reporting systems required by the Chapter 78 and Chapter 78a are operational prior to finalizing this rulemaking.

1540. Comment: 78.62(a)(5): PADEP is proposing to require 72 hour notification for disposal of residual waste. Operators currently have to abide by drilling, notching, and fracking notifications. An additional notification for closing in of a drill pit will add to the confusion currently being experienced by conventional operators who drill and frac different wells every day. Something as simple as a rainstorm would cause a chain reaction: a pit can’t be encapsulated in the rain, so the state would need to be re-notified and operators would be forced to wait an additional 72 hours to meet notification requirements. No notification should be required for a process as simple as encapsulating a drill pit. I recommend an exemption for pits less than 1,000 bbl.(450)

Response: The Department disagrees that no notification should be required. The Department believes that the notification timeframe established in the regulations is the minimum time sufficient to allow Department field staff to plan inspection schedules. See response to comment 1522.

1541. Comment: 78.62(a)(5) The proposal also provides for a three day advanced notification prior to pit disposal which may allow for adequate planning for the Department’s staff to be onsite and perform an inspection of the work. Therefore, we do recommend both provisions for adoption. (660a)

Response: The Department acknowledges the comment.

1542. Comment: § 78.62(a)(7) – We recommend that residual waste burial in pits not take place in floodplains. As in other sections of our comments we recommend “300 feet” replace “100 feet” in this subsection. This would serve to account for more recent periods of increased precipitation and flooding due to increasingly erratic weather events. (1062, 1133)

Response: In accordance with § 3215(f)(1) of the 2012 Oil and Gas Act, no well site may be prepared or well drilled within any flood plain if the well will have a pit or impoundment containing drill cuttings, flowback water, produced water or hazardous materials, chemicals

or wastes within the floodplain; or a tank containing hazardous materials, chemicals, condensate, wastes, flowback or produced water within the floodway. The provision has been modified to prohibit disposal of cuttings within the flood plain or 100 feet of a body of water.

1543. Comment: 78.62(a)(9), who qualifies as an “other similarly trained person”? We ask EQB to clarify what is meant by this term or delete it. (1099)

Response: The term is defined through its use in the regulation. A similarly trained person is someone who has the ability to identify redoxymorphic features (mottling) in soil and accurately determine the elevation of the seasonal high groundwater table.

1544. Comment: § 78.62(9): Determination of Seasonal High Groundwater Table should be done by an independent 3rd party. A requirement that waste protection infrastructure should be located at a “safe distance” above SHGT is fitting and proper, though many have questioned whether 20 inches is sufficient distance to be “safe”. Just as important as the actual measure of distance is the issue of who determines what the SHGT actually is. It is quite simply a conflict of interest for a well operator to be the party that determines this. The Environmental Quality Board must require that SHGT be determined by an independent certified professional, similar to the requirement that pre-drilling water tests be done by an independent certified laboratory (§ 78.52). (869a)

Response: See response to comment 899.

1545. Comment: 78.62(a)(9): The proposed regulation stating that a certified scientist or engineer must evaluate the seasonal high groundwater table comes at extreme cost with little environmental benefit. Conventional operators can have dozens of small pits within a few acres. A pit cannot be utilized for drilling or fracking if it is below the groundwater table simply because it fills up with water. Therefore, the DEP is attempting to further regulate a situation that does not exist. I propose adding a pit exemption for pits less than 1,000 bbl. (450)

Response: The subsection requires the determination to be made by a qualified person. Operators will be held responsible to ensure that the requirements are met and to address and issues that may arise as a result of an improper determination. Elevated water tables within 20 inches of the bottom of the pit may impact structural integrity of the pit or cause intermingling of groundwater and the regulated substances contained within the pit.

1546. Comment: 78.62(a)(9) - While this provision is less detailed than a similar provision, 78.59b.(e) the required certification statement ideally will ascertain that the environment and specifically our water resources will be adequately protected. However, we suggest that just as in 78.59b.(e) this statement be part of this provision as well: In no case shall the regional groundwater table be affected. With this additional consideration we recommend this provision for adoption. (660a)

Response: Section 78.59b(e) contemplates artificial manipulation of the groundwater to maintain the 20 inch separation for centralized freshwater impoundments. Section 78.62 does not allow artificial manipulation of the groundwater to maintain the 20 in separation and therefore the suggested language is not needed.

1547. Comment: 78.62(a)(9): The proposed language related to a certified minimum 20” pit depth above the seasonal high groundwater table should be revised to remove the certification requirement. (1113, 1118, 1120, 1115a, 1176-1188)

Response: The Department disagrees with the proposed changes to subsection (a)(9) because

the 20 inch separation requirement allows for a physical barrier between the seasonal high groundwater table and the bottom of the pit to prevent mixing of impounded materials and groundwater and to ensure structural integrity of the pit. It is critical to ensure that the mandatory 20 inch separation is not compromised and therefore a certification by an adequately trained individual is appropriate.

- 1548.** Comment: Issuance of waivers for “alternative waste management practices” should be prohibited by the Chapter 78 revisions. The Department routinely issues alternative waste management waivers allowing the use of 20 mil pit liners to contain drilling, exploration and productions wastes rather than the thicker 30 mil which is required in § 78.62. Not long after DEP approved the use of thin HDPE liners, Scott Perry, Director of the Bureau of Oil and Gas Management stated in an August 20, 2010 letter to well operators that “...pits used by operators that produce gas from unconventional shale formations to dispose of residual waste must be lined with an impervious liner that it at least 30 mil thick. 25 Pa. Code 78.62(a)(10). DEP will be rescinding its approval to use 20 mil liners at these sites through a notice in the Pennsylvania Bulletin. The volume of material, the length of time the pits are in use and the potential impacts to the environment from leaking pits necessitate this action.” However, it does not appear that the allowance of the thinner pit liner was in fact rescinded. This leaves in place, the option for drillers to apply for and obtain a waiver for this “alternative” waste management practice – one that DEP has itself acknowledged to be risky and inappropriate for current drilling operations. (853a)

Response: Subsection 78.62(a)(11) requires liners to meet the requirements in §§ 78.56(a)(8)-(10) which requires the liner to be 30 mils thick at a minimum unless approved by the Department upon a demonstration that the alternative thickness is at least as protective as 30 mils. The Department has approved several such liners and will keep an updated list of approved alternatives on its website.

- 1549.** Comment: It is imperative that the EQB prohibit the continued use of alternate liner or natural materials for pits as allowed under § 78.62(a)(11). (853a)

Response: See response to comment 1548.

- 1550.** Comment: 78.62(a)(11-18) The codification of pit construction standards that mirror those for temporary storage creates standard regulations for all pits, temporary and permanent. All pits, whether temporary or permanent need to be constructed to the most rigorous and modern standards in order to adequately protect our water resources. We support that standardization for adoption. (660a)

Response: The Department acknowledges the comment.

- 1551.** Comment: In constructing waste pits 78.62 (a)(15), it only requires 18 inches of soil fill over the top of the pit. It would be better to require at least 30 to 36 inches of fill. Otherwise if someone is plowing or digging fence post holes, they could easily ruin the integrity of the top liner for the pit. (167)

Response: See response to comment 1462 regarding landowner consent and notice provided to landowner regarding the location of waste disposed on the well site.

- 1552.** Comment: § 78.62(b)(2)-(3) (Current Rule): Allowing leachate at 50 times the safe drinking water standard is unacceptable. How exactly is leaching at 50 times the safe drinking water standard to be abated? We are not talking here about disposal at a landfill or other central facility: We are talking

about someone's property. Why 50? Why should any amount of contamination of leachate at all be allowed? The number 50 should be changed to 1. (That is assuming that pits are accepted at all for storing anything but potable water.) (869a)

Response: Section 78.62 only applies to conventional wells, which typically generate a smaller volume of waste than unconventional wells. The drinking water standard requirements in these paragraphs must be understood in context with the pit construction standards in subsection (a) and the leachate standards established in paragraph (b)(1), relating to the hazardous waste toxicity characteristic standard. The pit construction standards in § 78.62(a) provide significant protection from the waste entering the environment and the bottom of the pit cannot be closer than 20 inches from the seasonal high groundwater table. These requirements should prevent significant leaching from the encapsulated pit. In addition, the drinking water standard test provides additional health-based protection to the requirements in subsection (b)(1), which are already conservative at 50% of the toxicity standards in 40 CFR Part 261.

1553. Comment: 78.62(b). This provision provides that residual waste not exceeding certain contaminate concentration levels may, while still contaminated be disposed of in an onsite pit. This pit of course meets these better construction standards, but nevertheless, we are considering the burial of contaminated residual waste. It is perhaps important to consider a few items. As noted on the Drilling Waste Information Management System, "Onsite pit burial may not be a good choice for wastes that contain high concentrations of oil, salt, biologically available metals, industrial chemicals, and other materials with harmful components that could migrate from the pit and contaminate usable water resources." [<http://web.ead.anl.gov/dwm/techdesc/burial/index.cfm>]

In regards to those contaminated residual wastes that do qualify for onsite disposal, we do have some concerns. Our concerns pertain to potentially larger volumes of cuttings per site relative to the upcoming technology change to conventional horizontal wells, and in the rare event, to those unconventional wells where such wells are not hydraulically fractured. The Department needs to view this with an eye to the future of a possible increase of conventional drilling. The renaissance of exploration may extend in a greater way to conventional drillers in the future. The price of oil is higher than in many years and a new operator, IMG Midstream is offering a new opportunity in the unconventional fields which they are now interested in applying to the conventional gas fields. "In planning the projects, IMG found that the same constraints that stifle conventional gas producers' getting their product to market also apply to Marcellus companies. So, now, the company plans to source from both conventional and shale producers."

[<http://www.post-gazette.com/news/state/2014/01/08/IMG-Midstream-plans-small-plants-to-generate-electricity-from-gas/stories/201401080079>]

This new opportunity, distributed energy, is one whereby field gas is transported to a facility and through CHP electricity is generated and via the nearest substation enters the electric grid. So, we are considering this with two viewpoints, one that conventional horizontal drilling may create per site a greater quantity of residual waste and distributed energy may increase drilling in the conventional gas fields. Thus, we are considering the possibility of an increasing load of contaminated residual wastes and whether it is appropriate to continue with onsite disposal.

PA Code 288 Residual Waste Landfills creates application and operating requirements for three specific kinds of landfills, Class I, Class II, and Class III. Application requirements include site analysis, cover and re-vegetation, water protection and monitoring, and closure provisions. Granted, oil and gas residual waste disposal pits are significantly smaller, but in consideration of small landfilling of contaminated residual wastes, it is appropriate to review what if any oversight may be

missing as compared to a regulated residual waste landfill. For example, as part of the site analysis, the applicant is required to sample and describe certain characteristics of the aquifer for at least two quarters, including concentrations of arsenic, barium and lead. The applicant also has to provide a water quality monitoring plan. Upon closure of the facility, the applicant is required to provide a schedule of ongoing post-closure water quality monitoring, leachate collection and treatment, along with a description of the manner in which funds will be available to cover these and other required conditions.

We are concerned about the manner in which materials leaching may not be monitored in so many well site pit locations. We are concerned with the lack of oversight as compared to a regulated residual waste landfill, how likely it is that rural private water supplies may be impacted, and if so, the seriousness of such impacts and how the impacted homeowner's water supply will be remediated. In addition, it is important to note that in general, conventional drillers are much smaller operators than unconventional. Many notable conventional drillers of years gone by such as Pennzoil Prod. Co. has not spud a well in Pennsylvania since 2007. Many other less known operators have also ceased their activity in Pennsylvania. Thus, our concern lies with what happens in the long-term obligation when a contaminated residual waste pit has unnecessarily impacted a water supply, whose obligation/liability does it then become? Again, we are really focused on the disposal of contaminated residual wastes and what that means in regards to onsite well disposal methods.

Clean Earth of Williamsport currently has a Beneficial Use R&D permit [WMGR097R017] to demonstrate that drill cuttings and drilling mud generated during Marcellus Shale operations can be successfully processed and beneficial used as engineered fill at brownfield or Act 2 sites, as a construction material at other sites, and in construction of drill pads.
[\[http://www.pabulletin.com/secure/data/vol41/41-21/853.html\]](http://www.pabulletin.com/secure/data/vol41/41-21/853.html)

On December 19, 2013 Penn State Extension hosted a webinar "Drilling and Pipeline Cuttings Reclamation" which provided an update regarding the progress made with the Beneficial Use Permit.

This is a very informative webinar, just full of interesting facts. One item that is mentioned is that "The 10% not suitable for reuse exhibited the following characteristics: 1) Naturally occurring radioactive material, norm above background and 2) Inorganic constituents such as Arsenic, Lead and Barium." Because these cuttings are not suitable for reuse, their destination becomes a landfill that is properly authorized to accept contaminated drill cuttings. To be clear, we do understand that these are cuttings from both vertical and horizontal bores and strictly unconventional drilling. Thus, while these cuttings may be from deeper depths than the conventional residual waste contaminated cuttings referenced in this section, still, some of the contaminated cuttings may essentially come from shallower formations. Other contaminated substances that may be disposed of in the onsite pit are items other than the cuttings such as drilling muds and thus a soil component. Thus, there is good information here that we can at least compare to 40 C.F.R. 261.24 Table I (relating to the characteristic of toxicity). Arsenic, Lead and barium are all constituents of unconventional drill cuttings and noted contaminants on Table I. These same contaminants may be common to conventional drilling and are contaminants that are of concern regarding residual waste landfills in PA Code 288.123.

It is worthwhile to consider the presence of these same contaminants in conventional drilling onsite disposal. Here follows a discussion regarding arsenic as an example.

Arsenic –

- Water samples collected indicated a presence of arsenic. *“Arsenic is a relatively new concern in drinking water with serious health effects at very low concentrations. It is thought to most often occur naturally from certain types of rocks but it can also come from treated lumber and pesticides.”*
- Only 2 percent of the wells exceeded the health-based drinking water standard of 10 mg/L for arsenic. The maximum concentration observed was 35 mg/L but the majority of wells (89 percent) had arsenic concentrations below 6 mg/L. Wells with high arsenic occurred mostly in northern Pennsylvania regions, presumably due to the geology of these areas. The three northern regions of the state had significantly higher arsenic concentrations than the southern regions with the highest occurring in the northwest region. These results are similar to results reported by the U.S. Geological Survey (2000) for 578 private wells that were sampled in southeast and extreme western Pennsylvania. Arsenic is thought to originate primarily from natural geologic sources, thus, it would not be expected to vary significantly over time.
- Contamination of private wells can occur through the interaction of both natural and human causes. Leaching of arsenic from bedrock is an example of a natural source. Leaching from an oil and gas waste pit is an example of human causes.
- The well owners that participated in this study were made aware of problems that occurred in their water supply. Note that the percent avoiding water quality problems increased dramatically in each case. Pollutants with more severe or better documented impacts on human health, like lead, arsenic and E. coli bacteria, had the highest avoidance rates at the end of the study. Since relative risk information was given to each well owner in the Penn State Cooperative Extension fact sheets included with each water test report, it is not surprising that well owners responded with greater actions for pollutants with greater risks.
- Arsenic is also a human health concern because it can contribute to skin, bladder and other cancers (National Research Council, 1999).
- The National Research Council (1999) recommended lowering the current maximum contaminant level (MCL) allowed for arsenic in drinking water of 50 µg/L (micrograms per liter), citing risks for developing bladder and other cancers. The U.S. Environmental Protection Agency (USEPA) will propose new and likely lower, arsenic MCL during 2000 (U.S. Environmental Protection Agency, 2000). This fact sheet provides information on where and to what extent natural concentrations of arsenic in ground water exceed possible new standards.
- As the concentration for a possible new MCL decreases, the likelihood of exceeding that standard increases. Although homeowners with private wells are not regulated, a lower drinking-water standard would mean that more homeowners will be consuming water with concentrations that exceed a standard.
- Reported arsenic concentrations in Pennsylvania groundwater are noted not only in the Northern Tier Region, but also across the vast Marcellus Play including, areas that are also locations prone to conventional/shallow oil and gas drilling. These are same areas where folks rely on private water sources, wells and springs. These are the same locations where contaminated drilling cuttings may be disposed in pits.

- *“This research is not intended to predict arsenic levels for individual wells; its purpose is to predict the probability of elevated levels of arsenic in groundwater to help public health efforts in Pennsylvania,” said USGS scientist Eliza Gross, who led the study. “The study results and associated probability maps provide water-resource managers and health officials with useful data as they consider management actions in areas where groundwater is most likely to contain elevated levels of arsenic.”*

The Pennsylvania Department of Health plans to use the maps as an educational tool to inform health professionals and citizens of the Commonwealth about the possibility of elevated arsenic in drinking water wells and to help improve the health of residents, particularly in rural communities.

Arsenic occurs naturally and, in Pennsylvania, is most common in shallow glacial and shale/sandstone type aquifers, particularly those containing pyrite minerals. Arsenic can also result from human activities. Geologic conditions, such as fractures, and chemical factors in groundwater, such as low oxygen, extreme pH, and salinity, can cause arsenic to leach from rocks, become mobile, and contaminate wells distant from the source. Groundwater with elevated arsenic levels – more than 4 micrograms per liter -- can be found in scattered locations throughout Pennsylvania.

Arsenic in drinking water has been linked to several types of cancer, reproductive problems, diabetes, a weakened immune system, and developmental delays in children.

Here is an example from Kanawha County, West Virginia that indicates the amount of Arsenic and other contaminant levels which may leach into soil from improperly buried contaminated pit waste. There is not an easy way to obtain such information from Pennsylvania pit waste lacking the investigation through many file reviews. We just wanted to provide an example of what soil tests may reveal in regards to Arsenic leaching. We are quite aware of the disparity between PA and WV regulations. Again, we are more interested in what a soil sample may reveal regarding contaminated pit waste and nearby private water supplies, especially in view that water supplies within the Northern Tier Region at times have indicated existing pre-drill sample results have indicated a presence of arsenic. We are concerned about such water supplies and the risk of a further increase of arsenic levels. This report is attached in a separate attachment labeled *Arsenic – example of pit soil screening level 5714_EA*. It is relevant to note that this particular operator, Cabot Oil and Gas also operates in Pennsylvania’s Northern Tier Region; attached please find the corresponding completion report. The contaminated soil in this case reveals an arsenic concentration of 16mg/kg. According to this report, the EPA Soil to Groundwater screening level reveals .292 mg/kg as compared to this particular Soil to Groundwater screening calculated to 5.8 mg/kg. Please refer to the attached report for further details regarding this environmental assessment.

- As per 40 C.F.R. 261.24 Table I (As of July 1, 2011): Arsenic’s Regulatory Level is 5 mg/L (Maximum Concentration of Contaminants for the Toxicity Characteristic). According to the regulation, which is only revised for “residual” the thresholds for Arsenic, for concentration of contaminants in the leachate from the residual waste are as follows.
 - Does not exceed 50% of Table I - or 2.5 mg/L
 - Does not exceed 50x the primary maximum contaminant level under § 109.202; which for arsenic is .010 mg/L or 50x - .5 mg/L
 - As per the previous map, Arsenic concentrations are shown as elevated if greater than or equal to 4.0 micrograms per liter.

Our concern here lies with the fact that there is a greater risk here due to the fact that arsenic is already present in water supplies and that the addition of onsite contaminated residual waste pits may create an unnecessary risk to nearby water supplies. Pits also lack onsite monitoring. Certainly there are options here. Requiring monitoring is one option. Reducing the acceptable contamination level is another. Better yet, we recommend that onsite contaminated residual waste pit burial be eliminated in favor of centralized disposal where such contaminants are more easily, properly and adequately monitored.

Since the Department has access to information regarding residual waste contaminants that are common to onsite residual waste pit burial, we recommend that the Department review such information along with the enormous amount of water sampling that has been done in areas prone to drilling in order to determine based on present water quality whether there are sufficient safeguards in place to adequately protect water supplies in the event of water resource impacts. This is new information that the Commonwealth has been gathering since the unconventional development began and this is a relevant and necessary review. We recommend centralized landfilling of all contaminated residual waste and request the Department consider this information and eliminate onsite contaminated residual waste pit burial. (660a)

Response: See response to comment 1552.

1554. Comment: No burial of waste pit liners nor drill cuttings.(400, 401, 1030, 1030a, 1073-1077, 1079-1082, 1084, 1086, 1158)

Response: See response to comment 1493.

1555. Comment: The regulation of a conventional shallow oil drilling pit that is often less than 1/10 of an acre in size in the same manner as a holding pond at an unconventional site that often exceeds several acres in size is inappropriate. This section alone demonstrates the overwhelming need for separating the regulatory requirements of conventional and unconventional operations. In addition, for small pits it is recommended that the rule simply state that pits be installed above the water table as determined by water entering (or not entering) the pit hole at the time of installation. (606, 606a)

Response: As part of this rulemaking, in response to comments and recent legislation (the Act of July 10, 2014 (P.L. 1053, No. 126)), the Department split Chapter 78 into two separate Chapters – one for conventional oil and gas wells (Chapter 78) and the other for unconventional wells (Chapter 78a). The purpose of this amendment to the final rulemaking was to clarify the different requirements for conventional and unconventional wells. The Department believes that having two completely separate regulatory Chapters should serve to eliminate any confusion about what requirements apply to conventional and unconventional wells. In addition, having separate Chapters allows the Department to craft regulations to match the environmental risks posed by each segment of the industry (compare, for example, section 78.56 and section 78a.56, which contain significantly different requirements for temporary storage at conventional and unconventional well sites, respectively).

The Department disagrees with the proposed changes because the 20 inch separation requirement allows for a physical barrier between the seasonal high groundwater table and the bottom of the pit to prevent mixing of impounded materials and groundwater and to ensure structural integrity of the pit.

- 1556.** Comment: Within a 10 mile radius of my unleased land, my best estimate is that there are now over 30 gas wells, with more to come. It no longer feels like a safe place to live. In reading over the details of these proposed Chapter 78 regulations, I do not feel any less vulnerable.

I have a Master's Degree in Special Education and 30 years of daily study and experience in the field of human health.

In both molecular biology and pharmacology, "small molecule" is the term used for a molecule with a low molecular weight, 10 to the minus 9th. At this size, minute beyond what you can imagine, a substance is able to activate a receptor site on a human cell membrane, and in so doing – alter gene expression, which can then signal the cell to die, multiply, or mutate. Thus, the central dogma of receptor pharmacology is that the effect of any substance is directly proportional to the number of receptors occupied, and the smaller the molecule, the greater the capacity to occupy and affect receptor sites. On the membranes of your cells, toxins wreak havoc and dilution DOES NOT count. Less is truly more.

It is my understanding of these principles of orthomolecular biology that cause my fear and trepidation when reading the proposed Chapter 78 regulations, for there is an inherent flaw that can be found throughout: the classification and therefore the regulation of potentially highly toxic material as "residual waste".

The meaning of residual is: that which is left over. Kind of like the meatloaf in your refrigerator; it's what remains after the main event. Residual waste is an enormous challenge to the gas industry, and one they will do everything in their power to minimize. The industry would like permission to dispose of this waste in the most inexpensive, unregulated, and unobserved way possible. And therein lies my worst fears.

Section 78.62 outlines the conditions under which waste, that when generated by other industries IS classified as toxic, can be left behind at the site for perpetuity, as long as operators follow very minimal requirements.

I propose that NO residual waste should ever be stored in pits or permitted to remain behind when the well site is abandoned. (644)

Response: See response to comment 1493.

- 1557.** Comment: Before I finish I want to read this beautiful passage under the section 78.62 on the disposal of residual waste, or pits.

Section 78.62: "Disposal of residual waste-pits. The proposed amendments to this section clarify that solid waste generated by hydraulic fracturing of unconventional wells or processing wastewater under § 78.58 (relating to onsite processing) may not be disposed of in a pit on the well site. However, residual waste, including contaminated drill cuttings, can be disposed of in a pit on the well site.

I repeat for all the homeowners in the room with well pads on their property or for wells on public lands, "residual waste, including contaminated drill cuttings, can be disposed of in a pit on the well site." a.k.a. it's buried; it's buried without your permission or you knowing about it. But it's fine since it's required to be buried 20" above the Seasonal High Water Table. So, what is "it?" What are these contaminants? Lets look at Triple Divide and fast forward to Judy Eckerfs chapter. Okay, we see the contaminants are iron (that's fine nothing wrong with more iron behind the swingset),

manganese (I think that's in toothpaste, no big deal), Barium, Benzene, Strontium, Arsenic, Thorium, Uranium or radium 226 and 228, or in other words radioactive elements that produce radon. Okay ... but, these are naturally occurring contaminants. Like the good radon! So, everything is fine ... right? It's not like we have cases where a pit was buried above a seasonal high water table and someone found these contaminants in a person's water supply. What? This whole chapter in Triple Divide is about Judy Eckerfs water supply being contaminated after drilling, and the company illegally buried the waste pit, and DEP found out two years later, and they didn't issue a fine, and they found the same contaminants in the water supply that would be in the waste pit. AND they had a predrill test that showed Judy had clean water uncontaminated water before drilling. So what happened? DEP's investigation concluded that the gas industry wasn't liable for the contamination to Judy's water, because Judy filed her complaint more than six months after drilling.

Look, this is American soil, American resources and American citizens who require that agencies who are provided with the duty to protect the air, land, soil and water do better than sniff test regulations. (849a)

Response: The Department acknowledges the comment.

- 1558.** Comment: The regulations related to residual waste are unlawfully inadequate. The DEP's own studies have shown extensive and significant environmental pollution and harm resulting from faulty pits. Some companies have already started using a closed loop system to better contain these harmful wastes. For some reason, despite all this, the DEP has proposed allowing onsite burial of pits. In fact, the DEP only requires the pits to be 20 inches above the seasonal high groundwater table. Other states are more protective, New Mexico requires 25 ft. Also, the DEP is only proposing setback requirements for pits in regards to streams flowing year round, rather than protecting intermittent streams, which is contrary to the Clean Streams law. Why the DEP would fail to recognize the persistent threat that pits pose to the environment and human health is difficult to comprehend. Clearly, all pits must be prohibited. (887)

Response: See response to comment 1493. The Department disagrees that the setbacks do not apply to intermittent streams. The rulemaking only allows for disposal pits for conventional operators where the disposal area is not within 100 feet of a watercourse or body of water or within a flood plain.

- 1559.** Comment: I've now attended three of these sessions, and I think that several general conclusions can be drawn from the comments thus far. The first conclusion would be that many folks believe that there is a substantial risk of ground water pollution due to the use of pits for drill cuttings or completion fluid storage. The second conclusion can be drawn from the number of comments insisting that the conventional and unconventional wells are two altogether different animals, and cannot and should not be lumped together as one entity.

In regard to the first issue I would like to explain a little about how those of us in the shallow well, conventional industry utilize pits. First of all, in the early days of shallow oil well drilling with cable tools, the drill cuttings were mixed into a slurry by the drilling tools themselves, and then removed from the well bore with a tool known as a bailer; a laborious and time-consuming process. Over the course of the several weeks that it would normally take to drill the well to bottom, the drill cutting slurry would be discharged to the ground, normally on the downhill side of the well. Today, if you take a shovel and dig around the downhill side of one of these old wells, you may find evidence of these cuttings, otherwise known in the industry as sand pumpings. They will usually be found under years of ground and leaf cover, with tree and shrub roots growing all through them. My

reason for mentioning this is so that you might understand that the drill cuttings removed from our shallow conventional wells are a pretty benign substance, mostly consisting of shale and sandstone. Dry, uncontaminated drill cuttings are harmless enough that many operators apply for a waiver that allows them to discharge them by a method called dusting, and then land farming them into the surrounding surface. Prior to the fracturing phase of the well development, a small pit is excavated, which would probably average about 10' wide by 25' long by 8' deep. It is then lined with a 20 mil plastic liner. For those who may not understand that terminology, suffice it to say that a 20 mil liner is a pretty tough piece of plastic. Typically a frac job on a shallow well takes from five to ten hours to complete and during this time, frac return water will be discharged into this pit, and recycled by means of a water pump back into steel tanks on the wellsite. Once the frac operation is completed, the liquid fraction in the pit is vacuumed off. The remaining solids mostly consist of frac sand. The liner is then folded in on itself, encapsulating those frac sand returns. The pit is then reclaimed using the dirt that was excavated from it.

The point of this explanation is to emphasize the difference between large scale pits constructed for shale gas wells versus small scale pits used by the shallow well folks. This, of course, ties into the point that has been made by so many at these hearings. Small pits vs. large pits. Small locations vs. large locations. Small number of trucks vs. large numbers of trucks. Small amounts of drill cuttings vs. large amounts of drill cuttings. Small amounts of waste fluids vs. large amounts of waste fluids. Wells costing thousands vs. wells costing millions.

We're comparing apples to oranges here, and one size does not fit all. Common sense must prevail. (902)

Response: As part of this rulemaking, in response to comments and recent legislation (the Act of July 10, 2014 (P.L. 1053, No. 126)), the Department split Chapter 78 into two separate Chapters – one for conventional oil and gas wells (Chapter 78) and the other for unconventional wells (Chapter 78a). The purpose of this amendment to the final rulemaking was to clarify the different requirements for conventional and unconventional wells. The Department believes that having two completely separate regulatory Chapters should serve to eliminate any confusion about what requirements apply to conventional and unconventional wells. In addition, having separate Chapters allows the Department to craft regulations to match the environmental risks posed by each segment of the industry (compare, for example, section 78.56 and section 78a.56, which contain significantly different requirements for temporary storage at conventional and unconventional well sites, respectively).

- 1560.** Comment: An additional concern has to be the radioactive waste as generated from oil and gas operation. This is radon country and radon gas will be released in the drilling process as well as contamination in the shale waste. As I recall several years ago, the interstate 99 portion of that road between Altoona and Penn State was held up for years because no one wanted to take the sulfur - pyrite contaminated shale fill that was being produced in the road cuts because of their acidic waste content, As a concerned citizen, This unwanted material needs to be disposed of properly not haphazardly and not permitted to blow around as an air pollutant (916)

Response: Air emissions from oil and gas operations are regulated by the Department under Article III of Title 25. Changes to Article III are beyond the scope of this rulemaking. The Department's 2015 TENORM Study Report presented several observations and recommendations regarding radioactive material associated with the oil and gas industry. While the study outlines recommendations for further study, it concluded there is little potential for harm to workers or the public from radiation exposure due to oil and gas development. The Report observed that there is little potential for radiological exposure to

workers or members of the public from the handling, hauling, and temporary storage of vertical and horizontal drill cuttings on natural gas well sites and recommended that the Department conduct research and investigation of vertical and horizontal drill cuttings for beneficial use, onsite disposal, and future landfill disposal protocols. The Department remains committed to protecting the public from unnecessary exposure to radiation and is actively pursuing the recommendations of the 2015 TENORM study report. Landfill disposal is outside of the scope of this rulemaking.

1561. Comment: Under section 78.62(b), pits containing residual waste are allowed to be constructed on-site if the leachate analysis from the residual being applied to the pit does not exceed 50 times the respective drinking water MCL level or if the leachate does not exceed 50 times any established health level established by the Department. We recommend that any pits containing material up to 50 times the MCL or advisory level be lined and monitored. We also recommend that some type of groundwater monitoring be required at least quarterly surrounding the pits in order to detect if the liner has failed. It is also recommended that any pits or impoundments be permitted under the Pennsylvania Residual Waste regulations. (1138)

Response: See responses to comments 1493 and 1552.

1562. Comment: § 78.62(b)(2) and (3) – We believe this may merely be a typo: subsection (1) reads “does not exceed 50% of the maximum concentration”. Subsections (2) and (3) read, “does not exceed 50 times” the primary maximum contaminant level and safe drinking water level respectively. (1062, 1133)

Response: The language referenced by the commenter does not contain any typos.

1563. Comment: Radiation should be specifically addressed in the new regulations. Other regulations are not sufficient to guide the current oil and shale gas industry because of the uncertain status of various regulations and the use of varied terms. For example, the Solid Waste Management Act (35 P.S. §§ 6018.101-1003), referred to § 78.58(d) has limited provisions for radiation. Also, the Guidance on Radioactivity Monitoring at Solid Waste Processing and Disposal Facilities (Document 250-3100-001) was offered only as a best management practice in the absence of regulation. This Guidance has many deficiencies:

- a. It carries no regulatory authority.
- b. It is dated written in 2004,
- c. It handles only small quantities of TENORM,
- d. It did not anticipate the nature and volume of tracking waste disposed in landfills.

Waste Disposal” (para 2) is among the topics included in this Act, yet omits two items. The Act omits 1) the handling, monitoring and storage of radioactive waste and 2) waste disposal in landfills an industry-accepted method of disposal of the waste of the hydraulic fracking process, tracking fluid and drill cuttings.

Current language of the Act calls this waste “contaminated” (e.g. § 78.62), yet classifies it as “residual waste.” Fracking fluid and drill cuttings in Pennsylvania are known to contain at least Radium-226, a radioactive material. Therefore provisions should be made for measuring radiation and handling waste appropriately. Radium-226 has a half-life of 1601 years and will forever remain to impact the health of residents and the environment.

The ACT fails to mention Radium-226, TENORM or the radioactive nature of this waste. In fact,

“radioactive” is found once in the document in § 78.123 regarding logs maintained on the well. (938, 938a)

Response: The Department’s 2015 TENORM Study Report presented several observations and recommendations regarding radioactive material associated with the oil and gas industry. While the study outlines recommendations for further study, it concluded there is little potential for harm to workers or the public from radiation exposure due to oil and gas development. The Department remains committed to protecting the public from unnecessary exposure to radiation and is actively pursuing the recommendations of the 2015 TENORM study report. Subsection 78.58(d) requires an operator processing fluids onsite to develop a radiation protection action plan which specifies procedures for monitoring and responding to radioactive material produced by the treatment process. This section also requires procedures for training, notification, recordkeeping, and reporting to be implemented.

1564. Comment: even if the new regulations preclude the use of pits or impoundments to manage chemicals and other waste materials, there are thousands of sites across the Commonwealth that were permitted before the new Chapter 78 rules will take effect that used pits or impoundments to manage well construction and development and production waste. At the vast majority of these sites, the Pennsylvania Department of Environmental Protection (PADEP) allowed the owner/operator to bury the residual materials and wastes in the pits or impoundments by pushing in the sides and covering the top with soil to complete the burial.

The Earthjustice comments explain our concerns about the environmental contamination incidents related to waste management in pits and impoundments and the potential for wastes buried in these pits and impoundments to leach into adjacent soil, groundwater, or surface waters. This contamination potential does not go away once the wastes are buried. Instead, each of these burial sites becomes an environmental legacy that may cause considerable damage from release and migration of contaminants in the future.

To mitigate the environmental risks from these burial sites, we propose that a program be added to the proposed Chapter 78 regulations to specifically address these risks. This program would have several components, including: 1) identifying the location of each waste burial site; 2) determining the type and volume of waste in each burial site; 3) determining the waste site design and burial method used; 4) testing the waste to determine whether any constituent exceeds applicable or relevant and appropriate federal, state or local environmental quality criteria; 5) testing soils, groundwater and surface waters in the vicinity of the burial site to determine whether waste constituents have already migrated from the burial site; 6) removal of all waste materials from the burial site, all soils contaminated from contaminant migration, and remediation of impacted groundwater and surface waters; 7) transportation with a manifest system for tracking shipments of wastes and contaminated soil to waste handling, treatment and disposal facilities licensed to accept such wastes; 8) establishing a record keeping and reporting system for the owner/operator to provide PADEP with the information identified above; 9) making all of this information available to the public on a real time basis (i.e. as soon as it is submitted) through the PADEP website using a system such as eFACTS or a prominently identified portion of the PADEP website; and 10) payment by permit applicants of a fee to establish a fund to address orphan burial sites. Outlined below are some preliminary aspects of each of these components.

Identification, location and information about waste burial sites (items 1-3 above): Within 90 days of the effective date of the revised Chapter 78 regulations all oil & gas owners/operators that have previously held a permit to drill an oil or gas well or operate an oil or gas production facility in Pennsylvania shall submit to PADEP a list of all sites where waste materials have been buried. This

list shall include a map showing the burial site location, global positioning system (GPS) coordinates for each burial site, the site design and burial method used (including whether a liner was installed and the type used), a description of the type of waste material buried, an estimate of the amount of waste material buried, information about any known leakage or contamination from the burial site, results of any prior monitoring or testing to identify or verify leakage or contamination, information on any removal of waste or remediation that has occurred, the date on which the burial was completed, the name and address of the owner/operator or contractor who generated the waste material, and, if the burial was performed by an entity that did not participate in activities that generated the waste material, the name and address of the entity which performed the burial. If an owner/operator does not submit this information within the 90 day period, any application it submits for a new oil or gas well or production facility shall not be deemed administratively complete and the permit shall not be issued until the owner/operator has provided the information described above. An owner/operator seeking a permit or approval from PADEP must identify all current and former entities which held an oil & gas well or production facility permit or approval from PADEP and in which the current owner/operator held any legal interest, directly or indirectly through any other entity.

Burial site testing (items 4 - 5 above): Within 180 days of receipt of the information described above, PADEP shall conduct testing of the burial site to determine whether any constituent of the buried material exceeds an applicable or relevant and appropriate environmental criteria or parameter established under federal, state, or local laws or regulations, including water quality criteria, maximum contaminate levels (MCL), or MCL goals established under federal, state or local laws or regulations, and the additional parameters identified in the Earthjustice comments. If the waste material in a burial site does exceed any of these criteria or standards, PADEP shall test soils, groundwater and surface waters to determine whether any contamination from the buried material has already occurred. If no contamination is found, PADEP will retest a year later for two years. The cost of such testing shall be reimbursed to PADEP by the owner/operator of the site that includes the burial site. Until such testing is completed no application for a new oil or gas well or production facility permit by the owner/operator of the site may be approved by PADEP.

Waste and Contaminated Soil Removal and Remediation (items 6-9 above): For any burial site where initial or subsequent annual testing has determined that one or more of the environmental criteria described above is exceeded, within 90 days the owner/operator shall excavate and transport offsite, using a manifest system established by PADEP, all waste material and soils exceeding the environmental criteria. If groundwater or surface water contamination is found by the testing, within 30 days the owner/operator shall begin remediation approved by PADEP. The removed material must be transported to a facility authorized to accept such materials. If the owner/operator of the site that includes the burial site does not perform the excavation and offsite transport and disposal of the waste and contaminated soil or initiate PADEP-approved remediation, PADEP will use funds from the orphan sites remediation fund described below to perform the excavation and transport offsite, including the manifesting of these materials, and the remediation of soil, groundwater, and/or surface water contamination. Any owner/operator that does not perform the excavation and offsite transport and/or remediation described above shall not be eligible to apply for or obtain any permit for an oil or gas well or production facility.

Orphan Sites Remediation Fund (item 10 above): As part of any application for an oil or gas well or production facility permit under Chapter 78, the applicant will pay a fee that PADEP shall use to establish a fund to perform waste burial site identification, testing and remediation at sites where no owner/operator is known or where the owner/operator has not performed the identification, testing, removal, remediation and offsite transport obligations described above. PADEP may also use the funds to investigate and respond to burial sites identified by written, email, or telephone

notification by the public to PADEP. When PADEP establishes this fund, it shall include information that clearly informs the public of its right to request investigation and response for specific burial sites. For any site where PADEP used monies from the fund to perform the functions described above, the fund shall have a claim against any owner/operator who does not comply with the described requirements and the non-compliant owner/operator shall not be eligible to obtain any permit or other authorization from PADEP.

Establishing and using a system as described above is the only way we can minimize the creation of a legacy of potentially thousands of contaminated sites spread across Pennsylvania. The federal Superfund and the state's Act 2 programs are already being stretched to their limits and do not need the addition of these oil or gas waste burial sites to that burden. (1151)

Response: See response to comment 1493.

- 1565.** Comment: The Department should eliminate waiver provisions or establish standards for when waivers may be granted. Section 78.61 contains setback provisions for the location of disposal areas from streams and watercourses that may be waived by the Department, with no standard for when the Department may waive the setback requirement. The Department should remove the waiver provisions or establish standards for when setback requirements may be waived. (852a)

Response: The Department has removed the waiver provisions from the subsection.

- 1566.** Comment: Geologists should certify groundwater level. Section 78.62(a)(9) only requires a soil scientist rather than a professional geologist to determine separation between pit bottom and seasonal high groundwater. Considering this is a rule for burying residual waste, the judgment should be made by a professional geologist. (852a)

Response: A soil scientist or other appropriately trained person can accurately determine the elevation of the seasonal high groundwater table.

- 1567.** Comment: Setback distances should be enlarged. The setback distance from a burial pits to buildings under section 78.62(a) and water wells under section 78.62(a)(8) (should be greater than 200 feet and should reflect the risk to public health associated with the use of the building. (852a)

Response: The setbacks are consistent with the setbacks in the 2012 Oil and Gas Act.

- 1568.** Comment: Temporary pit requirements should not be stricter than disposal pits. 78.62(a)(11) replaces liner language (coefficient of permeability of 1×10^{-7} cm/sec and thickness of 30 mil) with the requirements in 78.56(a)(8-10). Unfortunately, those paragraphs do not provide specific permeability or liner thickness, just "structurally sound and impermeable". The requirements for disposal pits should certainly be as strict as the requirements for temporary storage pits. (852a)

Response: Subsections 78.56(a)(8-10) do provide specific permeability and liner thickness specifications. The requirements for disposal pits are appropriate.

- 1569.** Comment: Landfills should not be located within 20 inches of a drinking water supply. It is somewhat ironic that Act 13 establishes setback requirements of hundreds of feet between a well that has multiple liners of steel and concrete between pollutional materials in the well and surface waters, and at the same time the Department allows residual waste to be disposed 20 inches above seasonal high groundwater on which Pennsylvanians depend for drinking water. The Department should end this practice, but if it does not, then it should either increase the distance protecting fresh drinking

water or explain in the preamble to its regulations the scientific basis for assuming that twenty inches of soil will protect groundwater. (852a)

Response: The 20 inch separation requirement allows for a physical barrier between the seasonal high groundwater table and the bottom of the impoundment to prevent intermingling of encapsulated pit and groundwater. Remediation of potential leaks from encapsulated pits by the soil is not expected due to the nature of the waste generally contained in encapsulated pits.

1570. Comment: Pit specifications for drill cuttings from below the casing seat must be clarified. Section 78.61(c)(1) refers to the original requirements of section 78.62(a)(5) - (18), some parts of which have been changed or do not exist with respect to liner requirements. The rule does not provide direction to appropriate liner requirements in the remaining proposed language. (852a)

Response: The final rulemaking contains the correct cross-references.

1571. Comment: Burying of frac waste on site or of drill cuttings should end completely and carry a fine of no less than \$ 500,000. (806)

Response: The burial of drill cuttings from unconventional operations is prohibited. Burial of drill cuttings from conventional operations has been conducted for many years without reported impacts on health and safety or the environment.

1572. Comment: There is no public notice of where these sites are located, no transparency about what is disposed in these sites, the sites are allowed to be located 20 inches above fresh drinking water, and there is no long term monitoring to ensure that the sites are not leaking. These protections are inadequate.

It is true that the Department establishes limits for the concentration of various pollutants that can be in this waste. For example, the waste cannot contain pollutants in concentrations that exceed 50% of what would make the waste hazardous for toxicity. But these limits miss the mark. First, the limits are only as good as the testing protocols, and these regulations contain no requirements that the test be representative and performed according to accepted protocols. Second, there is no oversight requirement associated with the testing. The operators are free to ignore the regulations, and the burden would be on the agency to dig up these sites after the fact, sample them, and prove that the operator engaged in unlawful activity to enforce the standards. In other words, the requirements look nice, but as a practical matter the Department is not capable of enforcing the requirement.

I no other person, and few other industries are offered this convenience. Even the power industry must dispose of its fly ash in double-lined landfills with long-term monitoring and closure plans. I have seen the state prosecute individuals for dumping or burying household trash, or construction and demolition debris, and yet it officially sanctions this industry disposing of its residual waste at its construction site. This would be similar to the agency enacting a regulation allowing steel mills or dry cleaners to dig holes and bury their residual waste on their back forty.

What is worse, the DEP knows that many well-site disposal pits have leaked in recent years, contaminating surface and groundwater across Pennsylvania. When events in West Virginia recently reminded us of the importance and value of our clean water supplies, why would we promote this risky behavior? It is time that the Department cease allowing this method of waste

disposal to continue. They would not allow you to do it. They would not allow mom-and-pop businesses to do it. They should not allow it at oil and gas well sites.

At the very least, the DEP should (1) require DEP, and landowner and the public be notified where these sites will be located; (2) require that sampling of the waste be representative and results submitted to the agency before disposal occurs; and (3) require long-term groundwater monitoring. (852)

Response: See response to comment 1493.

§ 78.63 Disposal of residual waste – land application

1573. Comment: 78.63(a)(1) – Commentator questions the legality and scientific basis for the blanket prohibition of land application of residual waste generated by hydraulic fracturing of unconventional wells and solid waste generated by processing of fluids pursuant to § 78.58. Land application should be permitted if the waste meets the requirements of Section 78.63(b). Benefits would include conservation of landfill space and reduced heavy traffic on local communities.

Suggested Regulatory Language:

(1) The residual waste is generated by the drilling or stimulation of an oil or gas well that is located on the well site. Residual waste generated by hydraulic fracturing of unconventional wells and residual waste generated by processing pursuant to § 78.58, may not be disposed of on the well site unless it meets the requirements of § 78.63(b). (1153)

Response: See response to comment 1504.

1574. Comment: 78.63 – We support the EQB’s proposal to prohibit land disposal of solid waste generated by hydraulic fracturing of unconventional wells or processing of fluids under § 78.58. (1143)

Response: The Department acknowledges the comment.

1575. Comment: We oppose the land application of any other oil and gas waste, and we do not support the EQB’s proposal to allow the land application of residual waste (including contaminated drill cuttings).

We also do not support the distinction made here between unconventional and other oil and gas wells; this rule should apply to all wells in Pennsylvania.

We oppose the long-term onsite burial of any waste contaminated with chemicals, oil, grease, pollutorial materials, regulated substances, water based drilling muds that contain chemical additives, oil-based drilling muds, polymer-based drilling muds containing mineral oil lubricants, NORM, TENORM, mercury, heavy metals, or any other chemical additives or toxins.

We recommend that § 78.63 be revised as follows:

§ 78.63. Disposal of residual waste prohibited—land application.

The owner or operator is prohibited from disposing of any waste from Oil and Gas Operations by land application. (1143)

Response: This section of the Chapter 78 has remained largely unchanged since 1989 and the Department has allowed the disposal of residual wastes including land application of contaminated drill cuttings at conventional well sites since that time without significant harm to public health and safety or the environment. As long as the requirements in § 78.63 are met, including the leachate analysis requirements in § 78.63(b), the disposal of residual wastes including contaminated drill cuttings via land application at conventional well sites is reasonable and appropriate to ensure adequate protection of public health and safety and the environment. Conversely, the Department does not believe that the regulatory requirements originally promulgated in § 78.63 are sufficiently protective when applied to unconventional wells and well sites and the wastes generated thereby. Consequently, the Department has revised § 78a.63 to require operators of unconventional wells to obtain a permit from the Department prior to disposing of residual wastes including contaminated drill cuttings via land application at unconventional well sites.

1576. Comment: Amend subsection (a)(5) to allow Registered Small Businesses to submit notice via the telephone. (1135)

Response: The Department does not believe that the requirement to notify the Department electronically through its website poses an undue hardship on small business. Regarding electronic submission of reports and notifications, see response to comment 891.

1577. Comment: Collection and analysis of chemical waste samples that are intended to be disposed of onsite needs to be a mandatory requirement. The draft regulations leave this to the discretion of the operator, which should not be permitted. This is particularly important where a disposal site does not need to be inspected by the agency prior to closure, and there is no provision for long term monitoring of ground water. (19, 21, 26, 90, 142, 165, 180, 181, 189, 192, 391, 843, 851, 868, 946, 958, 1005)

Response: The Department disagrees and believes that disposal of residual wastes including contaminated drill cuttings at the well site that meet the requirements specified in §§ 78.62(b) and 78.63(b) do not present a health and safety or environmental concern. Chemical analysis must be conducted in order to demonstrate compliance with these requirements.

1578. Comment: 78.63(a)(1) – There is no scientific reason for PA DEP to not allow land application of drill cuttings from Unconventional wells. The PA DEP should be encouraging the use of drill cuttings to reclaim abandoned strip mines. (92a)

Response: Unconventional well drilling requires the addition of various chemicals to the drilling mud that contaminates the drill cuttings and renders the cuttings unacceptable for land application. Additionally, the volume of drill cuttings produced by drilling unconventional wells makes land application difficult due to the amount of land disturbance necessary to meet the regulatory 1:1 mixing requirement. The use of drill cuttings on abandoned mine lands is beyond the scope of this rulemaking.

1579. Comment: Ban road or land application of drilling waste, whether brine for de-icing, buried drill cuttings, or other such activities. (99, 649)

Response: With regard to drilling waste from unconventional wells, the Department acknowledges the comment. The rulemaking provides provisions that protect health and

safety as well as the environment and encourages the beneficial use of certain drilling wastes, as well as requirements to ensure the safe disposal of certain residual wastes on well sites.

- 1580.** Comment: The Board should deny the Department's proposed revisions to the Chapter 78 oil and gas regulations relating to the disposal and beneficial use of residual waste to the extent that they are contrary to the Solid Waste Management Act and associated regulations. As to the disposal of residual waste at the well site, the commentator urges the Board to act quickly to adopt more protective regulations that are consistent with the Department's solid waste management program, and that are adequate to protect the public and the environment. As to the beneficial use of brine for dust suppression and road stabilization, the Board should deny this proposed revision. The Board has already promulgated regulations that establish a process whereby residual wastes can be approved for beneficial uses. 25 Pa. Code Chapter 287. The Department must utilize this process if it wants to approve the beneficial use of gas well brine for dust control and road stabilization. (1152)

Response: The rulemaking is consistent with section 3273.1 of the 2012 Oil and Gas Act and the Solid Waste Management Act and regulations promulgated thereunder. Section 3273.1(a) exempts an operator from the obligation to obtain a permit and post a bond under the Solid Waste Management Act. Section 3273.1(c) recognizes that the duties or obligations of an owner or operator of a well site under the Solid Waste Management Act are not diminished or otherwise affected by Section 3273.1 The substantive requirements in Sections 78.61-63 and 78a.61-63 are as equally protective as those in the residual waste regulations.

With respect to the beneficial use of brine for dust suppression and road stabilization, the Board is not constrained by the residual waste beneficial use regulations. Chapters 78 and 78a are being promulgated under the authority of the Solid Waste Management Act as well as several other environmental statutes, and therefore additional regulations related specifically to the beneficial use of brine may be included within these Chapters. Section 105(a) of SWMA provides the Environmental Quality Board with the authority to adopt rules, regulations, criteria and standards of the Department to carry out the provisions of SWMA, including those relating to the protection of safety, health, welfare and property of the public and the air, water and other natural resources of the Commonwealth.

- 1581.** Comment: Prohibit the land application of all wastes including topsoil water, pit water, fill, or dredged material. These substances can contain chemicals and sediments bound with pollutants that pose risks to water, air and soil. (17, 18, 19a, 72, 73, 79, 102, 104, 125, 148, 169, 402, 492a, 475, 626, 787, 808, 843, 853a, 884, 909, 926, 938, 939, 947, 1030, 1030a, 1039, 1058, 1064, 1073-1077, 1079-1082, 1084, 1101, 1102, 1148, 1158, 1161, 1168, 4582 – 4584, 4584 – 4650)

Response: See response to comment 1575.

- 1582.** Comment: 78.63(a)(l) - The operator should be allowed to dispose of unconventional solid waste at the well site. What is the scientific basis for not allowing the disposal of this material? Why prohibit on-site disposal from unconventional wells without data and tests to support the prohibition?

78.63(a)(5) - Have the necessary electronic reporting setup in GreenPort prior to the implementation of this section.(411)

Response: Unconventional well drilling requires the addition of various chemicals to the drilling mud that contaminates the drill cuttings and renders the cuttings unacceptable for land application. Additionally, the volume of drill cuttings produced by drilling unconventional wells makes land application difficult due to the amount of land disturbance

necessary to meet the regulatory 1:1 mixing requirement.

The Department will ensure that all electronic notification and reporting systems required by the Chapter 78 and Chapter 78a are operational prior to finalizing this rulemaking.

- 1583.** Comment: 78.63(a)(1): The option of land application at the well site is available providing the operator satisfies the requirements. The waste must be generated at that well site. Residual waste generated by hydraulic fracturing of unconventional wells and generated by processing pursuant to § 78.58 may not be disposed of by land application. We support this provision for adoption as written. (660a)

Response: The Department acknowledges the comment.

- 1584.** Comment: The proposed amendments to this section clarify that solid waste generated by hydraulic fracturing of unconventional wells or processing fluids under § 78.58 may not be disposed of by land application at the well site. However, residual waste, including contaminated drill cuttings, can be disposed of on the well site by land application. The amendments to this section include a new provision that requires the operator to notify the Department 3 business days prior to land application. This notice shall be submitted electronically to the Department through its web site and include the date the residual waste will be disposed. Compliance with this section shall be documented and made available to the Department upon request as well as submitted in the well site restoration report. (566)

Response: The Department acknowledges the comment.

- 1585.** Comment: The commentators do not approve of the use of land application and or disposal of drilling waste at well sites. PA DEP neglected to allow the surface owner to reject this practice on property that is only being leased. Land application should only be allowed if the surface property owner fully agrees with the practice. Please include landowner agreements as part of this practice. It is our understanding that many different constituents are found within each step of gas well development and that all waste should be handled according to contaminated conditions. Landowners are not allowed to contaminate their property in fear of health reasons, nor should the oil and gas industry be allowed to do the same. These practices lead to diminished land values and use. (566)

Response: The rule making provides standards under which the waste can be safely disposed of at the well site. The Department encourages property owners who have concerns with the disposal of residual waste at the well site to negotiate lease restrictions with the operator. The final-form rulemaking contains a requirement that the well operator notify the surface landowner of the waste disposal and the location of land application.

- 1586.** Comment. No wastewater, drill cuttings, or other substances produced on the well site should be applied to land areas. (609, 926, 938a)

Response: See response to comment 1575.

- 1587.** Comment: No burial or land application of drill cuttings. We are creating the opportunity for thousands upon thousands of future “superfund” sites if we allow this toxic and often radioactive waste to be buried on well sites. I don’t want this hidden pollution buried in my community or my backyard or farm field and not near my water supplies! (787, 1030, 1030a, 1064, 1073-1077, 1079-1082, 1084, 1101, 1158, 4584 – 4650)

Response: See response to comment 1575.

1588. Comment: Residual waste/ brine trucks should be marked with hazardous waste signs, numbered and tracked from point to point to ensure delivery to proper facilities. (843)

Response: “Drilling fluids, produced waters and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy” are solid wastes but not hazardous wastes by definition. Therefore, application of hazardous waste transportation requirements to such wastes is not appropriate. Residual waste transportation is subject to regulation under the Solid Waste Management Act, 35 P.S. § § 6018.101 et seq., the Waste Transportation Safety Act, 27 Pa.C.S. § § 6201 et seq., and Chapter 299 of the Department’s residual waste regulations.

1589. Comment: The use of production fluids and reuse of flowback and produced water should be strictly regulated under RCRA and not be allowed to be used for things like dust suppression on roads. (845)

Response: The rulemaking provides provisions that protect health and safety as well as the environment and encourages the beneficial use of certain drilling wastes.

1590. Comment: As with other regulatory programs (e.g. RCRA), the regulations should provide language that allows the operators to rely on generator knowledge for disposal purposes in lieu of continued chemical analysis of material generated on site. (908)

Response: After a waste stream from a specific source has be characterized, continuous chemical analysis is not required, however, the waste stream must be monitored to ensure it has not changed.

1591. Comment: The DEP should be responsible for testing of the chemical content and radioactivity of all frack waste. No wastewater or drill cuttings should be applied to land areas. (912)

Response: The Department does not have the financial resources available to conduct testing of all hydraulic fracturing wastes. When testing is required the operator is responsible for the cost of testing through an accredited independent third party laboratory. See response to comment 1575.

1592. Comment: Residual waste disposal on roads and land is not a beneficial use and common sense says that this is what happened at Times Beach, MO years ago and the disposal of residual waste from gas and oil development has many of the same problems. It spreads the waste far afield but byproduct wastes can pollute waterways and landscapes in a more significant manner than other residual wastes. DEP regulations must ensure that land spreading does not result in contamination of soil, vegetation, and groundwater, particularly near drinking water supplies, streams, and rivers. (916)

Response: See response to comment 1575. Brine spread on roads must meet specific chemical parameters and be applied at appropriate rates and in appropriate locations to ensure protection of public health and safety and the environment.

1593. Comment: Disposal of liquid and solid waste is of major concern. First, the application of brine on roads is a public health issue for those living near where this occurs. Transfer of toxic materials

into areas where children and the elderly are exposed will increase their risk of developing illness associated with chemical exposure. The addition of compounds such as barium, strontium, radium 226 and unidentified chemicals used in the gas drilling process only increase the negative impact this runoff has on our rivers and streams. Disposal of brine, drill cuttings and residual waste exclusively in hazardous waste approved facilities is critical to protect public health. DEP's current "beneficial use" policy allowing drill cuttings and residual waste to be solidified and used as odor cover in municipal landfills is an unsafe practice. Allowing toxic materials admittance to a municipal landfill will most certainly lead to negative health impacts for residents on adjacent properties who are breathing the now contaminated air. Additionally, there is potential for contamination of public water from landfill leachate lines which are attached to municipal water authorities and or waste treatment facilities. These authorities do not have the proper equipment to filter out contaminants should they enter the leachate. If a landfill liner becomes compromised there is also the potential for private water supplies to become polluted through groundwater contamination. Land application or burial in a location other than a hazardous waste facility should not be allowed for these toxic materials. (919, 943)

Response: The rulemaking provides provisions that protect health and safety as well as the environment and encourages the beneficial use of certain drilling wastes. Sections 78a.62(a) and 78a.63(a) prohibits the disposal of residual wastes generated by hydraulic fracturing of unconventional wells and residual waste generated by processing residual waste from hydraulic fracturing of unconventional operations. Land application or burial on the well site is not allowed unless established contaminant parameters are met. See response to comment 1575. The issues raised by the commentator regarding off-site management of residual wastes are beyond the scope of this rulemaking.

- 1594.** Comment: The US EPA is aware of the risks involved with fracking wastes. A confidential Environmental Protection Agency draft document on the environmental impacts of the oil, gas and coal industries was obtained by the New York Times. It shows that federal authorities are concerned about public drinking water supplies especially in the regions of the Marcellus Shale. According to the E PA, "As oil and gas development encroaches on suburban and urban areas, human health and environmental impacts are expected to escalate." The document cites waste disposal as the main "bottleneck for the industry." The study was provided to The Times by an EPA official who said it shows that dilution of drilling waste does not always succeed in eliminating the health risks posed by that waste. The study is marked confidential and was conducted on behalf of the American Petroleum Institute in 1990. It found a potential increased risk of cancer among people who often eat fish from waters where drilling waste is discharged. The study is relevant because state regulators in Pennsylvania have said that dilution is effectively removing the risks posed by drilling waste that is discharged into rivers. Importantly, this study found an increased risk of cancer when drilling waste was dumped into a body of water that was larger than Pennsylvania Rivers. Furthermore, state records indicate that the radium levels found in Pennsylvania wastewater are much higher than those used in this study.

In a study by the Pennsylvania Department of Environmental Protection on Marcellus Shale wastewater discharge to the South Fork Tenmile Creek in Southwest Pennsylvania, state regulators concluded that even after treatment plants reduced the amount of hydro fracking wastewater that they were accepting, the water discharged from these treatment plants still had a negative impact on aquatic life in the streams that received the discharge." (926)

Response: Chapter 78 does not authorize discharges to surface waters. The issues raised by the commentator are beyond the scope of this rulemaking. The events in South Fork Tenmile Creek as described in the comment occurred in 2008-2009. The Department has since taken

action to rectify this situation and others like it.

- 1595.** Comment: The regulations should include a comprehensive waste management system such as that adopted under Subtitle C of the federal Resource Conservation and Recovery Act. Although the RCRA program now has limited application to the oil & gas industry at the federal level, there is no restriction in federal law that precludes a state from applying more stringent waste management requirements. It is essential that there be a true “cradle to grave” waste management program applicable to oil & gas development. (930)

Response: The comment is beyond the scope of this rulemaking.

- 1596.** Comment: The standards state that residual waste including contaminated drill cuttings may be disposed of on site. This is unacceptable for this or any industry. The storage of contaminated (to any degree) including radioactive drill cutting should be prohibited

Presently, the tracking industry is exempt from the regulation of hazardous substances that other industries must abide by. Those standards should be applied to all aspects of the storage, transport, and use of hazardous materials contained in pits, centralized impoundments, and tanks. Because Marcellus shale is more radioactive than other shale plays, the drill cuttings can be more radioactive, as evidenced by alarms activated at waste disposal sites and the high measurement of radioactivity in a study downstream from the Josephine Treatment Plant in Indiana County which treats wastewater from oil and gas drilling. Radium levels of sediment samples collected in Blacklick Creek, downstream from the plant, were 200 times greater than background samples. Researcher Vengosh noted that levels exceed thresholds for radioactive waste disposal and pose “potential environmental risks of radium bioaccumulation in localized areas of shale gas wastewater disposal.” There is no mention that evidence of positive radioactivity or chemical toxicity tests precludes the storage of drill cuttings in a pit or on-site burial. (938)

Response: The Department’s 2015 TENORM Study Report presented several observations and recommendations regarding radioactive material associated with the oil and gas industry. While the study outlines recommendations for further study, it concluded there is little potential for harm to workers or the public from radiation exposure due to oil and gas development. The Report also observed that there is little potential for radiological exposure to workers or members of the public from the handling, hauling, and temporary storage of vertical and horizontal drill cuttings on natural gas well sites. In addition, the 2015 TENORM Study Report concluded that there is little potential for radiological exposure to workers or members of the public from sediment-impacted soil at publically owned treatment works (POTWs) that have received wastewater from the oil and gas industry and at centralized wastewater treatment plants (CWTs) that treat wastewater from the oil and gas industry. The 2015 TENORM Study Report also observed that there is a radiological environmental impact to soil from the sediments from these POTWs and CWTs. The Report recommended that the Department: 1) conduct additional radiological sampling and analyses and radiological surveys at all POTWs and CTWs accepting wastewater from oil and gas operations to determine if there are areas of contamination that require remediation; 2) determine if it is necessary to establish radiological effluent discharge limitations; and 3) determine if the development and implementation of a spill policy is necessary. The Department remains committed to protecting the public from unnecessary exposure to radiation and is actively pursuing the recommendations of the 2015 TENORM study report. Section 78.58(d) requires an operator processing fluids onsite to develop a radiation protection action plan which specifies procedures for monitoring and responding to radioactive material produced by the

treatment process. This section also requires procedures for training, notification, recordkeeping, and reporting to be implemented.

1597. Comment: Residual contaminated waste is only properly disposed of at centralized permitted landfills. We need to have our environment protected from multiple mini contaminated landfills. Contaminated wastes need to be properly monitored for leaching and affecting private rural water supplies. That is best done at centralized landfill locations. (1035)

Response: See response to comment 1575.

1598. Comment: § 78.63 Disposal of Residual Waste – Land Application § 78.63(a)(1) – We have similar concerns as those described above under § 78.62(a)(1). There are, however, some differences we note. In § 78.62(a)(1), “residual waste is generated by the drilling or stimulation of an oil or gas well.” (emphasis added) In § 78.63(a)(1), “residual waste is generated by the drilling of an oil or gas well.” Absent a definition for residual waste, we don’t understand how these two sections can be different. In § 78.62(a)(1), “solid waste generated by hydraulic fracturing of unconventional wells and solid waste generated by processing of fluids pursuant to § 78.58, may not be disposed of on the well site.” In § 78.63(a)(1), “residual waste generated by hydraulic fracturing of unconventional wells and residual waste generated by processing pursuant to § 78.58, may not be disposed of by land application.” Please clarify the reasons for the differences in these comparable sections. As we note elsewhere, definitions for waste, solid waste and residual waste would aid greatly in our understanding of the Commonwealth’s intent. (1062, 1133)

Response: See response to comment 1536.

1599. Comment: The Proposed Regulations should also ban the disposal of residual waste by land application at the well site. *See* § 78.63.

Certain oil and gas exploration and production wastes, including drilling fluids and drill cuttings, are exempt from the United States Environmental Protection Agency (the “EPA”) hazardous waste regulations, promulgated under the authority of Resource Conservation and Recovery Act (the “RCRA”), Subtitle C. Otherwise, the waste disposal methods provided for under §§ 78.61-78.63 of the Proposed Regulations would be prohibited by federal law. The decision in *Robinson Township* established that under the ERA, the Commonwealth is a trustee of Pennsylvania’s public natural resources. The court reasoned that, “[a]s a fiduciary, the Commonwealth has a duty to act toward the corpus of the trust – the public natural resources – with prudence, loyalty, and *impartiality*.” *Robinson Township* at 38 [emphasis added]. The *impartiality* element of this duty should preclude the Commonwealth from promulgating regulations which enable oil and gas operators to take advantage of the aforementioned federal hazardous waste exceptions. The Commonwealth cannot be said to act impartially toward Pennsylvania’s public natural resources by permitting an oil or gas well operator to dispose of the hazardous waste it generates by methods that are prohibited for other industries operating in Pennsylvania. (1070)

Response: Pursuant to federal law, 40 CFR § 261.4(b)(5), drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy are excluded from being managed as hazardous waste. However, although the Department has incorporated that exclusion into its hazardous waste regulation by reference, under Pennsylvania law, these materials are still considered a solid waste. Despite the federal exemption, these materials are regulated as residual waste in the Commonwealth.

Residual waste is defined in the Solid Waste Management Act, 35 P.S. Sections 6018.101 et seq. and residual waste regulations, 25 Pa. Code Chapter 287, to include wastes from industrial activities. The activities authorized in § 78.63 are in compliance with the SWMA. This section of the Chapter 78 has remained largely unchanged since 1989 and the Department has allowed the disposal of residual wastes including land application of contaminated drill cuttings at conventional well sites since that time without significant harm to public health and safety or the environment. As long as the requirements in § 78.63 are met, including the leachate analysis requirements in § 78.63(b), the disposal of residual wastes including contaminated drill cuttings via land application at conventional well sites is reasonable and appropriate to ensure adequate protection of public health and safety and the environment consistent with Article I, Section 27 of the Pennsylvania Constitution. Conversely, the Department does not believe that the regulatory requirements originally promulgated in § 78.63 are sufficiently protective when applied to unconventional wells and well sites and the wastes generated thereby. Consequently, the Department has revised § 78a.63 to require operators of unconventional wells to obtain a permit from the Department prior to disposing of residual wastes including contaminated drill cuttings via land application at unconventional well sites. Amended § 78.63 is reasonable and appropriate and effectively implements Article I, Section 27.

- 1600.** Comment: 78.63(a)(21) requires the owner or operator to remediate the land application area until compliance is demonstrated, if the additional analysis, including soil surveys, monitoring and chemical analysis, fails to show compliance with the loading and application rate of waste consistent with DEP guidelines. However, there is no explicit timeframe by which the additional analysis must take place, or when the owner and operator must come into compliance. Leaving the remediation of contaminated soils for an unknown period of time will increase the risk of pollution to streams and impacts on aquatic life. (1157)

Response: The time needed for remediation of contaminated soils may vary from site to site. The Department will require remediation of contaminated soils as expeditiously as possible and establish a site specific timeframe for compliance for each instance. Establishing a generalized timeframe for compliance that is not site specific may result in contamination being in place longer than necessary.

- 1601.** Comment: Commentator opposes the disposal of residual waste, including contaminated drill cuttings, by land application. Before disposing of residual waste by land application, an operator or owner should be required to test the waste material, above and beyond the testing requirements of § 78.63(b), for naturally occurring radioactive material (NORM) levels. If NORM is found, then the residual waste materials should not be permitted to be disposed of by land application. (1157)

Response: See response to comment 1575. The testing requirements in subsection (b) include testing for TENORM and establish criteria for several TENORM constituents. The Department's 2015 TENORM Study Report presented several observations and recommendations regarding radioactive material associated with the oil and gas industry. While the study outlines recommendations for further study, it concluded there is little potential for harm to workers or the public from radiation exposure due to oil and gas development. The Report observed that there is little potential for radiological exposure to workers or members of the public from the handling, hauling, and temporary storage of vertical and horizontal drill cuttings on natural gas well sites and recommended that the Department conduct research and investigation of vertical and horizontal drill cuttings for beneficial use, onsite disposal, and future landfill disposal protocols. The Department remains committed to protecting the public from unnecessary exposure to radiation and is actively

pursuing the recommendations of the 2015 TENORM study report. Landfill disposal is regulated under the Solid Waste Management Act and is outside of the scope of this rulemaking. .

- 1602.** Comment: All liquid and solid waste must be monitored for all relevant forms of radiation and readings must appear clearly on current labels in at least the following conditions:
- (1). All temporary and permanent impoundments, storage tanks, pits, that collect discharges from wells must be tested at least quarterly.
 - (2) All liquid and solid materials transported to permanent sites such as landfills and injection wells, must be tested and clearly labeled, regardless of whether the destination state requires such labeling. (609, 938, 938a)

Response: Regarding (1), § 78.58(d) requires an operator processing fluids onsite to develop a radiation protection action plan which specifies procedures for monitoring and responding to radioactive material produced by the treatment process. This section also requires procedures for training, notification, recordkeeping, and reporting to be implemented.

Regarding (2), testing and labeling requirements for transportation of radioactive materials are outside of the scope of this rulemaking.

- 1603.** Comment: DEP should set standards for radiation monitor alarm set points. Trucks carrying above a certain limit must go to sites designated for radioactive waste.
Trucks below a certain radiation limit and volume might be allowed at a landfill site if the landfill meets at least the following features:

- i. The intensity and volume of radioactive substances in the landfill has not already reached a pre-determined limit set by the DEP, and verified by a third independent party.
- ii. The amounts of radioactivity and volumes are publically disclosed on a quarterly basis.
- iii. Residents within a 5 mile radius of the landfill are informed annually of the radioactivity status
- iv. The landfill monitors radiation on landfill perimeters and in storm run-off and streams nearby on at least a quarterly basis.
- v. The landfill leachate does not move the radioactivity to sites other than those designed for radioactivity. For example, the landfill cannot send radioactive leachate to municipal waste water treatment plants. (609, 938, 938a, 944)

Response: The issues raised by the commentator regarding offsite management of wastes are beyond the scope of this rulemaking.

- 1604.** Comment: Section 78.63 proposes allowance of residual waste using land application techniques if the toxicity requirements of 40 CFR § 261.24 are met. No reference is made to any MCL or health advisory limits for the material itself or for its leachate component. We recommend requiring testing for base material and leachate components prior to allowing land application of any drilling cuttings or byproducts of the operation. We recommend that the Department use land application of generally innocuous materials, but to require used of lined pits for storage of drilling waste materials that could pollute water sources. (1138)

Response: See response to comment 1575.

- 1605.** Comment: There should be strict regulation regarding the disposal of brine, drill cuttings and other residual waste from drilling. Fracking operators should have to follow the regulations imposed on

other industries regarding hazardous waste. After all, returned fracking fluid contains radioactive elements, benzene and other toxic chemicals, and brine. Brine should not be used for dust suppression or road de-icing due to the possibility the chemicals it contains will be dispersed into the air. Nor should residual waste be used as fill material for any purpose. (1146)

Response: See response to comment 1575.

- 1606.** Comment: 78.63(a)(2)-(3) – The changes here reflect the references to Act 13 which are needful. We therefore, recommend their adoption at the minimum as is written. (660a)

Response: The Department acknowledges the comment.

- 1607.** Comment: 78.63(a)(5) – The proposal also provides for a three day advanced notification prior to pit disposal which may allow for adequate planning for the Department’s staff to be onsite and perform an inspection of the work. Therefore, we do recommend both provisions for adoption. (660a)

Response: The Department acknowledges the comment.

- 1608.** Comment: 78.63(a)(20) – The proposal incorporates 25 Pa. Chapter 102. We support consistency across the code and recommend this provision for adoption. (660a)

Response: The Department acknowledges the comment.

- 1609.** Comment: 78.63(19)-(21) – To determine compliance with this section, the Department may require the owner or operator to conduct soil surveys, monitoring or chemical analysis.

We support appropriate and reasonable oversight that ensures that the land application is in compliance. We recommend this provision for adoption at a minimum as is written. (660a)

Response: The Department acknowledges the comment.

- 1610.** Comment: 78.63(a)(21) – We are recommending the same language as is noted in 78.62(b)(1-4) as a point of consistency with disposal of contaminated residual waste including drill cuttings. Additionally, we request that our previous comment above for 78.62 regarding contaminated residual waste and arsenic be also considered in response to this provision. (660a)

Response: See response to comment 1604.

- 1611.** Comment: 78.63(21)(c) – The owner or operator may request to dispose of residual waste, including contaminated drill cuttings, in an alternate manner from that required in subsection (a) by submitting a request to the Department for approval. The request shall be made on forms provided by the Department and shall demonstrate that the practice provides equivalent or superior protection to the requirements of this section.

We want to be clear that in absence of oversight that would normally occur in a landfill situation related to contaminated residual waste disposal including drill cuttings, that we prefer regulated landfill disposal and strongly discourage the Department from approving alternate disposal requests for contaminated residual wastes including drill cuttings. Our concerns lie with protecting our water resources and a variance of oversight in the manner in which landfilled contaminated residual waste is handled as compared to contaminated residual wastes, including drill cuttings as generated by the

oil and gas industry. There needs to be a consistency of not only regulations, but also, oversight and on-going monitoring of contaminated residual waste regardless of the disposal locations. More consistency and ease of monitoring is available at centralized locations and we advocate to that end. (660a)

Response: The Department acknowledges the comment.

§ 78.64 Containment around oil and condensate tanks

- 1612.** Comment: § 78.64 and § 78.64a – These sections require secondary containment “sufficient to hold the volume of the largest tank, plus an additional 10% of volume for precipitation.” Considering the likelihood of extreme weather events coupled with the possibility of events resulting in the rupture of more than one tank in any given secondary containment area, we suggest the Department adopt a standard of requiring a secondary containment “with the sufficient perimeter and height to hold 1.5 times the volume of the largest tank.” This enhanced requirement will better protect lands and waters of the Commonwealth and adjacent areas and has long been employed by the National Park Service for nonfederal oil and gas operations conducted under our regulations found at 36CFR Part 9B. (1062, 1133)

Response: If secondary containment is properly designed, constructed, maintained and operated in compliance with these regulations, the Department believes the volume of the largest tank plus an additional 10% of volume for precipitation secondary containment capacity requirement is adequate to protect the environment.

- 1613.** Comment: § 78.64: We request clarification on whether the listed requirement applies to all existing operations or only new operations? We suggest this more protective standard be required of both existing and new drilling operations. (1062, 1133)

Response: The subsections apply to all new, refurbished or replaced tanks or other above ground containment structures approved by the Department. Section 78.64 has applied to oil tanks since 1994. This section expands those requirements to also address condensate tanks. The Department has added a phase-in period for existing condensate tanks to meet the new standards.

- 1614.** Comment: Regulations for containment around oil and condensate tanks must be strengthened based on recent experiences in West Virginia. (1093, 1098)

Response: The Department acknowledges the comment.

- 1615.** Comment: Recent Marcellus Shale history has provided reason to extend this provision to include condensate tanks. Appropriate secondary containment is reasonable and an excellent precautionary measure to adequately protect our water resources. The results of what happens when inadequate containment is relied upon around condensate tanks is detailed in the attached occurrence from one site operated by Cabot in West Virginia. This is relevant as we have seen, corporate personalities are not state specific; they do cross lines especially when regulations prove to be less than a floor and insufficient to effectively address environmental impacts or adequately protect water resources. Please refer to attached – Condensate Spill – lacking secondary containment 2026EA. In this case, lacking adequate secondary containment, the soil, nearby ditch became contaminated by brine and petroleum. Please refer to the attached environmental assessment for further details. We recommend this provision be adopted as written. (660a)

Response: The Department acknowledges the comment.

- 1616.** Comment: **78.64(a)** – The commentator contends that the 660 reference is an antiquated number which was changed in the Federal Spill Prevention and Counter Control regulations several years ago. To maintain consistency between federal and state, Commentator recommends the language read “If an owner or operator uses a tank with a combined capacity of at least 1320 gallons...” (1071)

Response: The Department agrees changes should be made to reflect the current regulatory language. The Department has deleted “a tank with a capacity of at least 660 gallons” from the subsection.

§ 78.64a Containment systems and practices at unconventional well sites

- 1617.** Comment: 78.64a -There should be a clear definition of what the term “stored” means for clarification of Act 13. It had been discussed during Department training for Act 13 implementation webinars that individual fuel tanks on equipment were not considered “stored”; however, the way this section is worded, individual fuel tanks would need to be contained. (411)

Response: The section is very specific as to when secondary containment systems must be used.

- 1618.** Comment: § 78.64a: We also request clarification on whether the listed requirement applies to all existing operations or only new operations? We suggest this more protective standard be required of both existing and new drilling operations. (1062, 1133)

Response: Section 78a.64a pertains to the provisions required under section 3218.2 of the 2012 Oil and Gas Act. Secondary containment is required to be installed on the well site during both drilling and hydraulic fracturing operations, regardless if the operation is existing or new.

- 1619.** Comment: 78.64a – We support proposals to improve containment systems and practices. Overall, this new section provides a number of positive spill prevention requirements. We do, however, have some recommendations for improvement.

Foremost, we recommend that containment systems and practices should be improved at all oil and gas operations, not just unconventional well sites, and the containment systems should be impervious and impermeable. The proposed regulation would allow some permeability through the containment liner, albeit a small coefficient of permeability is proposed. However, we request that no amount of leakage be allowed. Containment systems should be “leak proof.”

When a containment system is damaged, the operator should be required to immediately remove regulated substances from that damaged containment system.

We recommend that § 78.64a be revised as follows:

§ 78.64a. Containment systems and practices at Oil and Gas Operations.

(a) This section applies to all Oil and Gas Operations.

(b) All Oil and Gas Operations shall be designed and constructed using containment systems and practices that prevent spills of regulated substances to the ground surface and to prevent spills

from leaving the Oil and Gas Operation.

(c) All regulated substances, including solid wastes and other regulated substances in equipment or vehicles, shall be managed within a containment system. This subsection does not apply to fuel stored in equipment or vehicle fuel tanks unless the equipment or vehicle is being refueled at the well site.

(d) Pits and centralized impoundments that comply with this chapter are deemed to meet the requirements of this section.

(e) Containment systems must meet all of the following:

(1) A containment system must be used at the Oil and Gas Operation when any equipment that will be used for any phase of drilling, casing, cementing, hydraulic fracturing or flowback operations is brought onto a well site and when regulated substances including drilling mud, drilling mud additives, hydraulic oil, diesel fuel, hydraulic fracturing additives, chemicals, or flowback are brought onto or generated at the Oil and Gas Operation.

(2) A containment system must be impervious and impermeable.

(3) The physical and chemical characteristics of all liners, coatings or other materials used as part of the containment system, that could potentially come into direct contact with regulated substances being stored, must be compatible with the regulated substance and be resistant to physical, chemical and other failure during handling, installation and use. Liner compatibility shall satisfy ASTM Method D5747, Compatibility Test for Wastes and Membrane Liners, or other more stringent standards as approved by the Department.

(f) An operator shall utilize secondary containment when storing additives, chemicals, oils or fuels, or regulated substances. The secondary containment must have sufficient containment capacity to hold the volume of the largest container within the secondary containment area plus 10% to allow for precipitation, unless the container is equipped with individual secondary containment such as a double walled tank. Where double-walled tanks are used, a secondary containment liner must be placed under all valves, flanges, and connection points to capture potential leaks. Tanks that are manifolded together shall be designed in a manner to prevent the uncontrolled discharge of multiple manifolded tanks. A well site liner that is not used in conjunction with other containment systems does not constitute secondary containment for the purpose of this subsection.

(g) Subsurface secondary containment systems may be employed at the Oil and Gas Operation. Subsurface secondary containment must meet the following requirements:

(1) Subsurface secondary containment systems must be impervious, impermeable and have sufficient strength and thickness to maintain the integrity of the containment system. The thickness of a subsurface containment system must be at least 30 mils. Adjoining sections of the subsurface containment system must be sealed together, in accordance with the manufacturer's directions, to prevent leakage. All seams of the adjoining sections shall have their integrity tested prior to being covered.

(2) Subsurface secondary containment systems must be designed to allow for the management or removal of stormwater.

(3) Subsurface secondary containment systems must be designed and installed in a manner that prevents damage to the system by the sub-base or the movement of equipment or other activities on the surface.

(4) Subsurface secondary containment systems may not be used to store regulated substances.

(5) A written standard of operational procedure for the inspection, maintenance and repair of the subsurface secondary containment system shall be included in the preparedness, prevention and

contingency plan.

(h) The operator shall submit a report to the Department documenting compliance with § 78.64 within 30 days of installation of the containment system and at least 14 days prior to operation. The Department shall make the report available to the public on the Department's website within 7 days. All surface containment systems shall be inspected weekly to ensure integrity. If the containment system is damaged or compromised, the well operator shall immediately repair the containment system. If the containment system cannot be immediately repaired, all regulated substances must be removed from the containment system and removed from the site, or placed in another on-site containment system that has not been damaged. The operator shall maintain records of any repairs until the containment system is restored. Stormwater shall be removed as soon as possible and prior to the capacity of secondary containment being reduced by 10% or more.

(i) Regulated substances that escape from primary containment or are otherwise spilled onto a containment system shall be cleaned up and removed within 24 hours. After removal of the regulated substances the operator shall inspect the containment system. A Department approved leak detection system capable of rapidly detecting a leak shall satisfy the requirement to inspect the integrity of a subsurface containment system. Groundwater monitoring wells do not constitute a leak detection system for the purpose of this subsection. If the containment system did not completely contain the material, the operator shall notify the Department, all regulated substances shall be removed from the containment system and removed from the site, or placed in another on-site containment system that has not been damaged, and the operator shall immediately remediate the affected area in accordance with § 78.66 (relating to reporting and remediating releases).

(j) Stormwater that comes into contact with regulated substances stored within the secondary containment area shall be managed as residual waste.

(k) Inspection reports and maintenance records shall be available at the well site for review by the Department, shall be submitted to the Department annually, and shall be made available to the public on the Department's website within 7 days.

(l) Documentation of chemical compatibility of containment systems with material stored within the system shall be provided to the Department upon request. (1143)

Response: Section 78a.64a pertains to the provisions required under section 3218.2 of the 2012 Oil and Gas Act, which was written specifically for secondary containment at unconventional well sites.

1620. Comment: 78.64a: The requirement with respect to "regulated substances" is overly broad. Act 13, specifies a list of six materials that must be in containment systems when stored on unconventional well sites. See Section 3218.2(c).

Suggested amendatory language:

(b) Well sites shall be designed and constructed using containment systems and practices that prevent spills of regulated substances to the ground surface and to prevent spills from leaving the well site during drilling and hydraulic fracturing operations.

(c) Containment systems shall be used when drilling mud, hydraulic oil, diesel fuel, drilling mud

additives, hydraulic fracturing additives, or hydraulic fracturing flowback is stored on an unconventional well site. This subsection does not apply to fuel stored in equipment or vehicle fuel tanks unless the equipment or vehicle is being refueled at the well site. (1071, 1137, 1147, 1153, 1174)

Response: The Department acknowledges that §3218.2(c) does list six materials that require use of containment systems when stored on an unconventional well site but disagrees with the comment. Section 402(a) of the Clean Streams Law (35 P.S. §691.402(a)) states that whenever the Department finds that any activity creates a danger of pollution of the waters of the Commonwealth or that regulation of the activity is necessary to avoid such pollution, the Department may, by rule or regulation, establish the conditions under which such activity shall be conducted.

1621. Comment: § 78.64a improperly allows an operator to install a leak detection system in lieu of inspection or repair, even after regulated substances are known to escape containment. Whether or not leak detection systems are required, both repairs and cleanup should be mandatory after a discovered leak. (997a)

Response: The Department agrees that both repairs and cleanup are necessary after a discovered leak. Section 78a.64a(e) requires that the well operator repair the containment system if it is found to be damaged or compromised. Section 78a.64a(f) requires the removal of regulated substances and then an inspection of the secondary containment to ensure its integrity. The language allowing a leak detection system in lieu of the inspection requirement has been removed from the rulemaking language.

1622. Comment: 78.64a – (a) This section shall only apply to unconventional well sites. (1057)

Response: The Department acknowledges the comment. This section is only included in the unconventional Chapter of the final-form rulemaking.

1623. Comment: 78.64a(c) - This subsection should only apply to regulated substances and solid wastes in equipment or vehicles used directly for the phases of drilling, casing, cementing, hydraulic fracturing, or flowback. The operator should not have to contain individual fuel or hydraulic oil tanks on individual equipment or vehicles (in order to operate) regardless of whether they are refueled or not. An example is an individual pump truck should not need to be contained but an acid transport truck would since the acid is used in the actual hydraulic fracturing process. (869a)

Response: Secondary containment is necessary to help prevent spills of regulated substances to the ground surface and escaping the well site. See response to comment 1620.

1624. Comment: We recognize the need to regulate unconventional wells differently and more stringently than conventional ones [78.64a]. All pits and centralized impoundments should be prohibited. Only closed tanks should be used for all polluttional materials – including fuel [78.64a (c)] and non-regulated wastes of unknown composition. Our comments concerning containment and practices for conventional wells are also applicable to unconventional wells. Greater expectations are placed on operators to provide written standards of operational procedures, but they are not site specific. (1093, 1098)

Response: The Department acknowledges the comment.

1625. Comment: 78.64a(c): Section 3218.2(c) of Act 13 lists six specific substances that must be stored

in containment systems. This subsection broadens the scope of that statutory list to include “all regulated substances, including solid wastes and other regulated substances in equipment or vehicles.” How is this expansion consistent with the intent of the General Assembly and Act 13? What is the need for this requirement? We ask EQB to explain in the Preamble and RAF of the final-form regulation how the list in the final-form regulation reasonably and adequately balances protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: The Department acknowledges that §3218.2(c) does list 6 materials that require use of containment systems when stored on an unconventional well site but disagrees with the comment. Section 402(a) of the Clean Streams Law (35 P.S. §691.402(a)) states that whenever the Department finds that any activity creates a danger of pollution of the waters of the Commonwealth or that regulation of the activity is necessary to avoid such pollution, the Department may, by rule or regulation, establish the conditions under which such activity shall be conducted.

- 1626.** Comment: § 78.64a(d): This section must simply be stricken. Pits and centralized impoundments should only be used to store potable water. (869a)

Response: This section has been deleted because pits are addressed in other sections of the regulation.

- 1627.** Comment: 78.64a(e) establishes the standards for containment systems. Do secondary containment systems referenced in 78.64a(f) have to meet the same standards as containment systems? This should be clarified in the final-form regulation.(1099)

Response: The Department has changed the language in the rulemaking to provide clarity for the meaning of secondary containment.

- 1628.** Comment: 78.64a (e) - The requirements of subsection 78.64a(e) are too prescriptive, and would not allow the Department to approve alternate methods where appropriate. Suggested Language: (e) Unless otherwise approved by the Department, containment systems must meet all of the following : (1137, 1147, 1174)

Response: The requirements in the section are appropriate. Deviation from the minimum standards prescribed in the section would not provide adequate protection to the environment.

- 1629.** Comment: 78.64a(e)(1) - This proposed subsection is overly broad (e.g. it would apply to cement in cement trucks) and conflicts with Act 13 Section 3218.2, which provides a specified list of materials that require storage in containment systems. The subsection is unnecessary because it is redundant with revised subsection (b) and (c) above. Suggested Language: Delete subsection (e) (1). (1137,1147,1153, 1174)

Response: The requirement to contain regulated substances is appropriate to ensure protection of public health and safety and the environment. The Department considers cement as a regulated substance.

- 1630.** Comment: As previously referenced in our general comments about the drawbacks of overly prescriptive language, it is our suggestion that the language be modified to allow for flexibility. As such, We support the MSC suggested language which reads “(e) Unless otherwise approved by the

Department, containment systems shall meet all of the following:”

78.64a(e)(1): This proposed subsection is overly broad, would apply to cement in cement trucks, and conflicts with Act 13, which provides a specified list of materials that require storage in containment systems which are addressed in a previous subsection. Subsection (e)(l) should be deleted. (1071)

Response: The requirements in the section are appropriate. Deviation from the minimum standards prescribed in the section would not provide adequate protection to the environment. The requirement to contain regulated substances is appropriate to ensure protection of public health and safety and the environment. The Department considers cement as a regulated substance.

- 1631.** Comment: § 78.64a(e)(3) -This section requires the liner compatibility to satisfy ASTM Method 5747 Compatibility Test for Wastes and Membrane Liners. § 78.6(a)(12) requires liners to satisfy EPA Method 9090 - Compatibility Test for Wastes and Membrane Liners. Here again it is suggested that either method would be applicable for either section, so either both methods should be referenced in both sections (recommended) or one should be selected as the standard. (1147)

Response: The rulemaking language has been changed and the Department allows for the use of test methods if approved by the Department.

- 1632.** Comment: 78.64a(e)(3) – ASTM D5747 is a test for landfill liners and pits where the liner is submerged in diluted chemicals for extended periods of time. It is extremely expensive (\$5000) to run on each chemical type found at a site. We propose ASTM D543 as an alternate test for surface liners. It contains a wet patch method that simulates a concentrated surface spill, which ASTM D5747 does not. We recommend testing for 72 hours at 140 F to account for response time and summer surface temperatures. Suggested Language: (3) The physical and chemical characteristics of all liners, coatings or other materials used as part of the containment system, that could potentially come into direct contact with regulated substance being stored, must be compatible with the regulated substance and be resistant to physical, chemical and other failure during handling, installation and use. Liner compatibility shall satisfy ASTM Method D5747, ASTM D543, or other standards as approved by the Department. (1137, 1147, 1153, 1174)

Response: The rulemaking language has been changed and the Department allows for the use of test methods if approved by the Department.

- 1633.** Comment: § 78.64a (f) Per 3218.2(d) of Act 13, there is no mandatory secondary containment requirement when storing additives, chemicals, oils or fuels. We recommend striking the first sentence because it is unnecessary and redundant with revised subsection(c) above.

§ 78.64a (f) Suggested amendatory language: Areas where additives, chemicals, oils or fuels are to be stored must have sufficient containment capacity to hold the volume of the largest container stored in the area plus 10% to allow for precipitation, unless the container is equipped with individual secondary containment such as a double walled tank. Tanks that are manifolded together shall be designed in a manner to prevent the uncontrolled discharge of multiple manifolded tanks. A well site liner that is not used in conjunction with an impervious berm does not constitute secondary containment for the purpose of this subsection. (1071, 1137, 1147, 1153, 1174)

Response: The Department interprets Section 3218.2(d) of Act 13 to mean that the container that additives, chemicals, oils or fuels are stored in is considered to be primary containment.

Therefore, the containment capacity referred to that must be able to hold the contents of the largest container plus 10% for precipitation is secondary containment.

1634. Comment: 78.64a(f) -The requirement of secondary containment is confusing. If an additive is already in a tote, is that considered containment and a liner system under the tote is secondary containment? This is going beyond the scope of Act 13 which merely requires a single containment system. (411)

Response: See response to comment 1633.

1635. Comment: 78.64a(f): Section 3218.2(d) of Act 13 does not require secondary containment systems. However, 78.64a(f) does require secondary containment when storing additives, chemicals, oils or fuels. Why does EQB believe this provision is consistent with the intent of the General Assembly and Act 13? (1099)

Response: The Department interprets Section 3218.2(d) of Act 13 to mean that the container that additives, chemicals, oils or fuels are stored in is considered to be primary containment. Therefore, the containment capacity referred to that must be able to hold the contents of the largest container plus 10% for precipitation is secondary containment. Any other interpretation of section 3218.2(d) would render the final phrase of the subsection (“...unless the container is equipped with individual secondary containment.”) irrelevant.

1636. Comment: The last sentence of § 78.64a(f) is vague. EQB should clarify the intent of this sentence in the final-form regulation. (1099)

Response: The Department has evaluated the language and determined that it is appropriate to convey that well site liners may not be used as secondary containment and as a result has stricken the last sentence of subsection (f) as well as all other references to subsurface liners serving as secondary containment.

1637. Comment: 78.64a(f): The final sentence of this subsection is vague and potentially contrary to Act 13 which has no such prohibition. As we understand, the Department’s concern is that an impervious berm be used with the liner to provide sump capacity. As such, we suggest stating this directly as in the following suggested amendatory language:

“(f) The secondary containment shall have sufficient containment capacity to hold the volume of the largest container within the secondary containment area plus 10% to allow for precipitation, unless the container is equipped with individual secondary containment such as a double walled tank. Tanks that are manifolded together shall be designed in a manner to prevent the uncontrolled discharge of multiple manifolded tanks. A well site liner that is not used in conjunction with an impervious berm does not constitute secondary containment for the purpose of this subsection.” (1071, 1137, 1174)

Response: The Department has evaluated the language and determined that it is appropriate to convey that well site liners may not be used as secondary containment and as a result has stricken the last sentence of subsection (f) as well as all other references to subsurface liners serving as secondary containment.

1638. Comment: Section 78.64a(f) states that secondary containment must be based on the largest container in the secondary containment system, but it does not restrict the number of containers or total volume of chemicals stored per containment system. This assumes that the system may only be

adequate to handle the failure of a single primary container. The Department should amend the language to ensure that the secondary containment system is designed with an adequate margin of safety to handle the failure of multiple primary containers. (852a)

Response: The language is consistent with § 3218.2(d) regarding capacity of secondary containment systems. The volume of the largest tank plus an additional 10% of volume for precipitation capacity requirement is reasonably adequate to protect public health and safety the environment.

- 1639.** Comment: Section 78.64a (f) states “a well site liner that is not used in conjunction with other containment systems does not constitute secondary containment for the purpose of this subsection.” This wording is confusing in its implications that a well site liner would be a secondary containment for a raw material or waste material that is in another containment system, such as a tank. If that is intended, then the regulation should provide standards for materials used to construct a ‘well site liner’ so that the liner would be appropriate for secondary containment, and possibly establish chemicals and wastes that would not be eligible for this type of large scale ‘well site liner’ method of secondary containment. (852a)

Response: The Department has evaluated the language and determined that it is appropriate to convey that well site liners may not be used as secondary containment and as a result has stricken the last sentence of the section being commented on. The Department interprets Section 3218.2(d) of Act 13 to mean that the container that additives, chemicals, oils or fuels are stored in is primary containment. Tanks or other primary containers do not meet the requirements for secondary containment, unless they are equipped with individual secondary containment such as a double walled tank.

- 1640.** Comment: 78.64a(g) – This language is too prescriptive and does not provide flexibility to the Department to approve alternate methods. Suggested Language: (g) Subsurface secondary containment systems may be employed at the well site. Unless otherwise approved by the Department, subsurface secondary containment shall meet the following requirements.(1071, 1137, 1147, 1174)

Response: Subsurface systems by their very nature cannot be easily inspected or repaired nor do they prevent soil contamination and therefore are not considered as viable secondary containment by the Department.

- 1641.** Comment: 78.64a(g)(1) – What constitutes an integrity test? Is the integrity test protocol provided by the manufacturer? (411)

Response: Language referring to subsurface containment has been stricken from the rulemaking language because the Department deems subsurface containment systems as too impractical to be employed as a secondary containment system.

- 1642.** Comment: Section 78.64a(g)(2) requires a subsurface containment system to ‘be designed to allow for the management or removal of stormwater’. The regulation should require an above grade berm that prevents stormwater run on for shallow below grade containment systems, and a drainage system that collects stormwater that infiltrates and collects in subsurface buried liner systems. (852a)

Response: Language referring to subsurface containment has been stricken from the rulemaking language because the Department deems subsurface containment systems as too impractical to be employed as a secondary containment system.

- 1643.** Comment: 78.64a(g)(4) – The use of the term “regulated substance” and the reference to “storage” make this subsection unclear and unnecessary. Subsurface secondary containment is not used for storage. Delete subsection (g)(4).(1137, 1147, 1174)

Response: The Department agrees that subsurface containment is not intended for storage of regulated substance. All language referring to subsurface containment has been stricken from the rulemaking language.

- 1644.** Comment: We recommend that leak detection systems be required in addition to any inspection or repair made after a leak is discovered. (1031)

Response: Since all language referring to subsurface containment has been stricken from the rulemaking language, the requirement for leak detection has been removed as well since secondary containment will be employed on the surface.

- 1645.** Comment: 78.64a(h) - To avoid unnecessary compliance stringency, the requirement for removing stormwater should be changed from “as soon as possible” to “as soon as practicable, “ which in combination with the additional requirement to ensure it is removed prior to the secondary containment capacity being reduced by 10%, will meet the intended goal. Suggested language change for the last sentence of (h): (h) Stormwater shall be removed as soon as practicable and prior to the capacity of secondary containment being reduced by 10% or more. (1071, 1137, 1147, 1153, 1174)

Response: Stormwater management should be dealt with as soon as possible to avoid reducing secondary containment capacity and the chance for a spill or release to then escape secondary containment.

- 1646.** Comment: 78.64a(i) – The reference to “regulated substance” is unnecessary and unclear in this subsection. Operators will clean up spills to containment. If spills escape containment, the provisions of Sections 91.33 and 78.66 will apply. Suggested Language: (i) Substances that escape from primary containment or are otherwise spilled onto a containment system shall be removed as soon as possible. After removal of the substances, the operator shall inspect the containment system. A Department approved leak detection system capable of rapidly detecting a leak shall satisfy the requirement to inspect the integrity of a subsurface containment system. Groundwater monitoring wells shall not constitute a leak detection system for the purpose of this subsection . If more than five gallons of a substance escapes the containment system, the operator shall notify the Department in accordance with Section 78.66 as applicable.(1071, 1147, 1137, 1153, 1174)

Response: The Department disagrees and believes that use of the term “regulated substance” is appropriate because the use of the term “regulated Substances” is to ensure that, at a minimum, the Operator will clean up the substances identified in this definition. The Department will support any Operator’s efforts to clean up any substances that may leak from containment above and beyond those included in the definition of “regulated substances”.

- 1647.** Comment: **78.64a(j)** – Stormwater that has not been discharged or discarded is not residual waste. This subsection is unnecessary. Delete subsection (j). (1137, 1147, 1174)

Response: The Department considers stormwater that has come into contact with regulated substances stored within secondary containment to be contaminated. While stormwater in

secondary containment with no regulated substances present is not considered residual waste, stormwater in secondary containment that also contains regulated substances is considered to be residual waste, as defined in § 287.1, regardless of whether or not the stormwater has been discharged or discarded and must be handled and disposed of accordingly.

- 1648.** Comment: **78.64a(j)** – Stormwater that comes into contact with regulated substances stored within the secondary containment area must be managed as residual waste under this subsection. If the stormwater is not discharged, a commentator believes it should not be classified as residual waste. What is EQB 's rationale for classifying this type of stormwater as residual waste? (1099)

Response: See response to comment 1647.

- 1649.** Comment: 78.64(j) – Stormwater that does not come into contact with a regulated substance should be allowed to be discharged according to 78.60. Stormwater that is not discharged is not a residual waste.

Suggested Regulatory Language:

(j) Stormwater that comes into contact with regulated substances stored within the secondary containment area shall be managed as residual waste when disposed. Stormwater that does not come into contact with a regulated substance may be discharged according to 78.60. (1153)

Response: See response to comment 1647.

- 1650.** Comment: 78.64a(k) – The Department should allow operators to maintain reports and maintenance records either at the well site or other location suitable for the operator.

Suggested Language:

(k) Inspections reports and maintenance records shall be available for review by the Department. (1147, 1174)

Response: The Department disagrees with the suggested language. Since secondary containment systems will be employed during drilling, casing, cementing, hydraulic fracturing and flowback operations, it is reasonable to make inspection reports and maintenance records available at the well site, because the site is normally manned during these operations. The Department is not stating that they must be stored on site, but capable of being made available upon request (physically or electronically) without having to visit an off-site location to do so. The requirement to have these inspection reports and maintenance records available at the site for review is in order to aid the Department with determining that the secondary containment systems are being routinely inspected and maintained during the inspection of the facility.

- 1651.** Comment: 78.64a (k): Under this subsection, inspection reports and maintenance records must be available at the well site for review by the Department. For many operators, it is not practical to store hard copies of inspection reports and maintenance records at the well site. Often these records are maintained and made available electronically by operators to various parties working on the well site. The commentator has noted that it would be difficult to maintain the records at the well site and has suggested that the records be available upon request by the Department. We agree with this suggestion and ask EQB to include language in the final- form regulation. Suggested language:

(k) Inspection reports and maintenance records shall be available for review upon request by the department. (861a, 1057, 1071, 1099, 1137, 1140)

Response: The Department disagrees with the suggested language. Since containment systems will be employed during drilling, casing, cementing, hydraulic fracturing and flowback operations, it is reasonable to make inspection reports and maintenance records available at the well site, because the site is normally manned during these operations. The Department is not stating that they must be stored on site, but capable of being made available upon request (physically or electronically) without having to visit an off-site location to do so.

1652. Comment: This subsection should be revised as follows to allow for document storage on site: An inspection and maintenance log shall be available at the well site for review by the Department. The inspection reports and maintenance records shall be provided to the Department upon request. (1049)

Response: The Department agrees with the comment.

1653. Comment: 78.64a(k): Please include language in the final-form regulation that specifies how long the reports and records must be kept. (1099)

Response: Subsection 78a.64a(e) states that records of repair must be kept until the site is restored. Because the subsection (renumbered as § 78a.64a(h)) requires the reports and records to be available at the well site for review, logically the records and reports should be kept until the site is restored and the secondary containment is removed in accordance with § 78a.65(a)(2).

1654. Comment: Containment Practice: These should all be monitored by a third party that has absolutely nothing to do with gas extraction and is not beholden to them in anyway. This is the only way that any data can be trusted at all and even then that is on the periphery as how can we be sure the gas companies aren't lining pockets of these third parties as they are doing with our elected officials. This industry simply cannot police themselves because that just doesn't happen. They simply cannot be trusted in any way, shape or form. Now to stop this type of criminal activity there must be a complete and total ban of this type of industrialized extraction. (864)

Response: The Department acknowledges the comment. The inspection and repair requirements in the subsection are appropriate as written. The Department inspects the industry's secondary containment practices to ensure its effectiveness.

1655. Comment: Chemical compatibility- Section 78.64a(l) The required chemical compatibility documentation should be submitted to the Department with the application materials so that an evaluation can be made as to the liner's suitability for each type of waste or bulk material stored onsite using a secondary storage system. The Department should not be requesting this information after-the- fact, or on an ad-hoc basis. (852a)

Response: The requirements in the rulemaking are consistent with requirements in the 2012 Oil and Gas Act and are appropriate to ensure protection of public health and safety and the environment. The required standards for the materials to be used as secondary containment are in the regulations which will ensure the effectiveness of the materials being used. Therefore, it will not be necessary to submit this information in every instance, only when the chemical compatibility is in question.

1656. Comment: 78.64a: This section needs to clearly differentiate between general pad containment systems and "secondary" containment, and the requirements thereof. General pad containment

systems should be differentiated between surface containment systems vs. subsurface containment systems. The appropriate inspection, leak detection, stormwater management, and maintenance requirements for each of these two alternatives should be established in separate sections. (1153)

Response: The Department acknowledges the comment. To clarify the language in this section, the regulatory language has been changed including addition of definitions for primary and secondary containment and deletion of the definition for containment system and all language referring to subsurface containment systems has been stricken too.

1657. Comment: 78.64a: Since Act 13 references the need for operators to have a containment plan, this section should include language that states that an operator who has submitted a containment plan to the Department that conforms with Department guidelines for such plans is deemed to meet the requirements of this section. (1153)

Response: Section 3218.2(b) of Act 13 does require an operator to submit a containment plan, but the requirements for this plan only include containment practices to be used, the area of the well site where containment will be employed and a description of equipment kept onsite to prevent a spill from leaving the site. This rulemaking expands the requirements for the containment plan required under Section 3218.2 of Act 13 to ensure adequate protection of the environment.

1658. Comment: Well sites are often located near our homes, schools and even local hospitals. These are industrial sites located in areas that traditionally have not been industrial activity locations. Often they are areas that previously supported agriculture, were forested and may be near private water supplies, and within high quality or exceptional value watersheds. In the Northern Tier Region it is not uncommon for a pond, trickle down stream, wetland, creek, or even a river to be nearby or adjacent to a well pad. There are many chemicals and regulated substances including solid waste that may either be used or generated at the well site. Therefore, in order to adequately protect our water resources and soil, containment structures need to be sufficient to prevent both spills to the ground and from leaving the well site. We recommend at a minimum this provision be adopted as written in its entirety. (660a)

Response: The Department acknowledges the comment.

1659. Comment: For general pad surface containment, the permeability specification in the draft regulation is overly stringent. General pad containment does not have water under head on it. Tear and puncture resistance and durability are more important. Secondary containment should be clearly defined as separate, surface, individualized containment units employed for containment of specific substances or operational units. Specific requirements for various units, such as the 10% rule, for fuel tanks, or brine tanks, should be articulated in this section. (1153)

Response: The permeability specification is appropriate to ensure that regulated substances are contained. It is the responsibility of the operator to choose a secondary containment system that is robust enough to withstand the conditions it will be subjected to on the well site. The requirements for secondary containment on a well site are clearly articulated in the subsection. The Department does not agree that including specific requirements for containment based on the type of material being contained is necessary or appropriate.

1660. Comment: Spills and leaks of regulated substances have occurred statewide and increase the risk of water, soil and air contamination. It is the responsibility of the department to protect our air, soil, and water for future generations which is why the department must promote current best industry

practices. Any revisions to these regulations should require produced wastewater, flowback and other contaminated fluids to be stored in closed loop systems, with a secondary containment, and a leak detection system. (1110)

Response: The requirements in the rulemaking are consistent with requirements in the 2012 Oil and Gas Act and are appropriate to ensure protection of public health and safety and the environment. The final-form rulemaking does not allow the use of open-topped structures for the storage of production fluids (§§ 78.57 and 78a.57), bans the use of pits for temporary storage at unconventional well sites (§ 78a.56), requires that robust secondary containment be used at unconventional well sites (§§ 78a.56, 78a.57, 78a.64 and 78a.64a), bans the disposal of residual waste at unconventional well sites without an individual permit (§§ 78.62 and 78a.63), requires routine inspections of tank systems at well sites (§§ 78.57(h) and 78a.57(i)) and if those systems fail, requires that the release be reported to the Department and remediated to meet established protective standards in a timely manner (§§ 78.66 and 78a.66).

- 1661.** Comment: The Department should ensure that all containment provisions in the Proposed Regulations fully meet the standard set forth in 58 Pa.C.S. § 3218.2. For example, §§ 78.57(c) and 78.66(b)(1)(i) only apply to threats of pollution to the waters of the Commonwealth. 58 Pa.C.S. § 3218.2(a) expressly states that containment also applies to “the ground surface or spills off the well site” (997a)

Response: The language referenced in the comment in §§ 78.57(c) and 78a.57(c) has been deleted from the final-form rulemaking. The Department also notes that §§ 78.57(a) and 78a.57(a) state that “the operator may not discharge the brine and other fluids on or into the ground or into the waters of this Commonwealth.”

Sections 78.66(b)(1)(i) and 78a.66(b)(1)(i) are reporting provisions, and have nothing to do with containment at unconventional well sites. The Department notes, however, that these subparagraphs implement the Clean Streams Law and § 91.33(a), and appropriately reference pollution or the threat of pollution to the waters of the Commonwealth. Sections 78.66(b)(1)(ii) and 78a.66(b)(1)(ii) address reporting of spills and releases to the ground surface.

§ 78.65 Site restoration

- 1662.** Comment: The Department failed to include any estimate for the costs associated with the new pad restoration requirements. Rather, the Department claims the industry will realize a cost savings because an operator may be able to obtain a 2 year extension to postpone the restoration. However, a postponement of a cost is not an avoidance of the cost. The Department’s estimated savings of \$21.7 million (estimated by the Department as \$50,000 per site multiplied by 434 sites per year) is actually a cost that will ultimately be incurred, not a savings. Moreover, the commentator estimates that the cost of pad restoration, as proposed in the regulations will be in the area of \$200,000 to \$300,000 per pad; not \$50,000 as the Department estimates. Therefore rather than a \$21.7 million savings, the restoration requirements for industry, as proposed are a cost of \$130 million. (1137, 1174)

Response: The restoration requirements in this section are not new and do not impose a new cost on the regulated community. This section largely restates the restoration requirements in Section 3216 of the 2012 Oil and Gas Act and incorporates the Department’s interpretation of these requirements and the existing Chapter 102 requirements as outlined in the “Policy for Erosion and Sediment Control and Stormwater Management for Earth Disturbance Associated with Oil and Gas Exploration, Production, Processing, or Treatment Operations

or Transmission Facilities”, Document No. 800-2100-008, which was finalized on December 29, 2012.

Further, the Department disagrees with the commentator’s assertion that the extension requirement is merely a postponement of the cost. This section mirrors the requirements in Section 3216(g) of the 2012 Oil and Gas Act that allow operators to request to extend the restoration period for up to two years so that an operator does not have to restore the site and then disturb it again if it plans to drill additional wells on the same well pad. The cost savings associated with the restoration extension are derived from avoiding the cost of restoring the site within 9 months of completion of drilling and later having to reconstruct the site and restore it again. Moreover, the cost estimate reflected is based on information obtained from the industry.

1663. Comment: We support new site restoration requirements to clarify when restoration must occur and what constitutes restoration. (1143)

Response: The Department acknowledges the comment.

1664. Comment: This section confuses “restoration” with “reclamation.” Restoration is the process whereby the original structural and functional diversity of the site is reproduced as closely as possible. This process typically involves a pre-disturbance assessment of baseline conditions or the use of a reference system as a template. Reclamation, as typically practiced, is simply site stabilization in order to reduce erosion and sedimentation. The proposed EQB rules promote the more limited reclamation, rather than the restoration required to ensure that the public natural resources are not degraded. We recommend that full restoration be required as soon as possible, and that reclamation be acceptable only as required to maintain safe operation of the well. (1143)

Response: The Department disagrees with the commentator’s recommendation as this section mirrors the statutory restoration requirements in Section 3216 of the 2012 Oil and Gas Act. See also the response to 1665.

1665. Comment: Clear guidelines and performance criteria are needed to define what represents site restoration or reclamation. We recommend that the proposed rule provide technical performance standards that define restoration, including type and density of perennial vegetation, soil characteristics (e.g., depth of topsoil, organic content, bulk density, pH), and drainage patterns. We recommend that the PADEP require documentation and approval of restoration plans that meet the defined criteria. (1143)

Response: Restoration to approximate original conditions, capable of supporting original uses to the extent practicable is the best practice to achieve site restoration within reasonable operational parameters. It is not necessary to include technical performance standards including requirements for type and density of perennial vegetation, soil characteristics and drainage patterns in this section because those issues are already appropriately addressed by the requirements, as well as existing requirements under Chapter 102. Projects meeting the requirements will satisfy the statutory restoration requirements and include performance requirements that will protect waters of the Commonwealth. Projects that trigger the Chapter 102 requirements for an erosion and sediment control permit must submit a Site Restoration/Post Construction Stormwater Management Plan to the Department for review and approval prior to construction of the site. Additionally, this section requires operators to submit a well site restoration report to the Department 60 days after restoration. When this

report is submitted, the Department conducts an inspection to ensure that the restoration requirements have been met.

- 1666.** Comment: The standards for restoration should require full compliance with Chapter 102 (governing erosion and sediment control, stormwater management, and riparian buffers), notwithstanding the regulatory exceptions granted to oil and gas activities under § 102.8(n), until site restoration is complete and permanent. In particular, all post-construction stormwater control features identified in a site restoration plan should be supported by the stormwater analysis described in § 102.8(g). (1143)

Response: Chapter 78 requires compliance with Chapter 102. To the extent this comment seeks to amend § 102.8(n), this comment is outside the scope of this rulemaking. To clarify the requirements in § 102.8, the Department has added a provision to the section that explains that the exception in § 102.8(n) applies only to the portions of the project that are restored to meadow in good condition or better.

- 1667.** Comment: The proposed language under § 78.65(d) would specifically allow a pad with multiple wells to be exempt from restoration until “30 calendar days after the expiration of all existing well permits on the site.” This period of time may extend for years, so it is critical that operations on site comply fully with Chapter 102. (1143)

Response: See response to comment 1666.

- 1668.** Comment: Proposed § 78.65(d)(2) further extends the deadline for restoration by up to two years. We oppose extension of the restoration deadline. (1143)

Response: This section mirrors Section 3216(g) of the 2012 Oil and Gas Act that allows the well owner or operator to request an extension from the restoration period. The Department does not have the authority to amend this statutory requirement by regulation.

- 1669.** Comment: In § 78.65(e), no contingency or requirement has been made for long term monitoring of the integrity of the plug following decommissioning of the well. Given that the concrete plug and steel casing will eventually degrade, along with the fact that thousands of gallons of contaminated fluids remain under pressure at the base of the well, migration of these materials into the groundwater aquifer and surface water is highly probable. This eventuality will have profound ecological consequences. We recommend changes to § 78.101 to address this issue. (1143)

Response: The Department disagrees that amendments to § 78.101 are appropriate as § 78.101 relates to applications for inactive status. Section 3220 of the 2012 Oil and Gas Act and §§ 78.91-98 address plugging requirements.

- 1670.** Comment: We recommend removing the proposed language in § 78.65(f)(3) related to removal and restoration of pits, because we oppose their continued construction, use, and on-site burial. We also oppose the land application of Oil and Gas Operation waste; therefore, we recommend removing the language in § 78.65(f)(4) relating to land application of waste. (1143).

Response: The section addresses well site restoration requirements. Pits are addressed in other sections of the regulation. To the extent that pits are allowed, they will be required to be restored under this section.

1671. Comment: Dry holes or wells that are determined to be uneconomic should be permanently plugged and abandoned before moving the drilling equipment from the well site. Drill holes used to facilitate drilling of a well should be filled with cement. (1143)

Response: Economic recovery potential for a well is not established at the completion of drilling. Abandoned wells must be plugged in accordance with the Department's plugging regulations in 25 Pa. Code Chapter 78, Subchapter D.

1672. Comment: We do not agree that written consent of the landowner should be the determining factor as to whether the operator has met the restoration requirements of § 78.65. The PADEP should solicit input from the landowner, neighboring property owners, and residents on those properties, as to whether they are satisfied with the restoration. In addition to addressing any concerns raised by the landowner, neighboring property owners, or residents, the PADEP should determine whether the regulatory requirement has been met through a record audit and on-site inspection. It is not satisfactory for the landowner to be the arbiter of the final restoration requirements, since a private contractual arrangement between the landowner and the Oil and Gas Operator may allow for restoration that is less robust than the proposed § 78.65 requirement, with adverse impacts on neighboring properties and residents. Landowners are not necessarily qualified to determine if restoration is sufficient to meet the requirements of Chapter 102, the provisions of the Clean Streams Law, or the guarantees of the Pennsylvania Constitution. (1143)

Response: The requirements allow a landowner to maintain facilities on their property that could be otherwise constructed under and in accordance with Department regulations, including Chapter 102. Decisions regarding compliance with Chapter 102 relating to site stabilization and restoration are made by the Department or delegated county conservation district.

1673. Comment: In accordance with 1663 through 1672, we recommend that § 78.65 be revised as follows:

§ 78.65. Site reclamation and restoration.

(a) The owner or operator shall restore the land surface within the area disturbed under section 3216 of the act (relating to well site restoration) and Chapter 102 (relating to erosion and sediment control).

(b) A drill hole or bore hole used to facilitate the drilling of a well shall be filled with cement, and all dry holes or wells that are determined to be uneconomic shall be plugged and abandoned according to the requirements of §§ 78.91 through 78.98 (permanent well plugging requirements) before moving the drilling equipment from the well site.

(c) If a well site is constructed and the well is not drilled, the well site shall be restored to meet the standards set forth in paragraph (e) within 30 calendar days after the expiration of the well permit unless the Department approves an extension for reasons of adverse weather or lack of essential fuel, equipment or labor.

(d) Within 9 months after completion of drilling a well, the owner or operator shall restore the well site, remove all wastes, and remove all drilling supplies, equipment, and containment systems not needed for production. When multiple wells are drilled on a single well site, post-drilling restoration is required within 9 months after completion of drilling of all permitted wells on the well site or 30 calendar days after the expiration of all existing well permits on the well

site, whichever occurs later. Notwithstanding the provisions of § 102.8(n), full compliance with § 102.8(a)-(m) shall be maintained at the well site until restoration following the plugging of all wells is complete and stable. Drilling supplies and equipment not needed for production may only be stored on the well site if written consent of the surface landowner is obtained and the supplies or equipment are maintained in accordance with § 78.64a (relating to containment systems and practices at unconventional Oil and Gas Operations well sites).

(1) An area is restored under this subsection if the following are met:

(i) Notwithstanding the provisions of § 102.8(n), all permanent post-construction stormwater control features as identified in the PCSM plan or site restoration plan are in place consistent with § 102.8(a)-(m) (relating to PCSM requirements).

(ii) Remaining impervious areas are eliminated, except for areas required for safe well operations. Impervious areas include areas where the soil has been compacted, areas where the soil has been treated with amendments to firm or harden the soil and areas where soil is underlain with an impermeable liner.

(iii) All areas of the site not needed to safely operate the well are restored to the standards set forth in paragraph (e). The areas needed to safely operate the well include to the following:

(A) Areas used for service vehicle, well work over equipment, and rig access.

(B) Areas used for storage tanks and secondary containment facilities.

(C) Areas used for wellheads and appurtenant processing facilities.

(D) Area used for any necessary safety buffer limited to the area surrounding equipment that is physically cordoned off to protect the facilities.

(E) Area used to store supplies or equipment required for exploration or production operations.

(F) Area used for operation and maintenance of long-term PCSM best management practices.

(iv) Notwithstanding the provisions of § 102.8(n), earth disturbance associated with oil and gas activities that are not included in an approved site restoration plan, and other remaining impervious surfaces, must comply with all post-construction stormwater management requirements in Chapter 102, including § 102.8(a)-(m).

(v) The site is permanently stabilized according to § 102.22(a) (relating to site stabilization).

(2) The Department shall verify that satisfies the restoration requirements of this section are met by conducting a site inspection, completing a record audit, and by ensuring that concerns of the landowner, and nearby property owners, and residents on those properties concerns are addressed. The Department shall issue a summary report with its findings within 30 days of receiving notice from the operator that the site has been restored. The Department's report shall be made available to the public on the Department's website.

(e) Within 9 months after plugging a well, the owner or operator shall remove all production or storage facilities, supplies and equipment and, to the extent technically feasible, completely and permanently restore the well site to approximate original conditions, including preconstruction

contours, drainage patterns, type and density of native plant community, soil characteristics, and pre-development habitat features and conditions. The operator shall bear the burden of proving that complete and permanent restoration in compliance with paragraphs (1)-(5) is not technically feasible. Restoration must support the land uses that existed prior to oil and gas activities.

(1) Restoration of pre-construction contours requires restoration of individual topographic contour lines to within 1 foot of the original contour, based on original topographic conditions for areas to be disturbed. Existing topographic conditions must be documented at contours not less than 2 feet in interval.

(2) Restoration of drainage patterns requires that there be no change in drainage area to a point of discharge to a stream (as defined at § 78.1), waterbody, wetland, or spring.

(3) Restoration of the native plant community requires restoration of the type and density of native vegetation that existed at the site prior disturbance by Oil and Gas Operations. Restoration of non-native plant species shall not include plants classified as invasive or noxious vegetation. Restored vegetation must be maintained and monitored for a period of two years in order to assure plant establishment. Plants classified as invasive and/or noxious vegetation shall not exceed 5% of the site cover at the end of each growing season during the two-year maintenance period.

(4) Restoration of soil characteristics requires restoration of the depth of topsoil, organic content, bulk density, pH, and soil particle gradation that existed prior to site disturbance. The surface and sub-grade soil conditions must not be compacted to greater than 85% density.

(5) Restoration of habitat requires the restoration of conditions necessary to support the number and type of plant and animal organisms that existed prior to disturbance by Oil and Gas Operations.

(f) Within 60 calendar days after the restoration of the well site, the operator shall submit a well site restoration report to the Department. The report shall be made on forms provided by the Department and shall identify the following:

(1) A description of the method used for disposal or reuse of the free liquid fraction of the waste, and the name of the hauler and disposal facility, if any.

(2) The types and volumes of waste produced, the name and address of the waste disposal facility and waste hauler used to dispose of the waste, and copies of all manifests documenting the disposition of the waste.

(g) The Department shall verify that final restoration requirements of subsections §§ 78.65(e)-(f) are met by conducting a site inspection, completing a record audit, and by ensuring concerns of the landowner, nearby property owners, and residents on those properties are addressed. The Department shall issue a summary report with its findings within 30 days of receiving notice from the operator that the site has been restored. The Department's finding report shall be made available to the public on the Department's website. (1143)

Response: See responses to comments 1663 through 1672.

1674. Comment: The DEP’s revisions to Chapter 78 should contain meaningful standards for the final restoration of well sites and impoundment sites as well as for interim, “post-drilling” restoration period. (Sections 78.65, 78.59b, and 78.59c) (19, 21, 26, 142, 189, 192, 391, 843, 851, 868, 946, 958, 1005)

Response: See response to comment 1665. Section 78.65(a)(1) lists the requirements for the restoration after drilling. Sections 78.59b(g) and 78.59c(b) explain the restoration requirements for well development impoundments and centralized impoundments. Section 102.8 provides the requirements for post construction stormwater management and section 102.22(b) specifies the requirements for temporary stabilization, to minimize accelerated erosion and sedimentation.

1675. Comment: DEP’s proposed revisions to this section impose obligations beyond and defeat the clear intention of Act 13 to allow for reasonable site restoration requirements that balance operational needs and environmental protections. In particular, the revisions overstep the DEP’s authority with respect to post construction stormwater controls and post drilling restoration obligations where Chapter 102 and existing permits and approvals delimit the obligations to restore well sites. DEP cannot with a broad brush ignore exemptions for well sites as provided in Chapter 102 or impose obligations for post construction stormwater controls or post drilling conditions in excess of its authority under Act 13 or any other statute. We recommend the revisions below to clarify the limits of DEP authority under this section.

We object to any requirement to return land to “approximate original conditions” unless such a commitment has been made in the approved site restoration plans or private agreements with landowners. No such obligation is created under any relevant statute and is without environmental justification. The use of the surface by those who hold the dominant mineral estate is constrained under Pennsylvania property law to a demonstration of “due regard” for the surface, which is unlikely to require restoration to the standards created in the definition above. The Department has failed to provide any environmental justification for this requirement.

Suggested amendatory language:

(a) [In addition to complying with section 206 of the act (58 P. S. § 601.206), an owner or operator shall meet the following requirements:] The owner or operator shall restore the land surface within the area disturbed during siting, drilling, completing and producing a well pursuant to section 3216 of the act (58 Pa.C.S. § 3216) and 25 Pa. Code Chapter 102.

[(1)](b) A drill hole or bore hole used to facilitate the drilling of a well shall be filled with cement, soil, uncontaminated drill cuttings or other earthen material before moving the drilling equipment from the well site.

[(2)] (c) If a well site is constructed and the well is not drilled, the well site shall be restored within 30 calendar days after the expiration of the well permit unless the Department approves an extension for reasons of adverse weather or lack of essential fuel, equipment or labor.

(d) *Restoration after drilling* — Within 9 months after completion of drilling a well, the owner or operator shall restore the well site, remove or fill all pits used to contain produced fluids or residual wastes and remove all drilling supplies, equipment and containment systems not needed for production. When multiple wells are drilled on a single well site, post drilling restoration is required within 9 months after completion of drilling all permitted wells on the well site or 30 calendar days after the expiration of all existing well permits on the well site, whichever occurs

later in time. Drilling supplies and equipment not needed for production may ~~[only]~~ be stored on the well site ~~when [if-express]~~ written consent of the surface landowner is obtained ~~[and the supplies or equipment are maintained in accordance with § 78.64a]~~.

(1) An area is restored under this subsection if the following are met:

(i) All permanent post construction stormwater control features as identified in the PCSM plan or site restoration plan are in place consistent with the applicable requirements in 25 Pa.Code § 102.8.

(ii) Remaining impervious areas are minimized. Impervious areas include areas where the soil has been compacted, areas where the soil has been treated with amendments to firm or harden the soil and areas where soil is underlain with an impermeable liner.

~~[(iii) All areas of the site not needed to safely operate the well are restored to approximate original conditions, including preconstruction contours, and can support the land uses that existed prior to oil and gas activities to the extent practicable. The areas needed to safely operate the well include to the following:~~

~~(A) Areas used for service vehicle and rig access.~~

~~(B) Areas used for storage tanks and secondary containment facilities.~~

~~(C) Areas used for wellhead(s) and appurtenant processing facilities.~~

~~(D) Area used for any necessary safety buffer limited to the area surrounding equipment that is physically cordoned off to protect the facilities.~~

~~(E) Area used to store any supplies or equipment consented to by the surface landowner.~~

~~(F) Area used for operation and maintenance of long term PCSM best management practices.]~~

(1135)

Response: This section largely restates the restoration requirements in Section 3216 of the 2012 Oil and Gas Act and incorporates the Department's interpretation of these requirements and the existing Chapter 102 regulations as outlined in the "Policy for Erosion and Sediment Control and Stormwater Management for Earth Disturbance Associated with Oil and Gas Exploration, Production, Processing, or Treatment Operations or Transmission Facilities", Document No. 800-2100-008, which was finalized on December 29, 2012. Projects meeting the requirements will satisfy the statutory restoration requirements and include performance requirements that will protect waters of the Commonwealth.

The Department does not interpret the provisions of § 102.8(n) as an extensive exemption from post construction stormwater management requirements. The inclusion of the reference in § 102.8(n) to restoration requirements in other Chapters of Title 25 expressly incorporates the performance requirement of post construction stormwater management as required in Chapter 102: "the portion of a site reclamation or restoration plan that *identifies PCSM BMPs to manage stormwater* from oil and gas activities . . . permitted in accordance with Chapters 78 and 86-90. . ." 25 Pa. Code §102.8(n).

All stormwater runoff associated with earth disturbance activities triggering a permit under 25 Pa. Code § 102.5 must be managed with BMPs that satisfy the requirements of Chapter 102. Section 102.8(n) recognizes that restoration undertaken in accordance with other Chapters of Title 25 may be functionally equivalent to a Chapter 102 PCSM BMP, and when

that is the case and it can be demonstrated, such restoration may be relied on to meet Chapter 102 PCSM requirements.

The restoration provisions in §§ 78.65 and 78a.65 provide clarity related to satisfaction of existing post construction stormwater management requirements under the Pennsylvania Clean Streams Law and Chapter 102 when restoration activities are undertaken at oil and gas development sites, and the Chapter 102 permittee proceeds under § 102.8(n). The Department does not agree that these provisions subject more activities to stormwater management. The existing Chapter 102 requirements for stormwater management are not modified by this rulemaking.

These provisions provide clarity and facilitate coordination among related regulatory Chapters. These provisions do not modify existing stormwater management requirements and therefore will not burden landowners by requiring more extensive stormwater control features on their property, because current law under the Pennsylvania Clean Streams Law and the Chapter 102 regulations contain applicable stormwater management requirements to ensure protection of waters of the Commonwealth.

The “due regard process” does not apply to these provisions. The “due regard process” pertains to the relationship between surface and subsurface owners. The Department has constitutional and statutory obligations to consider and protect public resources that are separate and unrelated to the property issues between surface and subsurface owners. The provisions in §§ 78.15 and 78a.15 establish a process for the Department to consider and protect public resources from the impacts of a proposed well and coordinate with public resource agencies to fulfill these obligations. These provisions function to provide the Department with information necessary to enable the Department to conduct its evaluation of potential impacts and to review the information in the context of the criteria outlined in §§ 78.15(g) and 78a.15(g), and to determine whether permit conditions are necessary to prevent a probable harmful impact.

1676. Comment: There is no requirement in Act 13 Sections 3216(c) or 3216(d), or in Chapter 102, that imposes an obligation to restore well sites to approximate original contours or conditions. Act 13 mentions approximate original contours (not conditions) in Section 3216(g) related to extension of restoration requests. It would defeat legislative intent to impose this obligation generally when the General Assembly clearly chose not to alter the obligations under Sections 3216(c) or (d). Such an obligation would impose unreasonable requirements in many locations across the Commonwealth where there is significant topographical variation. When a restoration plan proposes restoration to approximate original contours, it would be a part of expected restoration obligations. The restoration plan is the governing document that addresses restoration obligations. In addition, the Department has no authority or justification to dictate operation or safety requirements of operators, further making Section (d)(1)(iii) unnecessary.

Suggested amendatory language:

- (iv) Earth disturbance associated with oil and gas activities that are not included in an approved site restoration plan, and other remaining impervious surfaces, shall comply with applicable [all] post construction stormwater management requirements in plan approved pursuant to Chapter 102 where applicable.
- (v) The site is permanently stabilized according to § 102.22(a).

(2) The restoration period in this subsection may be extended by the Department for an additional period of time, not to exceed two years, upon demonstration by the well owner or operator that:

(i) the extension will result in less earth disturbance, increased water reuse or more efficient development of the resources; or (ii) site restoration cannot be achieved due to adverse weather conditions or a lack of essential fuel, equipment or labor.

(3) The demonstration under paragraph (2) shall be submitted on forms provided by the Department within six months after the completion of drilling, for approval by the Department. The demonstration must include ~~[all of the following:]~~ a site restoration plan that shall provide for:

(A) The timely removal or fill of all pits used to contain produced fluids or residual wastes;

(B) The removal of all drilling supplies and equipment not needed for production, including containment systems;

(C) The stabilization of the well site that shall include interim post construction storm water management best management practices in compliance with applicable provisions of § 102.8 ~~[including § 102.8(a) - (m);]~~ or other measures to be employed to minimize accelerated erosion and sedimentation in accordance with The Clean Streams Law.

(D) A minimum uniform 70% perennial vegetative cover over the disturbed area, with a density capable of resisting accelerated erosion and sedimentation, or a BMP which permanently minimizes accelerated erosion and sedimentation. Return the portions of the site not occupied by production facilities or equipment to approximate original contours ~~[conditions, including preconstruction contours, and]~~ so that it can support the land uses that existed prior to oil and gas activities to the extent practicable.

(4) Operators may obtain written consent from landowners to remove or modify an obligation to return sites to approximate original conditions, where such an obligation exists. [Written consent of the landowner on forms provided by the Department satisfies the restoration requirements of this section provided the operator develops and implements a site restoration plan that complies with paragraph 3(i)(A) - (E) and all PCSM requirements in 25 Pa. Code Chapter 102.]

(e) *Restoration after plugging*—Within 9 months after plugging a well, the owner or operator shall remove all production or storage facilities, supplies and equipment and restore the well site in accordance with an approved site restoration plan ~~[to approximate original conditions, including preconstruction contours, and can support the land uses that existed prior to oil and gas activities to the extent practicable].~~

[(3)] (f) Within 60 **calendar** days after the restoration of the well site, the operator shall submit a well site restoration report to the Department. The report shall be made on forms provided by the Department and shall identify the following:

[(i)] (1) The date of land application of the topsoil water, the results of pH and specific conductance tests and an estimated volume of discharge.

[(ii)] (2) A description of the method used for disposal or reuse of the free liquid fraction of the waste, and the name of the hauler and disposal facility, if any.

[(iii)] (3) The location, **including GPS coordinates**, of the pit in relation to the well, the depth of the pit, the type and thickness of the material used for the pit subbase, the type and thickness of the pit liner, the type and nature of the waste, **the type of any approved solidifier**, a description of the pit closure procedures used and the pit dimensions.

[(iv)] (4) The location of the area used for land application of the waste, and the results of a chemical analysis of the waste soil mixture if requested by the Department.

[(v)] (5) The types and volumes of waste produced and the name and address of the waste disposal facility and waste hauler used to dispose of the waste.

(6) [The name, qualifications and basis for determination that the bottom of a pit used for encapsulation is at least 20 inches above the seasonal high groundwater table.]

~~(7)~~ The test results required by §§ 78.62 and 78.63 for all unconventional wells ~~[or any conventional wells with a horizontal well bore]~~.

(g) The well operator shall forward a copy of the well site restoration report to the surface landowner if the well operator disposes of drill cuttings or residual waste at the well site.

(1135)

Response: The restoration requirements are consistent with the restoration requirements described in section 3216(g) of the 2012 Oil and Gas Act. The mere fact of granting of a restoration extension does not change the post-drilling restoration requirements for a well site. The Department interprets section 3216 to require consistent restoration of well sites regardless of whether or not the restoration is occurring after an extension has been granted. This includes making portions of the site “capable of supporting the uses that existed prior to drilling the well,” which the Department interprets as “approximate original conditions” in the regulation.

The Department is not dictating safety or operational requirements after the completion of drilling. Section 3216 requires restoration of all items “not needed for production.” The operator determines the scope of that provision in reference to the particular well site to be restored.

1677. Comment: 78.65 – Act 13 sets particular requirements for bonds for oil and gas well operators. The DEP, EQB cannot provide regulation increasing the amounts of those bonds, but the DEP can establish processes to make sure that well sites are not released from bonds until they are adequately restored. (907)

Response: The Department acknowledges the comment.

1678. Comment: Subchapter G of the proposed regulations does not ensure that well sites will be adequately restored before they’re released from the bond. As far as we can tell, the release is determined on providing a certificate of plugging only. Release from liability should also be conditioned on a demonstration that the Well site, or impounded site, is adequately restored or the last well has been plugged. (907)

Response: Section 3225(a)(3) of the Act states that “(3) Liability under the bond shall continue until the well has been properly plugged in accordance with this chapter and for a period of one year after filing of the certificate of plugging with the department.” In addition, bond release is condition upon compliance with the requirements of the Act and these regulations. Because section 3216(d) of the Act requires restoration of the well site within nine months of the plugging of the well, restoration should be complete before the bond timeframes have expired, and the Department cannot release a bond for an operator currently in violation of that requirement.

1679. Comment: Act 13 requires two stages of restoration for well sites. On one hand, Section 3216(c) requires partial restoration at the conclusion of drilling fracturing operations. Section 3216(d) requires final restoration after the last well on the site has been plugged. The DEP is proposing to implement these sections in proposed regulation 78.65, which requires that a well site can be considered restored if it is returned to its approximate original contours, including preconstruction contours, and can support the original land uses to the extent practical. Similar language appears in the DEP’s proposed regulations. (907)

Response: The Department acknowledges the comment.

- 1680.** Comment: Freshwater impoundments and centralized wastewater impoundments, which also contain restoration requirements. A return to original conditions, contours and use is a commendable goal for the restoration of well sites, both post-drilling and post-plugging and impoundment sites.

However, the DEP's general restoration standards are now practically unenforceable because they fail to require environmental baseline site assessments. They fail to require site-specific standards and criteria for restoration. They fail to require environmental professionals to sign off on state restorations. And they establish no process by the DEP defining approved or disapproved restoration. The DEP should require site-specific baseline assessments and restoration plans for all well and impoundment sites should require professional certification that restoration goals have been met and should require DEP approval before a well site can be considered restored. (907)

Response: See response to comment 1665.

- 1681.** Comment: The soil and water at these sites needs to be restored to its pre-drilling state by the drillers at no expense to the taxpayers. (16)

Response: The restoration requirements established in the 2012 Oil and Gas Act and the regulations are adequate to ensure protection of waters of the Commonwealth and require drillers to restore sites to the conditions that will achieve such protection.

- 1682.** Comment: **78.65** – Commentator recommends that the well pad restoration section be clarified to emphasize a site restoration plan as the governing document that addresses PCSM and the restoration requirements provided in Sections 3216(c) and (d) of Act 13.

Requests for extension that include the information described in Act 13 should be approved, denied, or deemed to be approved within 90 days of submission to the Department. The regulation should be structured to allow for renewable two year extensions of the restoration deadline provided the site restoration plan and appropriate PCSM measures are fully implemented. This extension process is critical to avoid unnecessary earthmoving activities for reconstruction of a well pad should an operator plan to drill and produce additional wells on the same pad location at some later time in the future.

Suggested amendatory language:

- a. Site Restoration Plan
Site restoration plan – meets the requirements of 25 Pa. Code Chapter 102 sections 102.8(b), (c), (e), (f), (h), (i), (l) and (m), if applicable, and Section 3216 of Act 13. The plan addresses interim site restoration required after completion of drilling and final restoration of the well site after all wells have been plugged.

Each restoration phase of the plan shall provide for:

- i. The timely removal or fill of all pits used to contain produced fluids or residual wastes;
- ii. The removal of all drilling supplies and equipment not needed for production, including containment systems; and
- iii. Site appropriate BMPs including a BMP which minimizes accelerated erosion and sedimentation, and other measures to be employed to minimize accelerated erosion and sedimentation in accordance with The Clean Streams Law.

- b. General
 - (1) The owner or operator shall restore the land surface within the area disturbed during siting, drilling, completing and producing a well.
 - (2) A drill hole or bore hole used to facilitate the drilling of a well shall be filled with cement, soil, uncontaminated drill cuttings or other earthen material before moving the drilling equipment from the well site.
 - (3) If a well site is constructed and a well is not drilled, the well site shall be restored within 30 calendar days after the expiration of the well permit unless the Department approves an extension in accordance with Section 3216(g) of the Act.
- c. Site Restoration Implementation
 - (1) An area is restored under this subsection if the following are met:
 - i. All PCSM BMPs identified in the site restoration plan are installed and properly maintained.
 - ii. Remaining impervious areas are minimized, including areas where soil amendments have been added to harden the soil or are underlain with an impermeable liner.
 - iii. Earth disturbance associated with oil and gas activities that are not included in an approved site restoration plan, and other remaining impervious surfaces, shall comply with applicable post construction stormwater management requirements in 25 Pa. Code Chapter 102.
 - iv. The site is permanently stabilized according to 25 Pa. Code § 102.22(a).
- d. Interim restoration after drilling
 - (1) Within nine (9) months after completion of drilling a well, the owner or operator shall restore the well site according to the approved restoration plan. When multiple wells are drilled on a single well site, post-drilling restoration is required within nine months after completion of drilling all permitted wells on the well site or 30 days after the expiration of all existing well permits on the well site, whichever occurs later in time. Drilling supplies and equipment not needed for production may be stored on the well site when express written consent of the surface landowner is obtained and the supplies or equipment are maintained in accordance with § 78.64a, where applicable.
- e. Extension of site restoration period after drilling
 - (1) The restoration period may be extended by the Department for additional periods of time, not to exceed two years each, upon demonstration by the well owner or operator that:
 - i. The extension will result in less earth disturbance, increased water reuse or more efficient development of the resources; or
 - ii. Site restoration cannot be achieved due to adverse weather conditions or a lack of essential fuel, equipment or labor.
 - (2) The demonstration under 78.65(e)(1) shall:
 - i. Be submitted within six (6) months after the completion of drilling for approval by the Department.
 - ii. Include a site restoration plan that provides for:
 - (A) The timely removal or fill of all pits used to contain produced fluids or industrial wastes;
 - (B) The removal of all drilling supplies and equipment not needed for production;
 - (C) The stabilization of the well site that shall include interim postconstruction storm water management best management practices; or
 - (D) Other measures to be employed to minimize accelerated erosion and sedimentation in accordance with The Clean Streams Law.

- iii. Provide for returning the portions of the site not occupied by production facilities or equipment to approximate original contours and making them capable of supporting the uses that existed prior to drilling the well upon restoration.
- (3) Requests for extension that include the information described in (e)(2) above will be approved, denied, or deemed to be approved within 90 days of submission to the Department.
- f. Restoration after plugging all wells on well site
 - 1. Within nine (9) months after plugging a well, the owner or operator shall remove all production or storage facilities, supplies and equipment and restore the well site according to the approved site restoration plan.
 - 2. Within sixty (60) days after restoration of the well site, the operator shall submit a well site restoration report to the Department. The report shall be made on forms provided by the Department and shall identify the following:
 - i. The date of land application of any topsoil water, the results of pH and specific conductance tests and an estimated volume of discharge.
 - ii. A description of the method used for disposal or reuse of the free liquid fraction of the waste, and the name of the hauler and disposal facility, if any.
 - iii. The location, including GPS coordinates, of the pit in relation to the well, the depth of the pit, the type and thickness of the material used for the pit subbase, the type and thickness of the pit liner, the type and nature of the waste, the type of an approved solidifier, a description of the pit closure procedures used and the pit dimensions.
 - iv. The location of the area used for land application of the waste, and the results of a chemical analysis of the waste soil mixture if requested by the Department.
 - v. The types and volumes of waste produced and the name and address of the waste disposal facility and waste hauler used to dispose of the waste.
 - vi. The name, qualifications and basis for determination that the bottom of a pit used for encapsulation is at least 20 inches above the seasonal high groundwater table.
 - vii. The test results required by §§ 78.62 and 78.63 for all unconventional wells or any conventional wells with a horizontal well bore.
 - 3. The well operator shall forward a copy of the well site restoration report to the surface landowner if the well operator disposes of drill cuttings or residual waste at the well site.

Response: See response to comment 1676. The proposed language is not consistent with section 3216 of the 2012 Oil and Gas Act. Additionally, the proposed language for deemed approvals is not appropriate for restoration extension requests.

1683. Comment: **§ 78.65:** The historic requirements of this section never contemplated multi-well development from a well site. Additionally, the space needed to safely operate and service multiple, unconventional wells located on a well site is greater than what was required in the past. As such, complete site restoration is not achievable until production ceases and all wells on the well site are plugged and abandoned.

Our suggested amendatory language:

- a) The owner or operator shall restore the land surface within the area disturbed pursuant to Section 3216 of the Act (58 Pa.C.S. § 3216) and 25 Pa. Code Chapter 102.
- 1) Post-Drilling Site Restoration Plan (also referred to as interim site restoration) – the plan shall provide for restoration of those areas of the well site not needed for production. Areas needed for production include but are not limited to the following: areas used for service vehicle and rig access; areas used for storage tanks and secondary containment facilities;

areas used for well head(s) and appurtenant processing facilities; areas used for any necessary safety buffer(s); areas used to store any supplies or equipment consented to by the surface land owner; and/or areas used for the implementation and management of the permanent post- construction stormwater control features as identified in the Post-Construction Stormwater Management Plan.

- 2) Post Plugging & Abandonment Site Restoration Plan (also referred to as final site restoration) – the plan shall provide for restoration of the well site within 9 months after the plugging and abandonment of the last well on the well site.

b) General Requirements

- 1) The owner or operator shall restore the land surface within the area disturbed during siting, drilling, completing and producing a well.
- 2) A drill hole or bore hole used to facilitate the drilling of a well shall be filled with cement, soil, uncontaminated drill cuttings or other earthen material before moving the drilling equipment from the well site.
- 3) If a well site is constructed and a well is not drilled, the well site shall be restored within 30 calendar days after the expiration of the well permit unless the Department approves an extension.

- c) Post-Drilling (Interim) Site Restoration – within 9 months after completion of drilling and stimulating all wells on a well site, the owner or operator shall restore the well site, remove or fill all pits used to contain produced fluids or residual wastes and remove all drilling supplies, equipment and containment systems not needed for production. A site will be considered to be restored in the Interim if the following conditions are met:

- 1) All permanent post construction stormwater control features as identified in the PCSM plan or Post-Drilling Site Restoration Plan are in place consistent with the requirements in 25 Pa. Code § 102.8.
- 2) Remaining impervious areas are minimized. Impervious areas are limited to those areas that do not exhibit infiltration capacity.
- 3) All areas of the well site not needed for production have been restored to the approximate conditions that existed immediately before disturbance by well site construction activities and/or to the satisfaction and requirements of the surface owner.

- 4) The well site is permanently stabilized according to 25 Pa. Code § 102.22(a).

- d) Post-Plugging & Abandonment (Final) Site Restoration –within 9 months after plugging and abandoning the last well on the well site, the owner or operator shall remove all production or storage facilities, supplies and equipment and restore the well site according to the approved Post-Plugging & Abandonment (Final) Site Restoration Plan.

- 1) Within sixty (60) days after restoration of the well site, the operator shall submit a final well site restoration report to the Department. The report shall be made on forms provided by the Department and shall identify the following:
 - i. The date of land application of any tophole water, the results of pH and specific conductance tests and an estimated volume of discharge.
 - ii. A description of the method used for disposal or reuse of the free liquid fraction of the waste, and the name of the hauler and disposal facility, if any.
 - iii. The location, including GPS coordinates, of the pit in relation to the well, the depth of

- the pit, the type and thickness of the material used for the pit subbase, the type and thickness of the pit liner, the type and nature of the waste, the type of an approved solidifier, a description of the pit closure procedures used and the pit dimensions.
- iv. The location of the area used for land application of the waste, and the results of a chemical analysis of the waste soil mixture if requested by the Department.
- v. The types and volumes of waste produced and the name and address of the waste disposal facility and waste hauler used to dispose of the waste.
- vi. The name of the qualified professional, qualifications and basis for determination that the bottom of a pit used for encapsulation is at least 20 inches above the seasonal high groundwater table.
- vii. The test results required by § 78.62 and § 78.63 for all unconventional wells or any conventional wells with a horizontal well bore.
- 2) The well operator shall forward a copy of the well site restoration report to the surface landowner if the well operator disposes of drill cuttings or residual waste at the well site. (952)

Response: The proposed language is not consistent with section 3216 of the 2012 Oil and Gas Act.

- 1684.** Comment: 78.65(a): The site restoration section of the Proposed Regulations begins by stating that “the owner or operator shall restore the land surface within the area disturbed...” pursuant to The Oil and Gas Act (58 Pa. C. S. § 3216) and the Chapter 102 regulations (25. Pa Code. Chapter 102). Land surface restoration activities should also be required to meet the requirements of The Clean Streams Law (35 P.S. §§ 691.1 et seq.) and Chapter 93 regulations related to water quality standards (25 Pa. Code Chapter 93). (1142)

Response: Section 3216(e) of the 2012 Oil and Gas Act states that restoration activities required by this chapter or in regulation promulgated under this chapter shall also comply with all applicable provisions of The Clean Streams Law. Provisions of Chapter 93 regulations related to water quality standards are issued under sections 5 and 402 of The Clean Stream Law. Implementation of the Chapter 93 antidegradation requirements for erosion and sediment control and stormwater management are provided in Chapter 102. Section 78.65 and 78a.65 require compliance with antidegradation implementation provisions in Chapters 102 and 93.

- 1685.** Comment: Greater expectations are placed on operators to provide written standards of operational procedures, but they are not site specific. Reports, records, and documentation maintained by the operator for Departmental review must be accompanied by frequent on-site inspections. How else can it be determined that drill cuttings used in restoration are actually “uncontaminated?” (1093, 1098)

Response: The Department acknowledges the comment. Inspections relate to Department implementation of a final regulation, which is beyond the scope of this rulemaking.

- 1686.** Comment: The following comments on § 78.65 are intended to help clarify language in the revised regulations and are also offered with the intent of providing enhanced off-site environmental protections to adjacent private and publically-owned lands such as those owned or managed by the National Park Service.

§ 78.65 (b) – This section states that “a drill hole or bore hole used to facilitate drilling of a well should be filled with [cement, soil, uncontaminated drill cuttings or other earthen material] before

moving the drilling equipment from the well site.” We suggest language that includes “any shallow drill hole or bore hole, not the main exploratory drill hole” to make clear to operators that this requirement applies to all ancillary drill and bore holes. (133, 1062)

Response: The rulemaking language is clear that these provisions only apply to drill or bore holes other than the permitted well. This language is now found in §§ 78.65(a)(1)(ii) and 78a.65(a)(1)(ii).

1687. Comment: DEP’s regulations requiring site restoration within 9 months of well permit expiration or drilling the last well makes no sense in shale plays where multiple formations and infill drilling are practiced. The regulations should stress site stability and adequate E&S controls for long term operations vs. the requirement to rapidly restore sites that will be used again and again in the future. (404)

Response: Sections 78.65(d) and 78a.65(d) adequately acknowledge multiple wells being drilled on the same well pad by allowing operators to postpone post-drilling restoration until all wells are drilled or all well permits for that site have expired. In addition, see response to comment 1676.

1688. Comment: 78.65(c) – The edge of the play is becoming visible in Wyoming County. There have been dry holes drilled and plugged. There have been well sites built never to see any equipment arrive on-site. Occasionally, since these have been locations of test wells, they are smaller in scope and size such that the operator was not required to have an Expedited Erosion & Sediment Stormwater General Permit and so they did not obtain one. An example of such a site is related to the Chief Oil & Gas Drill Operate Well Permit #131-20127 AMERICAN ASPHALT UNIT 1H OG WELL [Eaton Township]. Since there is no record of an E&S permit, there is also no record on [eFACTS] of any inspections that may have occurred regarding this site. Further it is unclear whether the operator had a PCSM plan according to the DEP [eFACTS] records being no E&S permit had been previously issued. This site was built several years ago. The operator determined to never drill a well there. Recently, this site has been restored. There is no follow up inspection recorded on [eFACTS]. Since the Department was not provided with any plans it remains unclear whether the operator did in fact adhere to procedures that restored the site to the actual “approximate original conditions including preconstruction contours, and can support the land uses that existed prior to [drilling the well].” This is particularly important where operators are ambitious but lack full understanding of their leasehold. Ideally, we do not want to see any well sites that serve no purpose other than land disturbance to be developed across our landscape. Well sites must not be developed lacking a full purpose to drill and lack any oversight towards development or restoration of the same site. This is an important reason why every well site needs to be required to have an Expedited E&S permit if for no other reason than to ensure that the site is fully restored according to the regulations and that at a minimum there has been a post-restoration inspection. The [eFACTS] system currently does not retain information regarding DOW permit renewals. This permit may have been renewed at least once, but it also remains unclear whether or not the well site was restored within the 30 day period previously prescribed in this provision. (660a)

Response: The erosion and sediment control permit requirements are established by Chapter 102, and § 102.5(c) of those regulations does not require a permit to be obtained for earth disturbances of less than five acres over the life of the project. Amending Chapter 102 is beyond the scope of this rulemaking. However, each operator is required to submit a restoration form (OOGM-75) within 60 days of completion of well site restoration, and Department staff inspect the site after the form is received. This inspection is conducted pursuant to Chapter 78 whether or not an erosion and sediment control permit is required

and is reflected as an inspection related to the underlying well permit. Also, Well Permit renewals are tracked in eFacts.

- 1689.** Comment: 78.65(d) – There needs to be a mechanism in place whereby the Department reviews the original site with the restoration plan. This is very important in regards to “78.65(d)(1)(iii) All areas of the site not needed to safely operate the well are restored to approximate original conditions, including preconstruction contours, and can support the land uses that existed prior to the oil and gas activities to the extent practicable.” As an example, Chesapeake’s permit ESX11-131-0034 FALCONERO LOCATION [Forkston Township] was previously an agricultural field that on the downhill side had supported a diversion ditch that protected water run-off from reaching the neighbor’s property. The neighbor’s home is located on the downhill side and lacking a properly constructed diversion ditch, the neighbor’s in-ground pool and home will become the route for all water run-offs from the field. When the operator was restoring the site post plugging, [this was a dry hole] there was no effort being made to accommodate for the previous diversion ditch. Fortunate for the neighboring landowner, he was home and watching – primarily due to concerns; what was occurring on the adjacent property. When he noticed they were not reconstructing the diversion ditch, he went to speak to the workers. The workers indicated to him, by showing him the plans, that there was no reference to restore the ditch and in fact there was no record of the ditch. The adjacent landowner contacted the operator only to no avail with the common response “not our fault” as often was the prescribed response to problems landowners experienced. Property owners must not be expected to photograph every part of preconstruction contours of their or adjacent properties. In cases of producing wells where full restoration may not occur for decades, no one will recall the original contours and features such as pre-existing and necessary diversion ditches when submitted plans lack these details. Nearby property owners need to be protected from unnecessary and excessive water run-off that may affect their property, especially when it was a pre-existing feature. It is fortunate for the adjacent property owner that he was able to articulate his concerns to the workers and have a successful response whereby the diversion ditch was reconstructed during the site restoration. However, this is one case, and one case in which restoration occurred in a very short interval of time subsequent to the drilling and plugging of a dry hole. That may not be the case in years to come when plans are erroneous and there are completely different landowners involved that may not remember such features as pre-existing and needful, functioning diversion ditches. The Department needs a mechanism in place to deal with such issues in the future as they no doubt will occur. (660a)

Response: Regardless of whether or not a well site has an erosion and sediment control permit, operators must comply with Chapter 102 and must utilize erosion and sediment BMPs to minimize accelerated erosion and sedimentation, and may also need to prepare written erosion and sediment control plans that contain plan maps that show the location of features including surface waters of this Commonwealth, and drainage patterns, field and property boundaries, buildings and farm structures.

Therefore, there should be an indication of preconstruction conditions in the operator’s erosion and sediment control plan.

In addition, for permitted sites, a preconstruction meeting is generally required.

- 1690.** Comment: Another situation that needs to be considered is when a well is plugged but the operator does not restore the site due to other business arrangements. One such location where this was experienced is Carrizo’s ESX10-131-0025 SHIELDS WELL SITE [Monroe Township]. This location subsequently became the site for a pipeline staging area for a gathering line project. Then, subsequent to that development, the site became a staging area for the Mehoopany Wind Farm. We

certainly have no issue with the utilization of an area that was constructed to support heavy equipment being used in either construction project. Rather our concern lies with the possibility where this may occur and then the operator and possibly the Department loses track of the site and the requirement to be restored. In review of Site ID 737797 the site restoration inspection is noted along with Violation Inspection ID: 2062442 Failure to meet requirements of permit, rules and regulations, or order of DEP. Thus, the Department needs to have a mechanism in place pertaining to similar situations. (660a)

Response: Where the operator has obtained an ESCGP, the operator would be accountable under the permit until such time as the site can be transferred to control under an NPDES permit. Where the operator is not required to obtain an ESCGP, the disturbance is relatively limited (less than five acres) and there are informal mechanisms in place to transfer responsibility for the site.

- 1691.** Comment: **78.65(d)** – Section 3216(c) of Act 13 requires the removal of equipment not needed for production. Since this is already addressed in statute, this section is not necessary and could be deleted. (124a)

Response: Inclusion of this provision in the regulations allows the public and operators to understand all restoration requirements for well sites without the need to reference the Oil and Gas Act.

- 1692.** Comment: **78.65(d)** – 78.64a, referenced in the last sentence of this provision, does not apply to conventional operators. It should be clarified that compliance with Section 78.64a only applies within Section 78.65 to unconventional operators.

Suggested Regulatory Language:

Revise the last sentence of (d) as follows: “Drilling supplies and equipment not needed for production may be stored on the well site when express written consent of the surface landowner is obtained. Supplies or equipment on unconventional sites must be maintained in accordance with § 78.64a.” (1153)

Response: The Department agrees and has deleted the final sentence from section 78.65 in the final rulemaking.

- 1693.** Comment: **78.65(d)** – “Drilling supplies and equipment not needed for production may be stored on the well site if express written consent of the surface landowner is obtained and the supplies or equipment are maintained in accordance with § 78.64a.” It is suggested that this sentence be deleted since this is an issue between the landowner and operator. (1057)

Response: Section 3216(g)(2)(B) of the 2012 Oil and Gas Act requires that all drilling supplies and equipment not needed for production be removed from the well site. The regulation allows for such storage but only to the extent that the surface landowner consents to these items remaining on the site.

- 1694.** Comment: **78.65(d):** To account for the dynamics of an operation where with one rig move an operator drills and completes every well on a pad in sequence, commentator suggests that the section read “Restoration after completion” and refer to restoration after completion of a well and rather than restoration after “drilling” or “completion of drilling.” (1071)

Response: The rulemaking section reflects the structure of section 3216 of the 2012 Oil and

Gas Act, which requires restoration “within nine months after completion of drilling of a well...”

- 1695.** Comment: Commentator contends nine months is an aggressive target and would request the Department allows two years for restoration after completion in alignment with other states in the region. (1071)

Response: The rulemaking reflects the structure of section 3216 of the 2012 Oil and Gas Act, which requires restoration “within nine months after completion of drilling of a well...” Section 3216(g) does provide an opportunity to the operator for restoration period extension if the operator demonstrates that the extension will result in less earth disturbances, increased water reuse or more efficient development of the resources; or site restoration cannot be achieved due to adverse weather conditions or lack of essential fuel, equipment or labor.

- 1696.** Comment: **78.65(d)(1)(ii)** – These proposed restoration obligations exceed those imposed by Chapter 102 and may exceed those within approved site restoration plans. Providing a blanket conclusion that “compacted” soil is impervious is overly broad, vague, and unreasonable. (1153)

Response: The language in this section is consistent with the Department’s interpretation of section 102.8.

- 1697.** Comment: DEP has no authority under Act 13 or otherwise to require restoration to “approximate original conditions” unless that obligation is part of an approved site restoration plan. There is no requirement in sections 3216(c) or (d) of Act 13, or in the Chapter 102 regulations, to restore well sites to approximate original contours or conditions. The term “approximate original contours” is used in section 3216(g) only in the context of restoration extension requests. Aside from being beyond the Department’s authority to require, such an obligation would impose unreasonable measures in many topographic areas of Pennsylvania. (1153)

Response: See responses to comments 1675 and 1676.

- 1698.** Comment: The rule should clarify that well site “restoration” occurs at two very different times – post drilling and post plugging – that entail very different obligations. (1153)

Suggested Regulatory Language:

- (1) An area utilized for post drilling production is restored under this subsection if the following are met:
- (i) All permanent post construction stormwater control features as identified in the PCSM plan or site restoration plan are in place consistent with the applicable requirements in 25 Pa. Code § 102.8.
 - (ii) Remaining impervious areas are minimized. Impervious areas may include areas where the soil has been treated with amendments to firm or harden the soil and areas where soil is underlain with an impermeable liner.
 - (iii) Earth disturbance associated with oil and gas activities that are not included in an approved site restoration plan, and other remaining impervious surfaces, shall comply with a post construction stormwater management plan approved pursuant to applicable requirements in 25 Pa. Code Chapter 102.
 - (v) The site is permanently stabilized according to 25 Pa. Code § 102.22(a).
- (1153)

Response: The section has been revised to specifically describe the requirements and timelines

of post-drilling and post-plugging restoration.

1699. Comment: **78.65(d)** – It is suggested that the sentence, “Drilling supplies and equipment not needed for production may be stored on the well site if express written consent of the surface landowner is obtained and the supplies or equipment are maintained in accordance with § 78.64a. “ be deleted since this is a land use issue between the landowner and operator. (861a)

Response: See response to comment 1693.

1700. Comment: It is suggested that the Department revise the rule to reflect that when multiple wells can be drilled on a site, the site restoration should occur within nine months after *hydraulic fracturing* of the last well on the pad. It appears that the Department is acknowledging that a well site need not be restored if the operator will use the footprint of the site for future development activities. Site development could include drilling and/or hydraulic fracturing, and the latter typically uses a larger space on the well pad than drilling. Furthermore, a well permit is an arbitrary means of demonstrating an operator’s intention to engage in future well site development activities. In many cases, an operator’s drilling schedule will change over time, and so well permits may not be obtained until shortly before the well is drilled. Thus, the Department should not encourage operators to obtain well drilling permits simply to extend the timeline for site restoration. (861a)

Response: See responses to comments 1694 and 1695.

1701. Comment: **78.65** – Simplify the language in this provision with a movement away from permit-dependent standards. Upon the completion of drilling all wells on a multi-well pad, Commentator generally supports the reclamation plans of the Board, which include reclaiming all disturbed areas, including backfilling, grading, leveling, seeding, mulching, cleanup; and removal of all other equipment, supplies debris, and any other material not removed during demobilization. A general concern is basing restoration requirements on when a well site has an active drill permit. The Board should base site restoration requirements, not on well development schedules or other arbitrary factors such as whether or not the operator is maintaining and renewing a well drilling permit for the site, but rather concentrate on how to best support the policy of Act 13 and The Clean Streams Law and landowner rights. Further complicating the use of drill permit expiration as a triggering event for site restoration is Act 13’s definition for drill permit expiration in § 3211(i), which states that if drilling commences during the first one-year period of a drill permit, the permit shall remain in force until the well is plugged in accordance with § 3220 or the permit is revoked. This definition creates confusion in applying the proposed requirements throughout section 78.65, particularly § 78.65(d). (1085)

Response: The Department encourages drilling multiple wells on the same well pad as this practice generally will result in less earth disturbance across the Commonwealth. Allowing operators to avoid restoring the well site until all active permits on the well site are either drilled or expire encourages this practice. It also avoids additional earth disturbance that would occur if the operator were required to restore the well site and then needed to open it up again to drill an additional well.

The Department disagrees with the commentator’s characterization of section 3211(i) of the 2012 Oil and Gas Act. The subsection actually states that “Well permits issued for drilling wells under this chapter shall expire one year after issuance unless operations for drilling the well are commenced within the period and pursued with due diligence... (emphasis added). The Department interprets that language to require completion of the well within sixteen months of permit issuance.

1702. Comment: We are concerned about site restoration. There needs to be a better process involved to ensure that preconstruction contours are properly documented. DEP needs to do site visits when reviewing E&S permits. We are aware of a few locations in our watershed where this did not occur. One, CAPPUCCI had a waiver signed after the fact, the pad was built within 100' of a pond and FALCONERO had no details of the pre-existing diversion ditch in any of their plans including the PCSM plan. FALCONERO has been restored [dry hole]. (1035)

Response: See response to comment 1689.

1703. Comment: Clarification is required as to when the 9-month time period for site restoration begins to run. In reviewing 58 Pa.C.S. § 3216, it is Commentator's opinion that the General Assembly's use of the phrase "completion of drilling of a well" indicates its intent for the 9-month time frame to begin when the well is properly equipped for production or the date the well is abandoned. *See*, 58 Pa.C.S. § 3203, definition of "completion of a well." This is consistent with the General Assembly's references to completing activity as an activity that causes earth/soil disturbance in 58 Pa.C.S. § 3216(a) and (b). It is illogical to start the clock for performing restoration for an activity that is clearly recognized as causing or requiring earth/soil disturbance before that activity has been finished. Based on 58 Pa.C.S. § 3216, Commentator recommends that the EQB clarify that the 9-month restoration period commences on the date the well is properly equipped for production or the date the well is abandoned. (1140)

Response: Drilling a well and completion of a well are two different processes, and the Department believes that the regulation is consistent with the plain language of section 3216. If the General Assembly had intended the result suggested by the commentator, it would have been simple for Section 3216 to state that restoration was to occur within nine months of the well-being equipped for production or abandoned.

1704. Comment: Amendments to this section address well site restoration requirements. The amendments have generated significant interest from the regulated community, especially new language found under Subsection (d). Some commentators believe that the language conflicts with Section 3216 of Act 13 and would impose significant costs to the oil and gas industry without a corresponding benefit. Other commentators have suggested additional language that is more protective of the environment. We ask EQB to explain why it believes the proposed language is properly aligned with Act 13. We also ask EQB to explain in the Preamble and RAF of the final-form regulation how the requirements in this section reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: The restoration requirements described in this section are consistent with the 2012 Oil and Gas Act. Performing site restoration to a lesser standard would not meet the intent of the Act, nor be consistent with existing obligations operators have under the Pennsylvania Clean Streams Law. Projects meeting the requirements will satisfy the statutory restoration requirements and include performance requirements that will protect waters of the Commonwealth. Also, refer to response to comment 1662.

1705. Comment: Section 78.65(d)(1)(ii) denotes that an area is restored if "remaining impervious areas are minimized." Greater clarification must be given as to what the word "minimized" means in this section. Impervious surface areas should be reduced to the greatest extent practicable. To ensure that this reduction occurs, the Department should establish procedures for de-compaction of surface areas no longer needed to be impervious. Oil and Gas Operations and the associated activities results in soil compaction which is not conducive to well site restoration and without proper instruction may be

overlooked by operators. Further clarification of the term “impervious” is needed; this will prevent situations where areas are restored but still functioning as hydrologically impervious. (997a, 1142)

Response: The terms are specific enough while retaining flexibility for Department inspectors to require appropriate steps to be taken to adequately restore well sites as needed to protect the waters of the Commonwealth. “Imperviousness” may also be addressed in more technical detail in technical guidance.

1706. Comment: **78.65(d)(1)(iii).** The word “approximate” is an undefined term that is not quantifiable and therefore too subjective in this context. Similarly, the term “condition” does not adequately provide a standard and should be specified as to the pre-construction soils, vegetative states, hydrology and other more specific descriptions of the unique character of the site. (1142)

Response: The terms are specific enough while retaining flexibility for Department inspectors to require appropriate steps to be taken to adequately restore well sites as needed to protect the waters of the Commonwealth.

1707. Comment: **78.65(d)(2)-(4)** – PADEP’s draft rule with respect to extensions of restoration period exceeds the authority and defeats the intent of Act 13 to allow for the most economical and environmentally friendly extension of well site restoration obligations.

Suggested Regulatory Language:

(2) The restoration period may be extended by the Department for additional periods of time, not to exceed two years each, upon demonstration by the well owner or operator that:

- (i) The extension will result in less earth disturbance, increased water reuse or more efficient development of the resources; or
- (ii) Site restoration cannot be achieved due to adverse weather conditions or a lack of essential fuel, equipment or labor.

(3) The demonstration under 78.65(e)(2) shall:

- (i) Be submitted within six (6) months after the completion of drilling for approval by the Department.
- (ii) Include a site restoration plan that provides for:

- (A) the timely removal or fill of all pits used to contain produced fluids or industrial wastes;
- (B) the removal of all drilling supplies and equipment not needed for production;
- (C) the stabilization of the well site that shall include interim postconstruction storm water management best management practices; or
- (D) other measures to be employed to minimize accelerated erosion and sedimentation in accordance with The Clean Streams Law.

(iii) Provide for returning the portions of the site not occupied by production facilities or equipment to approximate original contours and making them capable of supporting the uses that existed prior to drilling the well upon restoration, unless otherwise agreed by the surface owner.

(4) Requests for extension that include the information described in (e)(2) above will be approved, denied, or deemed to be approved within 90 days of submission to the Department. (1153)

Response: See response to comment 1676. The language is not consistent with the Department’s interpretation of section 3216 of the 2012 Oil and Gas Act. Additionally, the language for deemed approvals is not appropriate for restoration extension requests.

1708. Comment: **78.65(d)(3)(iii)** – The stabilization of the well site that includes interim post-construction storm water management best management practices in compliance with § 102.8, including § 102.8(a)—(m). 102.8 (m) PCSM long-term operation and maintenance requirements--

(2) For any property containing a PCSM BMP, the permittee or co-permittee shall record an instrument with the recorder of deeds which will assure disclosure of the PCSM BMP and the related obligations in the ordinary course of a title search of the subject property. The recorded instrument must identify the PCSM BMP, provide for necessary access related to long-term operation and maintenance for PCSM BMPs and provide notice that the responsibility for long-term operation and maintenance of the PCSM BMP is a covenant that runs with the land that is binding upon and enforceable by subsequent grantees, and provide proof of filing with the notice of termination under § 102.7(b)(5) (relating to permit termination).

(5) A permittee or co-permittee that fails to transfer long-term operation and maintenance of the PCSM BMP or otherwise fails to comply with this requirement shall remain jointly and severally responsible with the landowner for long-term operation and maintenance of the PCSM BMPs located on the property.”

Landowners leasing land for Gas wells have no idea that [subsection (m)] requires that: (1) their property deed must be written to indicate who will operate and maintain PCSW structures, e.g. sedimentation ponds, stormwater ditches at well pads and access roads; (2) that if the gas well operator fails to operate and maintain PCSW structures, the landowner will be required to operate and maintain such structures. The PA DEP must notify Landowners of this requirement! (92a)

Response: The Department disagrees with the Commentator’s characterization of Section 102.8(m). The requirement in Section 102.8(m) is intended to provide notification to potential property owners subject to long-term PCSM operation and maintenance requirements. The current requirements in Chapter 102 provide for post construction stormwater management including the requirements in Section 102.8(m) and has been in place since November 19, 2010. To the extent that an oil and gas operator intends to conduct oil and gas operations on leased property, it is the responsibility of the oil and gas operator and the property owner to be informed of the regulatory requirements governing the activity that will be conducted. Modifying the requirements of Chapter 102 is beyond the scope of this rulemaking.

1709. Comment: **78.65(d)(1)(iii)** –Best Management Practices (“BMPs”) must be established to ensure that such things as loss of forest cover, reduction of the amount of land returned to its original state, and/or other significant changes to the landscape are addressed through proper implementation of BMPs. For example, if it is not feasible to return a site to its original condition after oil and gas activities have occurred, the Department should require that the percentage of land which cannot be restored onsite be recreated in another, functionally equivalent location within the 12-digit hydrological code. (1142)

Response: See responses to comments 1665 and 1676.

1710. Comment: **78.65(d)(1)(iii)** requires that “all areas of the site not needed to safely operate the well are restored to approximate original conditions, including preconstruction contours, and can support the land uses that existed prior to oil and gas activities to the extent practicable.” To ensure that this

occurs, the Department must develop restoration standards. (997a, 1142)

Response: Section 3216 of the 2012 Oil and Gas Act and section 78.65 provide adequate restoration standards. See response to comment 1676.

1711. Comment: **78.65(d)(1)(iii)** – The proposed regulation requires restoring the land into “approximate original conditions”. In addition to being vague, the definition of these approximate original conditions refers to a state of the land that can support the “land uses that existed prior to oil and gas activities to the extent practicable.” (1161)

Response: The Department acknowledges the comment. The Department believes the definition is appropriately descriptive.

1712. Comment: Section **78.65(d)(1)(iii)(D)** creates a “safety buffer” to protect the facilities; however, there is no maximum area given nor is there criteria to determine what would be considered an appropriate “safety buffer” for various activities at the well site. Standards should be developed to ensure that the permitted “safety buffer” allows for seamless production while also restoring the site to its original state to the best extent practicable. (1142)

Response: See response to comment 1676.

1713. Comment: **78.65(d)(1)(iii)** – Restoration should not be only compatible to “the land uses that existed prior to oil and gas activities.” The restoration should allow for future land uses that are planned by the local zoning laws if these local regulations are more restrictive. The municipalities should be able to comment the restoration planed by the operator, notably regarding the future uses that are indicated in the local zoning for the land. (1161)

Response: If the well site requires an ESCGP, the restoration plan will be submitted along with the permit application. Without a restoration plan that complies with both Chapter 78 and Chapter 102, the Department will not approve the ESCGP. Municipalities are given notification of the submission of the ESCGP application pursuant to Act 14, and can comment at that time.

1714. Comment: The obligation to return land to “approximate original condition” that existed prior to well site construction disregards the ability of operators and land owners to agree on site restoration. (998)

Response: The rulemaking allows for this in subsection 78.65(e), 78.65(f), 78a.65(e) and 78a.65(f).

1715. Comment: **78.65(d)(1)(iii)** – An owner or operator must restore all areas of the well site not needed to safely operate the well to approximate original conditions, within 9 months of completion of all permitted wells on the well site. Subsections (d)(1)(iii)(A) – (F) describe the areas needed to safely operate the well, which include: areas used for service vehicle and rig access; areas used for storage tanks and secondary containment facilities; areas use for wellhead(s) and appurtenant processing facilities; area use for any necessary safety buffer limited to the area surrounding equipment that is physically cordoned off to protect the facilities; area used to store any supplies or equipment consented to by the surface owner; and area used for operation and maintenance of long-term PCSM best management practices. This comprehensive list basically includes every part of a well pad and related areas, suggesting that very limited site restoration is in fact required. Additionally, there is often a significant time lapse between when the first well on a pad is drilled

and when subsequent wells are drilled, creating even longer delays in restoration efforts. Re-vegetating disturbed surfaces is imperative to limiting sedimentation pollution, protecting water resources, and restoring habitat and food opportunities for terrestrial wildlife. We recommend that DEP revise this section to more clearly articulate where and when partial restoration must occur. (1157)

Response: The rulemaking is consistent with the requirements in section 3216 of the 2012 Oil and Gas Act. Water resources are protected under the erosion and sediment control requirements of Chapter 102 through the development and implementation of an E&S plan as well as an ESCGP, which must satisfy post construction stormwater management requirements, when required. Section 102.22 requires temporary and permanent stabilization of disturbed areas in a timely manner.

1716. Comment: § 78.65 (d)(1)(ii) and (iii) – These section address “minimizing” remaining impervious areas and restoring lands “to the extent practicable.” We suggest that the Department either more strictly define these two terms, or refer operators to other regulations, perhaps those found at 25 PA. Code, Chapter 102, Section 102 that may provide more detailed guidance in surface restoration and vegetative species requirements. (1062, 1133)

Response: The terms are specific enough while retaining flexibility for Department inspectors to require appropriate steps to be taken to adequately restore well sites as needed to protect the waters of the Commonwealth. Further these provisions are consistent with the Chapter 102 regulations.

1717. Comment: **78.65(d)(1)(iii):** Commentator has significant concerns with this section, in particular the requirement to restore a pad to preconstruction contours. Returning portions of a pad to preconstruction contours after drilling but before plugging would require the use of earth moving equipment, presenting a risk to pad stability on an actively producing pad, not to mention the dangers of working with that type of equipment around live well heads. This interim earth work would mean unnecessarily re-exposing soil to erosion and sediment control risks. Additionally, there may be instances where a landowner may not want a site restored to its original state that should be provided for. The Department should strike the requirement to restore to preconstruction contours in this section. Commentator is also concerned with subsection (A), referring to an exclusion for areas used for service vehicle(s) and rig access. The Department should add language to clarify that this would include area needed for refracturing and workovers. (1071)

Response: See response to comments 1730.

1718. Comment: In section 78.65 it states that a well site will be considered restored if it is returned to its “approximate original conditions,” and if it can support the original land uses to the extent practicable.” This language is vague, and as such, “practically meaningless. “ I would like to see specific rules, guidelines, and definitions regarding the restoration of a site. Exactly how will DEP determine if a site has been restored? Does approximate mean 90%? How will site restoration be measured? Section 78.65 also states that a site will be considered restored if the landowner gives written consent. The landowner is not likely an expert on what constitutes a healthy, restored ecosystem. The regulations should require written testimonies by experts in the area of environmental restoration as well as consent of the landowner. (108)

Response: The terms are specific enough while retaining flexibility for Department inspectors to require appropriate steps to be taken to adequately restore well sites as needed to protect the waters of the Commonwealth. The Operator must notify the landowner of completed

restoration; however the final determination is made by Department inspectors upon completion of the project. Further these provisions are consistent with and require compliance with the Chapter 102 regulations.

1719. Comment: The extension period for restoration activities in Section 78.65 (d) (2) states that additional time may be granted, "...not to exceed two years...." See. Proposed Regulations 25 Pa. Code § 78.65 (d) (2). It is unclear why two years is the number deemed appropriate. We suggest that the time period be shortened to the vegetative growing season, such as nine (9) months, absent justification for the two (2) year timeframe. (1142)

Response: The rulemaking is consistent with section 3216 of the 2012 Oil and Gas Act.

1720. Comment: 78.65(d)(3) - The form for this process should be produced and reviewed prior to establishment of this section. (411)

Response: The Department agrees and has made the restoration extension form available prior to the publication of the final-form regulation.

1721. Comment: **78.65(d)(3):** The deadline for submitting forms for an extension should align with the time frame triggering the restoration period, rather than an arbitrary 6 months after completion. (1071)

Response: The submission requirement is established to give the Department time to evaluate the extension request and work out any remaining issues prior to the deadline for restoration.

1722. Comment: The Department should clarify the use of "or" in Section 78.65(d)(3)(i)(A-D). As it currently reads, site restoration should consist of the timely removal or fill of all pits used to contain produced fluids or residual wastes; the removal of all drilling supplies and equipment not needed for production, including containment systems, the stabilization of the well site that shall include post construction stormwater management BMPs in compliance with Chapter 102; or other measures to be employed to minimize accelerated erosion and sedimentation in accordance with the Clean Stream Law. (emphasis added). The use of "or" in this context suggests that not all of the subsections must be complied with for the site restoration plan. (1142)

Response: The rulemaking is consistent with the provisions of section 3216 of the 2012 Oil and Gas Act.

1723. Comment: **78.65(d)(3)(i)(C)** – The term "interim" is confusing and must be defined. It is unclear whether "interim" means "temporary" in this instance. By definition, post construction stormwater management occurs after construction is complete and are permanent fixtures designed to manage and treat post construction stormwater; and thus they should not be "interim" or "temporary." The Department should also create a specific time limit for post-construction stormwater management practices to be completed and fully functional after active construction. The Clean Water Act limits the length of NPDES permits to five (5) years and thus it seems reasonable to limit the timeframe for post-construction activities to be completed to at least a five (5) year timeframe. See 33 U.S.C. § 1342. (1142)

Response: The Department will establish implementation timeframes for installation of PCSM BMPs depending upon the site-specific factors established in the extension request. In no case will it exceed two years, as the extension request is only valid for that timeframe.

1724. Comment: Clarification is also required to ensure that the site restoration plan includes requirements for permanent long-term post construction stormwater management in accordance with the Clean Streams Law, Chapter 102 regulations and Chapter 93 for water quality standards. Sections 78.65(d)(3)(iii) and (iv) provide for short-term management of stormwater and erosion and sedimentation, both of which are associated with an active site. Site restoration, on the other hand, would occur once a site is “restored to approximate original condition” and requires a site restoration plan which appropriately addresses stormwater post-construction. (1142)

Response: The Department agrees and requires compliance with Chapters 93 and 102 in this rulemaking.

1725. Comment: 78.65(d)(3)(i)(E): I also would like to see native plants and trees restored to pipe lines and well sites to eliminate the invasive plants taking over everything. (14)

Response: See response to comment 1177.

1726. Comment: § 78.65(d)(3) A site restoration plan must include additional items. The following items should be added to the list of required items in a site restoration plan:

- Soil replacement of any soil that may have come in contact with Regulated Substances.
- Testing to verify there is no radioactivity above background levels anywhere on the site. (869a)

Response: See response to comment 1665. Contamination must be addressed in accordance with section 78.66 and 78a.66.

1727. Comment: Act 13 requires two stages of restoration for well sites. On the one hand, section 3216(c) requires partial restoration after the conclusion of drilling and fracturing operations. On the other hand, section 3216(d) requires final restoration after the last well on the site has been plugged. The DEP is proposing to implement these sections in proposed regulation 78.65, which provides that a well site will be considered restored if it is returned to its “approximate original conditions, including preconstruction contours,” and if it “can support the original land uses to the extent practicable.” Similar language appears in the DEP’s proposed regulations for freshwater impoundments (78.59b) and centralized wastewater impoundments (78.59c), which also contain restoration requirements.

A return to original conditions, contours, and uses is a laudable goal for the restoration of well sites (both post-drilling and post-plugging) and impoundment sites. Currently, though, the DEP’s general restoration standards are practically unenforceable because the DEP’s regulations (i) fail to require environmental baseline site assessments, (ii) fail to require site-specific standards and criteria for restoration, (iii) fail to require environmental professionals to sign off on site restorations, and (iv) establish no process whereby the DEP can finally approve or disapprove restoration. The DEP should require site-specific baseline assessments and restoration plans for all well sites and impoundment sites, require professional certification that restoration goals have been met, and require DEP approval before a site can be considered to be restored. (26, 142, 165, 189, 192, 391, 843, 868, 946, 958, 1005)

Response: See response to comment 1665.

1728. Comment: § 78.65 (d)(3)(i)(D) - Subsection (a) requires the stabilization of the well site to include BMPs from Chapter 102, yet subsection (d) requires “other measures” to be employed to minimize accelerated erosion and sedimentation. It is recommended that these “other measures” be

identified or deleted. (861a)

Response: The reference to “other measures” has been removed from the rulemaking.

1729. Comment: § 78.65 (d)(3)(i)(E) –This section be revised to reflect language contained in 25 PA Code, Chapter 102, Section 102.4, Erosion and Sediment Control, recommending the use of native trees and shrubs. (1062, 1133)

Response: See response to comment 1483. The Department encourages the use of native plant species for all projects where vegetative cover is used for permanent stabilization. The Department is not aware any recommendations to use native trees and shrubs in section 102.4.

1730. Comment: 78.65(d)(3)(i)(F): As previously stated in 78.65(d)(1)(iii), there are significant concerns with the requirement to restore a pad to preconstruction contours at this stage of the process. The Department needs to strike s the reference to preconstruction contours in this section. Additionally, the language should be modified to specify that restoration requirements be according to the conditions in the permit to account for those circumstances where a landowner does not want land returned to its original state. (1071)

Response: See responses to comments 1694 and 1714.

This section largely restates the restoration requirements in Section 3216 of the 2012 Oil and Gas Act and incorporates the Department’s interpretation of these requirements as outlined in the “Policy for Erosion and Sediment Control and Stormwater Management for Earth Disturbance Associated with Oil and Gas Exploration, Production, Processing, or Treatment Operations or Transmission Facilities”, Document No. 800-2100-008, which was finalized on December 29, 2012. The Department believes that the restoration requirements are appropriate. The Department included the phrase “to the extent practicable” in the definition of “approximate original conditions” in recognition of the fact that restoration to approximate original contours may not always be feasible.

1731. Comment: When the lifetime of the well is over the site must be restored to its original state. Soil, plant life, and animal life should not be permanently altered as a result of the extraction process, or the site construction. (52)

Response: The Department disagrees and responds that the recommendation exceeds statutory requirements. See also the response to comment 1665.

1732. Comment: Given the number of “capped” oil and gas wells resulting from dropping prices and companies that disappear as part of the process, it is critical that money be escrowed as part of the permitting process to provide for land restoration. (68)

Response: Section 78.302 requires operators to file a bond with the Department for all wells drilled after April 18, 1985 that have not been plugged. Bonds may be used to provide for land restoration.

1733. Comment: This section should be rewritten to indicate that abandoned wells that must be plugged or that have been affected by nearby hydraulic fracturing must comply with this section of the regulations. At present Gas companies that work on problems they caused at abandoned wells do whatever they feel like to restore the work site. (92a)

Response: This section applies to owners or operators of oil and gas wells. Any person who drills and operates an oil or gas well must comply with this section.

1734. Comment: Regarding spills in § 78.65. Site restoration- Ground water contamination doesn't seem to be mentioned here. I only see "downstream commonwealth water". Ground Water should ABSOLUTELY be included. (98)

Response: The section addresses site restoration requirements. Section 78a.66 and 78.66 address spill reporting and remediation. Groundwater is included in "waters of the Commonwealth".

1735. Comment: 78.65(d)(4) - The form for this process should be produced and reviewed prior to establishment of this section. (411)

Response: The Department will make the form available prior to the publication of the final-form regulation.

1736. Comment: 78.65(d)(4): There is an inconsistency in this section as it allows for a written consent from a landowner to deviate from the regulations' restoration requirements, but then the language then reiterates that restoration has to comply with the regulation. There are instances where a landowner may want something other than what the regulation prescribes. This section should allow the landowner consent forms in lieu of the regulation's restoration requirements. (1071)

Response: The section is intended to allow deviation from the requirement to restore portions of the site not occupied by production facilities or equipment to approximate original conditions. Compliance with paragraphs (a) and (b) (2) – (7) and all PCSM requirements in Chapter 102 is appropriate in all cases as these subsections reflect requirements in the 2012 Oil and Gas Act as well as the Clean Streams Law.

1737. Comment: We disagree with the proposed requirement under § 78.65(d)(4) to acquire the written consent of the landowner regarding site restoration. This section does not clearly identify who is supposed to acquire this consent, but in our opinion, whether it is the operator or DEP, that documentation may be difficult to obtain as surface use can be a very sensitive issue between landowners and operators, sometimes even being addressed via litigation before drilling even occurs. We are not aware of any statutory authority under the Oil & Gas Act for DEP to require landowner consent to restoration. This consent requirement is an unnecessary intrusion on the landowner-operator relationship as the operator's use of the surface is a contractual and legal matter that is governed by the parties' agreements (e.g., deed or lease) and well-established legal precedent. Matters of surface use, including the extent of surface use, should be left to the parties themselves to resolve and is not something that DEP should be unilaterally and arbitrarily attempting to dictate, control and manage through regulation. (1140)

Response: The rulemaking does not require prior landowner consent and is consistent with the requirements in section 3216 of the 2012 Oil and Gas Act under which, operators have an obligation to restore portions of the site not occupied by production facilities or equipment to approximate original conditions. See response to comment 1736.

1738. Comment: We commend the Board for including subsection 78.65(d)(4), which provides for landowner written consent to satisfy some of the restoration requirements. However, the Board ought to go a step further to accommodate landowner rights by expanding the proposed § 78.65(d)(4) to read: "Written consent of the landowner on forms provided by the Department

satisfies the restoration requirements of this section provided the operator develops and implements a site restoration plan that complies with paragraph (3)(i) and (iii)-(iv).” (1085)

Response: See responses to comments 1739, 1740 and 1741.

- 1739.** Comment: Subsection (3)(ii) should be deleted because this issue is already addressed in § 78.65(d) itself. (1085)

Response: The sections that the commentator referred to addressed the requirements for post drilling restoration and post drilling restoration extension requests. These are separate and independent requirements. The revised regulations continue to address removal of equipment not needed for production in both the post-drilling restoration section (§§ 78.65(a) and 78a.65(a)) and the restoration extension section (§§ 78.65(e) and 78a.65(e)).

- 1740.** Comment: The language “and all PCSM requirements in Chapter 102” can be deleted from the end of § 78.6(d)(4) because it is already addressed in the provision’s reference to § 78.65(3)(iii). (1085)

Response: The sections that the commentator referred to addressed the requirements for post drilling restoration and post drilling restoration extension requests. These are separate and independent requirements. The revised regulations continue to address these requirements separately.

- 1741.** Comment: Finally, the inclusion of subsection 3(v) should be deleted as a landowner may prefer an alternative to the 70% vegetative cover when they are taking over ownership and maintenance of the pad. (1085)

Response: Permanent stabilization requirements include either 70% coverage of perennial vegetation or an acceptable BMP which permanently minimizes accelerated erosion and sedimentation. These requirements are flexible enough to address the commenters concerns, while adequate to ensure protection of waters of the Commonwealth.

- 1742.** Comment: **78.65(e)** – See comments related to “approximate original conditions”, Comment 1697

Suggested Regulatory Language:(e) Restoration after plugging—Within 9 months after plugging a well, the owner or operator shall remove all production or storage facilities, supplies and equipment and restore the well site in accordance with the approved site restoration plan, so that it can support the land uses that existed prior to oil and gas activities to the extent practicable. (1153)

Response: See responses to comments 1675 and 1676.

- 1743. Comment: 78.65(e):** This language should include exception language for instances where a landowner wants something done with the land other than what the regulation prescribes. (1071)

Response: See response to comment 1736 and 1741.

- 1744.** Comment: Additionally, to allow for operations where with one rig move we drill and complete every well on a pad in sequence, this section should read “after plugging the last well on a pad.” (1071)

Response: The Department agrees and has revised the section to account for multiple wells

drilled on a single pad.

1745. Comment: Lastly, this section seems to have the same requirements as the Erosion Sediment and Control General Permit for closing the permit. Commentator asks that the Department clarifies the necessity of having redundant conditions in a permit and in the regulation to restore a site or else remove the superfluous requirement. (1071)

Response: The restoration requirements apply to all well sites, even those where an erosion and sediment control permit is not required.

1746. Comment: The regulation should be structured to allow for renewable two year extensions of the restoration deadline provided the site restoration plan and appropriate PCSM measures are fully implemented. This extension process is critical to avoid unnecessary earth moving activities for reconstruction of a well pad should an operator plan to drill and produce additional wells on the same pad location at some later time in the future. The risk of accelerated erosion and resulting sedimentation is much greater during earth moving activities that would take place if a pad would be made smaller or expanded, possibly multiple times in the future. (1071)

Response: The changes proposed in the comment would allow a well site to remain unrestored in perpetuity which is inconsistent with the 2012 Oil and Gas Act. The structure of the regulations allows a reasonable restoration extension timeframe while also allowing a site to remain partially, but not fully restored provided that land owner consent is obtained, certain site restoration requirements are met, and adequate stormwater management is provided in accordance with Chapter 102. See §§ 78.65(a)(1) and 78a.65(a)(1)

1747. Comment: Section 78.65(f) says that within 60 days after the restoration of the well site, the operator will provide DEP with a description of the method used for disposal or reuse of the waste, including the name of the hauler and disposal facility, if any. We know for a fact that much of this waste is unaccounted for, there being no laws in place to require such an accounting. We know for example, that residual waste was spread on cornfields in Muncy, PA, only because those drivers were caught. I have personally witnessed 5 tank trucks, each labeled residual waste, leaking from the rear valve as they drove down my road, creating a black line in the middle of the lane, in all likelihood spreading small molecules of their toxic contents to nearby lawns, streams and playgrounds. I propose a closely regulated CRADLE TO GRAVE CHAIN OF CUSTODY for every gallon of residual waste generated. No exceptions. (644)

Response: The Department does not agree that a manifest system similar to that required for handling of hazardous wastes is necessary in these regulations. However, in accordance with the recently enacted Act 126 of 2014 which requires monthly resource production reporting, the Department has added a provision to section 78a.121 of the final rulemaking requiring monthly waste reporting for unconventional wells to the Department. The Department is also pursuing requiring receiving facilities to report receipt of oil and gas wastes on a monthly basis to facilitate tracking reconciliation. However, those efforts are outside of the scope of this rulemaking.

1748. Comment: 78.65(g) – Why does the landowner need a copy of the restoration report? This should not be a requirement. (411)

Response: The restoration report indicates where drill cuttings or residual waste has been disposed of at the well site. The surface landowner should be made aware of this information so they can understand the final status of the well site and plan their future use of the land

accordingly. Additionally, this requirement is consistent with requirements for landowner notice in the Chapter 102 regulations, which is important where there are features – structural or non-structural – which function as stormwater management BMPs.

1749. Comment: This section states a copy of the well restoration report must be forwarded to the surface owner. PADEP needs to further define the rights and allowable objections the surface owner may have with respect to the restoration plan. I recommend the DEP either remove this proposed regulation or better define the protection an operator will have from frivolous surface owners. (450)

Response: The restoration report referenced by the comment is an after-the-fact report and indicates to the surface landowner among other things, the location/s on the property where drill cuttings or residual wastes have been disposed by the operator. The restoration report is distinct from and not intended as a plan requiring Department approval prior to implementation.

1750. Comment: Protecting water resources and land reclamation: currently restoration practices are really inadequate. Most of what we are seeing at the well pads and pipelines are simply greenwash. Planting grass doesn't restore a 100 year old forest that has been decimated. The ecosystem has been totally destroyed by the creation of well pads, pipelines, and compressor stations. The forests have been fragmented and planting grass won't restore that. We are left with predator species of insects and wildlife that wasn't here before this industry infiltrated our once beautiful areas. So to that end the only solution to this problem is a complete and total ban of this industry in Pennsylvania. (864)

Response: A total ban of this industry is not consistent with nor authorized under Pennsylvania law and is beyond the scope of this rulemaking. Technical performance standards for the construction of pipelines and restoration of well pads including restoration to approximate original conditions, capable of supporting original uses to the extent practicable is the best practice to achieve site restoration within reasonable operational parameters. It is not necessary to include technical performance standards including requirements for type and density of perennial vegetation, soil characteristics and drainage patterns in this section because those issues are already appropriately addressed by the requirements. Projects meeting the requirements will satisfy the statutory restoration requirements and include performance requirements that will protect waters of the Commonwealth.

1751. Comment: Section 78.65 should require that well sites be restored to conditions in which the land can support uses that are the same as or ecologically equivalent to the uses supported before the start of oil and gas operations, should require operators to apply for restoration certificates, and should condition certification on a field assessment that demonstrates compliance with both general and site-specific restoration criteria. (852a)

Response: See response to comment 1665.

1752. Comment: Current section 78.65 was adopted in 1994 to implement section 601.206 of the 1984 Oil and Gas Act and establishes three basic requirements for the restoration of well sites. First, the operator must fill drill or bore holes with "cement, drill cuttings or other earthen material" before removing drilling equipment from a well site. Second, if a well site is constructed but no well is drilled on it, the operator must restore the site within 30 days after the well permit expires or obtain DEP approval for an extension. Third, within sixty days after restoring a well site, the operator must submit to the DEP a well site restoration report containing information about the disposal of top hole water; the reuse or disposal of "the free liquid fraction" of wastes and production fluids;" the use of

waste storage and disposal pits; the types and volumes of wastes produced on the well site; and the land-application and off-site disposal of wastes.

Proposed revised section 78.65 retains these requirements, with some modification, while adding new language. New subsection (a) restates the “general rule” of Act 13’s restoration statute that operators must “restore the land surface” within the area disturbed at a well site. (The statute does not define the term “restoration”). Subsection (b) retains the current requirement to fill bore holes, but provides that when drill cuttings are used for fill, they must be “uncontaminated.” New subsections (d) and (e) – the most significant additions to the rule – establish criteria that sites must meet to be considered “restored” after, respectively, the conclusion of drilling operations and the conclusion of plugging operations. Proposed subsection (f) adds two new requirements for restoration reports: that an operator who has buried residual waste in a pit explain its determination that the pit is 20 inches above the seasonal high groundwater table, and that operators of unconventional and horizontal wells provide “the test results required by §§ 78.62 [Disposal of residual waste - pits] and 78.63 [Disposal of residual waste – land application].” Proposed subsection (g) requires that well site restoration reports be provided to landowners – but only if the operator has disposed of drill cuttings or other residual wastes at the site. PennFuture strongly supports including restoration standard and criteria in section 78.65 (currently there are none), as well as enhanced reporting and notice requirements. (852a)

Response: As the commentator acknowledges, subsections (d) and (e) establish criteria that sites must meet to be considered restored after conclusion of drilling and plugging operations, respectively. Subsection (g) requires landowners be provided with site restoration reports.

1753. Comment: We commend the Department for clarifying, (through the provisions of subsections (d) and (e)), that section 58 P.S. § 3216(g) allows extension of the post-drilling restoration period under section 3216(c), but not of the post-plugging restoration period under section 3216(d). (852a)

Response: The Department acknowledges the comment.

1754. Comment: With respect to unconventional well sites, the Department’s central proposed restoration standard – a return to “approximate original conditions, including preconstruction contours [in which the land] can support the original land uses to the extent practicable” – would fail to protect the Commonwealth’s natural resources, and the long-term productive capacity of its land. (852a)

Response: See response to comment 1665.

1755. Comment: On a site by site basis, unconventional oil and gas operations typically result in greater and more severe environmental impacts than conventional operations. Unconventional well sites disturb (and compact) far more earth than conventional sites, create larger impervious surfaces, encroach upon more streams and wetlands, and, along with the gas and water pipelines that service them, fragment more forest land and wildlife habitat. Moreover, activities conducted on unconventional sites use far more chemicals and generate far more wastes than conventional activities do, and the management, storage, and transportation of these chemicals and wastes invariably lead to leaks, spills, and ruptures. While these leaks and spills are sometimes contained, in many cases they are not – and in these cases they introduce contaminants into soils, surface waters, wetlands, and groundwater, often in large quantities.

Such impacts have already caused significant damage to Pennsylvania’s natural resources – and the absence of strong, objective, and enforceable restoration standards and criteria threaten to

make these impacts a permanent part of the Commonwealth's landscape. (852a)

Response: This rulemaking as a whole and the restoration requirements of this section in particular do contain strong, objective and enforceable restoration standards and criteria to consider and mitigate impacts to Pennsylvania's natural resources and specifically protect waters of the Commonwealth.

1756. Comment: 78.65(d)-(e) should provide that a well site is restored when the land is returned to approximate original conditions, including preconstruction contours, soils, and vegetation, and can support uses that are the *same as or equivalent to* the uses supported before oil and gas operations commenced.

Proposed subsection 78.65(d), "Restoration after drilling," contains three restoration criteria. First, all "permanent" post-construction stormwater management Best Management Practices identified in an operator's PCSM plan must be in place. Second, remaining "impervious areas" (defined to include areas where the soil has been compacted, hardened, or underlain with a liner, as well as areas covered with pavement or gravel) must be minimized. Third, all areas of the wellsite not needed for operations must be "restored to approximate original conditions, including preconstruction contours, and [be able to] support the original land uses to the extent practicable."

Proposed subsection 78.65(e), "Restoration after plugging," contains just one restoration criterion: "Within nine months after plugging a well, the owner or operator shall remove all production or storage facilities, supplies and equipment and restore the well site to approximate original conditions, including preconstruction contours, and can [sic] support the original land uses to the extent practicable."

The term "approximate original conditions," used in both subsections (d) and (e), is defined in proposed section 78.1 as "reclamation of the land affected to preconstruction contours so that it closely resembles the general surface configuration of the land prior to construction activities and blends into and complements the drainage pattern of the surrounding terrain, and can support the land uses that existed prior to oil and gas activities to the extent practicable."

Presumably as a result of a drafting error, the term "preconstruction contours" appears both alongside the term "approximate original conditions" in section 78.65 and within the definition of "approximate original conditions" in section 78.1. This redundancy is confusing, and it begs the question of why a definition for "approximate original conditions" is necessary. We believe it would be simpler for both the Department and the regulated community to include *all* substantive restoration standards that will apply to well sites, including those currently incorporated into the definition of "approximate original conditions," in section 78.65, and to strike the definition of "approximate original conditions" from section 78.1. (852a)

Response: The Department has revised these sections to provide clarification of the standards for restoration post drilling versus post plugging and has included provisions to clarify what constitutes restoration under section 102.8(n). Restoration to exact preconstruction conditions is not required by the statute and is not an appropriate regulatory standard. Further, the restoration requirements taken together with the public resource impact screening, PNDI provisions and other requirements of this chapter, as well as existing applicable provisions of other Chapters of the Pennsylvania Code provide a comprehensive framework of protection. See response to comment 1665. Further, the term "approximate original conditions" is also used in the freshwater and centralized impoundment sections of the regulation.

- 1757.** Comment: Assuming that the Department makes this or a similar revision, there will still another significant problem with the Department’s central restoration criterion – i.e., the return to approximate original conditions, including the reestablishment of preconstruction contours, the capacity to complement the drainage pattern of the surrounding terrain, and the capacity to support the site’s original uses to the extent practicable.

A return to approximate original conditions may have merit as an aesthetic criterion – and to some extent as a stormwater management criterion – it is inadequate as an ecological performance criterion because it contains no language that would require restoration of a well site’s soils and vegetation. In a recent case involving a stormwater permit for a natural gas transmission pipeline, the Pennsylvania Environmental Hearing Board agreed with the Department that “from a stormwater perspective” restoration means “looking at the project as it would occur in natural conditions, looking at stormwater runoff and stormwater characteristics as it relates to the site conditions and natural conditions,” and agreed that “natural conditions are those that existed prior to the construction activities and restoration is being able to establish or mimic what existed at a particular site.” But Act 13 is not concerned with restoration only from a stormwater perspective. It is concerned with restoration more generally.

Section 3216 of Act 13 requires operators to “restore the land surface within the area disturbed in siting, drilling, completing and producing the well.” According to the dictionary, to “restore” means (1) to “give back” or “return,” (2) to “put or bring (something) back into existence or use,” and (3) to “return (something) to an earlier or original condition by repairing it, cleaning it, etc.” All well sites have certain types of soils and vegetation before oil and gas operations commence; consequently, the plain meaning of “restore” requires the Department to include soil and vegetation restoration as an objective criterion in section 78.65. From a *development* perspective (as opposed to a stormwater perspective), restoration is – as the appellants’ expert testified in *Delaware Riverkeeper Network* – “determined by looking at the natural landscape before any development activity.” (852a)

Response: The requirement to return to original conditions is not merely “an aesthetic criterion.” See responses to comment 1665 and 1756.

- 1758.** Comment: The Department’s restoration approach is flawed for using, as a restoration criterion, the capacity to support original uses only “to the extent practicable,” because “practicability” is too subjective and makes the concept of restoration too dependent on economic forces.

In the context of oil and gas development operations (or any kind of industrial land development), the plain meaning of “restoration” requires the return of land to a condition in which it can support uses that are at least ecologically and functionally equivalent to the pre- operations uses, if not the same as those uses. Attaching the phrase “to the extent practicable” to the Department’s proposed restoration standard would frustrate these goals because Pennsylvania Courts have held that the term “practicable” is “not limited to physical feasibility but, rather, also includes financial feasibility.”

Allowing sites to be restored to original conditions only “to the extent practicable” would not only allow operators to plea that they lack funds to perform adequate restorations; it would be an incentive for operators to include insufficient funds for restoration in their budgets so as to give credence to such claims. This is especially problematic in light of the meager amounts of the bonds that operators are required to post under Act 13. In any case, “practicability” is a highly subjective standard that is not appropriate to a concept like restoration, which, by definition, requires a

reference back to objective, pre-existing conditions. The Department's restoration standard should put the regulated community on notice that any person who intends to drill an oil or gas well in Pennsylvania must plan for the restoration of well sites to conditions that are the "same as or equivalent to" pre-development uses, and must budget accordingly.

There is a significant conceptual difference between, on the one hand, supporting original uses to the extent practicable, and on the other, supporting the same or equivalent uses. For the reasons discussed above, the concept of "practicability" is highly malleable and subjective. The concept of equivalency is less subjective because it requires a likeness in ecological function or effect, but assumes – and allows for – a lack of identity. It is elastic enough to allow for differences between original conditions and post-restoration conditions based on the fact that unconventional oil and gas operations have significant impacts, and to allow the Department to define an acceptable range of deviation from original conditions. The Department may fairly take into account the extent of an operator's efforts, an operator's justifications for why a more complete restoration cannot be achieved (which may include reasons of cost), and opinions (or the lack of opinions) from professional ecologists, engineers, etc. (852a)

Response: The qualifier "to the extent practicable" in the definition of "approximate original contours" does not modify to the environmental protections in this section, but rather makes clear that the obligation is not an identical replication of pre-development site conditions. See response to comment 1665.

1759. Comment: To ensure that the restoration standards in subsections (d) and (e) will be enforceable, the Department should establish a process whereby (1) operators must apply for restoration certificates, and (2) the Department may not certify a well site as restored until a field assessment shows the attainment of all applicable restoration criteria. (852a)

Response: See response to comment 1665. Each operator is required to submit a restoration form (OOGM-75) within 60 days of completion of well site restoration, and Department staff inspect the site after the form is received to ensure restoration has been completed.

1760. Comment: Like current section 78.65, proposed section 78.65 contains no requirement for the Department to assess operators' restoration activities, let alone approve them as satisfactory or disapprove them as inadequate. Likewise, there is no requirement for an operator to apply to the Department for approval of its restoration activities. Rather, proposed section 78.65 would maintain the current system of requiring operators to file restoration reports within sixty days after a well site has been restored. According to report issued last year by the State Review of Oil and Natural Gas Environmental Regulations, or STRONGER, the Department performs desktop reviews of all restoration reports that are filed. The STRONGER report also suggests that these reports are field-verified, but the Department's regulations do not even require inspections of well sites after restoration reports are filed. Rather, they establish a policy whereby well sites are to be inspected at least once during the post-drilling restoration period (or within three months after that period), and at least once during the post-plugging period (or within three months afterward). It is not clear how thorough the Department's desktop reviews are, and given the repeated budget cuts that the Department has suffered, we wonder how often the Department can actually conduct field verifications. (852a)

Response: The current site restoration requirements are appropriate and protective. The Department recognizes the need to maintain an in-field presence at well sites to ensure that

well sites are appropriately restored. Nonetheless, field verifications relate to program implementation and are beyond the scope of this rulemaking.

- 1761.** Comment: Regardless of how often field-verifications take place, the current restoration program is flawed because when an operator fails to restore a well site properly, the Department lacks the power to deny the operator an approval of its restoration activities. If approvals were required for post-plugging restoration, they could be made a condition of the well site's being released from the operator's bond. (852a)

Response: See response to comment 1678.

- 1762.** Comment: Operators should be required by regulation to apply for certifications of restoration, which may be granted only by the Department after a field assessment of the well site, and the field assessment should verify that the contours, soils, vegetation, and post-construction stormwater Best Management Practices (if any) of the site satisfy the Department's restoration criteria.

We recommend that section 78.65(f) be retitled "Application for Restoration Certificate," and be revised to require additional information that will enable the Department to determine whether the restoration criteria have been met – including but not limited to plans, drawings, and other documents (e.g., from the operator's erosion and sediment control permit authorization) showing the site's pre-construction contours and soil profile; similar documents showing the site's contours and soil profile, post-restoration; and a report from an ecologist, or other professional with appropriate expertise, describing how the site supports the same uses that it supported before oil and gas operations were commenced, or supports equivalent uses. (852a)

Response: See responses to comments 1760 and 1665. Each operator is required to submit a restoration report within 60 days of completion of well site restoration, and Department staff inspect the site after the report is received to ensure restoration has been completed.

- 1763.** Comment: In addition to requiring applications for restoration certificates in lieu of restoration reports, Section 78.65(f) should require operators to provide copies of these applications to landowners in *all* cases, not just when the operator disposes of drill cuttings or residual waste at the well site, and should list all spills and releases of regulated substances required to be reported to the Department under 25 Pa. Code § 78.66.

Proposed section 78.65(f) provides that "the well operator shall forward a copy of the well site restoration report to the surface landowner if the well operator disposes of drill cuttings or residual waste at the well site." As discussed above, we strongly believes that the Department should not merely require restoration reports; it should require operators to obtain restoration certificates for all well sites, and condition the issuance of certificates on the field assessments that verify restoration criteria. However, whether operators are required to submit reports or applications for certificates, they should also be required in all cases to provide copies of these documents to all landowners whose land has been affected by their operations, and to provide proof of notice with their submissions to the Department.

Notice to landowners only when drill cuttings or residual wastes are disposed of is insufficient, because the disposal of drill cuttings and residual wastes is not the only activity that can affect landowners' health and their water supplies and the productivity of their land. Spills and releases of chemicals and wastes may have such effects, too – and these effects may not manifest themselves until long after oil and gas operations have concluded. Consequently, operators should be required to list in their restoration applications or reports all spills and releases of regulated substances that

are to be reported under section 78.66. (852a)

Response: Sections 78.65 and 78.65a require the operator to provide restoration reports to the surface landowner. Further, the Department has revised §§ 78.66 and 78a.66 to require the operator or other responsible part to identify water supplied that have been polluted of for which there is a potential for pollution in a reasonable and systematic manner. The operator or other responsible party shall provide a copy of sample result to the water supply owner within 5 business days of receipt of the sample results from the laboratory. The Department believes that the notification and remediation processes described in §§ 78.66 and 78a.66 are adequate to provide notification to potentially impacted landowners.

- 1764.** Comment: The Department should add to section 78.65 a new subsection providing that certificates of plugging will not be deemed to be filed within the meaning of section 3225 of Act 13 until the operator has obtained a restoration certificate from the Department.

Under Act 13, oil and gas well operators must post bonds that cover their wells and their well sites. By law, these bonds are supposed to secure well sites' restoration: "A bond filed with an application for a well permit shall be ... conditioned upon the operator's faithful performance of all drilling, water supply replacement, *restoration* and plugging requirements of this chapter." Nonetheless, Act 13 also states that an operator's liability under a bond continues only "until the well has been properly plugged in accordance with this chapter and for a period of one year after filing of the certificate of plugging with the department." In other words, although Act 13 requires that bonds for wells and well sites secure various obligations that operators have under Act 13 (including restoration obligations), it releases operators from liability for particular well sites after the satisfaction of just one of those obligations: plugging (and the filing of a certificate of plugging). If a well site is restored within nine months of the plugging of the last well, as required by section 78.65(e), restoration will be accomplished before the well site is released from the bond. However, if the certificate of plugging is filed immediately after plugging occurs, and the well site is not restored within one year, release from the bond will occur *before* restoration.

To the extent that the Department should allow a well site to be released from an operator's bond before restoration, the Department would be violating section 3325(a) of Act 13. To prevent this, the Department should promulgate a new subsection of section 78.65 providing that no certificate of plugging submitted by an operator shall be accepted by the Department as filed within the meaning of section 3225 until the operator has obtained a restoration certificate from the Department. (852a)

Response: See response to comment 1678.

- 1765.** Comment: 78.65 - Section 3216 (a) of Act 13, requires restoration of the land surface within the area disturbed in siting, drilling, completing and producing the well. Commentators believe complete restoration is not required until production ceases. Section 3216 (c) imposes partial restoration requirements within nine months after completion of drilling a well and Section 3216 (d) requires removal of all facilities, supplies and equipment and restoration of the well site within nine months after plugging a well. 25 Pa. Code Section 102.8 (n) states an oil and gas restoration plan that identifies PCSM BMPs to manage stormwater from oil and gas activities meets the requirements of Section 102.8 if the restoration plan meets 102.8 (b) (c) (e) (f) (h) (i) (1) and (m). Commentators recommend that the well pad reclamation section be clarified to emphasize a site restoration plan as the governing document that addresses PCSM and the partial restoration requirements provided in Sections 3216 (c) and (d) of Act 13. (1137, 1174)

Response: The Department has revised these sections to provide clarification of the standards for restoration post drilling versus post plugging and has included provisions to clarify what constitutes restoration under Section 102.8(n). See response to comment 1676.

1766. Comment: There is no requirement in Act 13 Sections 3216(c) or 3216(d), or in Chapter 102, that imposes an obligation to restore well sites to approximate original contours or conditions. Act 13 mentions approximate original contours (not conditions) in Section 3216(g) related to extension of restoration requests. It would defeat legislative intent to impose this obligation generally when the General Assembly clearly chose not to alter the obligations under Sections 3216(c) or (d). Such an obligation would also create unreasonable requirements in many locations across the Commonwealth where there is significant topographical variation. When a restoration plan proposes restoration to approximate original contours, it would be a part of expected restoration obligations. The restoration plan is the governing document that addresses restoration obligations. (1137, 1174)

Response: See responses to comment 1675 and 1676.

1767. Comment: The Department has no authority or justification to dictate operation or safety requirements of operators, further making Section (d)(1)(iii) unnecessary. The regulation should be structured to allow for one or more two year extensions of the restoration deadline provided the site restoration plan and associated PCSM measures are fully implemented. This extension process is critical to avoid unnecessary earthmoving activities for reconstruction of the well pad should an operator plan to drill and produce additional wells on the same pad location at some later time in the future. The risk of accelerated erosion and resulting sedimentation is much greater during earth moving activities that would take place when pads would be made smaller or expanded, possibly multiple times in the future. (1137, 1174)

Response: See responses to comments 1675, 1676 and 1746.

1768. Comment: Suggested Language :

a. SITE RESTORATION PLAN

(1) Site restoration plan -meets the requirements of 102.8 (b), (c), (e), (f), (h), (i), (1), and (m), if applicable and Section 3216 of Act 13. The plan addresses interim site restoration required after completion of drilling, and final restoration of the well site after all wells have been plugged. The plan shall provide for:

- (i) The timely removal or fill of all pits used to contain produced fluids or residual wastes;
- (ii) The removal of all drilling supplies and equipment not needed for production, including containment systems;
- (iii) The stabilization of the well site that shall include interim post construction stormwater management best management practices in compliance with 25 PA Code § 102.8 including 25 PA Code §§ 102.8(a)-(m); or
- (iv) Site appropriate BMP's including a BMP which permanently minimizes accelerated erosion and sedimentation, and other measures to be employed to minimize accelerated erosion and sedimentation in accordance with The Clean Streams Law.

b. GENERAL

- (1) The owner or operator shall restore the land surface within the area disturbed during siting, drilling, completing and producing a well.
- (2) A drill hole or bore hole used to facilitate the drilling of a well shall be filled with cement, soil, uncontaminated drill cuttings or other earthen material before moving the drilling equipment from the well site.
- (3) If a well site is constructed and the well is not drilled, the well site shall be restored within 30

calendar days after the expiration of the well permit unless the Department approves an extension for reasons of adverse weather or lack of essential fuel, equipment or labor.

c. SITE RESTORATION IMPLEMENTATION

(1) An area is restored under this subsection if the following are met:

- (i) All permanent post construction stormwater BMP's identified in the site restoration plan are installed and properly maintained.
- (ii) Remaining impervious areas are minimized, including areas where soil amendments have been added to harden the soil or are underlain with an impermeable liner.
- (iii) Earth disturbance associated with oil and gas activities that are not included in an approved site restoration plan, and other remaining impervious surfaces, shall comply with applicable post construction stormwater management requirements in 25 Pa. Code Chapter 102.
- (iv) The site is permanently stabilized according to 25 Pa. Code § 102.22(a).

d. INTERIM RESTORATION AFTER DRILLING

(1) Within nine (9) months after completion of drilling a well, the owner or operator shall restore the well site, remove or fill all pits used to contain produced fluids or residual wastes and remove all drilling supplies, equipment and containment systems not needed for production. When multiple wells are drilled on a single well site, post drilling restoration is required within nine months after completion of drilling all permitted wells on the well site or 30 days after the expiration of all existing well permits on the well site, whichever occurs later in time. Drilling supplies and equipment not needed for production may only be stored on the well site if express written consent of the surface landowner is obtained and the supplies or equipment are maintained in accordance with § 78.64a, where applicable.

e. EXTENSION OF SITE RESTORATION PERIOD AFTER DRILLING

(1) The restoration period may be extended by the Department for additional periods of time, not to exceed two years, upon demonstration by the well owner or operator that:

- i. The extension will result in less earth disturbance, increased water reuse and more efficient development of the resources; or
- ii. Site restoration cannot be achieved due to adverse weather conditions or a lack of essential fuel, equipment or labor.

(2) The demonstration under 78.65(e)(1) shall:

- (i) Be submitted within six (6) months after the completion of drilling for approval by the Department.
- (ii) Include a site restoration plan that provides for:
 - (A) the timely removal or fill of all pits used to contain produced fluids or industrial wastes;
 - (B) the removal of all drilling supplies and equipment not needed for production;
 - (C) the stabilization of the well site that shall include interim postconstruction storm water management best management practices; or
 - (D) other measures to be employed to minimize accelerated erosion and sedimentation in accordance with The Clean Streams Law.
- (iii) Provide for returning the portions of the site not occupied by production facilities or equipment to approximate original contours and making them capable of supporting the uses that existed prior to drilling the well upon restoration.

(3) Requests for extension that include the information described in (e)(2) above will be approved, denied, or deemed to be approved within 90 days of submission to the Department.

f. RESTORATION AFTER PLUGGING ALL WELLS ON THE WELL SITE

1. Within nine (9) months after plugging a well, the owner or operator shall remove all production

or storage facilities, supplies and equipment and restore the well site according to the approved site restoration plan.

2. Within sixty (60) days after restoration of the well site, the operator shall submit a well site restoration report to the Department. The report shall be made on forms provided by the Department and shall identify the following:

- i. The date of land application of any topsoil water, the results of pH and specific conductance tests and an estimated volume of discharge.
- ii. A description of the method used for disposal or reuse of the free liquid fraction of the waste, and the name of the hauler and disposal facility, if any.
- iii. The location, including GPS coordinates, of the pit in relation to the well, the depth of the pit, the type and thickness of the material used for the pit subbase, the type and thickness of the pit liner, the type and nature of the waste, the type of any approved solidifier, a description of the pit closure procedures used and the pit dimensions.
- iv. The location of the area used for land application of the waste, and the results of a chemical analysis of the waste soil mixture if requested by the Department.
- v. The types and volumes of waste produced and the name and address of the waste disposal facility and waste hauler used to dispose of the waste.
- vi. The name, qualifications and basis for determination that the bottom of a pit used for encapsulation is at least 20 inches above the seasonal high groundwater table.
- vii. The test results required by §§ 78.62 and 78.63 for all unconventional wells or any conventional wells with a horizontal well bore.

3. The well operator shall forward a copy of the well site restoration report to the surface landowner if the well operator disposes of drill cuttings or residual waste at the well site. (1137, 1174)

Response: See responses to comments 1765 through 1767.

1769. Comment: 78.65(g) – The surface landowner needs to be involved when the operator is determining to dispose of contaminated drill cuttings or residual waste on-site. There needs to be a mechanism in place whereby the surface landowner may object to such disposals, at the very least to have their concerns addressed in the process if not to deny such disposal should they desire. Not all leases, not all landowners were aware of such possibilities that their property could essentially become a micro-landfill that is neither fully regulated nor monitored. Therefore, the landowner does need to be involved in this process. We agree that regardless of contamination or not, when disposal is on-site, the landowner does need to be aware of the contents and exact location. There needs to be a requirement that this disclosure is provided in all property transactions to the future surface landowners. We request the Department consider this information provided and that it be incorporated into this provision. With these additions, we recommend this provision as written. (660a)

Response: The Department acknowledges the comment. See responses to comment 1763 and 1462.

1770. Comment: We urge the board to require oil and gas operators to obtain baseline measurements on such parameters that may be relevant during restoration. This must be conducted prior to earth disturbance because sites may not begin restoration activities for many, many years after initial earth disturbance. The Board should require oil and gas operators to document pre-construction parameters to facilitate effective restoration. The parameters that should be documented to facilitate effective restoration include: the quality of habitat; the community structure (woodland, forest, etc.), life form (herbaceous, perennial, succulent, shrub, etc.), predominant taxonomic categories (coniferous, graminaceous, etc.) and moisture conditions; the distribution of vegetation types and age classes; a review of available habitats; habitat conditions; current forest community type; wildlife species and

plant communities currently using the area and those with the potential to use the area based on the habitat present, including species of special concern; ecologically important features such as vernal pools or wetlands; water quality; PNDI review for species of special concern that may be impacted by disturbance and/or restoration activities; and soil quality and type.

Second, without a baseline assessment the Department will have no basis for judging whether or not the site has actually been restored to its original condition. In order to provide a basis for a final inspection, the applicant must submit a baseline assessment and a written plan for restoration. Sites must be evaluated for restoration success using empirical data and routinely monitored so that long-term ecological goals are met.

Third and finally, the proposed regulations do not do enough to mitigate the impact of oil and gas activities prior to final restoration. The proposed restoration requirement puts off complete restoration while wells are still producing. This means that a particular site may sit only partially restored for tens of years. Furthermore, the 9-month period that the Department allows for partial restoration does not begin until the last well on a site is completed, which is often some number of years after the well pad is built. Additionally, under Act 13 operators can request restoration extensions of up to two years. Ecological restoration may take years or even decades to accomplish, especially after this kind of disturbance. This means that it is absolutely essential to look at every step in the process as an opportunity for restoration and enhancement of habitat. Throughout construction, operation, and partial and complete restoration, opportunities for habitat enhancement should be utilized whenever possible, especially for species of special concern. (1152)

Response: See responses to comments 1665, 1715 and 1771. Further, a comprehensive preconstruction site characterization is required for those projects that trigger the permit requirement under Chapter 102.

- 1771.** Comment: Gas development and drilling activities disturb and fragment areas that provide important ecological value and habitat. The Department's goal must be to reduce the impact of fragmentation and gas development by restoring sites to their original ecological value or by creating other suitable habitat for plants and wildlife. Long term restoration goals must be developed early in the site planning process and objectives for site restoration should be formulated based on a baseline assessment of the site's quality, soil function, community type, natural features, and plant and wildlife species. Without proper planning and effective, thoughtful implementation, suitable habitat for many species of plants and wildlife will be lost. The objective must be to restore the site to a self-sustaining natural community that provides ecological benefits and the Department must ensure that restoration goals are met. (1152)

Response: See response to comment 1665. The restoration goals for oil and gas well sites are established by Section 3216 of the Oil and Gas Act and 25 Pa. Code § 102.8(n) which establishes the requirement for site restoration upon completion of the project as part of the PCSM requirements for all earth moving activities requiring a permit. Reference to "restoration" in terms of earth disturbance activities requiring a permit under Chapter 102 is a BMP that establishes the condition of an acceptable post-construction stabilized site where stormwater runoff meets "meadow in good condition", at a minimum. This minimum standard of restoration is required by Chapter 102 for all areas of final stabilization that are not impervious, or providing PCSM BMPs to mimic meadow in good condition at a minimum for all impervious areas remaining after all oil and gas operations are completed. There is no requirement to re-vegetate earth disturbance post-construction to a standard greater than "meadow in good condition". Additionally, the requirements of Chapter 102 and the December 30, 2006 Stormwater BMP Manual encourage use of native plant species as well as

recommending certain species for post construction site stabilization, but it does not include reforestation requirements or guidelines. Restoration to exact preconstruction conditions is not required by the statute and is not an appropriate regulatory standard. Further, the restoration requirements taken together with the public resource evaluation, PNDI provisions and other requirements of this chapter, as well as existing applicable provisions of other chapters of the Pennsylvania Code provide a comprehensive framework of protection.

1772. Comment: This hearing concerns Act 13 of 2012 but refers to a number of other Chapters within the PA Code. I wish to address these other Chapters in relation to how Act 13 should be enforced. In particular PA Code 25 Chapters 78, 92 and 102 are not adequately defined for the use of compost nor does this Act encourage utilization of such recycled material in a pro-active and environmentally friendly manner within industrial application in the Oil and Gas restoration activities.

A little background is in order - PA is the largest producer of mushrooms east of the Mississippi and as a result is the largest manufacturer of compost for this agricultural industry. This agricultural industry is also historically the first and largest producer of organic recycled material for land and natural resource restoration applications, including O&G. The pasteurization process after mushroom harvest, eliminates the mushroom mycelium, weed seeds and pest larvae. The most unique aspects and benefits of pasteurized mushroom compost include providing:

- Organic matter to soils,
- which Builds up the soil flora.
- Improves water retention. Relieves compaction problems.
- Reduces the need for fertilizer

This last item “reduces the need for fertilizer” complies with the nutrient management program in regards to the Chesapeake Bay Initiative, a Federal requirement. Furthermore, compaction problems are inherent in every type of construction especially in the O&G areas.

How Chapters 78, 92 and 102 affect Act 13 is by reference in particular the PA DEP E&S control requirements for Oil and Gas Activities that reference manuals “E&S Pollution Control Program” (363-2134-008), “Oil & Gas Well Operators Manual” (550-0300-001) , “Water Quality Anti-degradation Implementation Guidance” (391- 0300-002) and DEP’s Stormwater BMP’s. Most of these drilling and pipeline locations are in rural and agricultural areas. Restoration is considered adequate when someone says there is 70% coverage. What does this mean? How consistent and sustainable is 70%? Does it include the productivity of the agricultural land such as the same amount of corn or soybean compared to undisturbed farmed area?

I encourage the utilization of mushroom compost and that it be based on a more comprehensive and consistent chemical analysis similar to PennDOT 408 Section 867 and to change the Soluble Salt concentration to Sodium Adsorption Ratio (SAR). The SAR is a more relevant chemical relationship of sodium, calcium and magnesium with calcium and magnesium being necessary micronutrients for root growth.

Alternatively, knowing the electrical conductivity of the “replaced topsoil” prior to mixing in adequate compost will address all the benefits stated earlier in a comprehensive and consistent manor that is site specific and thereby reduce the need for synthetic fertilizer and improve vegetative regrowth in a more sustainable fashion.

I have supplied you with PennDOT 408 Section 867, an excellent article from Drs. Beyer and Fidanza from Penn State University discussing the SAR relationship, an article from Soil & Plant Laboratory correlating compost incorporation with on-site soil, based on soluble salts, Hy-Tech's cumulative chemical analysis and compost applications for your consideration and adoption in Act 13 and PA Chapters 78, 92 and 102. I look forward to seeing the improvements in environmental quality especially with regards to land restoration in Oil & Gas well pads and pipeline restoration. Again thank you for this opportunity. s See Appendix 1 for attachments. (117)

Response: The Department acknowledges the comment; however it is beyond the scope of this rulemaking. Mushroom compost is currently acceptable to be used as part of the suite of BMPs that may be used to stabilize earth disturbance activities, as it is included in the Erosion and Sediment Control BMP Manual, March 2012.

1773. Comment: Similarly, a landowner may not want an operator to restore his or her land to approximate original conditions or apply 70% perennial vegetative cover when final restoration is occurring after twenty or thirty years of production and the landowner 's needs have changed- often there will be a different landowner entirely. However, the proposed § 78.65(d)(4) does not provide the landowner with the flexibility to create an alternative use for the land. (1085)

Response: All PCSM BMPs remaining on a site will need to be recorded with an instrument at the County Recorder of Deeds to ensure they remain in place and functioning. If a current or future landowner wishes to deviate from the proposed restoration in the ESCGP, it will be the responsibility of the landowner to communicate the proposed changes with the operator (permittee of the site) and the agency responsible for permit oversight (the Department or County Conservation District) to determine if a minor or major modification if the site is required to account for any proposed changes to the final conditions as detailed in the ESCGP for the site, or acquire other permits and/or permits that may be required for the activity, such as an NPDES for Construction Activities Permit. Restoration and/or PCSM BMPs manage stormwater to prevent pollution. Should a landowner wish to modify the stormwater functions of BMPs, they must do so in a manner to protect waters of the Commonwealth.

§ 78.66 Reporting and remediating spills and releases

1774. Comment: 78.66 – We support the proposal to strengthen reporting and remediation requirements at oil and gas well sites and access roads. Additionally, we recommend that this regulation be expanded to cover more than oil and gas well sites and access roads. Spills anywhere within the full footprint and area used by Oil and Gas Operations as defined in § 78.1 should be required to meet the improved reporting and remediation requirements. (1143)

Response: The Department acknowledges the comment. Spills and releases outside of the well site or access road are comprehensively addressed by other statutes and programs of the Department.

1775. Comment: 78.66: Spills and leaks. We don't hear much about spills and leaks. They get reported to DEP, but when you ask DEP for copies of them, they say they don't have them -- as recently happened with a request about Dimock. We hear about occasional fines, but nothing more. Shouldn't the company be responsible for fixing the problem, and assuring that it doesn't happen again? (1003)

Response: The Department agrees and has drafted this rulemaking with the intention of requiring responsible parties to address spills and releases in an environmentally responsible

manner.

It is the Department's intention to have an electronic spill and release reporting and tracking system available for the public and government entities to receive up-to-date information concerning spills and releases and remedial actions at oil and gas operations. The system will be similar to the Department's eNOTICE system, which allows users to get information about their communities and the facilities they are interested in delivered directly via email. The Department's goal is to have notification of spills and releases submitted electronically to the Department and loaded directly into the spill and release database, and available to the public in real time, just as it is available to the Department.

1776. Comment: 78.66 – The type and amount of material spilled or released, initial source control and containment actions, and the amount of material recovered should be reported. Spills or releases to land and air, in addition to the waters of Pennsylvania, should be reported. The PADEP should provide the reported information to the public on its website. (1143)

Response: It is the Department's intention to have an electronic spill and release reporting and tracking system available for the public and government entities to receive up-to-date information concerning spills and releases and remedial actions at oil and gas operations. The system will be similar to the Department's eNOTICE system, which allows users to get information about their communities and the facilities they are interested in delivered directly via email. The Department's goal is to have notification of spills and releases submitted electronically to the Department and loaded directly into the spill and release database, and available to the public in real time, just as it is available to the Department.

1777. Comment: 78.66 – In addition to the list of actions proposed, the operator should be required to take action to prevent and immediately respond to fire, explosion, or other imminent hazards and dangers to human health, crops, or nearby wildlife. (1143)

Response: This section of the rulemaking only addresses hazards created through spills or releases of regulated substances. Other hazards are addressed through other sections of the regulations (for example, sections 78.55 and 78a.55 and sections 78.73 and 78a.73).

1778. Comment: 78.66 – We oppose the recommendation to treat contaminated wash water, waste solutions and residues generated from washing or decontaminating equipment used for spill remediation as residual waste, because those wastes contain the spilled material, albeit at a lower concentration. The EQB has proposed to allow residual waste to be disposed of in pits at the well site (§ 78.62), or by land application (§ 78.63). It is inconsistent to require an operator to clean up a spill because of the risks of contamination, and then allow recovered materials or fluids contaminated with recovered materials to be re-categorized as “residual waste,” which can be re-applied back on the land and pose a risk of contamination. All recovered spilled, or released material, and all fluids contaminated with spilled or released materials, should be collected and transported to an approved waste handling facility appropriate for treating and disposing of the spilled material. (1143)

Response: The material in question is residual waste by definition under the Solid Waste Management Act and the regulations promulgated thereunder (see § 287.1). The standards in sections 78.62 and 78.63 provide safeguards against highly contaminated material being disposed of on well sites in an uncontrolled manner.

1779. Comment: 78.66 – We do not agree that the operator should be given ½ a year (180 days) to

complete a site characterization to determine the extent and magnitude of the contamination and submit a site characterization report to the appropriate PADEP regional office. Site characterization work should receive high priority, and should be done within 30 days. This work is needed to guide immediate clean-up and remediation efforts. (1143)

Response: 180 days is a standard period of time for conducting site characterizations, which can be extremely complex, and may require several rounds of soil and groundwater sampling and the requisite analysis (which in and of itself can be time-consuming). The 180-day standard for site characterization has been successfully applied to thousands of storage tank cleanups since 1993 (see 25 Pa. Code § 245.310(a)).

- 1780.** Comment: 78.66 – The proposed regulation at § 78.66(c)(3)(iii) would require the operator or responsible party to provide a report containing the site characterization and a description of any “interim remedial actions.” The proposed regulation at § 78.66(c)(3)(iv) would consider the report submitted as a “final remedial action” report if the “interim remedial actions” meet a certain standard. We recommend that § 78.66(c)(3)(iii) be clarified to require the operator to submit a report describing its “interim remedial actions” and explaining whether those actions met the clean-up standard, or whether additional remediation is required. If the site characterization indicates that the interim remedial actions taken did not adequately remediate the release, the operator or responsible party should develop and submit a remedial action plan. Remedial action plans should contain the elements outlined in § 245.311(a) (relating to remedial action plan). The report should be reviewed by the PADEP and either be deemed complete and satisfactory, or the PADEP should require additional site characterization or remediation work to be performed. (1143)

Response: The rulemaking does require operators to continue to the step of filing a remedial action plan if the interim remedial actions are not sufficient to meet the substantive requirements of the Statewide health or background standards. The Department does review and approve the remedial action plan and can request additional site characterization at that time or when the site characterization report is submitted. The Department agrees concerning remedial action plans, and they should contain the elements outlined in § 245.311(a).

- 1781.** Comment: 78.66 – An Incident Command should be formed to contain, control and clean up the spills or releases of significance. Incident Command System (ICS) forms or reports completed as part of the response action should be made available to the public. (1143)

Response: Inclusion of this concept is not appropriate for this section. Section 78.55 establishes emergency response requirements, including the use of Incident Command Systems where warranted.

- 1782.** Comment: 78.66 – The PADEP should require that the operator submit a lessons learned report that summarizes its plans, actions, equipment, or procedural changes to prevent or minimize the risk of future releases. (1143)

Response: The Department believes that requiring such reports to be prepared on a routine basis would be an unreasonable burden given the relatively minor nature of many of the spills and releases reported to the Department. The Department has the necessary authority under the 2012 Oil and Gas Act to require such reports to be prepared in the event of a significant spill or release.

- 1783.** Comment: 78.66 – We recommend that the proposed spill threshold of 5 gallons be revised to require immediate reporting of all spills to water regardless of volume. The PADEP’s regulations at

§ 91.33 require immediate reporting to PADEP of all spills to water and notification of downstream users that could be adversely affected. Alaska (Alaska Dep't of Env'tl. Conserv., Spill Reporting Requirements, <http://dec.alaska.gov/spar/spillreport.htm#requirements>), South Dakota (S.D. Dep't of Env't and Natural Res., Spill Reporting Requirements, <http://denr.sd.gov/des/gw/Spills/Spills.aspx>), North Dakota (N.D. Dep't of Health, Spill Reporting Requirements, <https://www.ndhealth.gov/WQ/GW/spills.htm>) and New York (NYSDEC, Spill Guidance Manual, Section 1.1 Spill Reporting and Initial Notification Requirements, <http://www.dec.ny.gov/regulations/2634.html>) also require reporting of spills to water as soon as the person has knowledge of the discharge. (1143)

Response: The final-form regulation has been clarified to require the result requested by the commentator in § 78.66(b)(1)(i) (“A spill or release of a regulated substance causing or threatening pollution of the waters of this Commonwealth, in the manner required by § 91.33 (relating to incidents causing or threatening pollution).”).

1784. Comment: 78.66 – We recommend immediate reporting of hazardous substances that meet the reportable quantities of 40 CFR § 302.4 and § 302.5, and immediate reporting of all spills greater than one gallon to land followed by a monthly report documenting spills to land of all sizes. (1143)

Response: The Department believes that the regulation is stringent enough that complying with the requirements will also allow operators to meet the reportable quantities provisions of the federal regulations. The Department also believes that the rulemaking reaches an appropriate balance between notifying the Department and allowing small spills to be addressed but not reported.

1785. Comment: 78.66 – The EQB proposes to allow spills of less than 42 gallons to land to be cleaned up by removing the impacted soils and submitting a report to the PADEP documenting that the soil contamination has been reduced to below the § 250.707(b)(1)(iii)(B) thresholds. As proposed, the operator would not be subject to the full remediation and reporting requirements of Chapter 250. We do not support streamlined remediation requirements for spills less than 42 gallons, because some spills in small quantities can pose a significant environmental risk. For example, a 41-gallon spill of hazardous substances that meet the reportable quantities of 40 CFR §§ 302.4 and 302.5 should be required to meet the full remediation and reporting requirements of Chapter 250. (1143)

Response: The Department disagrees, and notes that the regulation does not allow operators to escape the requirement to remediate the release and demonstrate attainment with applicable Act 2 Statewide health standards. This form of cleanup is only available where there is: 1) a relatively small spill or release, 2) the contamination can be removed by excavation of contaminated soils and 3) there is no pollution or threat of pollution to the waters of the Commonwealth. If any of these three conditions are not present, the operator must follow the more detailed processes. The rulemaking strikes an appropriate balance between the risk posed by the spill or release and the process needed to document the completion of the remediation.

1786. Comment: 78.66 – The PADEP regulations in Chapter 245 include specific remediation requirements for releases from storage tanks and associated facilities; those requirements should apply to oil and gas tanks. (1143)

Response: The provisions in section 78.66 were modeled in large part on the provisions of Chapter 245 relating to corrective actions, with appropriate modifications for the oil and gas industry.

1787. Comment: 78.66 – We recommend that the PADEP take a consistent and transparent approach to remediation, and require all spills to meet the Chapter 250 requirements. The remediation method should be approved by the PADEP, and confirmation of the remediation be submitted and made available to the public via the PADEP’s website. Preferably, the PADEP should consolidate the remediation reports into a website accessible to the public by GPS location. (1143)

Response: The Department believes that the rulemaking strikes an appropriate balance between in terms of required process, while still achieving the underlying goal of remediating spills and releases at oil and gas well sites to a protective standard.

It is the Department’s intention to have an electronic spill and release reporting and tracking system available for the public and government entities to receive up-to-date information concerning spills and releases and remedial actions at oil and gas operations. The system will be similar to the Department’s eNOTICE system, which allows users to get information about their communities and the facilities they are interested in delivered directly via email. The Department’s goal is to have notification of spills and releases submitted electronically to the Department and loaded directly into the spill and release database, and available to the public in real time, just as it is available to the Department.

1788. In accordance with our comments (commenter #1143) on § 78.66 above, we recommend that § 78.66 be revised as follows:

§ 78.66. Reporting and remediating releases.

(a) Scope. This section applies to reporting and remediating spills or releases of regulated substances on or adjacent to the Oil and Gas Operations defined in § 78.1.

(b) Reporting releases.

(1) An operator or responsible party shall report the following spills and releases of regulated substances to the Department in accordance with paragraph (2):

(i) A spill or release of a regulated substance causing or threatening pollution of the air, land or waters of this Commonwealth.

(ii) Any spill or release to water or that may threaten water resources, or of 5 gallons or more of a regulated substance over a 24-hour period to land, and any hazardous substance that meets the reportable quantities of 40 CFR §§ 302.4 and 302.5 that is not completely contained by a containment system.

(2) In addition to the notification requirements of § 91.33 (relating to incidents causing or threatening pollution), the operator or responsible party shall contact the appropriate regional Department office by telephone or call the Department’s Statewide toll free number at (800) 541-2050 as soon as practicable, but no later than 2 hours after discovering the spill or release, and notify the local government and water suppliers immediately thereafter. The operator must also submit a spill/release report on a form furnished by the Department to the Department through its web site within 12 hours. Spill/release reports must be submitted to the Department through its web site each day thereafter until the spill/release is contained, controlled, and cleaned up. The initial spill/release report and each update submitted daily thereafter shall be immediately made available to local emergency responders and the public on the Department’s website. The Department shall also make available to the public on its website any Incident Command System (ICS) Forms or Reports completed as part of the response action. To the extent known, the

following information shall be provided:

- (i) The name of the person reporting the incident and telephone number where that person can be reached.
- (ii) The name, address and telephone number of the responsible party.
- (iii) The date and time of the incident or when it was discovered.
- (iv) The location of the incident, including directions to the site, GPS coordinates or the 911 address, if available.
- (v) A brief description of the nature of the incident and its cause, what potential impacts to public health and safety or the environment may exist, including any available information concerning the contamination of surface water, groundwater or soil.
- (vi) The type of material. The estimated weight or volume of each regulated substance spilled or released and the amount contained, controlled, or recovered.
- (vii) The nature of any injuries.
- (viii) Source control and containment actions initiated or completed and remedial actions planned, initiated or completed.

(3) Upon the occurrence of any spill or release, the operator or responsible party shall take necessary corrective actions to prevent:

- (i) The regulated substance from reaching the waters of the Commonwealth.
- (ii) Fire, explosion or other imminent hazards; dangers to human health, domestic or farm animals, crops and other vegetation, or nearby wildlife; and damage to property.
- (iii) Impacts to downstream users of waters of the Commonwealth.

(4) The Department may immediately approve temporary emergency storage or transportation methods necessary to prevent or mitigate harm to the public health, safety or the environment. Storage may be at the site of the incident or at a site approved by the Department.

(5) After responding to a spill or release, the operator shall decontaminate equipment used to handle the regulated substance, including storage containers, processing equipment, trucks and loaders, before returning the equipment to service. Contaminated wash water, waste solutions and residues generated from washing or decontaminating equipment shall be managed as residual regulated waste and be collected and transported to an approved waste handling facility appropriate for treating and disposing of the spilled or released material.

(c) Remediating releases. Remediation of an area affected by a spill or release must be completed in accordance with Act 2, Chapter 250, and the following requirements:

(1) Within 15 business days of the spill or release, the operator or responsible party shall provide an initial written report to the Department through its web site. The spill/release report shall be immediately made available to the public on the Department's website. The 15-day report shall include, to the extent that the information is available, the following:

- (i) The regulated substance involved. The estimated weight or volume of each regulated substance spilled or released, and the amount contained, controlled, or recovered. Source control and containment actions initiated or completed and remedial actions planned, initiated or completed.
- (ii) The location where the spill or release occurred.
- (iii) The environmental media affected.
- (iv) Impacts and continued dangers to human health, domestic or farm animals, crops and other vegetation, or nearby wildlife. Impacts to water supplies, property, buildings or utilities. The nature of any injuries or damage.
- (v) Interim remedial actions planned, initiated or completed.

(2) The initial report must also include a summary of the actions the operator or responsible party has taken since the spill or release has occurred and the actions it intends to take at the site to address the spill or release such as a schedule for site characterization, to the extent known, and the anticipated time frames within which it expects to take those actions. After the initial report, any new impacts identified or discovered during interim remedial actions or site characterization shall also be reported in writing to the Department within 15 calendar days of their discovery to the Department through its web site. The spill/release report shall be immediately made available to the public on the Department's website.

(3) Within 30 calendar days of the spill or release, the operator or responsible party shall perform a site characterization to determine the extent and magnitude of the contamination and submit a site characterization report to the appropriate Department regional office describing the findings. The report shall be provided to the Department through its web site. The report shall be immediately made available to the public on the Department's website. The report must include a description of any interim or final remedial actions taken. If the site characterization indicates that the interim remedial actions taken did not adequately remediate the release, the operator or responsible party shall develop and submit a remedial action plan. Remedial action plans should contain the elements outlined in § 245.311(a) (relating to remedial action plan). For a background standard remediation, the site characterization must contain information required under § 250.204(b)—(e) (relating to final report). For a Statewide health standard remediation, the site characterization must contain information required under 25 Pa. Code § 250.312(a) (relating to final report). The report shall be reviewed by the Department and either be deemed complete and satisfactory or the Department shall require additional site characterization or remediation work to be performed.

(4) The report described in paragraph (3) may be a final remedial action report if the interim remedial actions meets all of the requirements of an Act 2 background or Statewide health standard remediation or combination thereof and the Department has deemed the remediation to be complete and satisfactory

(5) Once the remedial action plan is implemented the responsible party shall submit a final report to the appropriate Department regional office for approval. The Department will review the final report to ensure that the remediation has met all the requirements of the background or Statewide health standard, or combination thereof, except the notice and review provisions. Relief from liability will not be available to the responsible party, property owner or person participating in the cleanup.

(6) An operator or responsible party remediating a release under this paragraph may elect to utilize Act 2 at any time.

(7) Within 30 days of the spill or release, the operator shall submit a lessons learned report that summarizes its plans, actions, equipment, or procedural changes to prevent or minimize the risk of future spills or releases, including proposed amendments to its PPC plan for Department review and approval. The report shall be provided to the Department through its web site. The report shall be immediately made available to the public on the Department's website. (1143)

Response: See responses to comments 1691 through 1704.

1789. Comment: It is critical to recognize that Act 2 was enacted to eliminate “environmental hazards on existing commercial and industrial land across this Commonwealth,” and that the “reuse of industrial

land is an important component of sound land-use policy that will prevent the needless development of prime farmland, open space areas and natural areas and reduce public costs for installing new water, sewer and highway infrastructure.” 35 P.S. § 6026.102(1). Thus, the policy and focus of Act 2 is to clean up and reuse industrial land. Although Act 2 cleanup standards are to be employed wherever DEP requires cleanup under certain listed statutes including the Clean Streams Law, the Oil and Gas Act is not a specifically listed statute to which Act 2 applies. Thus, Act 2 procedures and standards should not be casually adopted to the oil and gas fields without considering their implications, especially on the conventional industry. (1153)

Response: Act 2 provides a procedure to remediate and receive relief of environmental liability relating to a release of a regulated substance addressed under various environmental statutes, including the Clean Streams Law, the Solid Waste Management Act, and the Hazardous Sites Cleanup Act. Many substances that are spilled at sites regulated under the Oil and Gas Act are regulated as waste under the Solid Waste Management Act or as pollutants under the Clean Streams Law (see, for example, sections 3273 and 3273.1 of the 2012 Oil and Gas Act, 35 Pa.C.S. §§ 3273, 3273.1). If these wastes and pollutants are regulated substances as defined under Act 2 and have contaminated soils and groundwater, they must be addressed under Act 2, regardless of the nature of the activity that resulted in contamination.

- 1790.** Comment: DEP has not fully weighed the harm that is to be mitigated with the costs imposed for such mitigation. Operational releases of brine to the ground surface during the 100-year history of oil and gas drilling in the Commonwealth for the most part has not been observed to have any significant or lasting environmental effect. DEP must consider this historical knowledge and context before altering cleanup requirements, especially for small spills of substances that have low toxicity and are readily remediated, such as brine and crude oil. (1153)

Response: The Department’s Act 2 standards explicitly reflect the risks various compounds and elements pose to human health and the environment, and have been applied successfully to thousands of successful remediations over the past 19 years. The rulemaking specifically provides flexibility to oil and gas operators to address small spills and releases and fully-contained releases in a flexible and straightforward manner.

- 1791.** Comment: Suggested amendatory language: § 78.66. Reporting and remediating spills or releases. § 78.66(b) *Reporting releases* –

(1) An operator or responsible party shall report the following spills and releases to the Department in accordance with paragraph (2):

- (i) A spill or release resulting or causing a danger of pollution of the waters of this Commonwealth as required by § 91.33 (relating to incidents causing or threatening pollution); or
- (ii) A spill or release of 5 gallons or more of brine over a 24-hour period that is not completely contained by a containment system.

(2) In addition to the notification requirements of 25 Pa. Code § 91.33, the operator or responsible party shall contact the appropriate regional Department office by telephone or call the Department’s statewide toll free number 1-800-541-2050 as soon as practicable, but no later than 2 hours after discovering the spill or release. To the extent known, the following information shall be provided:

- (i) The name of the person reporting the incident and telephone number where that person can be reached.

- (ii) The name, address and telephone number of the responsible party.
- (iii) The date and time of the incident or when it was discovered.
- (iv) The location of the incident, including directions to the site, GPS coordinates or the 911 address, if available.

- (v) A brief description of the nature of the incident and its cause, what potential impacts to public health and safety or the environment may exist, including any available information concerning impacts to surface water, groundwater or soil.
- (vi) The estimated weight or volume of the substance spilled or released.
- (vii) The nature of any injuries.
- (viii) Remedial actions planned, initiated or completed.

(3) Upon the occurrence of any spill or release, the operator or responsible party shall take appropriate action to:

- (i) Prevent the substance from reaching the waters of the Commonwealth.
- (ii) Prevent damage to property.
- (iii) Prevent impacts to downstream users of waters of the Commonwealth.

(4) The Department shall not require a permit or other formal authorization for temporary remediation methods necessary to prevent or mitigate harm to the public health, safety or the environment. Treatment and storage may be at the site of the incident or at an alternative appropriate site. The operator or responsible party shall promptly notify the Department if treatment or storage will take place at a location that is not the site of the incident.

(5) After responding to a spill or release, the operator shall decontaminate equipment, including storage containers, processing equipment, trucks and loaders, where necessary and appropriate, before returning the equipment to service.

(c)(1) Spills or releases to the ground of less than 42 gallons at a well site that do not impact or threaten to pollute waters of the Commonwealth may be remediated by removing the soil visibly impacted by the release and properly managing the impacted soil in accordance with the Department's waste management regulations. The operator or responsible party shall notify the Department of its intent to remediate a spill or release in accordance with this paragraph at the time a report of the spill or release is made or thereafter when such a determination is made. (1147)

Response: The Department has retained the use of the term “regulated substance” in the final rulemaking. The term was developed as part of the statutory oversight of remedial activities in Pennsylvania. However, it is appropriate for use in the manner it is used in Chapter 78 – generally relating to the storage, handling and containment of substances that would cause pollution or contamination if released.

1792. Comment: The Commentator recommends a reporting and remediation process that fully respects and protects the environment while eliminating unnecessary process and costs to operators. The Commentator suggests completely replacing the proposed section 78.66 with a reporting and remediation rule that balances the environmental concerns with appropriate consideration for less costly and effective remediation alternatives.

Suggested regulatory language:

§ 78.66. Containment, Characterization, Remediation, and Reporting Spills and Releases.

(a) Scope - This section applies to the reporting of spills and releases, containment, characterization, remediation and of liquids and/or solids at oil and gas well sites and access roads used exclusively for well sites. This section applies to naturally occurring substances such as brine, oil and condensate generated at the well site, as well as products and materials brought to the well site.

(b) Reporting Requirements

(1) The operator or responsible party shall notify the Department immediately upon becoming aware of a spill or release causing or threatening pollution of the waters of the Commonwealth.

(2) The operator or responsible party is required to notify the Department within two hours of becoming aware of other spills or releases, unless:

- (i) The spill or release of a substance is fully contained or fully remediated within two days of the spill, or
- (ii) The release and the quantity of the release does not exceed the de minimis values in this section.

(c) Immediate Response to a Spill or Release

(1) Upon discovery of a spill or release, the operator or responsible party shall mitigate the impact of the spill or release by immediately taking reasonable measures to:

- (i) Stop the spill or release at the source;
- (ii) Prevent migration of the substance from the site of the spill or release; and
- (iii) Prevent polluttional substances from reaching or impacting the waters of the Commonwealth.

(2) In order to mitigate environmental impacts of the spill or release, reasonable containment measures must be employed, which may include but are not limited to:

- (i) Temporary containment of the polluttional substance(s) in stationary or mobile tanks;
- (ii) Installation of temporary diversion ditches;
- (iii) Installation of temporary containment pits;
- (iv) Deployment of absorbent materials; or
- (v) Excavation and stockpiling of soils on suitable containment.

(d) Characterization of the Extent and Severity of a Spill or Release

(1) The operator or responsible party shall characterize the extent of the spill or release by:

- (i) Confirming the cause(s) of the spill or release,
- (ii) Determining the substance(s) involved and the extent of migration of those substances through the environmental media,
- (iii) Determining if additional remedial actions are necessary to mitigate risk to human health and/or environmental media,
- (iv) Evaluating available remediation standards, and
- (v) Designing a remedial action plan if necessary.

(2) For spills and releases that are contained and fully remediated within two weeks, and which do not trigger the need for submission or approval of a remedial action plan under subsection (e) below, a written spill incident report detailing the following must be filed with the Department within thirty days subsequent to the completion of the remedial actions:

- (i) The date and time of the incident or when it was detected;
- (ii) Location and cause of the incident;

- (iii) The quantity of the substance(s) spilled or released;
- (iv) Available information concerning the contamination of surface water, groundwater or soil; and
- (v) The remedial actions taken.

(e) Remediation of a Spill or Release

(1) An operator must submit a remedial action plan for approval by the Department prior to initiating remedial action for spills or releases that either exceeds the de minimis quantity specified below, or for remedial actions that would require more than two weeks to complete.

(2) For purposes of this section, de minimis quantities are defined below:

(i) Brine

For a release that does not flow into a stream or a wetland, the de minimis value is ten barrels per release.

For a release that flows into a stream or wetland, the de minimis value is one barrel per release.

(ii) Hazardous substances

For hazardous substances defined under Section 101 of CERCLA, 42 U.S.C. 9601, the de minimis value is the reportable quantity provided in 40 CFR Section 302.4.

(iii) Condensate - For condensate, the de minimis value is five gallons when the spill cannot be remediated within two days of discovery of the spill.

(iv) Crude oil – For crude oil, the de minimis value is five gallons when the spill cannot be remediated within two days of discovery of the spill.

(3) The owner or responsible party shall consider the following when developing a remedial action plan:

(i) In-situ remediation of hydrocarbons and other potentially degradable substances by methods including, but not limited to:

(i) Bioremediation,

(ii) Encapsulation, or

(iii) Incineration.

(ii) Both in-situ remediation and off-site treatment and disposal of nonhydrocarbon spills and releases.

(iii) Excavation of impacted soil for on-site or off-site treatment and/or disposal, as appropriate.

(4) The remedial action plan will provide a remediation schedule and the standard to which the remediation will be completed, which may include:

(i) Compliance with the foregoing remediation methods,

(ii) Statewide health standards,

(iii) Background standards, or

(iv) Site-specific standards.

(5) Once a remedial action plan is approved by the Department, the owner or responsible party shall remediate the spill or release according to the methods and timeline outlined in the said remedial action plan, with the ultimate goal of demonstrating attainment with the agreed upon standard.

(6) Within 90 days of attaining the selected remediation standard, the owner or responsible party shall submit to the Department a completion report.

(7) Any owner or responsible party may choose to enter the Pennsylvania Land Recycling Program (Act 2) program at any time during characterization or remediation phase. (1135)

Response: The Department appreciates the commentator's effort to balance the environmental concerns with appropriate consideration for less costly and effective remediation alternatives, however the regulation reflects the Department's best understanding of the regulatory system relating to environmental remediation in the Commonwealth and so is retained in the final rulemaking.

1793. Comment: This section is too restrictive and needs to be broadened to focus more on spill prevention and the application of appropriate spill remediation and less on notifications and regulatory process. (606, 606a)

Response: The Department acknowledges the comment. Other sections of the regulation address spill prevention. This section addresses the process of reporting and remediating spills and releases, and so it appropriately focuses on reporting and process issues.

1794. Comment: 78.66 – Commentators recommend editing the title of this section to be consistent with the Department's references within this section. The Commentators also agree with TAB's position in Section I of its July 18, 2013 Report and Recommendation Letter to the EQB that the Department's proposed Section 78.66 substantially increases the time and costs for addressing small spills of less than 42 gallons of a regulated substance, and that in most circumstances the costs to comply with the proposed regulation would far exceed the environmental benefit to be realized. Suggested Language: § 78.66. Reporting and remediating spills or releases (1137, 1174)

Response: As to the title, the Department agrees and has amended the title of the section. The Department disagrees that the provisions relating to small spills and releases result in excessive costs compared to environmental benefits. Those provisions are designed to allow operators to appropriately address relatively small spills and releases with a minimum of procedural hurdles or cost.

1795. Comment: This section is the codification of the spill policy. Due to events that have occurred such as those in Bradford County's Rome [Permit 015-20944; Inspection ID 1924655; Violations 598502, 598503] and Wilmot Townships [Permit 015-22087; Inspection ID 2054656; Violations 635518, 635519; Permit 015-21995; Inspection ID 2089544, Violations 646007, 646008, 646009], and throughout our region, we recommend the codification of these provisions as written that provide more stringent requirements regarding the reporting and corresponding remediation at well sites which many times are located near our homes and schools. It is imperative that the spill policy be codified at least as stringent as it is written. With sites so close to private water supplies and even some public water supplies, including those of hospitals, it is relevant to have a record of any spill that may be later attributed to the impact of all water resources. It is of merit to note that in the case of the YARASAVAGE blowout [Wyoming County, Washington Township, 2013] the DEP did sample the nearby hospital's water supply. One operator in our region [Cabot] is complying with Act 2 for their remediation practices. We encourage this option as a preferred remediation release and desire to see it used by all operators. (660a)

Response: The Department acknowledges the comment.

1796. Comment: The proposed 78.66 section regarding crude oil and/ or production water spills, is potentially the most frightening aspect of these new regs, if Act 2 standards are applied to the clean-up. A less intrusive and cheaper solution to the clean-up of small crude oil spills should be the adoption of bioremediation practices which are recognized as successful by the federal E.P.A. (875)

Response: The Department's Act 2 standards have been applied to thousands of successful remediations in the Commonwealth since 1995 and are nationally recognized as providing a sound risk-based remedial action system. Application of these standards to spills and releases to the oil and gas industry is no less appropriate than application of these standards to any other spills and releases. The Department notes that the bioremediation practices referred to by the commentator involved significant focused field work and extensive monitoring to reach the remedial action goals set by EPA and DEP. The Department can approve the use of bioremediation in the appropriate circumstances.

1797. Comment: References to Act 2 procedures for clean-up of spills at oil and gas well sites will impose excessive and unnecessary costs to the oil and gas operators and are not justified by a clear environmental benefit. The reporting and remediating of releases is respected to protect the environment, however modifications are required to eliminate unnecessary costs to the operator. The quantity of releases and various alternatives for remediation need to be considered. (998)

Response: The Department's Act 2 standards have been applied to thousands of successful remediations in the Commonwealth since 1995 and are nationally recognized as providing a sound risk-based remedial action system. Application of these standards to spills and releases to the oil and gas industry is no less appropriate than application of these standards to any other spills and releases.

The rulemaking specifically provides flexibility to oil and gas operators to address small spills and releases and fully-contained releases in a flexible and straightforward manner.

1798. Comment: § 78.66 – Clarification is needed regarding Act 2 requirements for spills off containment onto pad material (impermeable according to the Department when it comes to PCSM) versus off pad onto native soils. (913)

Response: The Department is requesting notification of spill and releases that pollute or threaten to pollute the waters of the Commonwealth or are large enough and not contained. These requirements apply whether the spill or release is to “pad material” or “off-pad into native soils.”

1799. Comment: The threshold for a reportable release fails to account for the low level of total dissolved solids found in conventional well production water. Categorizing these fluids with other much more hazardous substances and contaminants unnecessarily burdens conventional well operators with minimal environmental benefit. The proposed draft regulation is overly inclusive and should be revised. (1113, 1115a, 1118, 1120, 1176-1188)

Response: Production fluids are by definition regulated substances and spills and releases of those fluids otherwise meeting the criteria under the regulation must be reported to the Department. This obligation is relatively limited, in that it only requires the report of the spill or release to the Department. It does not necessarily create a significant remediation obligation. The balance of the section that does require remedial action reflects the relative risks posed by the spilled or released substance and will typically be much less burdensome for spills or releases of production fluids than for other substances used or produced in oil and gas operations. Finally, the Department notes that the existing § 78.66 has required spills of brine greater than 5 gallons over 24 hours (or 15 gallons of brine where the total dissolved solids concentration of the brine is less than 10,000 mg/l) since 2001. Requiring small spills to be reported to the Department establishes a bright-line standard that should forestall lingering liability for failure to report a spill or release that threatens pollution of the waters

of the Commonwealth under the Clean Streams Law and § 91.33(a).

1800. Comment: The Commentator supports the mandatory reporting requirements of Section 78.66. (852a)

Response: The Department acknowledges the comment.

1801. Comment: Even though the Oil and Gas Spill Policy was established in 2013, there are still significant consistency issues. Some common oil/gas related contaminants do not have established standards that need to be met to ensure proper measures have been taken in accordance with the professional opinion of Department representatives. Without additional clear guidance and standards to follow, this section of the proposed regulations can create inconsistencies between regional office and unclear expectations of what remedial obligations an operator will have following an unexpected release, resulting often in a lengthy legal debate and an unresolved site remediation issue. (880)

Response: The Department has updated the Spill Policy to address issues concerning chloride cleanups in soil and common constituents in materials typically found at oil and gas well sites. As additional issues are identified, they will be addressed through appropriate means (for example, training or additional technical guidance). The Department believes that including these requirements in the final-form rulemaking should result in significantly less inconsistency or ambiguity as to the reporting and remediation obligations of oil and gas operators.

1802. Comment: We recommend that the Department explain the basis and assumptions inherent in the defined term “reportable releases of brine” and other threshold releases and spills requiring notification including the request for supporting evidence to determine whether *de minimis* exemptions and thresholds are truly *de minimis*. (1031)

Response: The reportable release of brine standards have been in place in Chapter 78 since 2001 and are not proposed to be changed in this rulemaking.

1803. Comment: As a watershed association we strongly support this section related to reporting and remediating releases. We need to provide for necessary, reasonable and adequate protections for our water resources. (1035)

Response: The Department acknowledges the comment.

1804. Comment: Will this section confirm exactly with the current spill policy? When there are no statewide standard set for certain substances, such as chlorides in soils, to what standard does the operator have to have to meet to conform with full remediation? (411)

Response: See response to comment 1801.

1805. Comment: 78.66(a): The Department needs to clarify how far outside the Limit of Disturbance is considered “adjacent to well sites.” (1071)

Response: All spills or releases originating on a well site or access road will be considered adjacent to wells sites for the entire area covered by the spill or contaminated groundwater plume.

- 1806.** Comment: 78.66 (a)(2) The PFBC should be notified “of a regulated substance causing or threatening pollution of the waters of this Commonwealth.” We recommend that our agency be included in this Section to be notified of a release. Our statewide pollution number is 1-855-347-4545. (1006)

Response: It is the Department’s intention to have an electronic spill and release reporting and tracking system available for the public and entities such as the Pennsylvania Fish and Boat Commission to receive up-to-date information concerning spills and releases and remedial actions at oil and gas operations. The system will be similar to the Department’s eNOTICE system, which allows users to get information about their communities and the facilities they are interested in delivered directly via email. The Department’s goal is to have notification of spills and releases submitted electronically to the Department and loaded directly into the spill and release database, and available to the public in real time, just as it is available to the Department.

- 1807.** Comment: 78.66(b) – The oil and gas industry is already subject to release reporting under various federal laws that have reportable quantity thresholds as well as Pennsylvania law, particularly section 91.33 of the Clean Streams Law regulations. This section 78.66(b)(1) would impose a reporting obligation that is in addition to section 91.33, for a spill or release of 5 gallons or more of brine over 24 hours that is not completely contained by a containment system, regardless of whether there is an actual or threatened impact to waters of the Commonwealth. This requirement should be limited to reporting releases of 5 gallons or more of brine outside of containment.

Suggest Regulatory Language:

(b) Reporting releases -

(1) An operator or responsible party shall report the following spills and releases to the Department in accordance with paragraph (2):

(i) A spill or release resulting or causing a danger of pollution of the waters of this Commonwealth as required by § 91.33 (relating to incidents causing or threatening pollution); or

(ii) A spill or release of 5 gallons or more of brine over a 24-hour period that is not completely contained by a containment system. (1153)

Response: The Department believes that the regulation is stringent enough that complying with the requirements will also allow operators to meet the reportable quantities provisions of the federal regulations. The Department also believes that the rulemaking reaches an appropriate balance between notifying the Department and allowing small spills to be addressed but not reported. Finally, the Department notes that the existing § 78.66 has required spills of brine greater than 5 gallons over 24 hours (or 15 gallons of brine where the total dissolved solids concentration of the brine is less than 10,000 mg/l) since 2001.

- 1808.** Comment: 78.66(b): If an oil and gas activity is within a SWPZ, the affiliated water system and landowner also need to be contacted if there is a reportable spill or release.(1149, 1150)

Response: See response to comment 1806.

- 1809.** Comment: 78.66(b) Chapter 78.66 should be clarified and limited to reporting bring spills over 5 gallons outside of containment. (1164)

Response: Sections 78.66(b) and 78a.66(b) only requires reporting of a spill or release of 5 gallons or more of a regulated substance over a 24-hour period that is not completely

contained by secondary containment, or spills or releases causing or threatening pollution of the waters of the Commonwealth.

1810. Comment: § 78.66(b): All spills must be reported to the surface landowner. There is currently no requirement that a surface landowner be informed when there is a spill. Surface landowners are typically denied any more access to an unconventional well pad than a general passerby. If a spill occurs with no notice of violation, the surface landowner may not learn of this at all. Where there is a notice of violation the surface owner may only find out the same way any citizen finds out about any random violation. This is not acceptable. It is especially egregious in the case of a surface owner who is not the owner of oil or gas rights. Such a “split estate” surface owner may not be receiving any benefit from a well but may suffer adverse property effects from a spill. If a spill has occurred, the surface owner is entitled to know. (869a)

Response: See response to comment 1806.

1811. Comment: § 78.66(b): The rulemaking generally is completely unclear at what concentration a “Regulated Substance” becomes a concern, who is to assess concentration, and how that is to be determined. The existing rule, via the definition of ‘Reportable release of brine’ in § 78.1, contains a clear standard for concentration: 10,000 mg/l total dissolved solids. This is a well specified rule that is easily measured on well sites. The proposed rule deletes this clarity and provides no comparable standard to replace it. (869a)

Response: The Department has retained the use of the term “regulated substance” in the final rulemaking. The term was developed as part of the statutory oversight of remedial activities in Pennsylvania. However, it is appropriate for use in the manner it is used in Chapter 78 – generally relating to the storage, handling and containment of substances that would cause pollution or contamination if released.

1812. Comment: Suggested amendatory language:

“(b) Reporting releases -

- (1) An operator or responsible party shall report the following spills and releases of regulated substances to the Department in accordance with paragraph (2):
 - (i) A spill or release of a regulated substance causing or threatening pollution of the waters of this Commonwealth as required by § 91.33 (relating to incidents causing or threatening pollution); or
 - (ii) A spill or release of 5 gallons or more of a regulated substance or brine over a 24-hour period that is not completely contained by a containment system.” (1071)

Response: The Department agrees and has added the language to the final rulemaking.

1813. Comment: 78.66(b): This subsection pertains to the reporting of releases. It requires additional notification requirements that are above and beyond what is required under § 91.33, relating to incidents causing or threatening pollution. What is the need for these additional requirements?

A commentator has suggested that Paragraph (b)(4) be amended to allow treatment of released material, with DEP approval, as a temporary solution to spills or releases. We ask EQB to consider this option if it does not pose a threat to the natural resources of the Commonwealth. (1099)

Response: First, section 91.33 only relates to pollution or threat of pollution to the waters of the Commonwealth. While this is a critical concern for environmental protection, it is not the only type of spill or release that must be addressed. For example, the soil standards under Act

2 protect against direct contact and ingestion exposure in addition to the soil to groundwater pathway. A second critical argument for reporting additional releases relates to the Department's role as the regulator of oil and gas operations. Routine releases of potentially polluting substances should not be an everyday occurrence at well sites in the Commonwealth, even if the releases are to secondary containment structures. Receiving information that such releases are occurring at particular well sites may help the Department allocate resources to conduct outreach to operators who may be having operational problems leading to such releases. Reporting such releases may also serve as an "early warning system" for operators to address operational problems at particular well sites while they are still small and can be corrected with a minimum amount of effort or cost.

The Department believes that the rulemaking allows sufficient flexibility for the Department to quickly and efficiently process a request to store materials at another site that is not the site of the spill or release. The Department may also grant emergency authorization to treat contaminated media at another site under other authority. Given the nature and risks of off-site treatment and storage, however, the Department believes that prompt prior approval is appropriate and the concept is retained in the final rulemaking.

- 1814.** Comment: 78.66(b): Section 91.33 states that if a pollution event occurs, the polluter must "immediately notify the Department by telephone of the location and nature of the danger and, if reasonably possible to do so, to notify known downstream users of the waters." Because of the highly industrial nature of gas drilling and the multitude of chemicals used in the process as well as often the close proximity to people's homes or because of operation in very sensitive natural habitats, it is critical that the regulation goes farther than 91.33 in way of public notification of spills and threats to ensure the public is protected. It would be unreasonable NOT to contact downstream water users so that must be a requirement of the regulations – again due to the nature of the combination of chemicals these operators use. Notifying downstream water users, local emergency response personnel, surrounding community members, and other agencies like the Fish and Boat Commission and the Game Commission should be required of the operator and laid out clearly in the operator's emergency response preparedness plan. Before an operator is permitted, they should be required to have a listing of all residences and businesses within a certain radius of the operation so that in the event of an emergency, those in the vicinity can be notified and move out of harm's way. The operator should have an emergency response plan that includes all residences in the vicinity with various methods of contact information as well as the Department numbers and other agencies who are responsible to ensuring enforcement is followed through.

Due to the nature and extent of gas drilling, a public notification system involving possibly a siren or other public notification where signs are posted throughout the community of a certain radius from the industrial activity should be required of the operator, perhaps similar to that at a nuclear power plant – again to ensure the public gets timely notification of community threats.

Signs would have an emergency contact number, radio station, TV station, and website where people can obtain quick information on the current threat. The operator should have to maintain and share these public emergency contact outlets regularly in the news and in the media to ensure the community becomes educated on where to look if an emergency occurs and how to obtain accurate and timely information about the immediate pollution event.

How are Pennsylvania Emergency Management Agency (PEMA), and the Coast Guard's National Response Center (NRC), and other agencies incorporated into the emergency response triage and protocol for the operator? (1156)

Response: Emergency planning and response requirements are addressed by section 78.55 and 78a.55. Unconventional operators must include a summary of the risks and hazards to the public within 1/2 mile of the well site and the associated planning assumptions (25 Pa. Code § 78a.55(i)(5)(i)(G)). A copy of unconventional operator's emergency response plans must be provided to the Department, PEMA, the county emergency management agency and the Public Safety Answering Point with jurisdiction over the well site.

Conventional operators shall prepare and develop a site specific PPC plan. A copy of the PPC plan shall be provided to the Department, the Fish and Boat Commission or the landowner upon request. Also, see response to comment 1806.

- 1815.** Comment: Notice Requirements for Spills and Releases-- Pennsylvania has a robust framework of existing notification requirements that apply in the event a spill or release occurs. These notification requirements exist under both federal and state law. Notwithstanding this framework of requirements, the proposed version of 25 § 78.66(b)(1) creates a unique two-tiered release reporting system for the oil and gas industry. The oil and gas industry is already subject to the requirements for reporting releases pursuant to 25 Pa. Code § 91.33 that apply to all other regulated entities in Pennsylvania, as well as various federal release reporting requirements under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), the Clean Water Act ("CWA") and the Emergency Planning and Community Right-to-Know Act ("EPCRA"). In addition, Section 78.66(b) as currently proposed imposes separately on the oil and gas industry the obligation to report any spill or release of 5 gallons or more of a regulated substance over a 24-hour period that is not completely contained by a containment system. This reporting obligation applies regardless of whether there is any actual or threatened impact to waters of the Commonwealth or any other impact to the environment or to public health and safety. It appears that the EQB intended that this additional reporting obligation would replace requirements currently contained in 25 Chapter 78 to report certain releases of brine. Given the fact that the oil and gas industry is already subject to the reporting requirements that apply to every other member of the regulated community in Pennsylvania, any additional reporting requirements should be narrowly tailored and limited to releases of five gallons or more of brine that reach an area outside of a containment system. We have therefore proposed modifications to 25 § 78.66(b)(1) which are designed to reflect the general reporting requirements that exist under 25 § 91.33 as they are and additional reporting requirements for spills or releases of brine that would be unique to the oil and gas industry. (1173)

Response: The commentator is correct that the amendments to this section were intended to bring the uncertain requirements for reporting spills and releases of certain substances into line with the existing requirement to report certain small spills of relatively low total dissolved solids brine. The brine spill reporting requirements have been in place since March 2001 and do not appear to have placed a significant burden on the oil and gas industry in Pennsylvania. It did not make sense to allow spills and releases of larger amounts of substances presenting the possibility of much greater harm and hazard to go unreported to the Department. The Department believes that this requirement provides operators with clear and consistent guidance on when spills and releases must be reported to the Department and should allow operators following this rule to avoid any lingering potential liability under the Clean Streams Law for failure to report. In addition, the Department has an operational and oversight interest in receiving this information; see response to comment 1813.

- 1816.** Comment: The proposed version of 25 Pa. Code § 78.66(b)(3) discusses near term actions to respond to a spill or release. Minor wording changes to improve the clarity of this section are proposed below.

(b) Reporting releases –

(1) An operator or responsible party shall report the following spills and releases to the Department in accordance with paragraph (2):

- (i) A spill or release resulting in or causing a danger of pollution of the waters of this Commonwealth as required by 25 Pa. Code § 91.33 (relating to incidents causing or threatening pollution); or
- (ii) A spill or release of 5 gallons or more of brine over a 24-hour period that is not completely contained by a containment system.

(2) In addition to the notification requirements of 25 Pa. Code § 91.33, the operator or responsible party shall contact the appropriate regional Department office by telephone or call the Department's statewide toll free number 1-800-541-2050 as soon as practicable, but no later than 2 hours after discovering the spill or release. To the extent known, the following information shall be provided:

- (i) The name of the person reporting the incident and telephone number where that person can be reached.
- (ii) The name, address and telephone number of the responsible party.
- (iii) The date and time of the incident or when it was discovered.
- (iv) The location of the incident, including directions to the site, GPS coordinates or the 911 address, if available.
- (v) A brief description of the nature of the incident and its cause, what potential impacts to public health and safety or the environment may exist, including any available information concerning the contamination of impacts to surface water, groundwater or soil.
- (vi) The estimated weight or volume of each regulated the substance spilled or released.
- (vii) The nature of any injuries.
- (viii) Remedial actions planned, initiated or completed.

(3) Upon the occurrence of any spill or release, the operator or responsible party shall take appropriate action to:

- (i) Prevent the released substance from reaching the waters of the Commonwealth.
- (ii) Prevent damage to property.
- (iii) Prevent impacts to downstream users of waters of the Commonwealth.

(4) The Department shall not require a permit or other formal authorization for temporary remediation methods necessary to prevent or mitigate harm to the public health, safety or the environment. Processing, treatment or storage may be at the site of the incident or at an

alternative appropriate site. The operator or responsible party shall promptly notify the Department if processing, treatment or storage will take place at a location that is not the site of the incident.

(5) After responding to a spill or release, the operator shall decontaminate equipment, including storage containers, processing equipment, trucks and loaders, where necessary and appropriate, before returning the equipment to service. (1173)

Response: See responses to comments 1791, 1813, 1815, and 1836.

1817. Comment: Page 50, Section 78.66 (b) (1): Would it not benefit all if the municipality and county are also notified when the department is notified of a spill or release of a regulated substance? By notifying the municipality and county, the incident could be minimized since local officials would be in the information loop. (415)

Response: See response to comment 1806.

1818. Comment: Sections 78.66(b)(1) and (2) below create a two-tiered release reporting system for the oil and gas industry that is unique to this industry. The oil and gas industry is already subject to the requirements for reporting releases pursuant to 25 Pa. Code § 91.33 that apply to all other regulated entities in Pennsylvania, as well as the numerous federal reporting requirements under CERCLA (40 C.F.R. 302), CWA (40 C.F.R. 112), and EPCRA (40 C.F.R. 355) that provide specified reportable quantity thresholds. In addition to the requirements of Section 91.33, Section 78.66(b)(1) as currently proposed would impose an obligation to report any spill or release of 5 gallons or more of a regulated substance over a 24-hour period that is not completely contained by a containment system. This reporting obligation applies regardless of whether there is any actual or threatened impact to waters of the Commonwealth or any other impacts to the environment or to public health or safety. Assuming that EQB has proposed this section to replace the current “reportable release of brine” provision, Commentator recommends that this additional requirement be clarified and limited to reporting releases of 5 gallons or more of brine outside of containment.

Suggested Language: (b) Reporting releases -(1) An operator or responsible party shall report the following spills and releases to the Department in accordance with paragraph (2): (i) A spill or release of a substance resulting or causing a danger of pollution of the waters of this Commonwealth as required by § 91.33 (relating to incidents causing or threatening pollution); or(ii) A spill or release of 5 gallons or more of brine over a 24-hour period that is not completely contained by a containment system. (1) In addition to the notification requirements of 25 Pa. Code § 91.33, an operator or responsible party shall report a spill or release of a regulated substance causing or threatening pollution of the waters of this Commonwealth. The operator or responsible party shall report the spill or release using the procedures in paragraph (2). (2) The operator or responsible party shall contact the appropriate regional Department office by telephone or call the Department’s statewide toll free number 1-800-541-2050 as soon as practicable, but no later than 2 hours after discovering the spill or release. To the extent known, the following information shall be provided: (i) the name of the person reporting the incident and telephone number where that person can be reached. (ii) The name, address and telephone number of the responsible party. (iii) The date and time of the incident or when it was discovered. (iv) The location of the incident, including directions to the site, GPS coordinates or the 911 address, if available. (v) A brief description of the nature of the incident and its cause, what potential impacts to public health and safety or the environment may exist, including any available information concerning impacts to surface water, groundwater or soil. (vi) The estimated weight or volume of each regulated substance spilled or

released. (vii) The nature of any injuries. (viii) Remedial actions planned, initiated or completed. (1137, 1174)

Response: The Department disagrees with the suggested language. See response to comment 1815.

- 1819.** Comment: Reporting and Remediating Releases (78.66.) –a topic underscored by recent events in West Virginia and others within our own state. Throughout this section and the entire document, the word “regulated” must be replaced by *pollutional* given that regulatory exceptions exist for substances involved in the oil and gas industry. (640,1098)

Response: The Department believes that the term “regulated substances” is broad enough to cover the commentator’s concerns. The term has the added benefit of being a statutorily-defined term, providing clarity and certainty, unlike the undefined term “pollutional substances”.

- 1820.** Releases to the “pollution of water,” must be expanded to the pollution of water, *air, and land*. [78.66(b)(1)(i)] (640,1098)

Response: The paragraph in question specifically calls out spills that cause or threaten pollution to the waters of the Commonwealth because the provisions in 25 § 91.33 require notice to the Department in those situations. Paragraph (b)(1)(ii) addresses all other releases “not completely contained by secondary containment.

- 1821.** Given that time is of the essence in combating releases, notification protocol throughout this section needs to be revised to be by telephone, e-mail, and/or text immediately after discovery - not within 2 hours or as practicable [78.66(b)(2)]. All such communication should be archived for future access. (640,1098)

Response: Paragraph (b)(2) actually requires notification to the Department “as soon as practicable” but no later than two hours after discovering the spill or release. The Department believes that this is a reasonable outside limit for notice to the Department given the factors that might come into play in a spill or release. See response to comment 1776.

- 1822.** Because of the highly toxic nature of the substances used in natural gas operations, the 42 gallon limit should be reduced to 10 gallons so that more stringent remediation occur. [78.66(c)(1)] (640,1098)

Response: The Department disagrees, and notes that the regulation does not allow operators to escape the requirement to remediate the release and demonstrate attainment with applicable Act 2 Statewide health standards. This form of cleanup is only available where there is 1) a relatively small spill or release, 2) the contamination can be removed by excavation of contaminated soils and 3) there is no pollution or threat of pollution to the waters of the Commonwealth. If any of these three conditions are not present, the operator must follow the more detailed processes. The rulemaking strikes an appropriate balance between the risk posed by the spill or release and the process needed to document the completion of the remediation.

- 1823.** Comment: 78.66(b)(1)(i): A spill or release of a regulated substance causing or threatening pollution of the waters of this Commonwealth, [shall comply with the following reporting and corrective action requirements: of § 91.33 (relating to incidents causing or threatening pollution).]

Remove “regulated” and include any substance causing or threatening pollution of the waters or nearby environment/ground/groundwater and air of the Commonwealth. If regulated is not removed, DEP should define all “regulated substances” and ensure that, for example, sediment pollution is also specifically listed and included since earth disturbance and soil erosion and impacts can cause significant harm to nearby water resources. If a substance is not “regulated specifically by DEP” but can still cause pollution or threaten pollution of the waters, that substance should be reported.

DEP should expand releases to include not only threats to waters (vernal pools, groundwater, surface water, wetlands) but also releases to air and local environment, upland areas including the ground. (1156)

Response: Potential pollution from erosion and sedimentation is regulated by Title 25 Pa. Code Chapter 102. Also see responses to comments 1819 and 1820.

- 1824.** Comment: 78.66(b)(1)(ii): A spill or release of 5 gallons or more of a regulated substance over a 24-hour period that is not completely contained by a containment system.

Since the nature of the chemicals used for fracking and the flowback include a mix of many different constituents, DEP should expand and strengthen this provision to include any release of substances (regardless of quantity or timing) where containment is not working or ineffective and where harm could be caused to the environment, air, ground or nearby water bodies.

For example, according to the EPA, one gallon of motor oil can contaminate one million gallons of water— that’s a years’ supply of freshwater for 50 people. So any substance of any size that is spilled should be accounted, cleaned up and reported. Testing upstream and downstream of the spill or in the soil layers should also be required to ensure adequate clean up. DEP should remove the 24 hour timeframe or clarify that if a persistent spill is occurring over a long timeframe, reports are filed daily until the spill has been contained properly and cleaned up. (1156)

Response: The Department believes that the regulation is stringent enough that complying with the requirements will also allow operators to meet the reportable quantities provisions of the federal regulations. The Department also believes that the rulemaking reaches an appropriate balance between notifying the Department and allowing small spills to be addressed but not reported.

- 1825.** Comment: 78.66(b) (1) (ii): The replacement of 5 gallons of brine by 5 gallons of “regulated substance” as the criterion for a reportable spill is very problematic. Suppose a well operator spills 300 gallons of “material”, self-assesses that that material contains 1% “regulated substance”, and thus under the mies is really only a spill of 3 gallons of “regulated substance” and thus not reportable. Is this allowed? There is nothing in the new rules that precludes this interpretation. This is a major loophole, which completely *guts* spill reporting. (869, 869a)

Response: The reporting regulation is based on reporting by volume, not the concentration of a particular substance in the volume spilled or released.

- 1826.** Comment: § 78.66(b)(2) – The NPS suggests that the notification priorities in this section be reordered to require operators to report spills of 5 gallons or more *first* to the statewide toll free number and *second* to the Department. If a spill were to occur on weekends, nights, or holidays when Department personnel are not available, presumably the statewide toll free number would be answered and proper notifications initiated.

Additionally, the NPS asks that the Department's statewide toll free answering center notify the NPS via our emergency contacts directly if lands or waters owned or managed by the NPS are potentially affected so that staff or visitors can be immediately notified of any hazards and federal cleanup actions could be initiated as soon as possible. (1062, 1133)

Response: See response to comment 1806.

- 1827.** Comment: 78.66(b)(2) -- The proposed reporting obligation requires a description of "contamination" and an estimated weight or volume of "each regulated substance" spilled or released, which create an ambiguous and often impractical requirement to estimate impacts and constituents of spilled substances. (1103)

Response: Sections 78.66(b)(2) and 78a.66(b)(2) of the final-form rulemaking are intended to serve as guidance for the responsible party to provide relatively rapidly enough information for the Department to properly assess the reported spill incident, so the Department can employ the appropriate initial response.

- 1828.** Comment: 78.66(b)(2) The Service should be notified "of a regulated substance causing or threatening pollution of the waters of this Commonwealth." Agencies of the Department of the Interior should be notified via the National Response Center (NRC) and Pennsylvania Emergency Management Agency (PEMA). We recommend that the NRC be included in this Section to be notified of a release. (1134)

Response: See response to comment 1806.

- 1829.** Comment: § 78.66(b)(2)(viii) – The proposed reporting obligation requires a description of "contamination" and an estimated weight or volume of "each regulated substance" spilled or released which create an ambiguous and often impractical requirement to estimate impacts and constituents or spilled substances.

Suggested language: (2) In addition to the notification requirements of 25 Pa. Code § 91.33, the operator or responsible party shall contact the appropriate regional Department office by telephone or call the Department's statewide toll free number 1-800-541-2050 as soon as practicable, but no later than 2 hours after discovering the spill or release. To the extent known, the following information shall be provided:

- (i) The name of the person reporting the incident and telephone number where that person can be reached.
- (ii) The name, address and telephone number of the responsible party.
- (iii) The date and time of the incident or when it was discovered.
- (iv) The location of the incident, including directions to the site, GPS coordinates or the 911 address, if available.
- (v) A brief description of the nature of the incident and its cause, what potential impacts to public health and safety or the environment may exist, including any available information concerning impacts to surface water, groundwater or soil.
- (vi) The estimated weight or volume of the substance spilled or released.
- (vii) The nature of any injuries.
- (viii) Remedial actions planned, initiated or completed. (1134)

Response: See response to comment 1827.

1830. Comment; The proposed version of 25 § 78.66(b)(2) addresses the manner in which spills and releases are to be reported (assuming that a reporting obligation has been triggered). For example, the proposed provisions require that a description of the “contamination” of surface water, groundwater or soil and an estimated weight or volume of “each regulated substance” spilled or released be provided as part of the initial notification process. This type of information may be difficult to ascertain and often must be gathered or developed as part of the response actions that are undertaken. While the provision only requires that such information be provided “to the extent known,” we have suggested a few limited modifications to the provision to improve its implementability. (1173)

Response: See response to comment 1827.

1831. Comment: **78.66(b)(3)** – This section describes actions that are to be taken following a spill or release. The provisions of this section are phrased as broad objectives to be achieved through response actions, and would potentially create liability where factors beyond the control of the operator prevent the attainment of the listed goals.

Suggested Language: (3) Upon the occurrence of any spill or release, the operator or responsible party shall take necessary corrective actions designed to achieve the following objectives: (i) Prevent the substance from reaching the waters of the Commonwealth. (ii) Prevent damage to property. (iii) Prevent impacts to downstream users of waters of the Commonwealth. (1137, 1174)

Response: Prevention of pollution to waters of the Commonwealth; prevention of damage to property and prevention of impacts to downstream users of waters of the Commonwealth is the goal to be attained and operators may be held liable if said goal is not met.

1832. Comment: **78.66(b)(3)** – This section requires necessary corrective actions that are to be taken following a spill or release. However, provisions of this section are phrased as broad objectives to be achieved, and would potentially create liability where factors beyond the control of the operator prevent the attainment of the listed goals.

Suggested amendatory language:

“(3) Upon the occurrence of any spill or release, the operator or responsible party shall take appropriate action to:

(i) Prevent the regulated substance from reaching the waters of the Commonwealth.

(ii) Prevent damage to property.

(iii) Prevent impacts to downstream users of waters of the Commonwealth.” (1137, 1071)

Response: See response to comment 1831.

1833. Comment: **78.66(b)(4):** Commentator supports the need for regulatory flexibility to facilitate emergency response actions, however in this case, it believes that the provision does not go far enough. Specifically, the regulations should be clear that permits and other forms of formal authorization are not to be required where to do so would delay timely implementation of response actions. In that regard, Pennsylvania’s regulations contain similar provisions to facilitate emergency response actions under other regulatory programs. See, 25 § 287.101(d).

Suggested amendatory language:

(4) The Department shall not require a permit or other formal authorization for temporary remediation methods necessary to prevent or mitigate harm to the public health, safety or the environment. Treatment and storage may be at the site of the incident or at an alternative appropriate site. The operator or responsible party shall promptly notify the Department if treatment or storage will take place at a location that is not the site of the incident. (1071)

Response: The Department disagrees with the suggested language. The Department believes that the rulemaking allows sufficient flexibility for the Department to quickly and efficiently process a temporary emergency storage or transportation request. The Department believes that prompt prior approval is appropriate and the concept is retained in the final rulemaking.

- 1834.** Comment: 78.66(b)(4) - This section appears to be designed to facilitate emergency response measures by vesting the Department with certain discretionary powers to approve temporary emergency storage or transportation methods. It is unclear why treatment is not included in this list given that emergency treatment activities may be part of a response action. While Commentators support the need for regulatory flexibility to facilitate emergency response actions, we believe that the provision does not go far enough. Specifically, the regulations should be clear that permits and other forms of formal authorization are not to be required where to do so would delay timely implementation of response actions. In that regard, Pennsylvania's regulations contain similar provisions to facilitate emergency response actions under other regulatory programs (See, e.g., 25 § 287.101(d)). (1099)

Suggested Language:

(4) The Department shall not require a permit or other formal authorization for temporary emergency treatment, storage or transportation methods necessary to prevent or mitigate harm to the public health, safety or the environment. Treatment and storage may be at the site of the incident or at an appropriate alternative site. The operator or responsible party shall promptly notify the Department if treatment or storage will take place at a location that is not the site of the incident. (1103, 1137, 1174)

Response: The Department disagrees with the suggested language. The Department believes that the rulemaking allows sufficient flexibility for the Department to quickly and efficiently process a temporary emergency storage or transportation request. The Department believes that prompt prior approval is appropriate and the concept is retained in the final rulemaking.

- 1835.** Comment: The proposed version of 25 Pa. Code § 78.66(b)(4) addresses authority that PADEP has to facilitate emergency response measures. Specifically, the proposed provision appears to vest PADEP with certain discretionary powers to approve temporary emergency storage or transportation methods. It is unclear why processing or treatment is not included in this list given that emergency processing or treatment activities may be part of a response action. While the proposed provisions offer a modicum of regulatory flexibility to facilitate emergency response actions, they do not go far enough. Specifically, the regulations should be clear that permits and other forms of formal authorization are not to be required where to do so would delay timely implementation of response actions. In that regard, Pennsylvania's regulations contain similar provisions to facilitate emergency response actions under other regulatory programs. See, e.g., 25 Pa. Code § 287.101(d). (1173)

Response: 25 Pa. Code § 287.101(d) states, "The Department will not require a permit under this article for cleanup or other remediation at the site of a spill, release, fire, accident or other unplanned event, unless the site is part of a permit area for an active facility or the proposed permit area in an application. Well sites and access roads are part of a permitted

area. While some circumstances may dictate for the Department to immediately approve temporary emergency storage or transportation methods necessary to prevent or mitigate harm to the public health, safety or the environment; the Department reserves the right to review any proposals to process or treat waste at a well site or access road and require any necessary permits, authorizations and approvals necessary to process or treat the waste, after it is contained.

1836. Comment: The proposed version of 25 Pa. Code § 78.66(b)(5) sets forth requirements relating to decontamination of equipment used in responding to a spill or release. On its face, this provision requires that all equipment, including storage containers, processing equipment, trucks and loaders, be decontaminated in all instances following a response to a spill or release. Decontamination of equipment may be necessary if the equipment is going to be used for other purposes where cross-contamination could be an issue. However, a bright line mandate as proposed goes too far. For example, if spilled diesel fuel is recovered and placed in a tank that is dedicated to holding diesel fuel, there would be little reason to empty and decontaminate the tank before putting more diesel fuel in the tank. To address this issue, suggested revisions to the provision are set forth below. In addition, the second sentence of the proposed version of 25 Pa. Code § 78.66(b)(5) describing how contaminated wash water, waste solutions and residues are to be managed is unnecessary. (1173)

Response: This final rulemaking is consistent with existing Residual Waste regulations. See 25 Pa. Code § 299.218.

1837. Comment: 78.66 [(a) A] (b) (5) - This section is designed to address steps to decontaminate equipment used in responding to a spill or release. This section requires that all equipment, including storage containers, processing equipment, trucks and loaders, be decontaminated in all instances following a response to a spill or release. Decontamination of equipment may be necessary if the equipment is going to be used for other purposes where cross-contamination could be an issue. However, a bright line mandate cuts too far. For example, if spilled diesel fuel is recovered and placed in a tank that is dedicated to holding diesel fuel, there would be little reason to empty and decontaminate the tank before putting more diesel fuel in the tank. To address this issue, Commentators recommend revising Section 78.66(b) (5) as set forth below. In addition, the second sentence of Section 78.66(b)(5) describing how contaminated wash water, waste solutions and residues are to be managed is unnecessary. The classification of such materials will occur regardless of the provisions of the oil and gas regulations.

Suggested Language:

(5) After responding to a spill or release, the operator shall decontaminate equipment used to handle the regulated substance, including storage containers, processing equipment, trucks and loaders, as necessary, before returning the equipment to service. (1103, 1137, 1174)

Response: See response to comment 1836.

1838. Comment: **78.66(b)(5)** – The requirement to decontaminate equipment is unnecessary for the vast majority of materials that would be hauled from a site during spill cleanup at well sites. This provision should be deleted or modified to require decontamination of equipment only where justified by a clear and compelling purpose. Delete subsection (5). (1153)

Response: See response to comment 1836.

- 1839.** Comment: **78.66(b)(5)** – The language should be revised to state that a responsible party (e.g., contractor) shall also be able to decontaminate equipment. (913)

Response: A contractor may perform this function on behalf of the operator, but as the permittee the operator retains the responsibility to ensure that the operations are conducted in compliance with the law.

- 1840.** Comment: **78.66(b)(5)** – This section, designed to address steps to decontaminate equipment used in responding to a spill or release, is unnecessarily restrictive. Decontamination of equipment may be necessary if the equipment may not be needed in some cases. For example, if spilled diesel fuel is recovered and placed in a tank that is dedicated to holding diesel fuel, there would be little reason to empty and decontaminate the tank before putting more diesel fuel in the tank. Suggested language:

“(5) After responding to a spill or release, the operator shall decontaminate equipment, including storage containers, processing equipment, trucks and loaders, where necessary and appropriate, before returning the equipment to service.” (1071)

Response: See response to comment 1836.

- 1841.** Comment: 78.66(c): I would like to talk to you about the new standard for reporting brine spills under the proposed Chapter 78 regulations. The proposed reportable spill quantity for production water would be 42 gallons. Assuming a weight of brine at 11 pounds per gallon this would make the reporting requirement of non-hazardous production water at 462 pounds. This is an unjustifiable, ridiculous standard in light of the fact that Penn-Dot spreads salts and brines in both granular and liquid forms on our roads and over our bridges in quantities that can only be measured in hundreds of thousands of tons every year. This fact is compounded with a look at that The Code of Federal Regulations concerning reportable spill quantities of hazardous substances. The Code states in their reportable spill quantity tables that the reportable spill quantity of Hydrochloric Acid is 5000 pounds and the reportable quantity of Sulfuric Acid is 1000 Pounds. A conversion of those weights calculate that the reportable quantity of Hydrochloric Acid at a concentration of 38% is 505 gallons, at a concentration of 10% is 780 gallons. Now, let's talk about Sulfuric Acid for a moment, a normal concentration has a density which is very similar to fresh water. An average concentration for use in a battery will weight about 10 lbs. per gallon and that would yield a reportable quantity of 100 gallons. How did the DEP ever come up with mandatory reporting requirements for our non-hazardous production water from conventional wells' that is ten times more stringent than that of the EPA's requirements for hydrochloric acid and twice as stringent as that of battery acid? Where is the science behind this ridiculous standard? Who were the original drafters of this obscene requirement and WHY did they do it? Why would anyone try to give production water the same apparent level of toxicity as the worst listed on the hazmat table? Who are those in our government that have abused and misused the power granted them to such an outrageous extent? They were granted power to promulgate needful regulations that protect our environment using science and nonbiased professionalism. Instead they have betrayed their office to produce these proposed regulations with no basis in fact or in law to decimate an industry they deem unwanted. I would suppose they are still proud of their work, even though they should be ashamed. (898)

Response: See response to comment 1799.

- 1842.** Comment: 78.66(c): This subsection addresses the remediation of releases. Commentators note that the lack of a statewide health standard for chloride would make this provision costly and difficult to implement. Has EQB considered alternative methods of remediation for spills involving chloride?

In addition, a commentator has described the alternative remediation process provided under paragraph (c)(3) as more onerous than aspects of Act 2 cleanups because of restrictive timetables for compliance. We ask EQB to reconsider the timetables for compliance. We ask EQB to explain in the Preamble and RAF of the final-form regulation how the compliance requirements in this subsection reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: For chlorides, see response to comment 1801. Sections 78.66(c)(3) and 78a.66(c)(3), concerning alternative remediation, have been removed from the final-form regulations.

- 1843.** Comment: The proposed version of 25 Pa. Code § 78.66(c) addresses the manner in which spills and releases are to be remediated. The EQB has included a streamlined approach for remediating small spills and releases (i.e., spills and releases of less than 42 gallons at a well site that do not impact or threaten to pollute waters of the Commonwealth) and two different options for spills and releases that cannot be addressed using the streamlined approach for small spills and releases. The proposed regulations represent a very significant positive step. However, additional changes are necessary to enable the proposed regulations to effectuate the stated objectives for the proposed provisions.

With respect to the requirements for remediating a small spill or release, the proposed version of 25 Pa. Code § 78.66(c)(1) provides that the operator or responsible party must notify PADEP of its intent to invoke the provisions contained therein at the time the spill or release is reported. It is unclear whether an operator or responsible party may make such a determination later after it has gathered additional information or the decision about a remediation approach must be made at the time of the initial notice (which is to be within two hours of discovering the release). We believe that the proposed version of 25 Pa. Code § 78.66(c)(1) should be clarified to allow an operator or responsible party to select the approach under that provision at a time after the initial notice is made, provided that the predicates for using the approach are met (e.g., the spill or release is less than 42 gallons). In addition, it is unclear what is intended by the last sentence of the proposed version of 25 Pa. Code § 78.66(c)(1) which cross references sampling protocols for petroleum release sites that are attaining the statewide health standard under Act 2 and a full site characterization has not been performed. The thrust of the proposed provision is to allow physical removal of soils impacted by small releases at a well site that do not impact or threaten to pollute waters of the Commonwealth. The last sentence of the provision appears to engraft upon those requirements the entire attainment demonstration process for the statewide health standard under Act 2, thereby significantly undercutting the objective of streamlining the remediation process for small spills and releases. For this reason, we request that the sentence be removed.

The proposed version of 25 Pa. Code § 78.66(c)(3) is designed to afford the oil and gas industry a simplified, expedited process for properly responding to spills and releases that do not qualify as “small” without invoking all of the procedural components of Act 2 where liability protection under Act 2 was not desired. While there are a number of positive features to this provision, there are also many drafting issues that should be addressed to improve the clarity and workability of the provision. The provision contains numerous interlocking provisions that do not fully take into account the manner in which characterization and remediation activities may be conducted. Moreover, the restrictive timetables that are set forth in the provision will make the provision difficult to use.

A key substantive deficiency of the proposed version of 25 Pa. Code § 78.66(c)(3) is that the provision authorizes remediating spills and releases using either the background or statewide health

standard under Act 2 but not the site-specific approach under Act 2. Because all three cleanup standards under Act 2 are designed to be protective of public health and the environment and may be used in combination, there is no reason not to include the site-specific standard as an option under the provision.

Recommended changes to the proposed version of 25 Pa. Code § 78.66(c) to address the foregoing issues are set forth below:

(c) *Remediating releases* - Remediation of an area affected by a spill or release is required. The operator or responsible party must remediate a release in accordance with one of the following:

(1) Spills or releases to the ground of less than 42 gallons at a well site that do not impact or threaten to pollute of waters of the Commonwealth may be remediated by removing the soil visibly impacted by the release and properly managing the impacted soil in accordance with the Department's waste management regulations. The operator or responsible party shall notify the Department of its intent to remediate a spill or release in accordance with this paragraph at the time a report of the spill or release is made or thereafter when such a determination is made.

(2) For spills or releases to the ground of more than 42 gallons or that impact or threaten pollution of waters of the Commonwealth, the operator or responsible person may satisfy the requirements of this subsection by demonstrating attainment of one or more of the standards established by Act 2 and 25 Chapter 250 (relating to administration of land recycling program).

(3) For releases of more than 42 gallons or that impact or threaten pollution of waters of the Commonwealth, as an alternative to the requirements in subsection (2), above, the operator or responsible party may remediate a spill or release using the background, Statewide health or site-specific standard under Act 2, or a combination of such standards, in the following manner:

(i) Within 15 business days after the spill or release is reported, the operator or responsible party shall provide an initial written report to the Department that includes, to the extent that the information is available, the following:

- (A) The substance involved,
- (B) The location where the spill or release occurred,
- (C) The environmental media affected,
- (D) Impacts to water supplies, if any, and
- (E) Interim remedial actions planned, initiated or completed.

(ii) The initial report shall also include a summary of the actions the operator or responsible party intends to take at the site to address the spill or release such as a schedule plan for site characterization, to the extent known, and the anticipated timeframes within which it expects to take those actions.

(iii) After submission of the initial report, any new impacts impacted environmental media (such as groundwater) not previously reported that are identified or discovered during ongoing interim remedial actions or site characterization shall ~~also~~ be reported in writing to the Department within 15 calendar days ~~of~~ after their discovery.

(iv) Within 180 calendar days after the spill or release is initially reported or such later date as may be approved by the Department, the operator or responsible party shall perform a site characterization to determine the extent and magnitude of the contamination and shall submit a site characterization report to the appropriate Department Regional Office describing the findings. The site characterization report shall include a description of any interim remedial actions taken. For a background standard remediation, the site characterization report shall contain information described in 25 Pa. Code § 250.204(b)-(e) (relating to final report). For a Statewide health standard remediation, the site characterization report shall contain information described in 25 Pa. Code § 250.312(a) (relating to final report). For a site-specific standard remediation, the site characterization report shall contain information described in 25 Pa. Code § 250.408 (relating to remedial investigation report) and may contain an evaluation of risk.

(v) The site characterization report required under subsection (iv), above, may serve as a final remedial action report if the remedial actions conducted prior to submission of the site characterization report meet the requirements to attain the background, Statewide health, or site-specific standard or combination thereof under Act 2 except the notice and review provisions.

(vi) If the site characterization report required under subsection (iv), above, indicates that the interim remedial actions taken did not remediate the release so as to attain the background, Statewide health or site-specific standard or combination thereof under Act 2, the operator or responsible party shall develop and submit a remedial action plan to the appropriate Regional Office of the Department for approval. The plan is due within 45 calendar days after submission of the site characterization report and any supplements thereto to the Department. The remedial action plans should contain the elements described in 25 § 245.311(a) (relating to remedial action plan). The Department shall review and approve or disapprove the remedial action plan within 60 days after its receipt.

(vii) Once the remedial action plan is implemented, the operator or responsible party shall submit a final report to the appropriate Department Regional Office for approval. The Department shall review the final report to ensure that the remediation has met all the requirements of the background, Statewide health, or site-specific standard or combination thereof under Act 2, except the notice and review provisions.

(viii) Relief from liability pursuant to Act 2 will not be available to the responsible party, property owner or person participating in the cleanup.

(ix) Remediation conducted under this section shall not be required to meet the notice and review provisions under Act 2.

(x) An operator or responsible party remediating a release pursuant to this paragraph may elect to utilize Act 2 at any time. (1173)

Response: The Department believes that in the situation contemplated by subsection (c)(1), the operator will have a relatively clear idea of how to approach this spill or release at the time the notification call is made to the Department. By its terms, it only applies to spills or releases of less than 42 gallons of a regulated substance and the spill or release cannot pollute or threaten pollution of the waters of the Commonwealth. Therefore, the operator should be in a good position to identify the proper cleanup approach rather quickly. Operators may certainly determine later in the cleanup process that a straightforward excavation remediation may prove to be the best approach for a particular spill or release and the Department will review that decision accordingly.

Section 250.707(b)(1)(iii)(b) was added to the Land Recycling Program regulations in 2001 to address situations with petroleum releases where full site characterization was not done in association with an excavation remediation. Because that section deals primarily with petroleum substances, however, it is not an exact fit for oil and gas operations, and so the Department has deleted the cross-reference from the final rulemaking.

Regarding the alternative process, §§ 78.66(c)(3) and 78a.66(c)(3) have been removed from the regulations.

- 1844.** Comment: 78.66(c)(1) – Small spills by conventional operations have been handled in an environmentally friendly manner for over one hundred years. Experience under DEP’s new Spill Policy has shown that the costs added by compliance with this section can be three or four times higher than costs of traditional cleanup measures. The costs to clean up small spills of crude oil, for example, that have been documented through an Act 2 process, have increased from \$2,500 to over \$11,000, even where secondary testing, which would further increase costs, was not required.

This proposed section substantially increases the time and costs for addressing small spills, costs that far outweigh any benefit to be realized in most circumstances. DEP should not require an attainment demonstration under the Act 2 process for small spills because that process can require many soil and groundwater samples over several months or years, which imposes significant cost to clean up a small spill and provides no meaningful additional environmental protection.

Requiring Chapter 250’s statistically-based cleanup standards for all spills less than 42 gallons onto the ground or a well pad surface would result in more expensive remediation for these small spills, depending upon the substance spilled. Small spills (up to 10 gallons), whether brine or crude oil, are normally handled by immediately absorbing, vacuuming, or excavating a generous area around and under the spill, to visual, olfactory, and field metered standards. Onsite bioremediation in situ has been used successfully for many years and should be encouraged. The federal Environmental Protection Agency recognizes that bioremediation is a proven alternative tool that can be used to treat crude oil spills, has issued fact sheets and similar technical materials to guide on-scene coordinators response to such spills, and has recommended the evaluation of bioremediation as a cleanup option for crude oil spills in Pennsylvania. (See NRT Fact Sheet: Bioremediation in Oil Spill Response, A.D. Venosa, U.S. EPA Region 4 http://www2.epa.gov/sites/production/files/2013-07/documents/nrt_fact_sheet_bioremediation_in_oil_spill_response.pdf ; and Proposed Cleanup Guidelines for Small Crude Oil Spills using Bioremediation (Process Selection Flow Chart), J. Brown (Lockheed Martin/REAC) and H. Allen (USEPA/ERT) http://www.epa.gov/oem/docs/oil/fss/fss06/allenIII_2.pdf; and Voodoo Science; The Practical Application of Bioremediation Techniques as a Removal Response Option at Oil Spill Sites in the Northwestern Pennsylvania Oil Patch, V.E. Zenone, USEPA Region III (April 2004) http://www.epa.gov/oem/docs/oil/fss/fss04/zenone_04.pdf). Because such small spills have no real

potential to pollute, this approach is environmentally sound and operationally efficient. Remove the final sentence of paragraph (c)(1). (1153)

Response: The Department's Act 2 standards have been applied to thousands of successful remediations in the Commonwealth since 1995 and are nationally recognized as providing a sound risk-based remedial action system. Application of these standards to spills and releases to the oil and gas industry is no less appropriate than application of these standards to any other spills and releases. The Department notes that the bioremediation practices referred to by the commentator involved significant focused field work and extensive monitoring to reach the remedial action goals set by EPA and DEP. The Department can approve the use of bioremediation in the appropriate circumstances. Truly small spills can be remediated through excavation and minor confirmation sampling under section 78.66(c)(1).

- 1845.** Comment: 78.66(c)(1) – With respect to the requirements for remediating small releases, Section 78.66(c)(1) provides that the operator or responsible party must notify the Department of its intent to invoke the provisions of Section 78.66(c)(1) at the time the spill or release is reported. It is unclear whether an operator or responsible party may make such a determination later after it has gathered additional information or the decision about a remediation approach must be made at the time of the initial notice (which is to be within two hours of discovering the release).

Commentators request that Section 78.66(c)(1) be clarified to allow an operator or responsible party to select the approach under that provision at a time after the initial notice is made, provided that the predicates for using the approach are met (e.g., the spill or release is less than 42 gallons). In addition, it is unclear what is intended by the last sentence of Section 78.66(c)(1) which cross references sampling protocols for petroleum release sites that are attaining the statewide health standard under Act 2 and a full site characterization has not been performed. The thrust of Section 78.66(c)(1) is to allow physical removal of soils impacted by small releases at a well site that do not impact or threaten to pollute waters of the Commonwealth. The last sentence of Section 78.66(c)(1) appears to engraft upon those requirements the entire attainment process for the statewide health standard under Act 2. Commentators request that the final sentence be removed.

Suggested Regulatory Language:

(1) Spills or releases to the ground of less than 42 gallons at a well site that do not impact or threaten to pollute waters of the Commonwealth may be remediated by removing the soil visibly impacted by the release and properly managing the impacted soil in accordance with the Department's waste management regulations. The operator or responsible party shall notify the Department of its intent to remediate a spill or release in accordance with this paragraph at the time a report of the spill or release is made or thereafter when such a determination is made. (1103, 1137, 1174)

Response: See response to comment 1843.

- 1846.** Comment: 78.66(c)(1) – Reporting and Remediating Releases- Align with Department Guidance: The requirement to collect soil samples for laboratory analysis for spill of less than 42 gallons appears to be in conflict with the Department's guidance policy entitled Addressing Spills and Releases at Oil & Gas Well Sites or Access Roads, dated September 21, 2013. The guidance indicates that the responsible party only needs to excavate visibly impacted soil following the release of less than 42 gallons of a regulated substance. Statistical methods are only required when seeking Act 2 closure. The Board should consider this discrepancy in finalizing its proposed text. Additionally, the last sentence should read: "Completion of the cleanup may be documented through

the process outlined in 25 Pa. Code § 250.707(b)(1)(iii)(b).” (1085)

Response: Once promulgated, the rulemaking will control the requirements in the Spill Policy. The Spill Policy will be amended once the rulemaking is promulgated. Section 250.707(b)(1)(iii)(b) was added to the Land Recycling Program regulations in 2001 to address situations with petroleum releases where full site characterization was not done in association with an excavation remediation. Because that section deals primarily with petroleum substances, however, it is not an exact fit for oil and gas operations, and so the Department has deleted the cross-reference from the final rulemaking. Finally, see response to comment 1847.

- 1847.** Comment: 78.66(c)(1) – Subsection (c)(1) should require that documentation of the cleanup be submitted to the Department.

In subsection (c)(1), the Department should make documentation of the cleanup mandatory, and not discretionary. Subsection (c)(1) provides that documentation “should” be submitted to the Department. Replacing the word “should” with “shall” will eliminate any ambiguity in the regulation by making it clear that the documentation must be accomplished. Not only will this provide enhance transparency for the public and accountability, but it is likely something any responsible corporation would want to accomplish in any case, which is documentation that it has complied with the law. (852)

Response: The Department disagrees with the commentator. Spills and releases covered by paragraph (c)(1) are limited in scope and do not threaten to pollute the waters of the Commonwealth. It is appropriate to address such small releases through a limited remedial action process.

- 1848.** Comment: 78.66(c)(1) – The word “of” should be deleted between “pollute” and “waters” in the first sentence of subsection (c)(1). (852)

Response: The Department agrees and has corrected this typographical error.

- 1849.** Comment: **78.66(c)(1)-(2)** – How did DEP select 42 gallons as a cut off for remediation measures required? Is this based on some kind of scientific reasoning or contamination equation? As indicated above, this 42 gallon cut off is grossly unprotective of the environment and the surrounding community, especially due to the nature of the chemicals used by oil and gas operations. Chemicals could leach into the ground and depending on the depth of the water table, impact groundwater. As such, the requirements of monitoring laid out at 25 § 250.707(b)(1)(iii)(B) is likely not protective enough. For example, much of this code outlines samples being taken and *“compared with the Statewide health MSC as determined using Tables 1—4 and 6 in Appendix A”*. However many of the chemicals used in gas drilling do not have MSC established. How can DEP protect the public from these pollution threats if there are no established limits?

The timeframe of sampling outlined in 25 § 250.707(b)(1)(iii) may also not be long enough to detect problems in groundwater or during soil and groundwater migration and the regulations allow some variance to monitoring methodology. For example, the code reads *“In lieu of eight-quarter sampling in subparagraphs (iii) and (v), the Department may allow the eight samples to be taken during a period of four quarters, or less with written approval from the Department if the following criteria can be met”*. More frequent sampling and sampling over a longer amount of time would be more protective and help guard against legacy issues and contamination that might take time to be detected.

For soil contamination - the code reads, “The minimum number of samples to be collected is ten from the background reference population and ten from each distinct area of contamination”. Is this number of samples protective enough and thorough enough due to the nature of this type of oil and gas operation or should more samples be required? How does DEP ensure that proper sample locations are selected for sampling contamination? What kind of independent testing will be conducted by DEP for larger spills? Where are those measure and protocols outlined?

For groundwater contamination, the code reads, “On each onsite well, eight samples shall also be collected during the same eight-quarter period.” Due to the nature of the chemicals and groundwater movement over time, required sampling for only two years after an incident could lead to legacy pollution that goes undetected. Longer sampling requirements should be required due to the highly toxic nature of the materials used at the oil and gas operations.

25 § 250.707(b)(1)(iii) reads – “For groundwater attainment determination at each compliance monitoring well, subparagraph (i) or (ii) shall be met in addition to the attainment requirements in § 250.702 and § 250.704 (relating to general attainment requirements for groundwater). Seventy-five percent of all samples collected within each monitoring well over time shall be equal to or less than the Statewide health standard or the limit related to PQLs with no individual sample exceeding both of the following: (A) Ten times the Statewide health standard on the property. And B) Two times the statewide health standard beyond the property boundary.

These standards are not protective of public health, since these highly industrial processes are taking place so near groundwater that is used by the community. Rural areas rely on groundwater for their water supply so because of this close nexus of industry to rural water supply, more protective measures need to be in place to better protect the public. And again, if there are no health standards for some of the chemicals used by the industry, then the public is also not protected due to inadequate standards. How does DEP rectify this issue?

Because methane is considered “naturally occurring”, it also appears that through this code, migration of this substance will not be regulated as heavily as non-naturally occurring constituents. How does the Dept. plan on ensuring gas migration issues that are common, are addressed and the public is protected? What long term monitoring is required by DEP?

§ 250.704. General attainment requirements for groundwater. (a)For any standard selected, the attainment demonstration for the groundwater media shall be made at the point of compliance as defined in Subchapters B—D (relating to background standards; Statewide health standards; and site-specific standards).

Comment: As mentioned above, how does DEP reconcile the point that there are not statewide health standards for all of the contaminants that are used in the drilling process? (1156)

Response: The Department believes that the 42-gallon cutoff in paragraph (c)(1) is appropriate.

As an initial matter, spills or releases of any size that pollute or threaten to pollute the water of the Commonwealth must be remediated in accordance with paragraph (c)(2), which requires demonstration of attainment of Land Recycling Act standards in a defined process and timeframe. The Department notes that “waters of the Commonwealth” expressly includes groundwater, so rural water supplies should not be impacted by paragraph (c)(1). See response to comment 1785.

Paragraph (c)(1) does not absolve the operator from cleaning up the spill or release, but

acknowledges the limited impact likely to be caused by a small release that does not pollute or threaten to pollute the waters of the Commonwealth. All impacted soil must be removed and properly disposed of in accordance with residual waste regulations. For this reason, the lack of Act 2 Statewide health standards for certain substances used at wells sites should not result in public health being at risk – the contamination and contaminated soil must be removed and properly managed. The Department notes that if the operator wishes to have relief from liability under Act 2, that option is still available to address small spills, but necessarily requires more effort.

The Department’s storage tank program allows releases of petroleum up to 25 gallons to an aboveground surface without reporting to the Department, so long as the operator has control over the release, the release is completely contained and, within 24 hours of the release, the total volume of the release is recovered or removed (see, 25 § 245.1, definition of “reportable release”). These fairly common “excavation remediations” were the genesis for the development of section 250.707(b)(1)(iii)(B). Section 250.707(b)(1)(iii)(B) was added to the Land Recycling Program regulations in 2001 to address situations with petroleum releases where full site characterization was not done in association with an excavation remediation. Because that section deals primarily with petroleum substances, however, it is not an exact fit for oil and gas operations, and so the Department has deleted the cross-reference from the final rulemaking.

If an operator is required to remediate a spill or release for a compound without an Act 2 Statewide health standard, it does not mean that the remediator need not clean up the contamination. In such cases, the only options available to operators will be the background or site-specific standard.

- 1850.** Comment: 78.66(c)(2) – Neither Act 2 nor 25 Pa. Code Chapter 250 includes a statewide health standard for chlorides in soil. While brine releases or spills from oil and gas industry activities occur infrequently, when they do occur there are significant unnecessary complications and costs related to the remediation of these releases or spills that result from the lack of a chloride standard. (1071, 1137, 1174)

Response: The Department has updated the Spill Policy to address issues concerning chloride cleanups in soil and common constituents in materials typically found at oil and gas well sites. As additional issues are identified, they will be addressed through appropriate means (for example, training or additional technical guidance).

- 1851.** Comment: **78.66(c)(2)** – Neither Act 2 nor 25 Pa. Code Chapter 250 includes a statewide health standard for chlorides in soil. While brine releases or spills from oil and gas activities occur infrequently, when they do occur there are significant unnecessary complications and costs related to the remediation of these releases or spills that result from the lack of a chloride standard, therefore our interpretation of this language would allow the Operator to utilize the background methodology referenced in Chapter 250. While this flexibility exists, Commentator disagrees with the Departments requirement for oil and gas industry to clean-up to a standard otherwise intended as a voluntary program to release the landowner from liability. Oftentimes, the Operator is not the landowner and therefore would not benefit from the expense of an Act 2 site investigation and eventual release. (1103)

Response: See response to comment 1850. One of the primary reasons the Department requires remediation of spills is because the operator is typically not the owner of the land where the regulated substance is spilled or released. It is simply unreasonable to leave behind

contaminants posing a health risk as a result of oil and gas operations on another person's property. The primary benefit to an operator who completes a cleanup under Act 2 is relief from liability under that statute.

- 1852.** Comment: 78.66(c)(2) – As for larger spills, persons who remediate spills at oil and gas sites in Pennsylvania have always had the option to utilize the Act 2 process to obtain liability relief. However, there are no statewide health standards for chlorides, which may be a common constituent of spills related to oil and gas operations. Requiring compliance with Act 2 for brine spills potentially creates an excessive burden and expense for oil and gas operators to develop background or site specific standards of attainment, with uncertain environmental benefit. By the time such standards and cleanup plans are developed, chloride impacts may have naturally attenuated to the point that further remediation is unnecessary or could do more environmental harm than good. This is not in the spirit of Act 2, which was intended to encourage voluntary cleanups that address actual risks and not require that every site be immediately returned to pristine condition. Site specific factors should be reviewed to allow bioremediation and natural attenuation for such spills.

As written, the subsection allows operators to satisfy cleanup obligations through compliance with Act 2, which oil and gas operators have been able to do without this rule. DEP should continue to allow oil and gas operators to utilize Act 2 as a voluntary process. (1153)

Response: See responses to comments 1850 and 1851.

- 1853.** Comment: 78.66(c)(3)(ii) – Revise to state, “...within 15 business days of their discovery.” to be consistent with other notification provisions in this section. (124a, 913)

Response: The Department agrees and has made the requested change.

- 1854.** Comment: 78.66(c)(3) – The Alternate Remediation process first proposed by the Department was intended to establish a simplified, expedited procedure for properly responding to a spill where Act 2 liability protection was not desired. Instead the Department has created a more complicated process that is more onerous than the full Act 2 process because of the restrictive timetables that apply. Section 78.66(c)(3) reflects an alternative approach for remediating spills and releases using either the background or statewide health standard under Act 2 but not the site-specific approach under Act 2. Because all three cleanup standards under Act 2 are designed to be protective of public health and the environment, Commentator requests that the site-specific standard be included as an option under this provision. In addition, Section 78.66(c)(3) contains provisions that do not fully take into account the manner in which characterization and remediation activities may be conducted.

Suggested Language:

(3) For releases of more than 42 gallons or that impact or threaten pollution of waters of the Commonwealth, as an alternative to the requirements in subsection (2), above, the operator or responsible party may remediate a spill or release using the background, Statewide health or site-specific standard under Act 2 in the following manner:

(i) Within 15 business days after the spill or release is reported, the operator or responsible party shall provide an initial written report to the Department that includes, to the extent that the information is available, the following:

- (A) The Substance involved
- (B) The location where the spill or release occurred
- (C) The environmental media affected
- (D) Impacts to water supplies, if any
- (E) Interim remedial actions planned, initiated or completed.

- (ii) The initial report shall also include a summary of the actions the operator or responsible party intends to take at the site to address the spill or release such as a plan for site characterization, to the extent known, and the anticipated timeframes within which it expects to take those actions.
- (iii) After submission of the initial report, impacted environmental media (such as groundwater) not previously reported that are identified or discovered during ongoing interim remedial actions or site characterization shall be reported in writing to the Department within 15 calendar days after their discovery.
- (iv) Within 180 calendar days after the spill or release is initially reported or such later date as may be approved by the Department, the operator or responsible party shall perform a site characterization to determine the extent and magnitude of the contamination and shall submit a site characterization report to the appropriate Department Regional Office describing the findings. The site characterization report shall include a description of any interim remedial actions taken. For a background standard remediation, the site characterization report shall contain information described in 25 Pa. Code § 250.204(b)-(e) (relating to final report). For a Statewide health standard remediation, the site characterization report shall contain information described in 25 Pa. Code § 250.312(a) (relating to final report). For a site-specific standard remediation, the site characterization report shall contain information described in 25 Pa. Code § 250.408 (relating to remedial investigation report).
- (v) The site characterization report required under subsection (iv), above, may serve as a final remedial action report if the remedial actions conducted prior to submission of the site characterization report meet the requirements to attain the background or Statewide health standard or combination thereof under Act 2 except the notice and review provisions.
- (vi) If the site characterization report required under subsection (iv), above, indicates that the interim remedial actions taken did not remediate the release so as to attain the background or Statewide health standard or combination thereof under Act 2, the operator or responsible party must develop and submit a remedial action plan to the appropriate Regional Office of the Department for approval. The plan is due within 45 calendar days after submission of the site characterization report and any supplements thereto to the Department. The remedial action plans should contain the elements described in 25 § 245.31 l (a) (relating to remedial action plan). The Department shall review and approve or disapprove the remedial action plan within 60 days after its receipt.
- (vii) Once the remedial action plan is implemented, the responsible party shall submit a final report to the appropriate Department Regional Office for approval. The Department shall review the final report to ensure that the remediation has met all the requirements of the background, statewide health standard, or site-specific standard or combination thereof under Act 2, except the notice and review provisions.
- (viii) Relief from liability pursuant to Act 2 will not be available to the responsible party, property owner or person participating in the cleanup.
- (ix) Remediation conducted under this section shall not be required to meet the notice and review provisions under Act 2 except as described in this section.
- (x) An operator or responsible party remediating a release pursuant to this paragraph may elect to utilize Act 2 at any time. (1137, 1174)

Response: The Department acknowledges the comment. Regarding the alternative process, §§ 78.66(c)(3) and 78a.66(c)(3) have been removed from the regulations. Sections 78.66(c)(2)(i-vii) and 78a.66(c)(2)(i-vii) have been modified to reflect this change.

- 1855.** Comment: 78.66(c)(3) – The Alternate Remediation process proposed by the Department was intended to establish a simplified, expedited procedure for properly responding to a spill where Act 2 liability protection was not desired. Instead the Department has fashioned a process that is more onerous than the full Act 2 process because of the restrictive timetables that apply. (1103)

Response: The Department acknowledges the comment. Regarding the alternative process, 78.66(c)(3) and 78a.66(c)(3) have been removed from the regulations. Sections 78.66(c)(2)(i-vii) and 78a.66(c)(2)(i-vii) have been modified to reflect this change.

1856. Comment: 78.66(c)(3) – The word “of” appears to be missing between “pollution” and “waters” in the introductory clause. (852a)

Response: The Department agrees, but 78.66(c)(3) and 78a.66(c)(3) have been removed from the regulations.

1857. Comment: 78.66(c)(3)(iii) – 180 days is too long of a time to wait for characterization of spills or releases. Reports should be provided within 45 days. (153)

Response: Proper site characterization can sometimes be a lengthy process, including some waiting time for laboratory analysis to be completed and results reported back to the operator. The site characterization timeframe is modeled on the Department’s storage tank Corrective Action Process regulations in 25 Chapter 245, Subchapter D (relating to corrective action process for owners and operators of storage tanks and storage tank facilities and other responsible parties). Thousands of storage tank cleanups have been completed using this process since the regulations were enacted in 1993.

1858. Comment: 78.66(c)(3)(iv) – The antecedent for “This report” should be specified. We assume that “this report” refers to the “site characterization report” discussed in subsection (c)(3)(iii), but the sentence could be clarified with a specific reference to the “site characterization report.” (852a)

Response: The Department agrees and has made the suggested clarification.

1859. Comment: 78.66(c)(3)(iv) – The second sentence refers to notice and review provisions of “these standards.” We assume that “these standards” the background and statewide health standard referred to in the preceding sentence, but the reference could be clearer if the background and statewide health standards were referenced explicitly. (852a)

Response: Regarding the alternative process, §§ 78.66(c)(3) and 78a.66(c)(3) have been removed from the regulations. The second sentence referred to by the commenter under (iv) has also been removed.

1860. Comment: 78.66(c)(3)(iv) – This seems unclear when referencing meeting “all of the requirements” of an Act 2 cleanup. Act 2 provides that a cleanup must be completed to the standards under that law if a person seeks a release of liability for conducting further cleanup activities. Although there is no express provision authorizing it, the Department has interpreted Act 2 as allowing persons that voluntarily cleanup sites to only address pollutants for which the person seeks a liability release (To the contrary, Commentator believes that Act 2 can fairly be read as requiring a site remediation to comply with a cleanup standard or combination thereof, but that any such cleanup must address all known contaminants on the site for there to be a release of liability).

The Department has further taken the position, at least with respect to voluntary cleanups, that the agency will not take an enforcement action to ensure a comprehensive cleanup of contaminants even where the agency is aware that the owner is not cleaning up all contaminants on a site. With that complicated background, it is unclear what the Department means when the proposed regulation states that the cleanup must meet “all of the requirements” of an Act 2 cleanup –

particularly where Act 2 has been touted as being a “voluntary” compliance statute containing no “requirements.” Commentator supports a provision requiring that any cleanup of a spill or release demonstrate that each pollutant from that spill or release be remediated to an Act 2 standard. (852a)

Response: The Department acknowledges the comment. Regarding the alternative process, §§ 78.66(c)(3) and 78a.66(c)(3) have been removed from the regulations. All regulated substances that are spilled or released from oil and gas operations must be remediated under § 78.66(c).

- 1861.** Comment: 78.66(c)(3)(iv) – The second sentence seems to exempt the party responsible for a release from portions of Act 2’s notice and review provisions. Although some remedial actions may be exempt from certain of Act 2’s notice and review requirements if they are completed within 90 days of release (See Act 2, sections 302(e)(4) and 303(h)(4)), it does not appear that the exemption contained in subsection (c)(3)(iv) is so limited. Statutory requirements may not be limited or changed by regulation. We are not aware of any provision in Act 13 or any other statute that would allow for the waiver of Act 2’s notice and review requirements. Without such authority, the second sentence of subsection (c)(3)(iv) should be stricken. (852a)

Response: Regarding the alternative process, §§ 78.66(c)(3) and 78a.66(c)(3) have been removed from the final-form rulemaking. The second sentence referred to by the commenter under (iv) has also been removed.

- 1862.** Comment: Subsection (c)(3)(v) should mandate what must be included in a remediation plan Subsection (c)(3)(v), the last sentence, should replace the word “should” with the word “shall,” so that it would read, “Remedial plans shall contain the elements...” Replacing the word “should” with the word “shall” will eliminate any ambiguity in the regulation by making it clear that the remedial plans must include the required elements. (852a)

Response: This subsection references § 245.311(a), which states that the remedial action plan must contain certain elements, as necessary, based on the nature, extent, type, volume or complexity of the release. The language of the subsection acknowledges that not all elements of § 245.311 will be included in every remedial action plan, depending on those listed factors.

- 1863.** Comment: **78.66(c)(4)** – This “alternative” to Act 2 creates a lengthy, costly, and onerous process that does not provide a reasonable alternative to Act 2 in cases where substances spilled are benign and/or low volume. The rule must allow operators to request a reasonable alternative process in such cases.

Suggested Regulatory Change and Language:

Remove all references to regulated substances above and add the following new subsection 78.66 (c)(4):

NEW 78.66(c)(4) - For any releases of more than 42 gallons or that would result or create a danger of pollution of waters of the Commonwealth, operators may propose an alternative to (2) and (3) above within 10 days of becoming aware of the spill or release where: the spill has been contained and controlled through appropriate measures, including but not limited to installation of temporary diversion ditches, deployment of absorbent materials, excavation and stockpiling of soils as appropriate, and where the operator submits a remedial action plan that describes the alternative in sufficient detail for the Department to determine whether the alternative satisfies the goals of the Act and this Chapter. The Department will make a determination whether to allow the alternative method within 15 days of receipt. (1153)

Response: Regarding the alternative process, §§ 78.66(c)(3) and 78a.66(c)(3) have been removed from the final-form regulations.

The Department's Act 2 standards have been applied to thousands of successful remediations in the Commonwealth since 1995 and are nationally recognized as providing a sound risk-based remedial action system. Application of these standards to spills and releases to the oil and gas industry is no less appropriate than application of these standards to any other spills and releases.

The rulemaking specifically provides flexibility to oil and gas operators to address small spills and releases and fully-contained releases in a flexible and straightforward manner.

- 1864.** Comment: Act 2 compels oil and gas operators to utilize a standard that is voluntary for all other entities. These procedures should continue to be available for operators choosing to use them to obtain relief from liability; however they should not be a requirement at oil and gas well sites. Chlorides are among the most common component of spills on well sites, but Act 2 provides no soil statewide health cleanup standards. Without the presence of a cleanup standard, in addition to the requirement to utilize Act 2 procedures, oil and gas operators will experience excessive and unnecessary costs without any environmental benefit. (1103, 1135)

Response: The Department has updated the Spill Policy to address issues concerning chloride cleanups in soil and common constituents in materials typically found at oil and gas well sites. As additional issues are identified, they will be addressed through appropriate means (for example, training or additional technical guidance).

The Department's Act 2 standards have been applied to thousands of successful remediations in the Commonwealth since 1995 and are nationally recognized as providing a sound risk-based remedial action system. Application of these standards to spills and releases to the oil and gas industry is no less appropriate than application of these standards to any other spills and releases.

§ 78.67 Borrow pits

- 1865.** Comment: This section does not pertain to conventional operators as well as it does not "provide increased protection of public health, safety and the environment. " Very rarely does a smaller conventional operator open a large borrow pit to use for roadways, well pads and such. The borrow pits on small conventional well sites typically become the drill/frac pit. Any rock quarried from these 60'x100' pits are used right on site as well as the roadway.

This section really does not even pertain to the unconventional sites. I would think that almost 100% of the stone and rock for the pad and sites are quarried off site and trucked in. It also provides that the pit be reclaimed within 9 months after completion of drilling. Let me remind you, that current PADEP law requires the entire well site to be reclaimed 9 months after completion of drilling. We see simply more redundancy. This section needs removed; it has absolutely no place in these revisions. (145)

Response: Sections 78.67 and 78a.67 are intended to ensure that all borrow pits constructed in support of conventional and unconventional oil and gas development are constructed in a responsible manner that protects public health, safety and the environment and ensures that borrow pits are restored after completion of drilling. The sections are not rendered superfluous by typical industry operation, nor are they redundant of other restoration

obligations. Because a borrow pit may service one or several well pads other than the pad on which it is located, §§ 78.67(c) and 78a.67(c) provide for restoration timelines related to either the completion of drilling or the expiration of well permits. As an alternative to restoration upon either of these triggers, the sections allow an operator to seek a noncoal surface mining permit or alternative relevant exemption.

1866. Comment: Our watershed has had new borrow pits and others expanded to service the gas industry. We recommend the adoption of this section as it will benefit our watershed. (1035)

Response: The Department acknowledges the comment.

1867. Comment: With the addition of so many small borrow pits dotting our rural landscape servicing the gas industry, we certainly appreciate standardizing, identification and restoration practices throughout the Commonwealth. We recommend that in such locations, that beneficial use be investigated concerning the application of certified uncontaminated drill cuttings in the use of blending with borrow pit soils in order to aid in restoration of the previous land contours and possible re-vegetation. The Department needs to encourage beneficial use of uncontaminated drill cuttings. While it may be ideal to utilize such as material in the manufacturing of asphalt pavement and concrete products, lacking endorsement by PennDOT as an approved material will greatly hamper the practical use of uncontaminated drill cuttings as applied to both local and state roads. There may be a practical way through the use of uncontaminated drill cuttings to better restore borrow pits and aid in stabilization and creating minimal erosion. With consideration given to our suggestion, we recommend this provision at minimum as written. (660a)

Response: The Department acknowledges the comment. Beneficial reuse of uncontaminated drill cuttings is regulated under 25 Pa. Code Chapter 287 and is beyond the scope of this rulemaking.

1868. Comment: Borrow Pits: § 78.67(a) - The end of this subsection requires the operator of a borrow pit to operate, maintain and reclaim the site in compliance with the environmental performance standards of non-coal mining regulations and with the erosion and sediment control regulations and “other applicable laws.” It is suggested that either these “other applicable laws” be identified or that this all-encompassing reference be deleted. (913, 124a, 1085)

Response: The purpose of the subsection is to notify operators that laws other than those listed may apply. The laws that apply will depend on the type, scope and location of the activity being conducted.

1869. Comment: 78.67: Borrow Pits- The Board should clarify language in 78.67(a). Sections 78.67(c)(1) and (2) adequately ensure restoration of borrow pits, while § 78.67(a) requires the operator to comply with Chapter 102 and the performance standards in Chapter 77. (1085)

Response: The Department disagrees that this clarification is needed. Sections 78.67(a) and 78a.67(a) state that while certain pits are exempt from the Noncoal Surface Mining Conservation and Reclamation Act (NCSMCRA) permitting requirements, those facilities must still comply with environmental protection performance standards set forth in Chapter 77, Subchapter I, Chapter 102 and other applicable laws. Sections 78.67(c) and 78a.67(c) specify that there exists an obligation to either restore, or seek alternate permitting for, facilities that are for any reason no longer exempt under Section 3273.1, but do not provide standards the borrow pits must meet.

1870. Comment: 78.67(b) - Operators should not have to register borrow pits whether they currently exist or planned. Borrow pits normally are not put to use until test pits are dug for the presence of adequate material. This makes registering the borrow pit prior to construction impossible. What is the reasoning of this requirement? (1085)

Response: Sections 78.67(b) and 78a.67(b) require registration of the location of existing borrow pits to facilitate their inspection and regulation. Borrow pits are defined in Chapters 78 and 78a as “An area of earth disturbance activity where rock, stone, gravel, sand, soil or similar material is excavated for construction of well sites, access roads or facilities that are related to oil and gas development.” The digging of test pits to determine the presence of adequate material is not considered excavation for construction of well sites, access roads or related facilities.

1871. Comment: Where does the pit have to registered, Greenport? (1085)

Response: Sections 78.67(b) and 78a.67(b) require registration to the Department by providing GPS coordinates, county and township location. Operators shall register the information electronically through the Department’s website.

1872. Comment: A borrow pit or an earth disturbance created by excavation for oil and gas construction activities needs to be defined by size (78.1) and regulated accordingly by permit. Based on size and location, these pits have consequences to our water and land. It is not enough to just register location [78.67 (b)]. (1085)

Response: Sections 78.67 and 78a.67 provide environmental performance standards for borrow pits through incorporation of 25 Pa. Code Chapter 77, Subchapter I, and 25 Pa. Code Chapter 102. Without a valid well permit, operation of a borrow pit requires a permit under the Noncoal Surface Mining Conservation and Reclamation Act.

1873. Comment: 78.67 (b) – Section 78.67(b) should be deleted. Sections 78.67(c)(1) and (2) provide adequate authority for the Department to ensure restoration of the borrow pit. In addition, Section 78.67(a) requires an operator who owns a borrow pit to operate, maintain and reclaim the borrow pit in accordance with the performance standards contained in Chapter 102 and Chapter 77. Suggested Language: Delete Subsection 78.67(b) (1137, 1174, 1085)

Response: Unlike §§ 78.67(a) and 78a.67(a) and 78.67(c)(1)-(2) and 78a.67(c)(1)-(2), §§ 78.67(b) and 78a.67(b) require operators to provide location information for borrow pits. The Department has determined that the registration process is reasonable and appropriate to facilitate the inspection and regulation of borrow pits.

1874. Comment: Restoration of borrow pits should be accomplished without two-year extensions of timelines and according to best practices [78.67(c)(2)]. (640, 1098)

Response: The Department believes that the restoration extension described under § 3216 is appropriate to apply to borrow pits. Additionally, Sections 78.67(a) and 78a.67(a) require the operator to operate, maintain and reclaim borrow pits in accordance with the performance standards established in 25 Chapter 77 Subchapter I and 25 Chapter 102 which describe best practices for site reclamation and restoration.

1875. Comment: § 78.67 (c)(2) - This subsection is very confusing. § 78.67 (c)(2) incorporates by reference § 78.65(d) which incorporates by reference § 78.64a It seems to require the operator of a

borrow pit that no longer meets the well permit/registration and bonding requirements of the Oil and Gas Act to obtain a non-coal surface mining permit unless an exemption applies and they can get a 2-year extension of the restoration requirements approved. And this is all required because § 3273.1 of the law says that they do not have to comply with the non-coal mining law if they have a well permit/registration and a bond, and comply with these Chapter 78 regulations. It is strongly recommended that this process and these requirements be simplified. (913)

Response: Sections 78.67(c)(2) and 78a.67(c)(2) only apply when borrow pits no longer meet the exemption conditions afforded such pits under Section 3273.1 of the Oil and Gas Act. These subsections provide that a borrow pit may continue to be operated rather than be restored in any of three circumstances: the borrow pit may fall under a separate exemption, the operator may get a Noncoal Surface Mining Permit, or the operator may get an extension of site restoration requirements under §§ 78.65(c) and 78a.65(c), which would include borrow pit restoration as part of that approved extension.

1876. Comment: The Commentator recommends an exemption for Small Businesses from this section because the environmental impact does not provide any justification to impose new obligations on small oil and gas operations that are not imposed on other industries. (1135)

Response: The Department declines to carve an exemption for small businesses. This section does not create any new requirements except for registration through the Department's website. Instead, this section clarifies the existing statutory and regulatory requirements for these facilities. The Department has determined that the registration process is reasonable and appropriate to facilitate the inspection and regulation of the borrow pits.

1877. Comment: PADEP proposes regulation of requiring GPS coordinates for all pits. In conventional operations, pits are always immediately adjacent to a well. The requirement is unnecessary. I propose an exemption for conventional wells less than 3,000' deep. (450)

Response: The Department has determined that the registration process is reasonable and appropriate to facilitate the inspection and regulation of the borrow pits.

1878. Comment: 78.67 – We support the proposed new regulation at § 78.67. However, we request the proposed regulation be strengthened by referencing the proposed site restoration standards of § 78.65, and by including a PADEP review and approval process including public review.

We recommend that the regulation clarify that waste may not be stored in, disposed of or buried in a borrow pit. We do not support a two-year extension of the borrow pit restoration requirements. If the EQB disagrees with our recommendation to remove the two year extension provision for borrow pit restoration, we request that the Board explain under what circumstances an extension would be prudent and what criteria would be used by the PADEP to make that determination.

We recommend that § 78.67 be revised as follows:

(a) An operator who owns or controls a borrow pit that does not require a permit under the Noncoal Surface Mining Conservation and Reclamation Act (52 P. S. §§ 3301—3326), under the exemption in section 3273.1(b) of the act (relating to relationship to solid waste and surface mining), shall operate, maintain and reclaim the borrow pit in accordance with the performance standards in Chapter 77, Subchapter I and Chapter 102 (relating to environmental protection performance standards; and erosion and sediment control), and other applicable laws. Waste shall not be stored in, disposed of or buried in a borrow pit. (1143)

(b) Operators shall register the location of their existing borrow pits by _____, (Editor's Note: The blank refers to 60 calendar days after the effective date of adoption of this proposed rulemaking.) by providing the Department, in writing, with the GPS coordinates, township and county where the borrow pit is located. The operator shall submit an application for the use of a new borrow pit to the Department for review and approval prior to construction. The application shall be submitted electronically to the Department through its web site. The permit application shall be immediately made available to the public on the Department's website. The Department shall provide a 30-day public comment period on the proposed permit application. After considering comment received, the Department shall issue a decision on the permit. (1143)

(c) Borrow pits used for the development of Oil and Gas Operations that no longer meet the conditions under section 3273.1 of the act must meet one of the following:

(1) Be restored within 9 months after completion of drilling all permitted wells on the well site or 30 calendar days after the expiration of all existing well permits on the well site if the borrow pit is to be continually utilized for all permitted wells, whichever occurs later, to the site restoration standards of § 78.65. (1143)

(2) Obtain a noncoal surface mining permit for its continued use after the completion of drilling all permitted wells, unless relevant exemptions apply under the Noncoal Surface Mining Conservation and Reclamation Act and regulations promulgated thereunder. (1143)

Response: The Department declines to add language regarding waste, as such prohibition would be unnecessarily duplicative of regulations related both to waste and to noncoal mining.

The Department disagrees with the suggested change in the language in sections 78.67(b) and 78a.67(b) as the 2012 Oil and Gas Act does not require a 30-day comment period for borrow pits.

The Department intends to provide an effective date for adoption of the rulemaking. The Department does not agree with the recommended revisions to sections 78.67(c)(2) and 78a.67(c)(2). The Department believes that the restoration extension described under § 3216 of the 2012 Oil and Gas Act is appropriate to apply to borrow pits. Borrow pits may remain unrestored when servicing properly permitted and bonded wells including the two-year extension of the restoration requirement pursuant to sections 78.65(c) and 78a.65(c). The circumstances under which an extension would be prudent and the criteria used by the Department to make a determination are listed under Sections 3216(g)(1)(i)-(ii) of the Oil and Gas Act. Additionally, Sections 78.67(a) and 78a.67(a) require the operator to operate, maintain and reclaim borrow pits in accordance with the performance standards established in 25 Pa. Code Chapter 77, Subchapter I and 25 Pa. Code Chapter 102 which describe best practices for site reclamation and restoration.

1879. Comment: Conventional well operations often include a series of wells in relative close proximity. For this reason, borrow pits should remain active for the life of a project area, not for the construction of a single well pad. Borrow pits should also be allowed continued use for more than one unconventional well pad. (411, 606, 606a, 1113, 1115a, 1118, 1120, 1135, 1176-1188)

Response: Sections 78.67 and 78a.67 of the final-form rulemaking have been revised to clarify that borrow pits may remain unrestored when servicing properly permitted and bonded

wells.

§ 78.68 Oil and gas gathering lines

- 1880.** Comment: **78.68** – Oil and gas gathering lines are not within the traditional scope of Chapter 78, as provided under section 78.2, which limits the scope to rules for the drilling, alteration, operation and plugging of oil and gas wells and for the operation of a coal mine in the vicinity of an oil or gas well. Act 13’s reference to “gathering lines” does not provide a basis for enlarging the scope of Chapter 78 to include them. Delete section 78.68 in its entirety. (1153)

Response: Chapters 78 and 78a are being promulgated under the authority of several environmental statutes, not just the 2012 Oil and Gas Act. The construction, operation, maintenance, repair, and removal of oil and gas gathering and well development pipelines can impact the health, safety and welfare of the public and the environment. Pennsylvania environmental statutes that provide authority for §§ 78a.68, 78a.68a and 78a.68b include the Clean Streams Law, the Dam Safety and Encroachments Act, and the Solid Waste Management Act. The Department also notes that section 3218.4(a) of the 2012 Oil and Gas Act requires that all “buried metallic pipelines shall be installed and placed in operation in accordance with 49 CFR Part 192, Subpart I (relating to requirements for corrosion control).” Because gathering lines can carry either natural gas or hazardous liquids, section 78a.68(g) of the final-form rulemaking also allows for compliance with 49 CFR Part 195, Subpart H as well as Part 192.

- 1881.** Comment: PA DEP should require that all pipelines constructed in hydric soils, Acidic soils, or in a location parallel and upslope of a headwater stream have clay dams placed in the trench to ensure that ground water does not follow the pipeline and drain to a lower point. There have been pipelines constructed in Pennsylvania that have intercepted ground water feeding EV streams and conveying that water away from the stream to be discharged at a lower location thereby drying the stream. In addition, Gathering lines have been built that convey Acidic water in the pipe trench from upland areas and now discharge it at a low point in the pipeline causing a polluttional discharge in a nearby waterway. (92a)

Response: The Department has amended this subsection to clarify that oil and gas gathering line activities must comply with regulations in Chapters 102 and 105. The Department’s Erosion and Sediment Pollution Control Program Manual provides for clay trench plugs where piping along stream corridors may impact groundwater hydrology.

- 1882.** Comment: As noted in the Definition section, the proposed definition of a “gathering” pipeline is at odds and inconsistent with that term as defined under applicable state and federal law. Pipeline activities that create any earth disturbance or require stream crossings, for this industry and all others, are sufficiently regulated in accordance with 25 Pa. Code Chapters 102 and 105. There is no need for the Department to create a new term that will create confusion and impose burdens on oil and gas operators that are unique to this industry and unjustified by any clear environmental benefit. Remove the term throughout the rule. (1135)

Response: The Department has determined that regulation of gathering pipelines, as defined in Chapter 78a, is appropriate and necessary to protect the health, safety and welfare of the public and the environment.

- 1883.** Proposed section 78.68 should be stricken from any rule that applies to conventional operations because they are not justified by any compelling environmental need and would impose unnecessary

costs and burdens on conventional operations, which already comply with applicable provisions in Chapters 102 and 105. (1135)

Response: The Department agrees and has removed these gathering line requirements from Chapter 78.

- 1884.** Comment: The Department has no authority to regulate the safety of gathering lines, which is exercised exclusively by other state and federal agencies. (1135)

Response: See response to comment 1886.

- 1885.** Comment: Create a public online zoom able map of all gathering lines, pipelines and condensation stations, and related facilities. (156, 566)

Response: The Department agrees with this comment and is in the process of developing this capability. Chapters 78 and 78a require information sufficient to allow the Department to create such a map.

- 1886.** Comment: Ensure that all gathering pipelines are included in the ONE CALL 811 system to avoid future deadly accidents during excavation work. (901, 939)

Response: The Underground Utility Line Protection Law (Act 287 of 1974) requires that gathering lines or facilities regulated as onshore gathering lines under the federal Pipeline Safety Act and subject to federal regulations at 49 CFR § 192.614 participate in Pennsylvania's One Call System. Section 3218.5(a) of the 2012 Oil and Gas Act requires owners and operators of all natural gas gathering lines to comply with the Section 2(5)(i.1) of the Underground Utility Line Protection Law, which requires a pipeline owner or operator to provide certain information in response to a timely request from an excavator. The Department does not administer or enforce the One Call System.

- 1887.** Comment: We support the DEP's decision to promulgate regulations for above-ground pipelines carrying gas or wastewater, for fresh water components, for horizontal directional drilling for oil and gas pipelines and for water rights. (907)

Response: The Department acknowledges the comment.

- 1888.** Comment: We applaud inclusion of Oil and Gas Gathering Lines (78.68) in the proposed regulations. However, the definition needs to distinguish between production lines and gathering lines. Smaller gathering lines that feed into larger gathering lines also need to be included (78.1). (640, 1098)

Response: The Department does not use or define the term production line in the regulations. Gathering lines are not differentiated by size and the requirements of § 78a.68 apply to all such lines.

- 1889.** Comment: According to a recent study by the League of Women Voters, Pennsylvania is one of 2 states with totally ineffective gas line regulation and inspection, mainly because the laws are weak or non-existent. Include regulations for production pipelines and those carrying fracking, reused, flowback, produced, and/or waste water. We need to fix that. (1003, 1098)

Response: The Department acknowledges the comment. Chapter 78a regulates both

gathering pipelines used to transport natural gas, and well development pipelines used to transport water and wastewater during well development.

- 1890.** Comment: Pipeline regulations and inspections should be applied universally, and so-called “high-impact” or “low-impact” area designations should be eliminated. (1086)

Response: Chapter 78a regulates all oil and gas gathering pipelines and does not distinguish between “high-impact” or “low-impact” areas.

- 1891.** Comment: Corrosion control requirements as stipulated in Act 13 of 2012 are included in 78.68(h). In addition, it is necessary to add another provision to extend PA ONE CALL to this section. Specifically, we recommend this rulemaking’s regulatory language be inclusive regarding the necessity of owners and operators of all gathering lines, inclusive of all Classes, 1-2-3-4, both conventional and unconventional be required to comply with the Underground Utility Line Protection Law (UULP). Third party damage to gathering lines may create unnecessary environmental impacts. These situations are worthy to avoid. Excavators do not want to commence project work lacking knowledge of what may be below his worksite/project. They do not want to have issues, injuries, lost time/downtime, insurance claims and the cleanup afterwards. These lines are not currently protected under the UULP. Currently, there are only 45 of 120 PIOGA Producer members; of which about half of Shale Gas Operators currently comply with the UULP. As a matter of public health and safety and environmental protection, we recommend that mandatory participation in the UULP be required for all Classes 1- 2-3-4 of conventional and unconventional gathering lines. (660a)

Response: See response to comment 1886.

- 1892.** Comment: The Department is encouraged to develop additional management practices to specifically address location, site preparation, and corridor management for oil and gas gathering lines installed in Exceptional Value or High Quality watersheds, in order to minimize forest fragmentation and other surface disturbance and further reduce potential for accelerated erosion and sedimentation. (997a)

Response: The Department acknowledges the comment.

- 1893.** Comment: **78.68(a):** Gathering line construction is an “oil and gas operation”, as defined in Act 13, and erosion and sediment control requirements for oil and gas operations are addressed in Section 78.53. Suggested Language: Delete Subsection 78.68(a). (1071, 1137, 1147, 1164, 1174)

Response: The Department provides requirements specific for gathering lines in § 78a.68, including measures to ensure compliance with Chapters 102 and 105 during construction that are not addressed in § 78a.53. These specific requirements are appropriate to notify operators of gathering pipelines of particular measures necessary to protect the health, safety and welfare of the public and the environment. Specific requirements for gathering lines for conventional wells have been deleted from Chapter 78 in the final rulemaking.

- 1894.** Comment: Delete subsection 78.68(a). If the Department insists on the proposed section, we ask that the Department clarify what would qualify as “supporting facilities.” (1071, 1147)

Response: The examples provided following use of the term “supporting facilities” provide clarification as to the type of facilities (e.g., pipe storage yards, borrow and disposal areas, access roads) that may typically support the construction/installation of oil and gas gathering

lines.

1895. Comment: Installation practices and environmental considerations for gathering lines must be consistent with current best practices for interstate transmission lines given their size and the pressure of natural gas transported [78.68(b)-(c)]. Because of the tendency for sink holes to form in carbonate geology present in our Commonwealth, permits for gathering lines must include this factor to prevent problems with pipeline integrity. (640, 1098)

Response: Chapters 78 and 78a include provisions to ensure the safe transport of natural gas through gathering lines, including the requirement for buried metallic gathering pipelines to comply with federal safety standards in 49 CFR Part 192 or 195. The Department has also imposed limitations on locating certain oil and gas operations in areas with carbonate geology (e.g., centralized impoundments, tank storage areas), but does not impose such limitations on gathering pipelines. The presence of carbonate geology may be considered by the Department when issuing permits under Chapters 102 or 105.

1896. The permitting process should limit the number of gathering lines in a given area so that the footprint and risk of the infrastructure is minimized. Without consolidation requirements, the cumulative impact of independent gathering lines from various operators in the same area is monumental. (640, 1098)

Response: The Department requires compliance with Chapter 102 (relating to erosion and sediment control) and Chapter 105 (related to dam safety and waterway management) during construction of gathering lines to ensure that cumulative impacts do not pose an unacceptable risk to the environment.

1897. Comment: Soil segregation is required during construction of gas gathering lines pursuant to § 78.68(c)(1). We are not opposed to a rule that requires reasonable segregation of topsoil and subsoil as live topsoil is important for stabilization and restoration success. However, the strict mandate to segregate soil in all circumstances is not feasible. Notably, these proposed standards for unregulated gathering lines go above and beyond what the Federal Energy Regulatory Commission requires for construction of regulated transmission pipelines. The EQB fails to explain its rationale for imposing more costly and burdensome standards on unregulated facilities than the federal government imposes on regulated pipelines. We recommend that the EQB modify the Proposed Rule by removing the strict requirements for soil segregation and replacing them with standards requiring reasonable segregation of topsoil and subsoil to allow flexibility during construction operations. (1140)

Response: The segregation of topsoil is critical to successful restoration of all areas disturbed for oil and gas gathering pipeline construction and reduces the need for, the cost of and the additional impact from importing topsoil to restore healthy vegetation after construction. As the commentator notes, oil and gas gathering lines are not regulated by the Federal Energy Regulatory Commission (FERC). FERC regulates interstate natural gas transmission lines and provides guidelines for erosion control, revegetation and maintenance that recommend the segregation of topsoil during construction in agricultural and residential areas, and other areas when requested by the landowner. FERC also provides guidelines for the successful revegetation of soils disturbed by project-related activities. To the extent the topsoil segregation requirements in this final rulemaking go beyond those in FERC's guidelines, such requirements are necessary to comply with Pennsylvania environmental laws.

1898. Comment: 78.68(c)(1) – Topsoil segregation requirements is contrary to land owner and public land management agency’s continued efforts to minimize ROW widths. A performance based alternative rather than a prescriptive approach should be taken by the DEP. (1154, 1155)

Response: See response to 1897

1899. Comment: Importing topsoil onto sites where re-vegetation attempts have not been successful should be allowed. (1154, 1155)

Response: Importing topsoil is permitted under Section 78a.68(c)(4).

1900. Comment: 78.68(c)(1) – Topsoil segregation under frozen conditions is not feasible. (1154, 1155)

Response: While topsoil segregation may be more difficult when the ground is frozen, segregation can occur and is important to ensuring effective restoration.

1901. Comment: 78.68(c)(1) will significantly increase the cost of pipeline installations including additional ROW acquisition, timber damages, stumping, timber cutting, stripping and piling topsoil, maintaining the soil separately, re-vegetation, inspections and E&S controls. This section should be changed to be consistent with FERC guidelines for soil segregation. The section should be revised to state that topsoil and subsoil must remain segregated in the following areas until restoration 1. Actively cultivated or rotated crop lands and managed pastures, 2. Residential areas, 3. Hayfields and 4. Other areas at the landowner’s or land management agency’s request. (1154, 1155, 1164)

Response: See response to 1897.

1902. Comment: 78.68(c)(1) does not adequately address topsoil depth and should be modified to state “Topsoil and subsoil must remain segregated until restoration provided, however, that if topsoil is less than 12 inches, a 12-inch layer which includes the topsoil and the unconsolidated materials immediately below the topsoil shall be removed, segregated, conserved and replaced as the final surface soil layer. If the topsoil and unconsolidated material measure less than 12 inches, the topsoil and unconsolidated material shall be removed, segregated, conserved and replaced as the final surface soil layer.” This language is consistent with other DEP regulations at §§ 77.512(c), 87.97(c), and 90.97(c). (1154, 1155)

Response: See response to 1897.

1903. Comment: We are pleased that DEP has added § 78.68 to describe regulations related to oil and gas gathering lines. (1157)

Response: The Department acknowledges the comment.

1904. Comment: We support § 78.68(c)(2), stating that topsoil and subsoil must be prevented from entering watercourses and bodies. (1157)

Response: The Department acknowledges the comment.

1905. Comment: We recommend that § 78.68(c)(2) be amended to describe the requirements that must be followed to minimize risk of sedimentation events. (1157)

Response: The Department has revised §78a.68 to clarify that an operator of an oil and gas

gathering line from an unconventional well must comply with Chapters 102 and 105. The requirements for gathering lines have been removed from Chapter 78 for conventional oil and gas wells.

- 1906.** Comment: Section 78.68(c)(2) requiring prevention of topsoil and subsoil from entering watercourses and bodies of water is already addressed in 25 Pa. Code Chapter 105 and thus is redundant and should be deleted. (1154, 1155)

Response: Section 78a.68(c)(2) is not redundant with the requirements of Chapter 105.

- 1907.** Comment: 78.68(d) – We request that the Department clarifies how an operator would demonstrate compliance with this subsection. We suggest that the measureable requirement of this section be removed as it could unnecessarily require extensive, costly pre/post construction soil compaction analysis. (660a, 1071, 1174)

Response: The Department agrees. The section has been modified to address the comment. See the response to comment 1908.

- 1908.** Comment: § 78.68(d) Suggested amendatory language: Backfilling of the gathering line trench shall be conducted in a manner that minimizes soil compaction to ensure that vegetative growth can be established during restoration. (1147, 1164, 1174)

Response: The subsection has been modified. The final-form rulemaking subsection now states: “Backfilling of the gathering pipeline trench shall be conducted in a manner that minimizes soil compaction at the surface to ensure that water infiltration will be sufficient to support the establishment of vegetative growth to meet stabilization or restoration requirements.”

- 1909.** The pipeline companies are required to replace wetlands they destroy, but not riparian corridors, which are equally important. We recommend a requirement for operators/pipeline companies to plant new riparian buffers for every acre of riparian buffer they destroyed. This would greatly increase the integrity of our watersheds. NRCS normally requires a 180’ buffer along a stream. So if you calculate a 100’ wide by 180’ long buffer on both sides of a pipeline stream crossing a significant amount of riparian buffer acreage is being lost. We request this recommendation be added to the rulemaking and with that addition we recommend this provision for adoption as written. (660a)

Response: As with any earth disturbance activity, construction of an oil and gas gathering line must be conducted in accordance with the requirements of Chapter 102 (related to erosion and sediment control). Riparian buffers are best management practices typically included as part of post construction stormwater management plan for regulated activities under Chapter 102.

- 1910.** Comment: Provide clarification on what is meant by “jurisdictional floodway.” (1071)

Response: The term “jurisdictional floodway” is intended to mean “floodway” as defined in 25 Pa. Code Chapter 105. The provision has been clarified to remove the word “jurisdictional”.

- 1911.** Comment: 78.68(f) - Requiring that all materials be staged outside the floodway or greater than 50 feet from a water body can sometimes be very difficult to achieve (such as during open

trenching across a creek, where the creek bed materials must be temporarily staged prior to replacement), or may result in additional environmental impacts due to increased hauling distances. We request that language be added to allow for an alternate approach to be considered and approved, depending on site-specific circumstances. (1147, 1171, 1174)

Response: The Department has modified § 78.68(f) to allow staging in the floodway or within 50 feet of a water body if approved in writing by the Department.

- 1912.** Comment: 78.68(g): Gathering line construction is an “oil and gas operation”, as defined in Act 13, and erosion and sediment control requirements for oil and gas operations are addressed in Section 78.53. We support suggested amendatory language and in turn deleting subsection 78.68(g). (1071, 1147, 1154, 1155, 1164 1174)

Response: See response to comment 1893. The provision originally in § 78.68(g) has been deleted and replaced with a similar provision in §78a.68(a).

- 1913.** Comment: The proposed regulations fail to adequately define the term ‘maintain’ as it relates to requirements in § 78.68(g). To the extent that this provision remains in the final regulation, the EQB should define the term ‘maintain’. (1154, 1155)

Response: See response to comment 1912.

- 1914.** Comment: 78.68 – We support new requirements for oil and gas gathering lines.

Gathering lines (also referred to as “flowlines”) are more likely to corrode than “transportation pipelines” because they may contain oil, gas, and water produced along with the oil and gas (“produced water”).

Gathering lines are more likely to erode because they may operate at high pressure and high throughput velocity and contain abrasive materials such as sand and sediment that is produced from the well.

We have a number of recommendations to strengthen the proposed regulations.

The EQB proposes to require all “buried” metallic “gathering lines” to meet the requirements of 49 CFR Part 192 (gas transportation pipelines) or 195 (liquid transportation pipelines). The proposed regulation at § 78.68 (h) reads:

(h) All buried metallic gathering lines shall be installed and placed in operation in accordance with 49 CFR Part 192 or 195 (relating to transportation of natural and other gas by pipeline: minimum Federal safety standards; and transportation of hazardous liquids by pipeline).

The EQB defines a “gathering pipeline” (§ 78.1) as a pipeline that gathers oil, liquid hydrocarbons, or gas prior to delivery to an intrastate or interstate transmission pipeline:

Gathering pipeline—A pipeline that transports oil, liquid hydrocarbons or natural gas from individual wells to an intrastate or interstate transmission pipeline.

The defined term “gathering pipeline” should be used in § 78.68 instead of the undefined term “gathering line.” (1143)

Response: The provision is meant to reflect the requirements in §3218.4(a) in the 2012 Oil and Gas Act. The Department agrees relating to the use of the term “gathering pipeline” and has amended this section (now § 78a.68(g)) accordingly.

- 1915.** Comment: The proposed rule would benefit from further clarification. Section 78.68 appears to require application of federal standards governing transmission lines to gathering pipelines ordinarily excluded from federal requirements. We request that the EQB clarify that it intends to extend the federal standards to gathering lines built in Pennsylvania, which we agree is appropriate. (1143)

Response: By its own terms and in accordance with §3218.4 of the 2012 Oil and Gas Act, §78a.68(g) make the federal regulations applicable to all buried metallic gathering pipelines.

- 1916.** Comment: § 78.68 appears to require application of federal standards to rural pipelines ordinarily excluded from federal requirements, which would bring many pipelines in Pennsylvania under regulation. We request that the EQB clarify that it plans to extend federal standards to rural pipelines, which we agree is appropriate. (1143)

Response: See response to comment 1915.

- 1917.** Comment: The EQB proposes to regulate only “buried metallic gathering lines,” which would exclude regulation of aboveground gathering pipelines. Both aboveground and buried gathering pipelines warrant regulation. (1143)

Response: The bulk of this section does apply to both aboveground and below ground gathering pipelines. Only §78a.68(g) applies exclusively to buried metallic gathering pipelines in order to be consistent with Section 3218.4(a) which only requires corrosion protection for buried metallic pipelines.

- 1918.** Comment: The proposed regulation would direct the operator of a buried metallic gathering line to the federal regulations at 49 CFR Part 192 or 195. The operator would review those regulations and determine that many, if not most, onshore and rural gathering lines in Pennsylvania are exempt from federal standards governing the transportation of gas and hazardous liquids. The outcome would be that many, if not most, gathering pipelines in Pennsylvania would not meet those standards.

If it was the EQB’s intent to require all gathering pipelines, as defined in § 78.1 of this proposed rulemaking, to meet the standards applicable to “regulated onshore gathering lines” or “regulated rural gathering lines” under 49 CFR Part 192 or 195, respectively, then this requirement needs to be made clear in the proposed regulatory language. (1143)

Response: See response to comment 1915.

- 1919.** Comment: The operator should be reminded to comply with all applicable provisions of Chapters 102 and 105 and should obtain any required approvals prior to commencing gathering pipeline construction. The operator also should be reminded that, under 25 Pa. Code §§ 105.1, 105.14(b), 105.15, and 105.18a(a)(1), no construction activity, including temporary construction of pipelines, may adversely impact exceptional value wetlands. (1143)

Response: See response to comment 1893.

- 1920.** Comment: We recommend that the operator be required to provide the PADEP with a final as-built construction drawing and Geographic Information System (GIS) map file of the gathering

pipeline route to incorporate into the Pennsylvania state pipeline database and mapping system and make the pipeline information available to the public on the PADEP's website. (1143)

Response: This section sets construction and operation standards for oil and gas gathering lines. The standards established by this section are environmental protection standards. The Department declines to include a requirement for operators to provide construction details for each gathering pipeline constructed because it is outside the intended scope of this section.

1921. Comment: We recommend that the proposed regulations be made clear that they will apply to both existing pipelines and new pipelines. (1143)

Response: This section primarily applies to construction of gathering lines and therefore is not appropriate for retroactive application.

1922. Comment: New pipelines should be co-located with existing or proposed roads, trails or pipelines whenever possible. (1143)

Response: The Department agrees that new pipelines should be co-located with existing or proposed pipelines whenever possible. The Department does not agree with co-locating new pipelines along roads and trails for obvious security and conflicting-use reasons.

1923. Comment: Regarding topsoil used for gathering lines, we do not support the import or export of topsoil because it can mix soil fauna species. Best practice is to create an engineered organic soil layer following the PADEP's Stormwater Best Management Practices Manual (363-0300-002). We anticipate that this manual will be updated soon, and the new standards should apply when they are available. (1143)

Response: This section requires compliance with Chapter 102 which includes implementation of the Stormwater Best Management Practices Manual (363-0300-002).

1924. Comment: In accordance with comments 1914 through 1816, we recommend that § 78.68 be revised as follows:

§ 78.68. New and Existing Oil and gas gathering pipelines.

(a) All earth disturbance activities associated with oil and gas gathering pipeline installations and supporting facilities are limited to the construction right-of-way, work space areas, pipe storage yards, borrow and disposal areas, access roads and other necessary areas identified on the erosion and sediment control plan. Any person installing gathering pipelines shall comply with all applicable provisions of Chapters 102 and 105 and shall obtain any required approvals prior to commencing gathering pipeline construction. New gathering pipelines should be co-located with existing or proposed roads, trails or pipelines whenever possible to minimize footprint. Clearing for construction right-of-way, work space areas, pipe storage yards, borrow and disposal areas, and access roads should be limited only to those areas essential for active use to minimize footprint.

(b) Highly visible flagging, markers or signs must be used to identify the shared boundaries of the limit of disturbance, wetlands and locations of threatened or endangered species habitat prior to land clearing. The flagging, markers or signs shall be maintained throughout earth disturbance activities and restoration or PCSM activities.

(c) The operator shall maintain topsoil and subsoil during excavation under the following, unless otherwise authorized by the Department:

- (1) Topsoil and subsoil must remain segregated on site until restoration. Topsoil may not be exported from a site.
- (2) Topsoil and subsoil must be prevented from entering watercourses and bodies of water.
- (3) The soil horizons of topsoil, subsoil, and existing vegetation must be retained intact as fully as possible until replaced for restoration.
- (4) Topsoil cannot be used as bedding for pipelines.
- (5) Native topsoil or imported engineered topsoil must be of equal or greater quality to ensure the land is capable of supporting the uses that existed prior to earth disturbance. Engineered soil shall meet the latest requirements of the Department's Stormwater Best Management Practices Manual (363-0300-002).

(d) Backfilling of the gathering pipeline trench shall be conducted in a manner that minimizes soil compaction to ensure that water infiltration rates of the soil have not been decreased.

(e) Equipment may not be refueled within the jurisdictional floodway of any watercourse or within 50 feet of any body of water.

(f) Material staging areas shall be outside of a jurisdictional floodway of any watercourse or greater than 50 feet from any body of water.

(g) The gathering pipeline operator shall maintain the pipeline right-of-way, service roads and points of access to minimize the potential for accelerated erosion and sedimentation and soil compaction and to manage post-construction stormwater and minimize impacts to existing riparian buffers in accordance with Chapter 102.

(h) All buried new and existing metallic gathering pipelines used to transport gas or hazardous liquids (including crude oil, condensates, natural gas liquids, and associated produced water) between the well head and transmission line shall be installed and placed in operation in accordance with all the requirements of 49 CFR Part 192 or 195 (relating to transportation of natural and other gas by pipeline: minimum Federal safety standards; and transportation of hazardous liquids by pipeline) applicable, respectively, to Type B regulated onshore gathering lines or Category 3 low-stress pipelines in rural areas.

(i) For all new gathering pipelines installed after ____ (date these regulations are approved), the operator shall provide final as-built construction drawings and a Geographic Information System (GIS) map file of the gathering pipeline route to the Department within 30 days of completing gathering pipeline construction. For all existing gathering pipelines installed prior to ____ (date these regulations are approved), the operator shall provide final as-built construction drawings and a GIS map file of the gathering pipeline route to the Department within 60 days. The Department shall incorporate the new and existing gathering pipelines into the Pennsylvania state pipeline database and mapping system and make the pipeline route information available to the public on the Department's website.

(j) All new buried gathering pipelines on slopes greater than 5% or traversing areas of shallow seasonal groundwater shall be constructed with impermeable waterstops at intervals of not less than 200 feet to prevent the unintended lateral movement of surface and shallow groundwater. Waterstops must extend for the horizontal width and vertical depth of the bottom of the pipe excavation below the pipe, and to a height of 1 foot below final surface grades. (1143)

Response: See response to comments 1914 through 1816.

1925. Comment: 78.68(h): We recommend the adoption of corrosion control requirements. (1035)

Response: The Department acknowledges the comment.

1926. Comment: We recommend that all gathering line classes 1-2-3-4 for both unconventional and conventional wells are mandated to participate in PA ONE CALL. That is just a common sense environmental and safety matter. (1035)

Response: Section 3218.5 of the 2012 Oil and Gas Act specifies that the underground Utility Line Protection Law only applies to gathering lines to transport natural gas.

1927. Comment: **78.68(h)** – This section should be revised to only reference the relevant corrosion control aspects of the Federal regulations, consistent with Act 13. Suggested amendatory language: All buried metallic gathering lines shall be installed and placed in operation in accordance with 49 CFR 192, Subpart I, or 49 CFR 195, Subpart H (relating to corrosion control). (1147, 1174)

Response: Section 78a.68(g) of the final-form rulemaking states: “All buried metallic gathering lines shall be installed and placed in operation in accordance with 49 CFR Part 192, Subpart I, or 195, Subpart H (relating to the requirements for corrosion control).

1928. Comment: **78.68(h)** – Applying the proposed definition of “gathering pipeline” in § 78.1 to the new § 78.68(h) could result in confusion between the jurisdiction of the Department and the jurisdiction of the Pennsylvania Public Utility Commission. It appears that incorporating the new definition of gathering pipeline in the new § 78.68(h) imposes U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration’s (“PHMSA”) regulations on all buried metallic pipelines that transport oil, liquid hydrocarbons or natural gas from individual wells to an intrastate or interest transmission pipeline. PHMSA regulations in 49 C.F.R. Part 192 and Part 195 and the related construction guidelines are implemented by other agencies. The Pennsylvania Public Utility Commission has regulatory jurisdiction over intrastate natural gas pipelines; and PHMSA jurisdiction over interstate natural gas pipelines and hazardous liquid pipelines. The proposed language of § 78.68(h) (*i.e.*, inclusion of those incidental gathering and flow lines from the wellhead to point of commingling) would arguably include all pipelines regardless of operating condition, design and use under 49 C.F.R. Part 192 and Part 195. Commentator recommends deleting § 78.68(h) to quash any such confusion. See comment 75 regarding the definition of “gathering pipeline.” (1085)

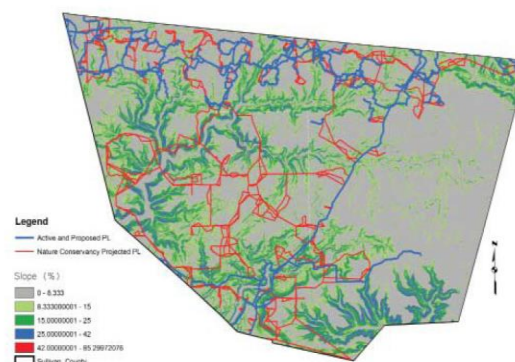
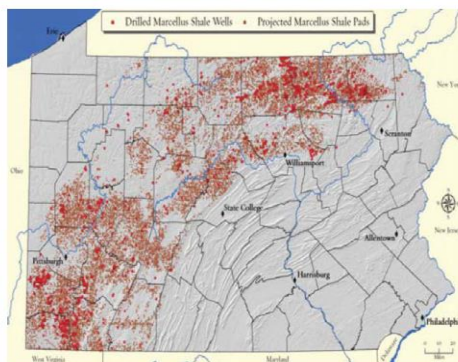
Response: See response to comment 1915.

1929. Comment: **78.68(h)** – Requiring all buried metallic gathering lines to comply with the entirety of the requirements in 40 CFR 192 and 195, as proposed, goes well beyond the Act 13, § 3218.4(a) requirement with references compliance with 40 CFR Part 192, Subpart I, relating to corrosion control. This section should be revised to reference only the relevant corrosion control aspects of the Federal regulations, consistent with Act 13. (1154, 1155, 1174)

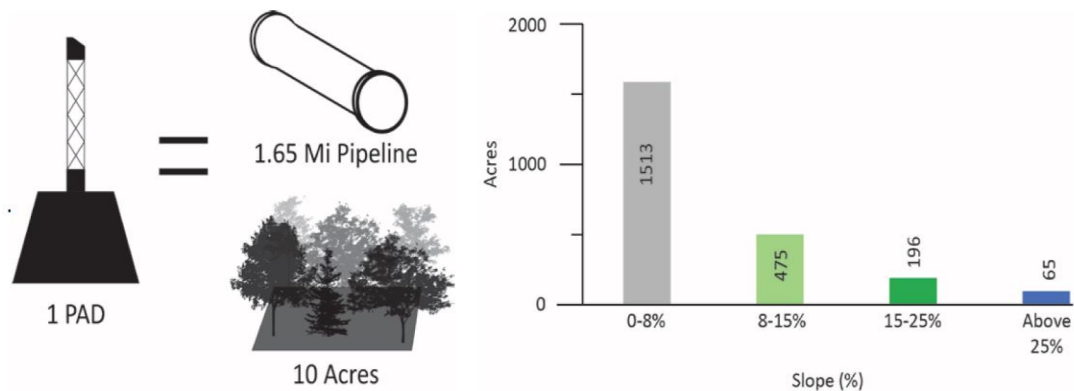
Response: See response to comment 1927.

1930. Comment: Proposed amendatory language: Upon completion of construction the Right-Of-Way (ROW) must be restored to the following specifications:

- A) The pipeline must initially be re-seeded with native grasses in accordance with the Conservation Reserve Enhancement Program (CREP) conservation program and in accordance with DEP erosion/sedimentation guidelines.
- a) Native grasses will be reseeded until a minimum of 70% coverage occurs.
- B) To run concurrent with re-seeding of the site will be a re-vegetation plan that will be managed over a 5 year period which will adhere to the following guidelines of plantings per specific section of ROW:
- a) The first 5' on either side directly above the pipeline must be planted with a mixture of native herbaceous perennials and grasses to be maintained for inspection and repair purposes.
 - b) The next 20' on either side of the pipeline will be planted with native shrubs and brush with roots not exceeding 3' in depth.
 - c) The area past the 25' measurement from the pipeline will be planted to restore native hardwood tree regrowth.
 - d) The horizontal planting depth at the edge of (b) and (c) will vary by 15 feet in width per 50 feet in distance to restore a varied edge of habitat along the extent of the ROW.
- C) Shrub and tree plantings will be implemented following the CREP planting guidelines and within their species and diversity criteria.
- a) Planting maintenance will occur on a bi-annual basis (spring/fall) until a minimum of 75% of initial planting numbers have reached stable heights at a minimum of 50% of the originally planted species diversity.



Projected Marcellus well-pad locations in Pennsylvania and an example, in Sullivan County PA, of the extent and impact of existing (blue) and future (red) gathering lines



The projected Marcellus development in Pennsylvania is estimated to be more than 6,000 new well sites, which will require 10,000 miles of pipeline that will impact 60,000 acres. In Sullivan County the estimation of this impact's spread over the local topography implies erosion issues in mountainous areas.

Managing Right-of-way Width and configuration



Planting Zones: A 10 foot cleared right-of-way (red) is reserved for maintenance, yellow areas are suitable for shallow rooted shrub and brush cover, while the green can be re-established in hardwood forest. The re-introduction of these different plant types has implications across all the concerns listed.

Varied Edge: As illustrated, curving edges to right-of-way cuts provide for more natural breaks in forest cover, disrupting harsh visual edge as evident in current right-of-way cuts. A varied edge increases the variety of habitat available and in turn the diversity of wildlife present. Increasing shrub and herbaceous vegetation improves soil stability through better root structure, minimizing erosion and sedimentation.

Island Habitats: Re-establishing wildlife corridors across large, open right-of-ways is necessary to achieve connection between wildlife populations. Providing islands of vegetation within the right-of-way opening creates connections and ensures the availability of larger tracts of habitat for the conservation of Pennsylvania's biodiversity. Islands of vegetation improve visual quality through breaking and softening the impacts of human activity. (643)

Response: See response to comment 1893. To the extent that these comments are directed to the requirements of Chapter 102 and 105, they are beyond the scope of this rulemaking.

- 1931.** Comment: Provisions for scenic, watershed and habitat conservation in utility and development right-of-ways: The landscape surrounding Pennsylvania communities represents several vital resources of irreplaceable value. First is the value of the scenery for spiritual and restorative recreational as well as property value; second is the capacity of the natural landscape to store, detain and cleanse storm water; third is the value of high quality habitat to maintain healthy ecosystems. Residents are drawn to the area for the scenery and rural lifestyle. Visitors explore the parks, forests and woodlands, navigate and fish the trout-rich waters, hunt in private forests and game lands, and hike or bike the numerous historic trails and byways.

Infrastructural right-of-ways, whether for natural gas, power lines, or roadways severely affect and disrupt the quality of the rural landscape enjoyed by residents and visitors. By reducing forest canopy and disturbing soils on steep slopes they decrease the land's capacity to recharge aquifers, increase run-off and flooding, and increase erosion and sediment. They provide pathways for invasive species and disrupt the movement and support habitat for critical and endangered species. The permanent gaps they create in forest canopy fragment habitat and the loss of connectivity could threaten the survival of some species.

The past introduction of interstate gas and electrical transmission infrastructure has already impacted the forests and ridgelines that provide Pennsylvania with much of its natural heritage. The recent introduction of more expansive natural gas drilling with its pipeline infrastructure and wind turbines with access roads points to a future with ever more serious implications for our valued natural systems. Continued incremental erosion of the Pennsylvania landscape will result in significant economic loss and flooding damage to communities as well as irreparable damage to natural systems and scenic quality.

While current restoration practices mitigate some of the damage done during construction we suggest improvements to current regulations to require a greater degree of restoration to increase the performance of right-of-ways with respect to the concerns above: watershed protection, habitat protection and scenery protection. Modifying current practices and regulations to decrease the width of managed right-of-ways post construction, vary configuration of the vegetated edge of right-of-ways, create pockets of habitat within right-of-way openings, and design planting programs with enhance functional goals, the performance of the landscape impacted by this infrastructure can greatly improve. (643)

Response: See response to 1704.

§ 78.68a Horizontal directional drilling for oil and gas pipelines

- 1932.** Comment: Horizontal direct drilling is only one of many alternatives for pipeline installation in areas of wetlands and waters. [78.68a]. A protocol should be established for the use of each method. (640, 1098)

Response: Horizontal directional drilling (HDD) is used in areas other than areas of wetlands and waters and is regulated under Chapter 102 and Chapter 105. The intent of §78a.68a is to provide regulations specific to HDD for oil and gas operations in all areas. The Erosion and Sediment Control BMP Manual, Chapter 102 and Chapter 105 provide appropriate regulation and guidance for other stream and wetland crossing methods.

- 1933.** Comment: We recommend that the EQB make clear that horizontal directional drilling for oil and gas pipelines includes all non-vertical drilling required to install a pipeline below grade, even if some sections of hole may not be strictly horizontal (drilled exactly 90 degrees to a vertical plane). (1143)

Response: This section applies to HDD which is a pipeline construction process that includes boring beneath an impediment such as a water course or a roadway.

- 1934.** Comment: **78.68a** – We support the requirements for horizontal directional drilling associated with gathering and transmission pipelines. We support the required authorization by the PADEP under Chapters 102 and 105 (relating to erosion and sediment control; and dam safety and waterway management) for horizontal drilling. We recommend the use of directional drilling under all watercourses, unless the PADEP determines that a dry crossing presents less risk to waters of the Commonwealth. (1143)

Response: The Department acknowledges the comment.

- 1935.** Comment: Permits would be awarded only to the best available practice based on site-specific conditions, particularly local geology, as determined by the County Conservation Districts. More stringent conditions for permitting should exist in exceptional value and high quality streams. (640, 1098)

Response: Permitting requirements for stream and wetland crossings are regulated under Chapters 102 and 105 and are beyond the scope of this rulemaking.

- 1936.** Comment: 78.68 (i) We have concerns regarding the release of bentonite in addition to regulated substances from horizontal drilling under streams. While bentonite is not chemically toxic, it can be physically lethal to fresh water mussels. The Service requests that reporting of substantial releases of bentonite to waters with federally listed mussels be required via NRC or PEMA. (1134)

Response: All discharges to waters of the Commonwealth must be reported to the Department. The Operator need not get an approval from the Department prior to using bentonite for horizontal directional drilling, but subsection 78a.68a(g), 78a.68a(h) and 78a.68a(i) specify the monitoring and reporting requirements as well as contingency plan implementation requirements in case of discharge of drilling fluids to waters of the Commonwealth. The Department has determined that the prescribed notice is adequate.

- 1937.** Comment: We are interested in these particular provisions because earth disturbance activities regarding pipeline construction have resulted in many acres of land that have not been consistently

restored to the degree that provides for prior land-use. In other words, farmers have loss tillable acreage. We recommend that the DEP be more involved in the stream crossing issues related to glacial till streams such as Mehoopany Creek. Our watershed association met with a midstream operator to advocate for a crossing change to HDD because of the fact that we'd be losing additional riparian buffer. Riparian buffers need to be replaced 1:1 as wetlands are replaced. We are having continual erosion issues that may be exacerbated by pipeline easements destroying riparian buffers in these critical areas. Our watershed association may not always have the opportunity to advocate for a stream crossing change with an operator. Other watersheds may not have opportunities to advocate on such issues Therefore, the DEP needs to take a greater role. (1035)

Response: The Department regulates utility line stream crossings under Chapters 102 and Chapter 105. Section 78a.68a(a) requires compliance with Chapters 102 and 105 for HDD that occurs beneath any body of water or watercourse.

1938. Comment: Proposed section 78.68a should be stricken from any rule that applies to conventional operations because they are not justified by any compelling environmental need and would impose unnecessary costs and burdens on conventional operations, which already comply with applicable provisions in Chapters 102 and 105. (1135)

Response: The original section 78.68a has been removed from Chapter 78 conventional rulemaking but has been included in Chapter 78a.68a unconventional rulemaking.

1939. Comment: DEP proposes new performance standards for horizontal directional drilling for oil and gas pipelines but there is no similar requirement for use of the exact same technology for other pipelines or purposes. Either horizontal directional drilling creates environmental problems or it does not. The use of the hole created is not material. By proposing this regulation the Commonwealth is either demonstrating a bias against Pennsylvania's Oil and Gas Industry or pandering to anti-oil and gas activists. Regardless, this proposal is inappropriate and should be removed. If, in fact, legitimate concerns exist about this technology, then rules governing any and all uses should be properly developed. (1135)

Response: The intent of the section is to provide clarity to existing requirements and address issues that frequently arise during HDD activities conducted by the oil and gas industry.

1940. Comment: 78.68a – Horizontal directional drilling for oil and gas pipelines is not within the traditional scope of Chapter 78, as provided under section 78.2, which limits the scope to rules for the drilling, alteration, operation and plugging of oil and gas wells and for the operation of a coal mine in the vicinity of an oil or gas well. As stated in comments above, nothing in Act 13, including its reference to “gathering lines,” provides a basis for enlarging the scope of Chapter 78 to these proposed requirements. Delete section 78.68a in its entirety. (1153)

Response: The Department acknowledges the comment and has removed section 78.68a in its entirety from the final-form rulemaking in Chapter 78. However, horizontal directional drilling for gas pipelines is relatively common in unconventional well development. Given the significant potential for and experience of pollution of the waters of the Commonwealth from such operations, the Department has retained this section in the final-form rulemaking in Chapter 78a. Finally, the Department notes that “construction, installation, use, maintenance and repair of...oil and gas well development, gathering and transmission pipelines” is included in the final-form regulation definition of “oil and gas operations.”

1941. Comment: The Department needs the latitude to review stream crossings in glacial till areas that

are highly subject to continual erosion due to recent flooding. There are areas where Northern Tier Region watersheds have lost and are continually losing trees and vegetation. These same streams may be locations for pipeline crossings. Some operators will submit both a trench and HDD plan, while others may only submit one or the other. Ideally, we recommend that operators submit both plans to the Department with their preference noted. (660a)

Response: See response to comment 1937.

- 1942.** Comment: For glacial till stream crossings, we recommend the Department evaluate whether or not the operator's trench plan involves the removal of further trees, shrubs and other vegetation in a stream highly susceptible to erosion issues. Those plants help further ensure the integrity of that stream more than a trenched pipeline crossing. In streams of that nature, where the operator is proposing such a crossing, a proper evaluation needs to be done regarding how likely an HDD operation will be successful and the riparian buffer remains. These areas are not only important locations for immediate downstream neighbors, but also the entire watershed as the Susquehanna River Basin is having an increasing amount of sediment issues. (660a)

Response: See response to comment 1937.

- 1943.** Comment: For glacial till stream crossings, the operator can benefit by meeting with the Department's watershed program staff who are able to explain to them the exact nature of not only stream bank erosion but also, stream bed deterioration that does occur and the nature of both can affect the safe operation of their pipeline during serious flooding. Ideally, we want to see pipelines safely installed in such areas at deeper depths below the stream bed in order to avoid pipeline failures. We recommend the adoption of these recommendations as written along with serious consideration to our above noted suggestion. (660a)

Response: See response to comment 1937. The Department always encourages pre-application meetings which provide the operator an opportunity to ensure that all regulatory requirements are clearly articulated and clarify various issues related to their project. Mandatory pre-construction meetings will give an additional venue to the operator as well as the Department to make sure that necessary preparation has been done for the project.

- 1944.** Comment: We strongly support the regulation of, and permitting requirements for, horizontal directional drilling under any body of water or watercourse, pursuant to Chapters 102 and 105 of Title 25 of the Pennsylvania Code (78.68a(a)); (1157)

Response: The Department acknowledges the comment.

- 1945.** Comment: § 78.68a(a) is redundant of requirements in 25 Pa. Code Chapters 102 and 105 which Accordingly, 78.68a(a) is not necessary and should be deleted. (1154, 1155)

Response: The references to 25 Chapters 102 and Chapter 105 is appropriate to notify operators of horizontal directional drilling associated with pipeline construction related to oil and gas operations, including gathering and transmission pipelines that occurs beneath any body of water or watercourse of applicable requirements outside of 25 Chapter 78a.68a.

- 1946.** Comment: § 78.68a.(a) The reference to Chapter 102 would not be necessary in light of proposed changes to Section 78.53. Pipeline construction is an "oil and gas operation," as defined in Act 13, and erosion and sediment control requirements for oil and gas operations are addressed in Section 78.53. (1174)

Response: See responses to comments 736 and 1945.

1947. Comment: Inclusion of the phrase “pipeline construction related to oil and gas operations” is confusing.

Suggested amendatory language: **Any horizontal directional drilling that is associated with [pipeline] construction [related to oil and gas operations] of oil and gas pipelines, including gathering and transmission pipelines, that occurs beneath any body of water or watercourse must be authorized by the Department in accordance with [25 Pa. Code Chapter 102 (relating to erosion and sediment control)] 25 Pa. Code Chapter 105 (relating to dam safety and waterway management).** (1085, 1147, 1174)

Response: “Pipeline construction related to oil and gas operation” indicates not only oil and gas pipelines but also any pipeline construction related to oil and gas operations. Also, the Department has determined that the language requiring HDD activities to meet the requirements of both Chapter 102 and 105 is appropriate.

1948. Comment: We strongly support the requirement that a PPC plan be kept on site, to include a site specific contingency plan that describes measures to be taken to control, contain, and collect any discharge of drilling fluids and minimize impacts to waters(78.68a(b)). (1157)

Response: The Department acknowledges the comment.

1949. Comment: The directional drilling operator is not the appropriate individual to develop a PPC plan since the developer of the gathering line is already required to develop the plan pursuant to 78.55(a). Accordingly, 78.68a(b) is not necessary and should be deleted. (1154, 1155, 1164, 1174)

Response: The intent of the section is to clarify the specific PPC requirements for HDD activity and is therefore appropriate. This section has been amended to remove the reference to directional drilling operator. Instead, any person conducting this activity is required to prepare a PPC plan. A separate PPC plan is not required for HDD activities provided that the PPC plan developed under § 78a.55 meets the requirements in this section.

1950. Comment: § 78.68a.(b) This provision is redundant of the Department’s proposed Section 78.55(a), which would apply to all “oil and gas operations”, as defined. Suggested amendatory language: Delete subsection 78.68a(b). (1147, 1154, 1155, 1164, 1174)

Response: See response to comment 1637.

1951. Comment: In addition to notifying the Department prior to such drilling, operators should be required to notify water suppliers and treatment plants downstream [78.68a (c)]. Such notification would serve to promote closer monitoring and appropriate action in the event of accidental discharges or blowouts. (640, 1098)

Response: The Department disagrees that providing notification to downstream water users prior to drilling is necessary. Sections 78.66(b)(1)(i) and 78a.66(b)(1)(i) require operators or other responsible parties who have a spill or release that pollutes or threatens to pollute the waters of the Commonwealth to comply with the reporting requirements in § 91.33. That section requires notification of the spill or release to known downstream users of the waters.

1952. Comment: 78.68a(e) should be clarified to reflect that the referenced materials staging areas are for horizontal directional drilling operations. Requiring that all materials be staged outside of the floodway or greater than 50 feet from a water body can be very difficult to achieve and may result in additional environmental impacts due to increased hauling distances. (1164, 1174)

Response: The section has been modified to allow for materials staging within the floodway or within 50 feet of a water body if approved by the Department.

1953. Comment: 78.68a(e) The language be added to allow for an alternate approach to be considered and approved, depending on site-specific circumstances.

§ 78.68a(e) Suggested amendatory language: Unless an alternative plan is approved by the Department, materials staging areas for horizontal directional drilling operations shall be outside of a floodway, as that term is defined in 25 Pa. Code Chapter 105, of any watercourse or greater than 50 feet from any body of water.(1147, 1164, 1174)

Response: See response to comment 1952.

1954. Comment: We are concerned about the proposal to allow material staging areas within 50 feet of a water body. We recommend that material staging areas be located at least 100 feet away from a water body to provide a protective buffer. (1143)

Response: The setback for material staging areas from water bodies is appropriate and consistent with other regulatory requirements.

1955. Comment: § 78.68a (f) -This section requires prior Department approval before using any drilling fluid additives other than bentonite and water for horizontal boring for pipelines. It also requires the Department to post on its website approved additives that have been approved for horizontal drilling for pipelines.

Horizontal drilling or boring for pipelines is often necessary when crossing roads and streams. The use of specific additives may not be known until unforeseen circumstances occur. It would be costly and unreasonable to require the operation to shut down until Department approval of an additive is obtained. It is recommended that this Department approval is unnecessary and should be deleted. (124, 124a)

Response: The Department has determined that language regarding approval for fluid additives other than bentonite is appropriate because HDD activities often come in line with fresh groundwater. The Department will maintain a list of all approved HDD fluid additives on its website. The operator may use fluid additives from the online list or propose a new fluid additive for use. Additives may not be used prior to obtaining approval from the Department.

1956. Comment: We recommend that drilling additives be limited to non-toxic materials, since there is a potential risk to the environment of exposure to these additives. (1143)

Response: See response to comment 1955.

1957. Comment: We also recommend changes to the PPC Plan requirement similar to those we recommended for § 78.55. (1143)

Response: See response to comment 1949.

1958. In addition to the PADEP, the operator should notify the landowner, neighboring owners, local resident, the local government and local emergency response resources relied on in the PPC at least 24 hours prior to beginning of any directional drilling activities. (1143)

Response: The Department disagrees that requiring notification to landowners, neighboring land owners, local residents, local government and local emergency response resources prior to commencing HDD activities is necessary. See response to comment 1951.

1959. Comment: Address bentonite spill prevention since they are such a common occurrence. (901, 939)

Response: See response to comment 1936.

1960. Comment: To protect our water, drilling fluid additives, other than bentonite and water, must be shown to be safe in water supplies by independent testing before use in pipeline installations [78.68a (f)]. (640, 1098)

Response: See response to comment 1955.

1961. Comment: *78.68a(f): Horizontal Directional Drilling- Unnecessary Pre-Approval if the Department Releases a Comprehensive Pre-Approved List:* Given the long established practice of horizontal directional drilling across multiple industries (*e.g.*, public utilities), the benign nature of the additives and the relatively few instances of issues while crossing streams related to such additives, it is unnecessary to require Department approval of such additives. The proposal requires prior Department approval before using any drilling fluid additive other than bentonite and water for horizontal directional drilling. It is recommended that subsection (f) be deleted. (1085)

Response: See response to comment 1955.

1962. Comment: 78.68a(f): The standards that will be used to evaluate the fluid additives should be clarified directly in the regulation. Industry standards can vary, and in order to avoid costly and unreasonable delays, the language should expressly state the approach the Board will take. (1085)

Response: The Department disagrees that the standards to be used to evaluate fluid additives should be clarified directly in the regulation. Standards that will be used to evaluate fluid additives are more appropriately developed in technical guidance or other similar means.

1963. Comment: The pressure monitoring and reporting required in subsequent § 78.68a (g), (h) and (i) should be adequate. (124, 124a)

Response: The Department acknowledges the comment.

1964. Comment: To achieve minimal impact on the stream and adjacent water bodies, subsection 78.68a(g) requires monitoring of bodies of water and watercourses over the horizontal directional drilling operations, for pressure or loss of drilling fluids. We recommend adding language to this subsection to include details on what kind of monitoring must take place, over what time frame, and what kind of report must be prepared and whether that report must be submitted to DEP. (1157)

Response: The language is sufficient to describe the type and scope of monitoring that must occur when conducting HDD activities. Reporting requirements are addressed in §§ 78a.68a(b), 78a.68a(i) and 78a.68a(j).

1965. Comment: 78.68a(g) - Monitoring for pressure and loss of fluid returns can vary and require frequent modifications. Loss of fluid and/or pressure does not always yield an inadvertent return, thus monitoring requirements should not be memorialized in a PPC plan. Clarify this statement to ensure that monitoring for discharges be established, but not monitoring for pressure and fluid loss.

§ 78.68a.(g) Suggested amendatory language: Horizontal directional drilling operations shall be monitored for pressure and loss of drilling fluid returns. Bodies of water and watercourses over and adjacent to horizontal directional drilling operations shall be monitored for any signs of drilling fluid discharges. Monitoring for signs of drilling fluid discharge shall be in accordance with the PPC Plan. (1147, 1164, 1174)

Response: Loss of drilling fluid, regardless of whether or not an inadvertent return occurs, represents a potential environmental impact.

1966. Comment: We support the proposal for the monitoring of drilling fluid and pressure losses at the directional drilling operations to prevent waterbody contamination. We recommend, however, that the regulation governing drilling fluid discharge or loss of circulation be expanded to include immediate action by the directional drilling operator to shut down the drilling operations, notify the PADEP and immediately implement the PPC plan. (1143)

Response: Section 78a.68a(h) specifies that if a discharge occurs during horizontal directional drilling activities, the drilling operator shall immediately implement the contingency plan developed pursuant to § 78a.68a(b). Also § 78a.68a(i) states that when a drilling fluid discharge or loss of drilling fluid circulation is discovered, the loss or discharge shall be immediately reported to the department, and the operator shall request an emergency permit pursuant to 25 Pa. Code § 105.64 (relating to emergency permits), if necessary.

1967. Comment: 78.68a(h) - Horizontal directional drilling activities will be performed under Department authorization, per paragraph (a), and in accordance with a site-specific PPC plan. For purposes on paragraph (h), it should be sufficient to specify that the contingency plan portion of the PPC Plan must be implemented.

§ 78.68a.(h) Suggested amendatory language: ~~[Horizontal directional drilling activities shall not result in a discharge of drilling fluids to waters of the Commonwealth].~~ If a discharge of drilling fluids to waters of the Commonwealth occurs during horizontal drilling activities, the drilling operator shall immediately implement the contingency plan portion of the site-specific PPC plan ~~[developed pursuant to subsection (b)]~~. (1147, 1174)

Response: Discharges of materials other than drilling fluids may occur during HDD activities. The language in §78a.68a(h) is appropriate.

1968. Comment: It is not practical or reasonable for industry to report all loss of drilling fluid circulation particularly when the fluid does not come to the surface. § 78.68a(i) should include an exception for momentary or short duration temporary losses of circulation. Section 78.68a(i) should be revised to state “when a drilling fluid discharge is discovered, the operator shall request an emergency permit pursuant to 25 Pa. Code § 105.64 (relating to emergency permits), if necessary.” (1147, 1154, 1155, 1164, 1174)

Response: See response to comment 1965.

- 1969.** Comment: § 78.68a(i) is unclear and ambiguous as to how an operator should follow the PPC plan required in Chapter 102 which describes the measures to be taken to control, contain and collect any discharge of drilling fluids while also waiting for the Department to issue an emergency permit under Chapter 105. The PPC plan under Chapter 102 should be left as the place where reporting requirements are covered. (1154, 1155)

Response: A permit under Chapter 105 is only necessary if implementation of the PPC plan requires the operator to construct, operate, maintain, modify, enlarge or abandon a dam, water obstruction or encroachment. The Department encourages operators obtain authorization under Chapter 105 for these activities prior to commencing HDD.

- 1970.** Comment: The proposed language of § 78.68a(i) should be revised to clarify that an emergency permit shall be requested under § 105.64 following a drilling fluid discharge or loss of drilling fluid circulation, to allow immediate remedial action necessary to alleviate an imminent threat to life, property or the environment. (1143)

Response: The Department agrees with the concept and has added language to the final rulemaking to reflect that the emergency permit should be requested for emergency response and remediation activities.

- 1971.** Comment: Under § 78.68a(i), a directional drilling operator shall immediately report a loss of drilling fluid circulation to DEP and request an emergency permit if necessary. This requirement fails to recognize that a temporary loss of drilling fluid circulation is a rather common occurrence during HDD operations, but it is not an absolute indicator that there is a problem and it certainly does mean there is a discharge of fluid. We presume that the intent of this rule is to report discharges of fluid, however, EQB is incorrectly equating a loss of drilling fluid circulation to a discharge. That is an erroneous and arbitrary presumption that is not supported by any facts. Reporting every loss of drilling fluid circulation to the DEP would be unduly burdensome, would not further any regulatory or environmental objective, would create an unnecessary administrative burden on the DEP, and would provide no benefit to the operator, the DEP or the public. Remove the reference to “loss of drilling fluid circulation” from the proposed rule so that the rule properly focuses on reporting of actual drilling fluid discharges to DEP. (1140)

Response: See response to comment 1965.

- 1972.** Comment: § 78.68a (j) - It is suggested that language is added to allow for electronic notifications to the Department of water supply complaints received by the operator to be consistent with other notification provisions in this Chapter.(124)

Response: The section requires notification through the Department’s website.

- 1973.** Comment: 78.68a(k) - In this section regarding horizontal directional drilling, the Department is requiring the operator to treat drill cuttings and drill mud (bentonite and water) as residual waste. It’s good the Department is finally addressing what to do with the “drill mud”, but now the material will have to be hauled to a land fill at a significant expense. This adds thousands of dollars in disposal and trucking costs. In most instances it is unnecessary and often times the retrieval of the mud is more harmful to the environment than incorporating them in the pipeline right of way. (411)

Response: Drill cuttings and spent drill mud meet the definition of residual waste under 25 Pa. Code § 287.1 and must be handled accordingly.

- 1974.** Comment: Provisions for the beneficial reuse of drilling fluid should be included in 78.68a. 78.68a(k) should be revised to state, “horizontal directional drilling fluid returns and drilling fluid discharges shall be contained, stored and recycled or disposed or beneficially reused in accordance with Part I, Subpart D, Article IX (relating to residual waste management).” (1143, 1147, 1154, 1155, 1164, 1174)

Response: The section has been revised to generally require drilling fluid returns and drilling fluid discharges to be managed in accordance with Part I, Subpart D, Article IX (relating to residual waste management).

- 1975.** Comment: In accordance with comments 1933, 1934, 1954, 1956, 1957, 1958, 1966 and 1970, the Commentator recommends that § 78.68a be revised as follows:

§ 78.68a. Horizontal directional drilling for oil and gas pipelines.

(a) Any horizontal directional drilling associated with pipeline construction related to oil and gas operations, including gathering and transmission pipelines, that occurs beneath any body of water or watercourse will ~~must~~ be authorized by the Department in accordance with ~~[25 Pa. Code] Chapters 102 [(relating to erosion and sediment control)] and [Chapter]105 [(relating to dam safety and waterway management)]~~ (relating to erosion and sediment control; and dam safety and waterway management). Horizontal directional drilling shall be used for crossing all bodies of water or watercourses, unless the operator demonstrates that a dry crossing presents less risk to waters of the Commonwealth. Horizontal directional drilling for oil and gas pipelines includes all non-vertical drilling required to install a pipeline below grade, even if some sections of the hole are not precisely 90 degrees to the vertical plane.

(b) Prior to beginning ~~commencement~~ of any horizontal directional drilling activity, the directional drilling operator shall develop a PPC plan under ~~[pursuant to 25] § 102.5(l)~~ (relating to permit requirements). The PPC plan must ~~[shall]~~ include a site specific contingency plan that describes the measures to be taken to control, contain and collect any discharge of drilling fluids and minimize impacts to waters of the Commonwealth. The PPC plan shall include information to demonstrate that the Oil and Gas Operator has sufficient equipment and trained and qualified personnel immediately available, or on contract, to contain, control and clean-up the worst-case discharge or respond to the worst-case emergency.

If local emergency response resources are relied on in the PPC plan, the operator must demonstrate that the local responders are trained, qualified, and equipped to respond to an industrial accident. If the local responders are not trained, qualified, and equipped to respond to an industrial accident, the operator should be required to provide its own industrial response equipment and personnel. The operator must conduct a drill to test the PPC plan prior to commencing directional drilling, and must provide 3 days’ notice of the test to the Department and local emergency response resources relied on in the PPC Plan, to provide them with the opportunity to participate.

The operator shall submit the PPC plan to the Department for review and approval as part of the permit application. Operations may not commence until Department approval of the

PPC plan is complete.

Proposed revisions to the PPC plan must be submitted to the Department for review and approval prior to implementing a change to the practices identified in the PPC plan. Once approved, the Department will audit each PPC at least once during the construction operation to verify that there is sufficient trained and qualified personnel and equipment available to carry out the plan.

The PPC plan must be present onsite during drilling operations and filed with the Department ~~[made available to the Department upon request]~~.

(c) The Department, the landowner, the local government and local emergency response resources (if relied on in the PPC plan) shall be notified at least 24 hours prior to beginning ~~[commencement]~~ of any horizontal directional drilling activities, including conventional boring, beneath any body of water or watercourse. Notice shall be made electronically to the Department through its web site and include the name of the municipality where the activities will occur, GPS coordinates of the entry point of the drilling operation and the date when drilling will begin ~~[commence]~~.

(d) All required permits and Material Safety Data Sheets shall be on site during horizontal directional drilling operations and be made available to the Department upon request.

(e) Material staging areas shall be outside of a regulated floodplain ~~[floodway]~~, as ~~[that term is]~~ defined in ~~[25 Pa. Code chapter 105]~~ § 105.1 (relating to definitions), of any watercourse or greater than 100 ~~[50]~~ feet from any body of water, whichever is greater. As is required under §§ 105.1, 105.14(b), 105.15, and 105.18a(a)(1), no construction activity, including construction of temporary pipelines, may adversely impact exceptional value wetlands.

(f) Non-toxic drilling fluid additives other than bentonite and water must be approved by the Department prior to use. The use of toxic drilling fluid additives is prohibited. All approved horizontal directional drilling fluid additives will ~~[shall]~~ be listed on the Department's web site.

(g) Horizontal directional drilling operations shall be monitored for pressure and loss of drilling fluid returns. Bodies of water, ~~[and]~~ watercourses, and wetlands over and adjacent to horizontal directional drilling operations shall also be monitored for any signs of drilling fluid discharges. Monitoring shall be in accordance with the PPC plan. Directional drilling operations must cease immediately if there is a drilling fluid loss or pressure drop or there is any sign of a drilling fluid discharge into any body of water, water course, or wetland.

(h) Horizontal directional drilling activities may ~~[shall]~~ not result in a discharge of drilling fluids to waters of the Commonwealth. If a discharge occurs during horizontal directional drilling activities, the drilling operator shall immediately implement the contingency plan developed under ~~[pursuant to]~~ subsection (b).

(i) When a drilling fluid discharge or loss of drilling fluid circulation is discovered, the loss or discharge shall be immediately reported to the Department, and the operator shall request an emergency permit under ~~[pursuant to 25 Pa. Code]~~ § 105.64 (relating to emergency permits), if immediate remedial action is necessary to alleviate an imminent threat to life, property or the environment.

(j) Any water supply complaints received by the operator shall be reported immediately to the Department by telephone and within 24 hours through the Department’s web site. The Department shall implement the requirements of § 78.51 when responding to the complaint. (1143)

Response: See response to comments 1933, 1934, 1954, 1955, 1957, 1958, 1966 and 1970.

§ 78.68b Well development pipelines for oil and gas operations

1976. Comment: Oil and gas extraction operations are intensely industrial, inherently hazardous activities that can threaten water, air and land resources and public safety if proper regulations with vigilant oversight aren’t in place. PennFuture supports aspects of the proposed regulations by DEP. Among other things we support DEP’s decision to regulate wastewater pipelines and to regulate drilling operations installing pipelines under streams. (1210)

Response: The Department acknowledges the comment.

1977. Comment: There has been much variation operator to operator and region to region in regards to the operations of temporary pipelines. Not all temporary pipeline operations have been adequate. In this instance brine was discharged from a pipeline, serious enough to warrant further investigation by the Attorney General’s Environmental Crimes Section. Creating standards that will adequately protect our water resources especially in areas of stream crossings are an excellent initiative. At a minimum, we recommend these provisions for adoption. (660a)

Response: The Department acknowledges the comment and has revised the definition of “temporary pipelines” to now be “well development pipelines.”

1978. Comment: Temporary fluid pipelines need much better regulation and inspection since sensitive watersheds in our county have been subjected to repeated spills and fish kills with tens of thousands of gallons in some instances. These need to be more tightly regulated and inspected due to their past history in Pennsylvania. (901, 939)

Response: The Department acknowledges the comment and has retained the regulatory requirements addressing well development pipelines in Chapter 78a for unconventional oil and gas operations in the final rulemaking.

1979. Comment: Proposed section 78.68b should be stricken from any rule that applies to conventional operations because they are not justified by any compelling environmental need and would impose unnecessary costs and burdens on conventional operations, which already comply with applicable provisions in Chapters 102 and 105. (1135)

Response: The final conventional chapter of the regulations does not contain this section.

1980. Comment: This section should be revised to clarify that it is not applicable to conventional operators. (1113, 1118, 1120, 1115a, 1176-1188)

Response: See response to comment 1979.

1981. Comment: The Department should ensure that the requirements for temporary pipelines in section 78.68b are consistent with the requirements for “services lines” (a category which includes

temporary oil and gas pipelines) in General Permit BWEW-GP-8.

The Department recently accepted comments on proposed revisions to Water Obstruction and Encroachment General Permit BWEW-GP-8. Currently, GP-8 is titled “Temporary Road Crossings” and it authorizes only temporary road crossings of streams and wetlands. The Department has proposed to retitle GP-8 “Temporary Crossings and Environmental Testing or Monitoring Activities,” and to expand its scope to cover, among other things, “service lines, including temporary pipelines for oil and gas operations that have an inside diameter of up to 24 inches.

We assume that the Department’s Bureau of Waterways Engineering and Wetlands and its Office of Oil and Gas Management have been in communication about possible conflicts between GP-8 and section 78.68b, and will continue to communicate. That said, it appears that the pipeline requirements in proposed GP-8 and proposed section 78.68b were developed independently of each other. For example, while proposed GP-8 opposes the terms “fresh water, which is devoid of any polluttional materials” and “fresh water which may contain polluttional materials,” proposed section 78.68b uses the phrase “fluids other than fresh ground water, surface water, water from water purveyors or approved sources,” which implies a category of fluids consisting of “fresh ground water, surface water, and water from water purveyors or approved sources.” And while proposed section 78.68b(d) provides that “[t]he section of a temporary pipeline crossing over a watercourse or body of water, except wetlands, shall not have joints or couplings,” proposed GP-8 states that “[n]o valves, fittings or pipe joints shall be located within the floodway limits of the watercourse, including above the watercourse.” To the extent that wetlands are present in floodways, these provisions would allow a person to install a pipeline with a joint over the wetland, but require an individual Chapter 105 permit, rather than coverage under GP-8. The problem is that the differences in nomenclature and phrasing between the two provisions make this less than this obvious.

We understand that proposed section 78.68b and proposed GP-8 will regulate different universes of pipelines – 78.68b covering all temporary oil and gas pipelines, including those that cross no streams and wetlands, and proposed GP-8 covering a wide range of service lines that cross streams and wetlands, including but not limited to oil and gas pipelines – but the area of overlap is broad and important. We urge the Department’s Waterways Engineering and Oil and Gas personnel to work together closely to ensure consistency between section 78.68b and GP-8 (e.g., to prohibit joints and couplings over both floodways and wetlands in both contexts) and in all cases to resolve conflicts by choosing the option that will be more protective of waters of the Commonwealth. (852a)

Response: The Department strives to ensure consistency between its programs. The Bureau of Oil and Gas Management (BOGM) is working with the Bureau of Waterways Engineering and Wetlands (BWEW) to ensure the GP8 does not conflict with § 78a.68b. The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

1982. Comment: The commentator incorporates by reference comments submitted to the Department in response to draft GP-8 by Steven Kunz and Pennsylvania Campaign for Clean Water. (852a)

Response: The Department acknowledges the comments. The comments submitted regarding General Permit 8 are specific to GP-8 and are not relevant to the changes to Chapters 78 or 78a.

1983. Comment: In summary, the proposed modification of GP-8 should not be approved because it

expands its scope inappropriately, sets minimal or no limitations on the length or area of streams and wetlands that can be impacted "temporarily" (up to 2 years), sets no special restrictions on its use or eligibility in Special Protection (EV or HQ) waters, provides no mechanism to assure full restoration of disturbed wetlands and streams, and severely restricts transparency and public oversight. (852a)

Response: See response to comment 1982.

1984. Comment: It is important that the Department use GP-8 to authorize the impacts of “single and complete projects” rather than indefinite numbers of discrete activities. If a landowner needs to cross a stream or wetland to perform work on another part of her/his property, and a temporary road crossing of a wetland represents the only regulated impact associated with the work she/he plans to do, then GP-8 may be the appropriate way to authorize the work, provided she/he meets all of its conditions.

If, on the other hand, a gas company wants to drill a set of wells to extract natural gas, needs to cross streams and wetlands with roads to access and construct the drill pad, needs additional road and pipeline crossings to get fresh water to and contaminated water from the drilling site, and needs to connect the extracted gas by pipeline to an existing transmission line, then the entire project must be evaluated as a whole even if some of its activities are “temporary”. If road or pipeline crossings serve no purpose independent of a gas well, coal, or other project, then any impacts associated with the crossings must be added to and evaluated in light of all other impacts associated with the primary project. Otherwise, General Permits are just being used to piecemeal larger projects, making it appear that their total and cumulative impacts are less than they actually are. This is true in any watershed, but it is especially important where Special Protection waters are to be impacted. (852a)

Response: See response to comment 1982.

1985. Comment: With budget reductions and cutbacks becoming routine, the Department consistently is being called upon to do more with less. Yet the risks to the resources that the Department is responsible for protecting and preserving are growing, not shrinking. A fundamental problem with all General Permits is a lack of transparency -- project proponents merely register to use and abide by them on the honor system. There essentially is no technical review by the Department, only a clerical “acknowledgment” that a registration has been received. Making matters worse, there is little opportunity for review or input by the general public because notice of a General Permit registration is provided only to the Township and County where the project is located, and it is no longer published in the Pennsylvania Bulletin as once was the case. I recommend that GP-8 registrations, and the registrations of all other General Permits, be published in the weekly Pennsylvania Bulletin. The general public then would have an opportunity to know what activities are being proposed and where, can assist the Department by providing additional oversight, and can alert the Department timely when inappropriate or ineligible activities are proposed to be undertaken. (852a)

Response: See response to comment 1982.

1986. Comment: It appears that the Department is trying to create a General Permit that can authorize a wide range of disparate activities commonly needed by oil and gas operators as well as by other enterprises in wetlands and streams. Currently, GP-8 authorizes only temporary road crossings. The proposed GP-8 would continue to authorize temporary road crossings, but would greatly expand its scope to also authorize temporary service line crossings (which can include electric and telephone lines, and water lines and other pipelines as large as 24 inches in diameter that can carry polluted water). The proposed GP-8 also would authorize temporary testing and monitoring activities, which

are ill defined (see Comment 6 below). While the common denominator appears to be that all covered activities are “temporary”, the expanded scope of the revised GP-8 is inappropriate and contrary to Chapter 105 regulations. The activities are not “similar in nature” as required by §105.442(a)(1) for General Permits. To be consistent with existing regulations, the Department should create separate General Permits for (a) temporary service line crossings and (b) temporary environmental testing and monitoring activities, and leave the focus of GP-8 on temporary road crossings. (852a)

Response: See response to comment 1982.

1987. Comment: The existing GP-8 defines a temporary road crossing as being “across a wetland or across or along a stream”. The proposed GP-8 expands that to include crossings, by either roads or service lines, that are “placed in, along, under, across, or over regulated water”. A new road “under” a stream or wetland necessarily would cause major impacts during its construction and its removal. Similarly troubling is the open-ended allowance for pipelines “under” regulated waters. How far “under” is not defined or limited in proposed GP-8, so presumably fracking pipes several feet or even 6,000 feet or more beneath regulated waters are included. Unless the specific scope of activities which are included or excluded from using revised GP-8 is more clearly defined, it appears that virtually any shale gas fracking activity would qualify, provided only that it is “completed” in less than 2 years’ time. Such an ill-defined, open-ended scope of activities is entirely inappropriate for authorization under a single General Permit, especially if those activities are allowed to be conducted in Special Protection watersheds. (852a)

Response: See response to comment 1982.

1988. Comment: The newly-proposed definition of “Environmental Testing or Monitoring Activities” is much too vague and open-ended. Included in the definition is “borings of soil or rock material ... and other similar or related activities”. That description potentially could cover a full-scale exploratory gas well project, which would be a major operation that conceivably could be completed within 2 years (“temporary”) if it encounters a low potential yield of gas. In addition to providing a separate General Permit for Environmental Testing or Monitoring Activities, (see Comment 1 above) (cross ref 2nd comment under section 1, gen descript), the Department must better define the scope of such allowable activities in a way that limits the area to be disturbed, limits the depth of borings, and/or limits the diameter of boreholes so as to ensure that any associated impacts to streams and wetlands are minimal both individually and cumulatively, and thus can appropriately be authorized by a General Permit registration. (852a)

Response: See response to comment 1982.

1989. Comment: The term “appurtenant works” is defined, and it is used in the definitions of “bridge” and of “culvert”. Elsewhere in proposed GP-8 “support structures” are mentioned when discussing temporary bridge and service line crossings of watercourses, but there is no definition or limitation for what constitutes a support structure. If “support structures” are “appurtenant works” that must be made clear. Furthermore, the Department must specify some appropriate limit on the size or dimension of support structures or appurtenant works to be authorized under GP-8 within streams and wetlands. (852a)

Response: See response to comment 1982.

1990. Comment: In accordance with §105.442(a), projects authorized under a General Permit must comply with the Department’s requirements for permit issuance in §105.14- 105.17 and §105.21.

Per §105.14(a)(6) and §105.21(a)(2), the project must comply with the standards and criteria of applicable laws administered by the Department, and that would include all Chapter 93 antidegradation requirements.

Per §105.21(a)(4), the project also must be consistent with the environmental rights and values secured by Pennsylvania Constitution Article 1, Section 27.

It is mentioned upfront in the proposal to modify GP-8 that “[t]he majority of Chapter 105 general permits have not been materially revised since 1996 and the revisions to BWEW-GP-8 represent the opportunity to reorganize and establish a better organized and more concise general permit. As pointed out in Comment 1 above, however, the new GP-8 is not being made more concise; the proposed expansion of its scope makes it less concise.

One major change that has occurred since most Chapter 105 General Permits were revised in 1996 was the adoption during 1999 of antidegradation requirements in PA Code Chapter 93 (at §93.4a-d). The current recognition by the Department that EV (Exceptional Value) and HQ (High Quality) waters of the Commonwealth deserve “special protection” has not yet been fully incorporated into the majority of Chapter 105 General Permits. The existing GP-8 only prohibits fords on EV and HQ streams, and the proposed GP-8 maintains that ford prohibition, but allows other kinds of temporary road crossings and greatly expands beyond temporary roads the types of structures and activities authorized in Special Protection waters.

Unless the Department has done a thorough analysis of the potential kinds and numbers of projects that are likely to rely on the expanded GP-8, and thus has determined its anticipated effects on EV wetlands, EV waters, and HQ waters, as well as the cumulative impacts of constructing and maintaining roads, pipelines, and other “temporary” activities in, under, and across such resources for up to 2 years, and has found those impacts to be negligible, the public has no reason to expect that this action will comply with the antidegradation requirements of Chapter 93 or the environmental rights and values assured to Commonwealth residents under Article 1, Section 27 of the Pennsylvania Constitution.

The Department should make the revised GP-8 (and indeed all General Permits) ineligible for use in any Special Protection waters. That would not prohibit these activities; it would simply allow the Department the opportunity to review the proposed work, provide public notice, and authorize approval by Individual Permit if appropriate, thereby ensuring that the antidegradation requirements will be met. (852a)

Response: See response to comment 1982.

- 1991.** Comment: The wide variety of activities authorized by proposed GP-8 are to be conducted and to remain in place for up to 2 years, and this is labeled “temporary”. The existing GP-8 and the proposed GP-8 both define “temporary” as one year, but the proposed GP-8 includes a specific allowance for extending the authorization one additional year, for a total of up to 2 years. The second year can be authorized upon written request and upon a “documentation of need”. No standard of “need” is defined, however, and since the original General Permit authorization (like all General Permits) is simply registered and not afforded any technical review, presumably any written request for extension and documentation of need will not be reviewed either. Two years of damage to water resources, even if labeled “temporary”, does not necessarily make the impact insignificant. Even one year can cause significant disruption to the functions and values of streams and wetlands, with many years required for recovery. One year measured from initial site disturbance to

completion of site restoration should be adequate for truly temporary work, and extensions should not be allowed except in rare and unusual circumstances. (852a)

Response: See response to comment 1982.

1992. Comment: The proposed allowance for a registrant to request that “temporary” structures remain in place for a second year raises the possibility that a registrant may ultimately wish to leave certain pipelines or roads in place permanently. Presumably, the registrant could ask to recharacterize an activity from one covered by GP-8 to one covered by GP-5 (utility line crossings) or GP-7 (minor road crossings). Such a “bait and switch” action, however, should be specifically disallowed once any construction has taken place under the GP-8 registration. The authorizations for permanent pipeline crossings (GP-5) or road crossings (GP-7) have more restrictive conditions than a registrant may not have been able to satisfy, had she/he initially registered for their use, including limits on the length and area of authorized impact, limits on the size and types of waterways that can be disturbed, and requirements for mitigation. The Department should make it clear that no activities constructed under a GP-8 authorization can later be recharacterized under another General Permit. Rather, an Individual Permit would need to be approved with appropriate mitigation following review and evaluation of the activity as if it had never been constructed. (852a)

Response: See response to comment 1982.

1993. Comment: The requirements for restoration of disturbed areas, as described in the proposal, are inadequate and must be strengthened. Subsection 12.A.2 directs that authorized crossings and activities (other than fords) “shall be restored to original topography and stabilized”. Subsection 12.B directs that sites disturbed by environmental testing or monitoring activities “be restored to original topography where practicable”. Subsection 19 directs that temporary fills be removed and that “affected areas [be] stabilized and returned to their pre-existing elevations”. However, where a forested wetland or a forested stream corridor has been filled or disturbed, simply returning the area to original topography will not provide adequate restoration. At minimum, GP-8 must include a requirement that all wetlands and riparian corridors disturbed by authorized activities be restored to original “condition”, including topography, hydrology, and vegetation. Additionally, there must be a requirement to report to the Department on the condition of each restored wetland or riparian corridor at some interval (I suggest one year) following restoration, and to undertake enhanced or supplemental measures and additional monitoring if the initial restoration is found to be inadequate. Again, this is especially important in Special Protection watersheds. (852a)

Response: See response to comment 1982.

1994. Comment: General Condition #4 (Subsection 12.A.4) requires that wetlands be delineated in accordance with the latest Corps of Engineers wetland delineation criteria. This requirement is a good start, but it must be expanded in three ways if it is to have any real meaning or credibility. First, it must specify that onsite wetland delineation must be conducted for the entire project area, including the recording of vegetation, soils, and hydrology data on appropriate data forms at representative locations. Second, the extent of regulated streams also must be delineated, inasmuch as many streams (and especially their headwaters) are not shown on US Geological Survey maps or the Department’s eMapPA database. Third, every wetland and stream delineation must be reviewed and confirmed in a written Jurisdictional Determination (JD) following field inspection by the appropriate Corps District. In my experience, and from discussions with Corps representatives, the Corps JD process in Pennsylvania quite often identifies additional jurisdictional wetlands and streams that were not initially recognized in a consultant’s delineation. Unless and until all wetlands and streams are accurately identified, neither the General Permit registrant nor the Department can

be confident that impacts have been avoided and minimized. Again, this is especially important in Special Protection watersheds, where antidegradation otherwise cannot be assured. (852a)

Response: See response to comment 1982.

1995. Comment: General Condition #5 (Subsection 12.A.5) requires that crossings of wetlands be avoided if possible, but elicits no information to demonstrate that a registrant has tried to achieve avoidance or minimization. This condition must be expanded to require an analysis of other possible crossing alternatives, and an explanation of how the proposed crossing avoids wetlands and why it is the registrant's preferred alternative. (852)

Response: See response to comment 1982.

1996. Comment: Subsection 12 lists several conditions regarding the orientation and structural stability of proposed crossings and support structures, including that they "shall be placed in such a manner as to not be displaced by flood waters" [Subsection 12.A.14]. While the concern for potential damage to the structures is commendable, there is no comparable condition or specific requirement that authorized structures are not to displace floodwaters, nor any analysis or requirement that maintaining such structures in a floodway or floodplain for up to two years will not obstruct floodwaters or adversely affect upstream or downstream flooding 2 in a stream of any size. Such a condition/requirement must be added to GP-8. (852a)

Response: See response to comment 1982.

1997. Comment: According to Subsection 12.C, causeways are allowed to extend no more than 300 linear feet along a watercourse, and cannot exceed 0.25 acre in "aerial" extent. I believe what might be meant here is "areal" extent. (852a)

Response: See response to comment 1982.

1998. Comment: Existing GP-8 limits the length of temporary road crossings of wetlands to 200 linear feet. Proposed GP-8 eliminates that length limit and replaces it with an areal limit of 0.1 acre of wetland. Presumably, the 0.1 acre applies to each temporary road crossing, but a single project could have multiple road crossings. In addition to the 0.1 acre limit on each road crossing, proposed GP-8 must impose a cumulative acreage limitation for all road crossings (e.g., no more than 0.25 acre of wetlands, the same limit imposed by GP-7 for permanent road crossings), beyond which reliance on GP-8 would not be allowed because it represents more than a minimal impact. (852a)

Response: See response to comment 1982.

1999. Comment: There is no limitation on the area of wetland that can be disturbed by service line crossings, by environmental testing or monitoring activities, by bridges, or by any other activities (except for roads, see Comment 14) authorized by proposed GP-8. There must be an overall areal limitation (e.g., no more than 0.5 acre) on wetland disturbances authorized by GP-8 from all proposed activities combined. Projects that exceed that limitation may be authorized, but only by Individual Permits after appropriate review and public notice. (852a)

Response: See response to comment 1982.

2000. Comment: In Subsection 12.G it is noted several times that temporary service lines that would be eligible for proposed GP-8 could be transmitting either fresh water or "fresh water which may

contain pollutional materials”. What constitutes “pollutional materials” is not defined, but presumably could include stormwater, sanitary wastewater, shale fracking fluids, and flow back fluids containing brine and radioactive materials from fracking operations. The types of “pollutional materials” allowed or not allowed must be clearly defined, especially if those pipelines are allowed to be constructed in Special Protection watersheds under the proposed GP-8. (852a)

Response: See response to comment 1982.

2001. Comment: Subsection 16 offers the feeble statement that “No regulated activity may substantially disrupt the movement of those species of aquatic life indigenous to the watercourse, stream or body of water, including those species which normally migrate through the area.” First, the qualifier “substantially disrupt” is not defined. Second, unless the project proponent is required to inventory indigenous aquatic species and those “which normally migrate through the area”, this condition is unlikely to be taken seriously and cannot be enforced. The same is true of Subsection 17 which states that “Breeding areas for migratory waterfowl must be avoided to the maximum extent practicable.” The Department must require those who would use GP-8 to include with the General Permit registration documentation of the movements of aquatic species and of the presence or absence of any breeding areas of migratory waterfowl. (852a)

Response: See response to comment 1982.

2002. Comment: The DEP’s proposed revisions would expand the scope of GP-8 to include other “temporary” water obstructions and encroachments in addition to temporary road crossings. Most notably, proposed revised GP-8 would authorize temporary crossings of streams and wetlands by “service lines,” including aboveground pipelines used by the natural gas industry to carry flow back, brines, and other pollutant-laden fluids. The expansion of GP-8 would enable the natural gas industry (and other industries) to enjoy “one-stop permitting” for temporary aboveground service lines and the obstructions and encroachments that carry them over streams and wetlands. Currently, operators must obtain coverage under GP-8 for their temporary roads and GP-5 (“Utility Line Stream Crossings”) for their pipelines.

Section 105.442 of the DEP’s Chapter 105 regulations authorizes the DEP to issue general permits authorizing water obstruction and encroachment projects if the projects are “similar in nature.” We are concerned that proposed revised GP-8 would run afoul of this limitation. Roads and their potential impacts are different from service lines and their potential impacts, and it is hard to see how those differences are elided when the roads and service lines are both temporary. (852a)

Response: See response to comment 1982.

2003. Comment: “*Complete*” project. In various locations the permit instructions are applied to the “complete” project yet the meaning implies only a portion of the permitted activity— construction, operation, maintenance or removal. In these instances, complete should be defined or substituted for the allowable “construction, operation, maintenance and removal” activities. See Conditions, Road Crossings, section 12.C.8. and Equipment, section 13. (852a)

Response: See response to comment 1982.

2004. Comment: The Campaign appreciates that the Department of Environmental Protection, as “trustee” of the Commonwealth’s natural resources, acknowledges that temporary crossings of roads and service lines are impactful and thus should be permitted activity especially as the number of crossings has grown dramatically with the natural gas boom. The need to update our current

regulation points to a lack of readiness by Pennsylvania's environmental policies for the industry's growth. The Campaign is pleased to present these comments to help ensure temporary crossings will be adequately regulated for natural gas and other activities and permitted crossing activities prioritize Pennsylvanian's clean water needs. We ask DEP to ensure its duty, through the drafting of GP-8, to "conserve and maintain" people's "right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment." (852a)

Response: See response to comment 1982.

2005. Comment: Best Management Practices, section 3. This section would be more accurately titled "Erosion and Sediment Control and Post-Construction Stormwater Management Activities." These activities are the subject of Chapter 102; BMPs are simply the means by which erosion and sediment control and post-construction stormwater management are accomplished. This section should also note one key Chapter 102 requirement that is especially significant for the maintenance of water quality in special protection streams: crossing activity at special protection water sites should maintain, restore or construct 150' forested riparian buffers. (852a)

Response: See response to comment 1982.

2006. Comment: Temporary Crossing, section 5. The proposed definition of "temporary crossing" needs to clearly define the start of "temporary." The start should be DEP's acknowledgment of permit coverage: "A road crossing or service line crossing placed for a specific period of time not to exceed one (1) year from the date the department acknowledges coverage under this permit, and removed in its entirety after that period of time." (852a)

Response: See response to comment 1982.

2007. Comment: Where General Permit Does Not Apply, Section 6. First, the DEP should specify that in the circumstances where GP-8 does not apply, operators must obtain Chapter 105 individual permits. Second, the term "hazardous and toxic material" should be defined and include pollutants harmful to aquatic or human life. Third, no temporary crossing should be permitted where protection is provided through the Wild and Scenic Act or Wilderness Act. (852a)

Response: See response to comment 1982.

2008. Comment: Extension of General Permit, section 7.A.2 and Conditions, General, section 12.A.1. The permit must define minimum requirements for permit extensions, rather than effectively directing the DEP to grant an extension whenever an operator states that it needs one. The active use of a crossing prolongs ecological impacts; so does the very placement of an obstruction or encroachment, even when it is not in use. Thus, an extension should not be permitted without demonstrated need above and beyond the need for the initial permit period and an extension should only be granted if the permittee can demonstrate 1) there remains no alternative and 2) no significant additional or permanent harm will result from prolonged permitted activity. A request for an extension should also trigger on-site inspection by DEP or its agents and an opportunity for affected public parties to review the record of reports and inspections and comment on potential additional concerns. (852a)

Response: See response to comment 1982.

2009. Comment: Effective Time Period, section 9. In light of the significant changes to the permit and expansion of scope, an indefinite effective time period is inappropriate. We suggest an initial permit

term of five years to ensure that any inadequacies that become apparent in this general permit are revisited promptly. (852a)

Response: See response to comment 1982.

- 2010.** Comment: Conditions, General, concerning site restoration, section 12.A.2 and Environmental Testing or Monitoring Activities, section B.5. Crossings and monitoring or testing sites should not be permitted where topography cannot be restored, and restoration of topography should include restoration or implementation of forested buffers at the site. (852a)

Response: See response to comment 1982.

- 2011.** Comment: Conditions, General, concerning safe use of the waterway, section 12.A.3. The customary manner of use for small streams is often at high flows and can be at any time of the year. ATON plans should be required when the “sufficient height and clearance” at times of high flows is not practicable. (852a)

Response: See response to comment 1982.

- 2012.** Comment: Conditions, General, concerning wetland delineations, section 12.A.4. The DEP’s GP-8 application form requires submission of the data sheets that form the basis of an operator’s wetland delineation. GP-8 itself should require the submission of these data sheets. (852a)

Response: See response to comment 1982.

- 2013.** Comment: Conditions, General, concerning wetland crossings, section 12.A.5. “[T]he crossing is permissible...” should be replaced with “[T]he crossing may be permissible...” In addition to demonstrating that no other crossing is available, the permittee should demonstrate no long-term ecological harm will result from the wetland crossing even if it is located at the narrowest location. Alternatively, the DEP should retain current GP-8’s 200-foot limit on the length of an allowed wetland crossing. Further, there should be a maximum cumulative acreage wetland impact for GP-8 covered projects if multiple crossings occur in the same wetland. By example 1-acre per crossing not to exceed 0.25-acre cumulatively. (852a)

Response: See response to comment 1982.

- 2014.** Comment: Condition, General, concerning devices for temporary wetland crossings, section 12.A.6. Current GP-8 states: “The site of a wetlands crossing shall be stabilized by any appropriate means, including but not limited to using removable, temporary mats, pads or other similar devices to insure minimization of impact on the wetlands ecology.” Proposed section 12.A.6 removes the language concerning stabilization (which is the purpose of wetland crossing mats and other devices) and would allow an operator to cross wetlands without mats or other devices if such devices are not “practicable.” The stabilization language should be retained and the practicability language removed. At the very least, if the practicability language is retained, GP-8 should require the operator to demonstrate lack of practicability in writing and explain what other means of crossing it will use. (852a)

Response: See response to comment 1982.

- 2015.** Comment: Conditions, General, concerning owner inspections, section 12.A.13. The permit should define “regular” inspections to be, at a minimum, seasonal. Further, inspections should be

followed with reports submitted to DEP and available to the public. DEP must provide quick review of the reports to properly “provide for continued operation and maintenance...” (852a)

Response: See response to comment 1982.

2016. Comment: Conditions, General, concerning protection of vegetation, section 12.A.15. While protection of the existing landscape should be maximized during construction and operation, restoration of any harm from construction and use of the crossing should be built into the maintenance plan, and forest cover should replace the riparian and land features that were developed to serve the crossing when the crossing is removed. Restoration of approaches should include approaches for fords—see Conditions, Fords, section 12.F.3. (852a)

Response: See response to comment 1982.

2017. Comment: Conditions, Environmental Testing or Monitoring Activities, section 12.B.3. This section provides that “[a]ny cutting or boring liquids shall ... be in compliance with 25 Pa Code Chapter 102 (relating to erosion and sediment control)”. Chapter 102 does not govern the use of cutting or boring liquids except to the extent that section 102.5(l) requires that, when conducting earth disturbance activities, a person using pollutants prepare and implement a Preparedness, Prevention, and Contingency (PPC) plan. Section 12.8.3 should state explicitly that operators that conduct environmental testing activities using potentially polluting materials must develop and implement PPC plans. (852a)

Response: See response to comment 1982.

2018. Comment: Conditions, Road Crossings, sections 12.C.2-4. Generally, crossings and approach roads should not result in new runoff and should be restored with vegetated cover when the crossing is removed. (852a)

Response: See response to comment 1982.

2019. Comment: Conditions, Road Crossings, concerning wetland crossings, sections 12.C.5-8. Generally wetlands should not be filled. An operators seeking to fill a wetland, rather than cross it using a timber mat or other less impactful device, should at a minimum be required to demonstrate why a fill is necessary. The DEP should inspect all filled crossings after removal to determine whether any permanent impacts have occurred, or at a minimum require operators to provide independent, professional certification that no permanent impacts have occurred. (852a)

Response: See response to comment 1982.

2020. Comment: Conditions, Bridges, section 12.D.4. If bridge design and construction cannot eliminate the potential for damages at bank-full conditions, the “permittee shall remove the temporary crossing...” under bank full conditions as well as “...in the event of high waters...” (852a)

Response: See response to comment 1982.

2021. Comment: Conditions, Culverts, section 12.E.3. Design should address the discharge of normal high flows. (852a)

Response: See response to comment 1982.

2022. Comment: Conditions, Fords, section 12.F.4. All water supplies should be protected, not just “public water supplies...” Nearby upstream intakes should be protected if the ford creates a backwater or mixing zone where sediment or other pollutants could contaminate the intake. Further, GP-8 should prohibit fords on streams and water bodies having *existing* uses of High Quality or Exceptional Value, as well as streams and water bodies that have been designated as such. Important note: prohibiting fords in HQ or EV streams is good, but that prohibition should be extended to HQ and EV crossings that involve instream harm—fills, some road crossing, culverts and service lines. Prohibition of activity in HQ and EV waterways should be listed under Conditions, General, and section 12.A. (852a)

Response: See response to comment 1982.

2023. Comment: Conditions, Service Line Crossings, concerning construction, sections 12.G.5-6. First, to ensure clarity, the phrase “Temporary service line crossings of all watercourses transmitting fresh water...” should read “For all watercourses, temporary service line crossings transmitting fresh water...” Second, equal care to the integrity of the service line should apply to lines transmitting clean or polluted water. And, while there are important reasons to prohibit “hazardous or toxic” (see Where General Permit Does Not Apply, section 6), it is equally important to ensure service lines prohibit spill of pollution or even additional volumes of clean water that may harm the floodplain, the riparian corridor or degrade the crossed waterway. See further comment in the last bullet, Terminology, regarding “pollutional materials.”

We recommend that the DEP eliminate section 12.G.5 and apply the more stringent standard set forth in section 12.G.6 to crossings of all service lines that carry fluids of any kind. On the one hand, the category of water covered by section 12.G.5 – “fresh water which is devoid of any pollutional materials” – is arguably a non-existent category because (i) “pollutional materials” is not defined in proposed GP-8, and (ii) almost all water contains substances that could be considered pollutants, even if in very low concentrations. Moreover, given the lack of definition for the terms “fresh water” or “freshwater” in GP-8 (or any of the DEP’s regulations), and the fact that under residual waste general permit WMGR123 gas well wastewaters can be “de-wasted” and handled like fresh water, requiring separate standards for pipeline crossings involving “fresh water which is devoid of pollutional materials” and “fresh water which may contain any pollutional materials during the lifetime of the crossing” is confusing – and likely to lead to confusion and error in the field. A two-tiered standard is even less appropriate given the fact that, as proposed, GP-8 contains no provisions to ensure that service line for water “devoid of pollutional substances” will not have been used to carry wastewater at some previous time, or will have been adequately cleaned, if it has been. (852a)

Response: See response to comment 1982.

2024. Comment: “*Pollutional materials.*” This awkward use of pollution as an adjective of materials will not be necessary if 12.G.5 and 6 are combined, providing equally robust construction for service lines carrying any material. If it remains important to isolate treatment of materials being transported in service lines, with pollution and those without, then a definition is important. In the context of crossings, if the material is not hazardous or toxic (see again, comments 3 and 19), the concern should be potential for degradation, even temporarily. Materials should not be permitted to cross in temporary service lines if crossing cannot be assured to satisfy anti-degradation rules in the case of transport failure impacting the floodplain, soils, groundwater, riparian corridor or the waterway itself. (852a)

Response: See response to comment 1982.

2025. Comment: Conditions, Service Line Crossings, concerning “industry standards,” section 12.G.7. This section mandates that service lines carrying fresh water or wastewater “shall consist of materials that meet industry standards for durability, strength and appropriate pressure ratings to handle the anticipated uses and conditions.” What industry standards does the DEP have in mind? GP-8 could be used by a range of different industries, including the oil and gas production industry. How many and which industries have standards for service lines? Who decides what those standards are? Criteria for the durability and strength of service lines are obviously a good idea, even a practical necessity. But the DEP must state more specifically where it will look to determine if operators have, in fact, designed their services lines to industry standards. Otherwise, the indispensable requirements of this section will be unenforceable. (852a)

Response: See response to comment 1982.

2026. Comment: Conditions, Service Line Crossings, concerning backwater and high flow, section 12.G.10. Please reference comment 16 for Conditions, Bridges, and section 12.D.4. (852a)

Response: See response to comment 1982.

2027. Comment: Use of Explosives, section 14. The use of explosives should not be permitted unless the permittee can demonstrate no lasting (beyond the permit term) harm and no explosive should be used at HQ and EV waterway sites. (852a)

Response: See response to comment 1982.

2028. Comment: Aquatic Life Movements, section 16. Greater clarity or definition of “substantially” is required. Permitting must be mindful of breeding seasons, migration, impacts from temperature changes due to pooling or other crossing impacts etc. (852a)

Response: See response to comment 1982.

2029. Comment: Fill, section 18. Fills that impact the hydrology of the site should not be permitted. (852a)

Response: See response to comment 1982.

2030. Comment: **Removal of Temporary Fills, section 19.** “[A]ffected areas...” requiring stabilization should include approach areas that may cause runoff. And, bank vegetation should be restored or riparian buffers implemented in addition to restoring pre-existing instream elevations (see similar comments 12 and 14.) (852a)

Response: See response to comment 1982.

2031. Comment: **Navigation, section 20.** Impeded navigation or recreation should require ATON plans per Conditions, General, 12.A.3 and safe passage should be restored upon removal of the crossing feature. (852a)

Response: See response to comment 1982.

2032. Comment: Commentators question EQB’s statutory authority for these three sections (78.68, 78.68a, and 78.68b) and also question if these provisions are consistent with the intent of the General

Assembly and Act 13. The commentators assert that the subject matter addressed by these sections is extensively covered by both federal and state law, and consequently these sections are not needed. In the Preamble to the final-form regulation, we ask EQB to explain its statutory authority for these sections and how they are consistent with the intent of the General Assembly and Act 13. We also ask for an explanation of why these sections are needed, in light of other federal and state laws that cover these matters. (1099)

Response: Chapters 78 and 78a are being promulgated under the authority of several environmental statutes, not just the 2012 Oil and Gas Act. The construction, operation, maintenance, repair, and removal of oil and gas gathering and well development pipelines can impact the health, safety and welfare of the public and the environment. Pennsylvania environmental statutes that provide authority for §§ 78a.68, 78a.68a and 78a.68b include the Clean Streams Law, the Dam Safety and Encroachments Act, and the Solid Waste Management Act. The Department also notes that section 3218.4(a) of the 2012 Oil and Gas Act requires that all “buried metallic pipelines shall be installed and placed in operation in accordance with 49 CFR Part 192, Subpart I (relating to requirements for corrosion control).” Because gathering lines can carry either natural gas or hazardous liquids, section 78a.68(g) of the final-form rulemaking also allows for compliance with 49 CFR Part 195, Subpart H as well as Part 192.

2033. Comment: Similar to our previous comments, we note that these sections have generated significant interest from the regulated community. Some commentators believe that the language would impose significant costs to the oil and gas industry without a corresponding benefit. Other commentators have suggested additional language that is more protective of the environment. We ask EQB to explain in the Preamble and RAF of the final-form regulation how the requirements in this section reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry. (1099)

Response: The Department acknowledges the comment. The Executive Summary and RAF address these issues.

2034. Comment: 78.68b - This title is confusing. Temporary pipelines constitute an “oil and gas operation” as defined by Act 13, (see change to definition of temporary pipelines above), so the inclusion of “for oil and gas operation” is redundant. The heading should be revised to simply state: “Temporary pipelines.” (1147, 1174)

Response: The Department acknowledges the comment and has revised the definition of “temporary pipelines” to now be “well development pipelines.”

Section 78.68b only addresses well development pipelines being utilized by an operator for oil and gas operations. Should the operator install a well development pipeline for purposes other than oil and gas operations, it would be subject to other regulatory requirements as appropriate.

2035. Comment: Eliminate the word “temporary” as these lines may be in place for decades before the well site is restored due to multiple wells and multiple re-frackings on a given site. [See Definitions. (78.1.)] (941, 1098)

Response: The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.” Well development pipelines, although not specifically defined as temporary are only allowed to remain in place as to service a well until the well site has

been restored. However, the Department believes use of the term “Well Development Pipelines” is more reflective of the intent of this term, especially as they are not intended to be permanent.

- 2036.** Comment: Provision should be added to this section requiring the pipeline to be designed for this use and be compatible with the material being transported. (1049)

Response: The Department disagrees that this provision is necessary for this regulation. The Department’s experience with well development pipelines does not suggest that pipeline compatibility is a contributing factor to releases and environmental damage from well development pipelines. Note: The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

- 2037.** Comment: Too often, the entire length of pipeline corridor is cleared and graded all at once early in the project, and the cleared land (and any excavated trenches) remains in an unstabilized state for long periods of time, allowing unwanted non-point source runoff to occur. To eliminate these water quality (WQ) impacts construction should be phased to limit the areal extent and duration of earth disturbance and provide for more timely stabilization of at least those areas tributary to sensitive water resources (at least Exceptional or High Value Waters). Permanent stabilization should proceed IMMEDIATELY in sensitive areas once the pipe is placed in the ground and the trench backfilled. Since the core concept of these proposed amendments is the protection of public lands, this recommendation will decrease potential significant WQ impacts and better protect Waters of the State. (1028)

Response: All earthmoving related to Oil and Gas Activities are required to comply with the provisions of Chapter 102. Proper planning and construction of each project on behalf of the operator/permittee and proper permit review, approval and inspection by the Department during earthmoving activities ensure the Ch. 102 regulations are being met. The time-frames of stabilization (temporary and permanent) upon cessation (temporary or permanent) of earthmoving activities are described in Ch. 102.

- 2038.** Comment: 78.68b (a) - The language relating to Chapter 102 would not be necessary in light of Range’s proposed change to Section 78.53 above. Temporary pipeline construction is an “oil and gas operation” (see change to definition of “temporary pipelines” above), as defined in Act 13, and erosion and sediment control requirements for oil and gas operations are addressed in Section 78.53. (1174)

Response: The reference to Chapter 102 is appropriate to notify operators of well development pipelines of applicable requirements outside of Chapter 78.

- 2039.** Comment: § 78.68b(a) Suggested amendatory language: Temporary pipelines must meet applicable requirements in Chapter 105 (relating to dam safety and waterway management). (1147, 1174)

Response: See response to comment 2038.

- 2040.** Comment: Section 78.68b(a) should identify the regulated activities under Chapters 102 and 105 with which temporary pipelines must comply.

Subsection (a) currently provides: “Temporary pipelines shall meet applicable requirements in 25 Pa. Code Chapters 102 (relating to erosion and sediment control) and Chapter 105 (relating to dam

safety and waterway management).” We recommend that to add clarity, the Department revise this subsection to add the words that follow in italics: “*The construction, installation, use, maintenance, repair, and removal of temporary pipelines* shall meet applicable requirements in 25 Pa. Code Chapters 102 (relating to erosion and sediment control) and Chapter 105 (relating to dam safety and waterway management).” It is not pipelines themselves that cause erosion and sedimentation, but their installation, removal, and maintenance. Similarly, Chapter 105 does not contain pipeline specifications; it regulates the placement of pipelines. Section 78.68b (a) should reflect these considerations. (852a)

Response: The explanation of well development pipelines in Section 78a.68b(a) has been amended accordingly.

- 2041.** Comment: Section 78.68b (b) should be revised to clarify the types of pipelines that must be installed aboveground except when crossing pathways, roads, or railways.

Currently, subsection (b) provides: “Temporary pipelines that transport fluids other than fresh ground water, surface water, water from water purveyors or approved sources, shall be installed aboveground except when crossing pathways, roads or railways where the pipeline may be installed below ground surface.” We recommend striking the phrase “water from water purveyors or approved sources” because water obtained from purveyors may consist of acid mine drainage or other water that could cause pollution, if discharged into a water of the Commonwealth, and because the term “approved sources” is ambiguous. For clarity, we also recommend replacing the phrase “fresh ground water, surface water” with the phrase “fresh ground water or fresh surface water.” We suggest the following language for revised section 78.68b(b): “Temporary pipelines that transport fluids other than fresh ground water or fresh surface water shall be installed aboveground except when crossing pathways, roads or railways, in which case the pipeline may be installed below ground surface.” (852a)

Response: The Department agrees that clarification of the provision is appropriate but disagrees with the limitations proposed in the comment. The provision has been amended to clarify the types of water that may be transported in a temporary underground pipeline.

- 2042.** Comment: **78.68b(b)** – We support requiring aboveground pipelines for transporting wastewater. (113)

Response: The Department acknowledges the comment.

- 2043.** Comment: **§ 78.68b (b)** – There are instances where it may be more practical and/or less invasive to cross watercourses and/or bodies of water below ground surface. A provision should be added to allow underground crossings of water courses or bodies of water. Suggested amendatory language: “Temporary pipelines that transport fluids other than fresh ground water, surface water, water from water purveyors or approved sources, shall be installed aboveground except when crossing pathways, roads, railways, watercourses, or bodies of water where the pipeline may be installed below ground surface.” (1071, 1147, 1174)

Response: The Department acknowledges that there may be instances where it is more practical and/or less invasive to cross watercourse and/or bodies of water below the ground surface. The final-form rulemaking allows underground installation of well development pipelines when crossing watercourse or bodies of water with Department approval.

- 2044.** Comment: Section 78.68b(b) imposes a blanket restriction on burying pipelines that are carrying

any fluids other than fresh ground water, surface water, water from water purveyors or other approved sources. This restriction is an unreasonable limitation on field construction and operations. Operators should be encouraged rather than discouraged from piping water sources to/from their well sites to reduce truck traffic, allow for efficient recycling of water, and better protection of the water line. If an operator desires to install its water lines underground to better protect the lines from the elements, damage and vandalism, it should not be restricted to only using those lines for freshwater. Operators should be able to utilize buried water lines to transport both fresh and flowback water as needed from the wellhead to/from storage and to/from active frac sites. Yes, there are risks associated with buried pipelines, but many of those risks are the same if the pipeline is placed on the surface. As the risks are similar, and burying the line can actually provide much greater protection to the pipeline than simply placing it on the surface, EQB should remove this blanket restriction on burying water lines. (1140)

Response: The Department has determined that it is appropriate for well development pipeline transporting fluids other than fresh ground water, surface water, water from water purveyors or approved sources to be installed above ground to minimize environmental impact, including undetected leaks and additional earth disturbance activities. Additionally, burial of the pipeline does not suggest a temporary installation which this section is intended to allow.

2045. Comment: § 78.68b(c) – There may be instances where culverts, casing, or apparatuses which could be construed as culverts were previously installed for the specific purpose of installing temporary piping across impediments. (1147, 1174)

Response: The Department acknowledges the comment. Section 78.68b(c) does not prohibit the use of culverts, casing or apparatuses which were constructed for the specific purpose of installing temporary piping across impediments as long as the culverts, casing or apparatuses are not stream culverts or storm drain pipes.

2046. Comment: Language should be added to §78.68b(c) to clarify that this applies only to bridges over water (i.e. bridges subject to 25 Pa. Code Chapter 105, Subchapter C). (1147, 1174)

Response: Bridges not over water may be used to traverse stormwater conveyances in which case, Department oversight of well development pipeline installation under a bridge is appropriate. The Department agrees that installation of well development pipelines under bridges not over water and not used to traverse stormwater conveyances should not be subject to this section. The final-form rulemaking clarify the requirements regarding bridges used to traverse stormwater conveyances and bridges not over water.

2047. Comment: Section 78.68b(c) should be revised to clarify that temporary pipelines cannot be installed through existing stream culverts, storm drain pipes or under bridges that are subject to Chapter 105, Subchapter C without approval from the Department. (1147, 1174)

Response: Stormwater culverts and storm drain pipes may not be regulated under 25 Pa. Code Chapter 105 and may not function properly when a well development pipeline is installed through them which may threaten public safety and/or harm the environment. Additionally, see response to comment 2046.

2048. Comment: Section 78.68b(c) should be revised to clarify that temporary pipelines may be installed through existing stream culverts, storm drain pipes or under bridges when such structures were previously specifically installed for this purpose. (1147, 1174)

Response: See response to comment 2045.

- 2049.** Comment: 78.68b(c) -The term “under bridges” is unclear. We have spoken with PennDOT about running temporary water lines within the bridge trusses. Would this be considered “under bridges” or would it be considered part of the structure since it would not obstruct flow in any way and does it matter? (1049)

Response: The purpose of §78.68b(c) is to address well development pipelines installed through or under existing bridges, stream culverts and storm drains. See response to comment 2046.

- 2050.** Comment: Section 78.68b(c) should provide that temporary pipelines may not be installed through any stream culverts, storm drain pipes, or under bridges without authorization from the Department.(852a)

Response: There may be instances where installing a well development pipeline through a stream culvert, storm drain pipe or under a bridge is appropriate. See response to comment 2046.

Note: The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

- 2051.** Comment: Proposed subsection (c) states that temporary pipelines “cannot be installed through existing stream culverts, storm drain pipes or under bridges without approval by the Department pursuant to § 105.151 (relating to permit application for construction or modification of culverts and bridges).” To ensure consistency with 25 Pa. Code Chapter 105, the word “existing” should be struck. (852a)

Response: The intent of the subsection was to cover situations where well development pipelines are proposed to be placed in existing structures which may not have the necessary hydraulic capacity to accommodate the well development pipeline. Pipeline placement in proposed structures will be addressed under the appropriate permitting requirements.

Note: The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

- 2052.** Comment: The word “cannot” should be changed to “may not” in §78.68b(c). (852a)

Response: The Department agrees. The proposed change will be made.

- 2053.** Comment: 78.68b(d) -This subsection should be revised to clarify that a heat fused joint of HDPE pipe, fused according to ASME specifications, would not be classified as a joint under this subsection as heat fused joints are equal to the strength and integrity of the pipe itself. It is suggested that the language be changed to refer to the joints as “threaded or mechanical joints”. (1049)

Response: The Department does not consider a welded seam to be a joint for the purpose of this subsection.

- 2054.** Comment: § 78.68b.(d) There may be instances where the width of a stream exceeds the length of a section of temporary pipe, thus a joint or coupling may be required to install the

crossing. (1147, 1174)

Response: Section § 78.68b has been removed from the final-form rulemaking. The Department acknowledges the comment and has revised § 78a.68b(d) to allow joints or couplings in well development pipelines over water bodies if secondary containment is provided.

2055. Comment: Amendatory language: The section of a temporary pipeline crossing over a watercourse or body of water, except wetlands, shall have the minimum number of joints or couplings. Temporary pipeline crossings over wetlands shall utilize a single section of pipe to the extent practicable. Shut off valves shall be installed on both sides of the temporary crossing. (1147, 1174)

Response: The Department acknowledges the comment and has revised § 78a.68b(d) to allow joints or couplings in well development pipelines over water bodies if secondary containment is provided. Also, the Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

2056. Comment: Replace the words “to the extent practicable” with “to comply with “best practice at the time of installation” so that joints and couplings are not incorporated in the crossing of watercourses or ponds into which toxic substances might escape [78.68b (d)]. (941, 1098)

Response: The Department disagrees with the suggested revision. Some wetland crossings may be too wide and exceed the length of a section of temporary pipe and a joint or coupling may be required to implement the crossing.

2057. Comment: Allowing temporary pipelines carrying wastewater to have joints and couplings over wetlands is unreasonable.

Proposed section 78.68b (d) provides that “[t]he section of a temporary pipeline crossing over a watercourse or body of water, *except wetlands*, shall not have joints or couplings. Temporary pipeline crossings over wetlands shall utilize a single section of pipe to the extent practicable. Shut off valves shall be installed on both sides of the temporary crossing.” (Emphasis added). Where pipelines that carry wastewater, chemicals, and other “regulated materials” are concerned, a rule that allows joints and couplings over wetlands as a general rule (rather than an exception) is arbitrary and unreasonable. Why should wetlands be afforded less protection than streams? They should not be. The phrase “except wetlands” should be struck in the first sentence of the proposed regulation, and the second sentence – in which the use of the phrase “to the extent practicable” makes the avoidance of joints a matter of financial feasibility – should likewise be deleted. (852a)

Response: See response to comment 2056.

Note: The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

2058. Comment: 78.68b(d) – Commenter recommends insertion of the term “minimum number” to allow for the crossing scenario. (1174)

Response: The Department disagrees with the proposed revision. See responses to comments 2054 and 2056.

2059. Comment: Shut off valves should not only be installed on both sides of temporary crossings but also every 50 feet along the line to limit contamination in the event of a rupture. These locations must be included in an emergency response plan and monitored on an on-going basis to assure working order. [78.68b (d and e)] (941, 1098)

Response: The Department has determined that shut off valves located on both sides of a well development pipeline crossing are adequate to limit environmental damage in an emergency situation. Requiring installation of valves every 50 feet as the commenter suggests is unreasonable and would result in more potential points of failure in the pipeline. Additionally, in some cases, this requirement would result in valves being installed over watercourses and wetlands when they otherwise would not be required.

2060. Comment: Discharge limits of 1000 barrels of fluid needed for a shut-off valve are too high - particularly in areas of exceptional quality and high quality streams. Because of varying pressures and the potentially highly toxic content in the lines, 100 barrels would provide greater protection for our waters. [78.68b (e)]. (941, 1098)

Response: The Department acknowledges that 100 barrels is less than 1000 barrels and those smaller spills are generally less harmful. However, the Department also recognizes the need for reasonable operation of well development pipelines. Reducing the containment limit from 1,000 barrels to 100 barrels could potentially increase the number of valves by a factor of 10 which will increase the number of potential failure points by a factor of 10. The Department believes that the containment limit appropriately balances the need for environmental protection with the need for reasonable operation of well development pipelines. In addition, the Department has revised § 78a.55 to require the emergency response plan to include the location and monitoring plan for any emergency shutoff valves located along well development pipelines in accordance with § 78a.68b.

2061. Comment: Subsection 78.68b (e) should be revised to be at least as stringent as sections 12.G.8 and 12.G.9 in proposed GP-8.

Sections 12.G.8 and 12.G.9 of proposed GP-8 provide for periodic inspections of temporary pipelines that transport wastewater; for shut-off valves located outside of the floodway limits of waterways; for written procedures for stopping the flow of fluids when a leak, break, or rupture occurs, and for terminating service and collecting remaining fluids when operations cease; and for a written emergency response plan addressing actions to be taken if a discharge, leak, or spill should occur. Section 78.68b(e) contains provisions for shut-off valves, check valves, and “other method [sic] of segmenting the pipeline placed at designated intervals,” but only to the extent necessary to prevent the discharge of “no more than 1000 barrels of fluid.” Requiring shut-off valves and other devices that would do nothing to stop discharges of less than 1,000 barrels is barely better than not requiring shut-off valves at all, and would fail to protect the Commonwealth’s waters and soils from leaks and spills. The safety provisions in sections 12.G.8 and 12.G.9 of GP-8 are reasonable and far more protective. The Department should include all of them in proposed section 78.68b(e). (852a)

Response: The Department disagrees that regulations should be at least as stringent as conditions of General Permit 8 (GP-8) because regulations and general permit conditions serve different functions in the regulatory scheme. Regarding the commenter’s concern about containing a spill from a pipeline, the Department has revised § 78a.55 to require the emergency response plan to include the location and monitoring plan for any emergency shutoff valves located along well development pipelines in accordance with § 78a.68b.

Regarding the 1,000 barrel containment limit, see response to comment 2060.

- 2062.** Comment: Highly visible flagging every 75 feet or less must be supplemented with motion sensitive devices with light and/or sound to prevent damage by wildlife, off-road vehicles, cross country skiers, hunters, and others [78.68 (f)]. (941, 1098)

Response: Highly visible flagging or other demarcation will be required on above-ground well development pipelines at regular intervals over its entire course, including special demarcation at all stream and wetland crossings. Motion sensitive devices are not practical for this application.

- 2063.** Comment: § 78.68b.(f) should allow for alternatives to highly visible flagging if approved by the Department. Suggested amendatory language: Highly visible flagging, or other alternative marking method approved by the Department, shall be placed at regular intervals, no greater than 75 feet, along the entire length of the temporary pipeline. (1147)

Response: The Department agrees and has added “markers or signs” to the final-form rulemaking.

- 2064.** Comment: 78.68b (f)--It is recommended that the Operator be given latitude when identifying temporary infrastructure based on local variables and unique characteristics of a given locale. Our suggested amendatory language: Temporary pipelines shall be identified and marked at regular intervals over its entire course including special demarcation at all crossings.” (952)

Response: The flagging, markers or signs requirement contains appropriate flexibility to address locational considerations.

- 2065.** Comment: 78.68b (f) - Variable spacing for flagging based on setting (e.g., woods vs. fields) and risk (e.g., where a vehicle might run over the line) should be considered. (1049)

Response: See response to comment 2064.

- 2066.** Comment: 78.68b (f) - An allowance for alternative marking methods is required in this section as cattle and other farm animals may destroy typical flagging. Suggested Language: (f) Highly visible flagging, or other alternative marking method approved by the Department, shall be placed at regular intervals, no greater than 75 feet, along the entire length of the temporary pipeline. (1174)

Response: See response to comment 2063.

- 2067.** Comment: 78.68b(g) - Similar to paragraphs (b) and (e), this type of prescriptive pressure testing requirement should be limited to pipelines used to transport fluids other than fresh ground water, surface water, water from water purveyors or approved sources, or in the alternative, a 15 minute (rather than 2 hour) pressure test should be adequate for those water sources . Suggested amendatory language: Temporary pipelines shall be pressure tested prior to being first placed into service and after the pipeline is moved or altered. For temporary pipelines that transport fluids other than fresh ground water, surface water, and water from water purveyors or approved sources, a passing test is holding 125% of the anticipated maximum pressure for two hours. Leaks or other defects discovered during pressure testing shall be repaired prior to use. (1147, 1174).

Response: Uncontrolled release of pressurized fluids will cause environmental harm regardless of the chemical characteristics.

Note: The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

- 2068.** Comment: Subsection 78.68b (g) should require pressure testing each time a temporary pipeline is placed in service.

Currently, subsection (g) provides that “temporary pipelines shall be pressure tested prior to being first placed into service and after the pipeline is moved or altered.” For purposes of clarity, the phrase “and after the pipeline is moved or altered” should be replaced with the phrase “and each time the pipeline is subsequently placed into service after being moved or altered.” (852a)

Response: The revised language states that “well development pipelines shall be pressure tested prior to being first placed into service and after the pipeline is moved or altered.”

Note: The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

- 2069.** Comment: Records of pressure testing and daily use must be available to DEP as well as repairs [78.68b(g)]. (941, 1098)

Response: The Department agrees and has added language to this section to require appropriate record keeping.

- 2070.** Comment: Subsection 78.68b (h) should clarify that any discharge of hydrostatic water requires a NPDES permit from the Department under 25 Pa. Code Chapter 92a.

As the Department notes in Notice of Intent instructions for its NPDES general permit PAG-10, “NPDES General Permit for Discharges from Hydrostatic Testing of Tanks and Pipelines,” “[a]ll persons identified in 40 CFR Part 122 who operate facilities or activities which discharge pollutants into surface waters of the Commonwealth (including intermittently flowing streams and drainage channels), including discharges to municipal separate storm sewers or non- municipal separate storm sewers, are required to have the discharges authorized by a NPDES permit.” The Department has developed PAG-10 for discharges of hydrostatic testing water that do not occur in special protection watersheds. (In special protection watersheds, individual NPDES permits are required). Section 78.68b (h) should make clear that operators seeking to discharge hydrostatic testing water to surface waters of the Commonwealth must obtain a NPDES permit. (852a)

Response: The commentator raises one particular situation while the rulemaking language is generic enough to address all discharge situations.

- 2071.** Comment: 78.68b (i)--it is unclear how often these inspections must occur and how often they must be documented. Please provide clarity regarding the proposed extent of these temporary pipeline regulations.(124, 124a)

Response: 78a.68b(i) has been revised to clarify that pipeline inspections must occur daily when the pipeline is pressurized.

Note: The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

2072. Comment: This evening we address a portion of Section C Environmental Protection and Performance Standards beginning with Temporary Pipelines for Oil and Gas Operations (78.68b). We commend the Department for including these pipelines based on the results of our study in Lycoming County. We recognize that pipelines are the safest way to transport hazardous liquids and gases if they are appropriately installed and monitored with adequate precautions taken. Strict accountability standards as well as monitoring and enforcement are needed by outside agencies - not the operators - relative to their construction and on-going maintenance. [78.68b (i)] (941, 1098)

Response: The Department acknowledges the comment and has revised the definition of “temporary pipelines” to now be “well development pipelines.”

2073. Comment: 78.68b (i)--Temporary pipelines transporting residual waste or partially treated water have the potential for leaks. Temporary pipelines run long distances and if not properly monitored and maintained can create at risk situations for water resources and private water supplies. Our soils are also at risk. This section adequately addresses such issues and we recommend its adoption. (1035)

Response: The Department acknowledges the comment and has revised the definition of “temporary pipelines” to now be “well development pipelines.”

2074. Comment: EQB must clarify § 78.68b (i), which requires inspections prior to and during each use. What is meant by “during each use?” For example, if fluid is flowing for 14 consecutive days, how often is the operator to inspect the facilities based on this regulation? (1140)

Response: See the response to comment 2071.

2075. Comment: Subsections (i) and (m) should require operators to retain records of temporary pipeline operations, inspections, and repairs for at least two (2) years after a pipeline has been removed from service.

Section 78.68b (i) requires operators to document their inspections and repairs of temporary pipelines, and section 78.68b(m) requires operators to document where and when they used pipelines, and what fluids they transported in them. We support these provisions, but recommend additional provisions requiring operators to retain their inspection documents for at least two years after a pipeline has been removed from service. If this documentation is not retained, and so cannot be provided to the Department, it will be much more difficult for the Department to determine whether an operator’s temporary pipeline operations were responsible for pollution later discovered in the vicinity of the pipeline operations. (852a)

Response: The Department agrees and has added a new subsection to this section to set an outside timeframe for records retention. Given the temporary nature of well development pipelines, the Department has established a requirement to retain these records for one year after the pipeline is removed from service.

Note: The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

2076. Comment: The word “and” should be replaced with the word “or” in 78.68b(j), as both will relieve pressure on the pipe, reducing the potential for discharge. There may be instances where an operator intends to utilize the pipeline within a reasonable timeframe after the initial “use”. Dewatering the

entire pipeline would be a wasteful and unnecessary action. Suggested amendatory language: Temporary pipelines not in use for more than 7 calendar days shall be emptied or depressurized. (1147, 1174)

Response: It is not possible to fully depressurize a well development pipeline that is not empty. Also, the Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

2077. Comment: Monitoring of the contents must be done to assure the public that flammable materials - even when mixed with other fluids - are not being transported through temporary pipelines [78.68(k)]. (941, 1098)

Response: Transportation of flammable fluid is prohibited by 78.68(k). The Permittee will be responsible to ensure that flammable fluids are not transported through well development pipelines. Should it be determined that flammable fluids have been transported through well development pipelines, the Department will take the appropriate action.

The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

2078. Comment: Restoration must be completed to the highest standards to the original state to mitigate degradation and prevent changes in the hydrogeology over the long-term [78.68(l)]. (941, 1098)

Response: The intent of the provision is to provide a timeline for the removal of well development pipelines. The typical construction and removal techniques used on well development pipelines do not generally result in significant earth disturbance or a need for site restoration. All earth disturbance resulting from installation and/or removal of the well development pipelines must be conducted in compliance with 25 Pa. Code Chapter 102.

2079. Comment: § 78.68b.(m) Suggested amendatory language: An operator must keep records regarding the location of all temporary pipelines, the type of fluids transported through those pipelines, and the approximate period of time that the pipeline was in use. These records should be kept for the duration of the use of the pipeline and for a period of one (1) year after the end of use. Such records must be made available to the Department upon request. (1147, 1174)

Response: See response to comment 2075.

2080. Comment: The location and contents of fluids transported through the pipelines as well as timelines for use must not only be provided to the Department on request, but automatically to all emergency responders in the area and County Conservation District personnel. [78.68(m)].
At this time, our studies indicate that pipelines will have a far greater impact on our environment than previously assumed. Thus, we urge your thoughtful consideration and thank you. (941, 1098)

Response: See response to comment 2059. The Department’s Emergency Response staff has protocols in place to notify the appropriate first responders as necessary for these types of events.

2081. Comment: 78.68b – We support requirements for temporary pipelines used for Oil and Gas Operations. (1143)

Response: The Department acknowledges the comment and has revised the definition of “temporary pipelines” to now be “well development pipelines.”

2082. Comment: The Delaware Riverkeeper Network previously submitted comments 2083 through 2098 to the PADEP outlining its concerns about, and recommendations for, the GP8 Permit for temporary pipelines and stream crossing. Those comments are attached hereto as Appendix B for the EQB’s ease of reference. (1143)

Response: The Department acknowledges the comments. The comments submitted regarding GP-8 are specific to GP-8 and are not relevant to the changes to Chapters 78 or 78a.

2083. Comment: PADEP should amend the proposed BWEW-GP-8 (“GP-8”) as significant portions of the permit are overly vague, unenforceable, and not sufficiently protective to human health and the environment. (1143)

Response: See response to comment 2082.

2084. Comment: Under what conditions may a project applicant fell trees for a ROW for a temporary service line? (1143)

Response: See response to comment 2082.

2085. Comment: How wide may a ROW be for a temporary service line? (1143)

Response: The right of way is not limited. However, § 102.4 requires that projects be designed to limit the extent and duration of earth disturbance to the extent practicable. Additionally, earth disturbance fees are required that the operator must pay for the review of erosion and sediment pollution control plans as well as the costs of unwarranted earth disturbance and stabilization that would exceed any benefit from expanding the right of way beyond what is necessary. The well development pipelines are needed for access by construction vehicles, trenching, placement of pipe, staging areas for operator offices and transportation vehicles and storage areas for construction equipment and piping.

2086. Comment: What are the restoration and mitigation requirements for such activities? (1143)

Response: See response to comment 2082.

2087. Comment: Until such time that the items above are addressed significant sections of the proposed GP-8 permit are overly vague, unenforceable, and not sufficiently protective to human health and the environment. DRN respectfully requests that these changes be made and the draft permit, with this additional detail be re-released for public review and comment, before the permit is made final and issued. (1143)

Response: See response to comment 2082.

2088. Comment: Item 2 provides a description of the Department’s discretion to deny, revoke, or suspend authorization to use the GP-8; however, this provision provides no guidance or timeframe for review of potential violations that would result in a denial, revocation, or suspension of the permit. Without such a time frame this provision becomes unenforceable. For example, there needs to be a regulatory review process in place that ensures that once potential violations of terms and

conditions of the permit occur as a result of construction activity, the potential violations are reviewed before the construction activity is completed. It is simply not possible to revoke or suspend a permit when the Department waits until all the activity is completed before reviewing the potential violation. This has already occurred in numerous linear infrastructure projects in Pennsylvania in the context of Chapter 105 and 102 permit authorizations (i.e. Tennessee Gas 300 Line Upgrade Project). (1143)

Response: See response to comment 2082.

2089. Comment: The terms “trenched” and “bored” are not defined in the “Definitions” section of the proposed GP-8, furthermore, there is no guidance anywhere in the GP-8 that provides an explanation as to how the Department will interpret these terms. The Department needs to identify what level of ground disturbance triggers the term “trench” or “bored” as those terms are interpreted differently across the regulated community. Without more specific language identifying what activities are limited under this item, this section is overly vague. Furthermore, in addition to providing definition of the term, the GP-8 should make clear that no trenching activities are permitted by the GP-8. (1143)

Response: See response to comment 2082.

2090. Comment: The term “hazardous or toxic material” is not defined in the “Definitions” section of the proposed GP-8, furthermore, there is no guidance anywhere in the GP-8 that provides an explanation as to how the Department will interpret this provision. Without more specific language identifying what types of material are “hazardous” or “toxic” this provision is overly vague and unenforceable. Materials that are hazardous should be regulated pursuant to the U.S. Resource Recovery and Conservation Act, which should provide the definition of these substances. Furthermore, the Department should require that the project applicant submit, and make publically available, what constituents each temporary line is carrying. (1143)

Response: See response to comment 2082.

2091. Comment: Section 6.H-I do not provide any prohibitions against adversely impacting Exceptional Value wetlands similar to the protections afforded in 25 Pa. Code 105.18(a) for similar linear activities. The provisions of 105.18(a) should be either expressly written into the proposal or incorporated by reference. (1143)

Response: See response to comment 2082.

2092. Comment: The proposed GP-8 does not define the term “need” in the context of 7.A.2, furthermore, there is no guidance anywhere in the GP-8 that provides an explanation as to how the Department will interpret this provision. Without more specific language identifying how a project applicant can demonstrate “need” the provision is overly vague. (1143)

Response: See response to comment 2082.

2093. Comment: Item 12.A.4 should also indicate that the wetlands be classified as either “Exceptional Value” or “Other” consistent with the designations under 25 Pa. Code 105.17. The Corps of Engineers Wetland Delineation Manual does not provide for this specific designation. (1143)

Response: See response to comment 2082.

2094. Comment: Item 12.A.4 should describe generally what a project applicant needs to demonstrate in order to prove that a wetlands crossing cannot be avoided. For example, is it sufficient for the project applicant simply to not own the ROW that would avoid the wetland? Does the applicant need to at least request permission for expanding the ROW from the landowner...etc.? Does the Department perform a cost/benefit analysis in making this determination? The Department needs to provide guidance on how this provision will be interpreted. (1143)

Response: See response to comment 2082.

2095. Comment: Item 12.A.9 should include prohibitions from pollution not just for waterways but also for wetlands. (1143)

Response: See response to comment 2082.

2096. Comment: Item 12.A.9 must provide more specific guidance on the interval of time between inspections to satisfy this provision. The term “regular basis” is overly broad and is interpreted differently across the regulated community. Unless modified this item does not provide useful guidance on how to interpret this provision. (1143)

Response: See response to comment 2082.

2097. Comment: Item 12.A.9 must provide more specific guidance on the interval of time between inspections to satisfy this provision. The term “periodic” is overly broad and is interpreted differently across the regulated community. Unless modified this item does not provide useful guidance on how to interpret this provision. It should be made clear that Chapter 102 standards must be adhered to and best management practices must be applied (1143)

Response: See response to comment 2082.

2098. Comment: Item 12.G.6 is inconsistent with item 6.E., which states that this general permit does not apply for temporary service lines that “transmit hazardous or toxic material.” Yet, 12.G.6 indicates that a temporary service line may contain “pollutional materials.” First, there is no definition or guidance in the GP-8 that demonstrates how the Department will interpret the term “pollutional materials.” This term must be specifically defined. Furthermore, to the extent that it is defined, the definition must not conflict with the requirement that no “toxic” or “hazardous” materials are carried in the service line. As proposed, item 12.G.6 and item 6.E cannot be reconciled. The same problem arises in the context of item 12.G.7. Furthermore, materials that are hazardous should be regulated pursuant to the U.S. Resource Recovery and Conservation Act. (1143)

Response: See response to comment 2082.

2099. Comment: As is explained above in our comments on § 78.1 with respect to the definition of “temporary pipelines,” the difference between a gathering pipeline and a temporary pipeline is that the gathering pipeline is used to transport hydrocarbons to a transmission pipeline that brings it to the market, whereas a temporary pipeline is used to construct the oil or gas well or for waste generated by drilling or stimulation of a well.

Because temporary pipelines are not designed to safely transport hydrocarbons to market, and these pipelines could potentially be operating at the well site while hydrocarbons are initially produced, the definition should make it clear that temporary pipelines may not be used to transport hydrocarbons to market. (1143)

Response: The Department agrees. §78a.68b(k) prohibits transportation of flammable materials through a temporary pipeline. Also, please note that the Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

- 2100.** Comment: We support limits on temporary pipeline crossing of water bodies and wetlands. We recommend, however, that temporary pipelines be designed and routed to avoid water or wetland crossings, unless it is not technically feasible. Where crossings cannot be avoided, operators of temporary pipelines should be required comply with all applicable provisions of Chapters 102 and 105 and to protect wetlands. (1143)

Response: Chapter 105 requires avoidance and minimization of impacts to water bodies and wetlands. The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

- 2101.** Comment: Pipelines that fail pressure tests should be successfully retested prior to use. Pressure testing should be completed using uncontaminated freshwater. (1143)

Response: The Department agrees. §78a.68b(g) has been amended to include pressure testing after repairs are completed and prior to use.

- 2102.** Comment: Additional criteria should be included for inspector training and qualifications, and a list of inspection components to determine fitness for service should be added. PADEP inspection and audit requirements should be added. (1143)

Response: The temporary nature, the installation techniques used and the materials transported allow failures of temporary pipelines to be readily detected by pipeline inspectors. Therefore the Department does not believe that specialized training and qualification requirements for temporary pipeline inspectors or a list of inspection components to determine fitness for service are warranted.

The Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

- 2103.** Comment: In accordance with comments, 2081 through 2102, above, Commentator recommends that § 78.68b be revised as follows:

§ 78.68b. Temporary pipelines for oil and gas operations.

(a) Temporary pipelines must meet all requirements in Chapters 102 and 105 (relating to erosion and sediment control; and dam safety and waterway management), notwithstanding the provisions of § 102.8(n) and regardless of the extent of land disturbed. Use of temporary pipelines for transportation of hydrocarbons is prohibited.

(b) Temporary pipelines that transport fluids other than fresh groundwater, surface water, water from water purveyors or other sources of uncontaminated water approved by the Department, shall be installed aboveground except when crossing pathways, roads or railways where the pipeline may be installed below ground surface.

(c) Temporary pipelines cannot be installed through existing stream culverts, storm drain pipes or under bridges without approval by the Department under § 105.151 (relating to permit applications for construction or modification of culverts and bridges).

(d) Temporary pipelines shall be designed and routed to avoid crossings of bodies of water, watercourses, or wetlands, unless the Oil and Gas Operator demonstrates to the Department that it is not technically feasible to route the pipeline around the body of water, watercourse, or wetland. If a temporary pipeline must cross a body of water, watercourse, or wetland, the following requirements must be met:

- (1) The section of a temporary pipeline crossing over a watercourse or body of water may not have joints or couplings.
- (2) Temporary pipeline crossings over wetlands must utilize a single section of pipe unless the Oil and Gas Operator demonstrates to the Department that it is not technically feasible.
- (3) Shut off valves shall be installed on both sides of the water or wetland temporary crossing.
- (4) The temporary pipeline shall be properly supported along the span to mitigate pipeline sagging and bending stresses.

(e) In addition to the requirements of subsection (c), temporary pipelines used to transport fluids other than fresh ground water, surface water, water from water purveyors or sources of uncontaminated water approved by the Department, must have shut off valves, check valves or other method of immediately isolating the pipeline flow. The control valves shall be placed at designated intervals, to be determined by the pipeline diameter, that prevent the discharge of no more than 1,000 barrels of fluid. Elevation changes that would effectively stop flow in the event of a pipeline leak shall be taken into consideration when determining the placement of shut off valves and be considered effective flow barriers.

(f) Highly visible flagging shall be placed at regular intervals, no greater than 75 feet, along the entire length of the temporary pipeline.

(g) Temporary pipelines shall be pressure tested prior to being first placed into service and after the pipeline is moved or altered. A passing test is holding 125% of the anticipated maximum pressure for 2 hours. Leaks or other defects discovered during pressure testing shall be repaired and the pipeline shall be retested. Every temporary pipeline shall pass pressure testing prior to use or re-use.

(h) Water used for hydrostatic pressure testing of the temporary pipeline must be uncontaminated freshwater. If the pipeline is new and uncontaminated, the test water may be returned to its original source, as long as it remained uncontaminated during the testing. If the pipeline has been previously used, the test water must be collected and transported to an approved treatment and disposal facility.

(i) Temporary pipelines shall be inspected by a trained and qualified inspector to determine fitness for service prior to and during each use.

(1) The inspector shall examine the temporary pipeline for leaks, cracks, bending stress, corrosion, erosion, material incompatibility, weld failure, joint failure, valve failure, and other forms of deterioration or physical damage, and to and verify that all the requirements of this section are met.

(2) The initial inspection must be completed by a piping inspector who applies the API 570 Piping Inspection Code Standard for Inspection, Repair, Alteration and Rating of in-service Piping Systems. The entire length of the temporary pipeline shall be inspected prior to use by the API 570 inspector. The API 570 inspector must determine, in writing, that the temporary pipeline is fit for service, and a record of that determination must be kept on file by the operator and made available to the Department upon request. Any repairs recommended by the API 570 inspector must be made prior to use.

(3) The operator must inspect and monitor the temporary pipeline during use and must immediately shut down the pipeline if leaks or other integrity deficiencies are identified. The temporary pipeline must be repaired, re-inspected, and found to satisfy the API 570 standard prior to use.

(4) Inspection dates and any defects and repairs to the temporary pipeline shall be documented and made available to the Department upon request.

(j) Temporary pipelines not in use for more than 7 calendar days shall be emptied and depressurized.

(k) Flammable materials may not be transported through a temporary pipeline.

(l) Temporary pipelines shall be removed in accordance with the required restoration timeline of the well site it serviced under § 78.65 (relating to site restoration).

(m) An operator shall keep records regarding the location of all temporary pipelines, the type of fluids transported through those pipelines, and the approximate period of time that the pipeline was installed, inspections, testing and repair. The records shall be filed annually with the Department.

(n) The Department shall inspect each temporary pipeline at least once during its operating life, and shall conduct an audit of the temporary pipeline inspection, testing and repair records within 30 days of receipt. (1143)

Response: See responses to comments 2081 through 2102. And please note that the Department has revised the definition of “temporary pipelines” to now be “well development pipelines.”

§ 78.69 Water management plans

2104. Comment: We applaud the DEP for imposing the same requirements for water withdrawals as the Susquehanna River Basin Commission, in the Ohio basin, including requiring: (1) posting of signs at water withdrawal locations; (2) monitoring of water withdrawals or purchases; (3) reporting of withdrawal volumes, in stream flow measurements and water source purchases; and (4) record keeping. By doing so, the DEP is moving toward a more consistent state-wide water withdrawal management system. Signage, monitoring, reporting and record keeping are only effective tools for ensuring that there is adequate water in-stream and for other uses, if there are sufficient tools and resources for enforcing regulations. (1157)

Response: The Department acknowledges the comment.

2105. Comment: We strongly encourage the DEP to develop and implement an inspection and enforcement plan to ensure that operators are complying with water management plans and that water withdrawals for unconventional shale gas development are not harming other uses, including the ecological health of a stream. (1157)

Response: The Department conducts inspections and when necessary carries out enforcement to ensure water management plans are being followed.

2106. Comment: Currently, a well operator submits a company-wide water management plan to the DEP, allowing the company to list multiple counties and water sources in one plan. To gain a better

sense of how water withdrawals for unconventional shale gas development may, or may not, be impacting hydrological regimes within Pennsylvania, we recommend that DEP add a requirement to this section to require a company to submit a water management plan for each sub-basin—at the Hydrologic Unit Code (HUC) 8 level, at a minimum—in which it is operating, rather than a single company-wide water management plan. (1157)

Response: Although a company-wide water management plan may list multiple counties and water sources in one plan, the Department requires a water management plan application submittal and approval for each water source within the plan.

- 2107.** Comment: Section 78.69 - We fully support WMPs that require posting of signs, monitoring of water withdrawals, and reporting of withdrawal volumes, in-stream flow measurements, and water source purchases as does the Susquehanna River Basin Commission. Western Pennsylvania has lacked oversight on water withdrawals over the years. It is our hope that all gas drilling activities both conventional and unconventional shall be held to these standards. (566)

Response: The Department acknowledges the comment. Because the section 3211(m) of the 2012 Oil and Gas Act only references unconventional well development in relation to water management plans, the section is only retained in Chapter 78a. To the extent that a conventional operator is hydraulically fracturing a conventional well and requires similar volumes of water as an unconventional well, the Department may impose water management plan requirements on the operator as a permit condition.

- 2108.** Comment: There should be regulations as to what type of water is used in fracking: fresh water, sewer or mining water, or any other contaminated water source. (1146)

Response: The quality of the water used in fracking is generally determined by the operator. The Department encourages operators to use lesser quality water to conserve fresh water.

- 2109.** Comment: 78.69(e)-(f) – Automatic extensions of approved WMPs should be allowed in the event that the Department does not act in a timely manner to renew the WMP after submittal of a renewal application.

Suggested Regulatory Language:

(e) Expiration. Individual water sources within a WMP are valid for 5 years unless the approval to use the source is extended or renewed.

(f) Renewal and Extension. A WMP renewal application for individual water sources within a WMP shall be submitted at least 6 months prior to the expiration of the 5 year term for withdrawal or use of a water source under a WMP. If the Department does not act upon a timely submittal of a renewal application within the 5 year term, the approval of the individual water source is deemed to be administratively extended until such time as the Department acts on the operator's renewal application for that individual water sources. This subsection shall go into effect 6 months after the effective date of the regulation. (1103, 1153)

Response: The Department requires renewal application submittal 6 months prior to the 5 year expiration date to ensure the Department has sufficient time to review the renewal application relative to other renewal applications and will not administratively extend a renewal application.

2110. Comment: Stop all illegal surface water and ground water withdrawals immediately for drilling and fracking in common law water rights, western Pennsylvania, where only a landowner may withdraw surface water for domestic use and not for industrial use or for sale. (1158)

Response: A WMP is a plan associated with drilling or completing an unconventional well that demonstrates that the withdrawal and use of water sources in the Commonwealth protect those sources and protects public health, safety and welfare. An approved WMP does not provide for water rights. Furthermore, although the Department works to prevent unauthorized water withdrawals and other illegal acts, the Department does not regulate riparian land disputes.

2111. Comment: The Department should incorporate recommendations from the Upper Ohio Basin Ecosystem Flow study into its Water Management Plan requirements for the basin. The Susquehanna River Basin Commission's (SRBC) Low Flow Protection Policy, preceded by a similar study, creates classes of streams based on their sensitivity to water withdrawals and limits withdrawals when they are likely to have ecological impacts. The Department should employ similar factors when managing water in the Ohio River Basin. (997a)

Response: Currently, a low flow protection policy similar to SRBC's based on The Nature Conservancy's study has not been developed in the Ohio River basin. However, Sections 78a.69(b)(1)–(6) and 78a.(c)(1)-(11) of the rulemaking establishes comprehensive requirements and standards that are based on the criteria in 58 P.S. § 3211(m)(2) and requires all water management plan applications, including those in the Ohio River basin, to include a low flow analysis. This low flow analysis may limit withdrawals during low flow conditions. Further, policies should not be in the regulations as they may change over time. A low flow protection policy is better presented in a guidance document rather than regulation.

2112. Comment: The Department should consider potential impacts to ecological health in its review of proposed Water Management Plans. (997a)

Response: Section 78.69(i)(1-4) provides protection from ecological impacts by maintaining designated and existing uses and preventing operating withdrawals from adversely impacting the quantity and quality in the watershed as a whole.

2113. Comment: The Department is encouraged to work with State agencies and river basin commissions to develop protocols for preventing the spread of invasive species during water withdrawal and transport. (997a)

Response: The Department agrees and has made an amendment to the regulation. Section 78a.69(c)(6)(ii) requires a water management plan application to include a description of measures to be taken to prevent the rapid movement of invasive, harmful or nuisance species by vehicles, equipment or other facilities from one site to another.

2114. Comment: 78.69: Prohibit the recycling of previously contaminated fluids such as acid mine drainage for use in the fracking process.(148)

Response: The Department disagrees with this comment and encourages the recycling and reuse of mine influenced water, production water and other low quality water in well development to conserve fresh water.

2115. Comment: This provision codifies Department policy that has been effective since 2008. The

SRBC withdrawal model is extended into the Ohio River Basin. The STRONGER, September 2013 Review has recommended that [page 60] the Department “clearly indicate what is required in a water management plan and make those plans available to the public.” (STRONGER 2013 Guidelines Section 9.3.) We support this recommendation and the provision as it is currently written. (660a)

Response: The Department acknowledges the comment.

2116. Comment: There needs to be better enforcement of random water withdrawals from any stream with water. (939)

Response: The Department works to prevent unauthorized water withdrawals and other illegal acts.

2117. Comment: Section 78.69 - The section title should be modified to make it clear that the entire Section only applies to unconventional well operators. Suggested amendatory language: § 78.69. Water management plans for unconventional well operators. (1103, 1147, 1174)

Response: According to the 2012 Oil and Gas Act, no person may withdraw or use water from water sources within this Commonwealth for the drilling or hydraulic fracture stimulation of unconventional natural gas wells. So water management plans are not just limited to unconventional well operators, but are limited to withdrawals and uses for unconventional wells.

2118. Comment: For Water Management Plans (Section 78.69) in the Ohio River Basin, we urge the Department to follow the lead of the Susquehanna River Basin Commission’s Low Flow Protection Policy to reduce adverse impacts to aquatic resources through better siting and timing of withdrawals. We understand the Department is considering use of data collected in partnership with The Nature Conservancy to accomplish this purpose, and we strongly support that initiative. (997)

Response: Currently, a low flow protection policy similar to SRBC’s based on The Nature Conservancy’s study has not been developed in the Ohio River basin. However, Sections 78a.69(b)(1)–(6) and 78a.(c)(1)-(11) of the rulemaking establishes comprehensive requirements and standards that are based on the criteria in 58 P.S. § 3211(m)(2) and requires all water management plan applications, including those in the Ohio River basin, to include a low flow analysis. This low flow analysis may limit withdrawals during low flow conditions. Further, policies should not be in the regulations as they may change over time. A low flow protection policy is better presented in a guidance document rather than regulation.

2119. Comment: Language noting that a water management plan is not needed for water source locations outside of Pennsylvania should be added. (1071, 1085, 1103, 1147, 1174)

Response: The Department does not enforce Chapter 78 requirements outside of Pennsylvania.

2120. Comment: 78.69(a): We request that the Department identifies a process by which an operator can amend an approved WMP for insubstantial changes. (1071)

Response: Modifications to WMPs will be addressed through forms provided by the Department.

2121. Comment: 78.69(a): *Water Management Plans- Clarify the Scope of the Requirement*: This proposed section addresses posting, monitoring and reporting in the Ohio River Basin; reuse planning requirements, and the Water Management Plan expiration and renewals. The following is the suggested amendatory language: “prior to withdrawal or use of water sources from within this Commonwealth...”(1085, 1147)

Response: The specific language referenced by the commenter has been deleted from the rulemaking but the Department has included language in § 78a.69(a)(1) that specifies that the section applies only to water sources within this Commonwealth.

2122. Comment: Subsection (a) should require WMPs for all *persons* that withdraw water for use in drilling and hydraulic fracturing operations – not just for all “unconventional well operators.”

Water for unconventional oil and gas operations is not withdrawn only by companies directly engaged in those operations; it is also withdrawn by third parties who sell water to those companies. Section 3211(m) of Act 13 requires persons in *both* categories to obtain DEP-approved water management plans: “No person may withdraw or use water from water sources within this Commonwealth except in accordance with a water management plan approved by the department.” By contrast, proposed section 78.69 directs only “unconventional well operator[s]” to obtain DEP approval for their water management plans. If section 78.69(a) is to conform with Act 13, it must be revised accordingly, and should also clarify that WMPs are required for all withdrawals for water sources “within this Commonwealth.” We suggest using the statutory language so that the regulation is coextensive with the statutory requirement: “No person shall withdraw or use water from any source of water within the Commonwealth for drilling or hydraulic fracturing an unconventional gas well without first obtaining the Department’s approval of a water management plan. This requirement applies to any withdrawals from a water of the Commonwealth or any other source of water located within the Commonwealth.” Accordingly, subsection (a) should be retitled “WMPs for unconventional well operations” (emphasis added). (852a)

Response: The Department agrees with the comment and has modified Section 78.69(a) to include the suggested amendatory language; see Section 78a.69(a)(1).

2123. Comment: 78.69(b) - The SRBC “requirements” that the Department would impose under this section are ambiguous as written. Do the requirements stem from the Compact, Federal regulations promulgated under the Compact, SRBC policy documents, or individual dockets? Some SRBC requirements are part of individual water withdrawal docket conditions and could not be implemented outside of the SRBC. (852a, 1071, 1147, 1174)

Response: The Department agrees with the comment and has modified 78a.69(b) to provide clarity.

2124. Comment: 78.69(b) - As written the Department would impose conditions on water withdrawals or water purchases solely by this industry in the Ohio River basin without imposing such conditions on other industries withdrawing or purchasing water. (852a, 1071, 1147, 1174)

Response: The comment is beyond the scope of the regulations. 25 Pa. Code Chapter 78 is related to oil and gas wells. The regulations, including section 78a.69, are to amend the Chapter to update the requirements related to surface activities associated with the development of oil and gas wells.

2125. Comment: 78.69(b) - This proposal to adopt SRBC requirements lack specificity and cannot be implemented as written. The SRBC's signage, monitoring, and reporting requirements for water withdrawals need not only apply to Ohio River Basin, but also the Delaware, Potomac and Genesee basins, and the Lake Erie watershed. (852a, 1071, 1147, 1174)

Response: The Department agrees with the comment and has modified 78a.69(b) to provide clarity.

2126. Comment: Section 78.69 provides new requirements related to water management plans (WMPs). 78.69(b) addresses implementation requirements related to WMPs for unconventional operators. Commentators assert that this section is vague, and should include specific citations to the Susquehanna River Basin Commission regulation 18 CFR § 806.30. Commentators also note that water withdrawals should be in accordance with Act 220 and 25 Pa. Code Chapter 110 and that the provision fails to recognize the Ohio River Basin. For clarity's sake, it should. Further, the requirements of the SRBC's regulations regarding water withdrawals should also be applied to the Lake Erie Basin, the Lake Ontario/Genesee River Basin, and the Potomac River Basin. We agree that EQB should clarify the implementation requirements of this provision. (411, 1006, 1031, 1099, 1159)

Response: The Department disagrees with adding specific citations from the SRBC regulations to this rulemaking. However, the Department has modified 78a.69(b) to provide clarity.

2127. Comment: § 78.69 (c) - The natural gas industry has been "recycling/reusing" water and minimizing fresh water use for quite some time now. Unfortunately the new regulations would force operators to rethink this option. In order to increase the amount of water being "reused/recycled" in the Commonwealth, the Regulations need to provide an avenue for the operator, either through permits or DEP approvals, to document, move, or reuse water from one site to another. In addition, the Oil and Gas Division must have its own regulations concerning water management and not be conflicted and confused with those of the Waste Management Division.(123, 638, 638a, 123a, 798, 123b, 883, 940)

Response: The regulations provide flexibility for recycling/reusing of water to minimize fresh water use including provisions for storage management and disposal of wastewater in §§ 78a.56, 78a.57, 78a.58, 78a.59a and 78a.59b. Also, WMPs allow for the reuse of water and WMP applications require a reuse plan under Sections 78a.69(b)(6) and 78a.69(c)(8).

2128. Comment: § 78.69 (c) - This section requires an unconventional well operator to develop a water reuse plan for fluids that will be used in future hydraulic fracturing operations and provides that a wastewater reduction strategy developed under 25 Pa Code Chapter 95.10(b) satisfies this requirement. There may be operators who do not have the facilities, ability or need to treat and reuse flow- back and produced water. They should have the option of disposal available to them. It is recommended that the disposal option be recognized and accepted by the Department, and that the regulations recognize that option. (124, 124a, 1085)

Response: The Department acknowledges that ultimately some water may need to be disposed however the Department does not believe that it is appropriate to include "disposal" as a reuse option in a wastewater reuse plan.

2129. Comment: 78.69(c) *Water Management Plans- Assure Department-Accepted Disposal Method is Accounted For*: The proposed language should include the Department-approved method of

disposal. Excepting Interstate Commission and public water suppliers, withdrawals alone in Pennsylvania do not require a permit, but withdrawals averaging more than 10,000 gallons per day over a 30-day period must be registered with the state. Under the Clean Streams Law, the Department has duty to develop regulatory measures to encourage the use of reuse wastewater facilities, wastewater recycling facilities, and treatment and discharge facilities (25 Pa. Code § 92.2b (2010)). (1085)

Response: The regulations provide flexibility for recycling/reusing of water to minimize fresh water use including provisions for storage management and disposal of wastewater in §§ 78a.56, 78a.57, 78a.58, 78a.59a and 78a.59b. Also, WMPs allow for the reuse of water and WMP applications require a reuse plan under Sections 78a.69(b)(6) and 78a.69(c)(8).

- 2130.** Comment: Subsection (c) should require operators to submit their fluid reuse plans to the Department. Proposed section 78.69(c) would require unconventional well operators seeking WMPs to develop a “reuse plan” for hydraulic fracturing fluids. Commentator supports this requirement, but the Department should also require operators to *submit* their reuse plans to the Department, rather than requiring the plans to be submitted only upon request. If submission of these plans is not required, section 78.69(c) will be unenforceable by the Department, and the public will be denied the opportunity to obtain and review these important documents, and understand the industry’s efforts to reduce the impact of its operations.

To the extent the Department revises 78.69(a) to apply to any person withdrawing water for unconventional gas development, then this section should be worded and structured to stand apart and alone from that section, by renumbering it and removing the phrase “submitting a WMP application” from the first sentence.

Presumably, the Department has not proposed a submission requirement because there is no such requirement for wastewater source reduction strategies (which can be used to comply with section 78.69) under 25 Pa. Code § 95.10(b). But under section 95.10(b), which discusses requirements for operations that generate wastewater, there is no requirement to submit *any* documents. By contrast, where WMPs are concerned, it is the Department’s current practice to require applications, and section 78.69 would codify this practice. Requiring operators to submit source reduction strategies or reuse plans will impose no significant burden on operators (especially if reuse plans, once submitted, need be resubmitted only when they changed) and will provide valuable information to the public. (852a)

Response: The Department agrees with the comment and has modified Sections 78a.69(b)(6) and 78a.69(c)(8). The modified Sections require an applicant to submit a reuse plan or be in compliance with 25 Pa. Code § 95.10(b); both of which are enforceable by the Department.

- 2131.** Comment: Subsection 78.69(d) is confusing and unnecessary, and should be struck from the final rulemaking. Proposed subsection (d) echoes section 3211(m)(3) of Act 13, which provides that the statutory criteria for WMPs set forth in subsection (2) are presumed to be achieved to the extent that a proposed water withdrawal has been approved by the Susquehanna River Basin Commission, the Delaware River Basin Commission, or the Great Lakes Commission. In theory, a regulatory presumption corresponding to the statutory exemption makes sense. Here, however, it seems unnecessary. Not only does the introductory phrase “when applicable” beg the question of when the regulatory presumption will apply; the presumption is misplaced where an operator has obtained a withdrawal approval from the SRBC because the SRBC does not require water reuse plans. Further, the statutory provision is self-executing and requires no further elaboration or explanation. For these reasons – and because the requirement for a reuse plan is the *only* substantive requirement in section

78.69 to which a presumption of regulatory compliance could apply, we recommend that proposed subsection (d) be struck from the final Chapter 78 rulemaking. (852a)

Response: The Department disagrees with the comment. Section 78a.69(d) states that the requirements of a WMP are presumed to be met when “an approval from the Susquehanna River Basin Commission, the Delaware River Basin Commission or the Parties to the Great Lakes-St. Lawrence River Basin Water Resources Compact is obtained for a water withdrawal to the extent that requirements in subsection (c) are considered in granting the approval.” If a portion of a WMP requirement, such as a reuse plan, is not included in and approved Susquehanna River Basin Docket, it will still be required as part of the Department’s WMP application.

2132. Comment: § 78.69(e) Suggested amendatory language: *Expiration*. Individual water sources within a WMP are valid for 5 years, unless the approval to use the individual water source is administratively extended or renewed. (1147)

Response: The Department disagrees with the comment. The Department requires renewal application submittal 6 months prior to the 5 year expiration date to ensure the Department has sufficient time to review the renewal applications and will not administratively extend a renewal application.

2133. Comment: § 78.69(e) – This section states that “individual water sources within a WMP (Water Management Plan) are valid for 5 years.” Considering the sensitive and important water resources that exist in the state, we suggest either a yearly or biennial review of water management plans to ensure that water resources are being protected to the fullest extent or that yearly precipitation rates, which may affect water handling, are being taken into consideration. (1062, 1133)

Response: The Department disagrees with the comment. Sections 78a.69(b)(1)-(6) and 78a.69(c)(1)-(11) requires the operator to report water withdrawal volumes and in-stream flow measurements among other requirements which allow the Department to determine if the water resource is being protected. The Department may suspend or revoke an approved water source within a Water Management Plan for failure to comply with the Water Management Plan.

2134. Comment: Section 78.69. Water management plans. A process for amending WMPs should be added to this section. Suggested amendatory language: NEW (e) *Amendments*. Amendments to an approved water source in a WMP may be submitted during the 5 year term for withdrawal or use of the approved water source, on forms provided by the Department. Such amendments will be considered valid if no response from the Department is received within 30 days of receipt of submission of the form requesting the amendment. (1147, 1174)

Response: The Department acknowledges the comment but does not believe that any changes to the regulatory language are necessary to accommodate amendments to WMPs or individual sources.

2135. Comment: Subsection (e) should authorize the Department to limit the term of a WMP water source approval to less than five years. In some circumstances, such as where the effects of a proposed withdrawal from a special protection stream are uncertain or where a withdrawal and other nearby projects may have cumulative impacts, it may be appropriate to limit the term of a withdrawal to less than five years. Subsection (e) should give the Department the power to do so. We suggest that subsection (e) be revised to provide: “An approval in a WMP to withdraw or use

water from an individual water source shall be valid for 5 years unless the WMP provides for a shorter time period or the withdrawal or use of the source is suspended or revoked under subsection (g).” (852a)

Response: The Department acknowledges the comment and notes that § 78a.69(f)(3) states that the Department may suspend or revoke an approved water source within a WMP for failure to comply with the WMP or for any reasons in sections 3211(m), 3252 and 3259 of the act (relating to well permits; public nuisances; and unlawful conduct). The Department believes that this provision addresses the commenter’s concern.

- 2136.** Comment: Proposed Subsections 78.69(e) and (f) should be revised to allow for the administrative extension of individual water sources within a WMP where the operator has submitted a renewal application in the event the Department does not act in a timely manner to renew the individual water source before the 5 year expiration date.

Suggested Language: - (e) Expiration. Individual water sources within a WMP are valid for 5 years, unless the approval to use the individual water source is administratively extended or renewed. (f) Renewal and Extension. A renewal application for individual water sources within a WMP shall be submitted at least 6 months prior to the expiration of the 5 year term for withdrawal or use of the individual water source. If the Department does not act upon a timely submittal of a renewal application by the WMP holder within the 5 year term, the approval of the individual water source is deemed to be administratively extended until such time as the Department acts on the unconventional well operator’s renewal application for that individual water source. (124, 1057, 1103, 1147, 1174)

Response: The Department disagrees with the comment. The Department requires renewal application submittal 6 months prior to the 5 year expiration date to ensure the Department has sufficient time to review the renewal applications and will not administratively extend a renewal application.

- 2137.** Comment: A phase-in period of 6 months from the effective date of the final regulation should be added to the proposed renewal subsection (f) for water sources approved under a WMP.

Suggested Language - Subsection 78.69(f) shall go into effect 6 months after the effective date of the final regulation. (124, 1057, 1103, 1147, 1174)

Response: The Department agrees. The regulations will go into effect at an as of yet undetermined period of time after the final regulations.

- 2138.** Comment: Water Management Plan Renewals – 78.69(f): We suggest that WMP renewal applications be submitted 30 or 60 days prior to expiration as opposed to 6 months in advance. (1167)

Response: The Department disagrees with this comment. The Department requires renewal application submittal 6 months prior to the 5 year expiration date to ensure the Department has sufficient time to review the renewal applications and will not administratively extend a renewal application.

- 2139.** Comment: Subsection (g) should authorize the Department to suspend or revoke WMPs in their entirety for compliance violations. Failure by an operator to comply with its WMP, such as by withdrawing greater volumes of water than the WMP permits, or withdrawing any amount of water

when a stream level falls below a pass-by flow level, could harm aquatic life or impair a water quality standard. To ensure that subsection (g) provides an effective deterrent to non-compliance, the Department should reserve the right to suspend or revoke an operator's WMP in its entirety for deliberate, repeated, or egregious violations. In all likelihood, suspending withdrawal only for the water source that has been violated will have no deterrent effect because all unconventional well operators maintain large portfolios of sources and the loss of any one particular source will not prevent the operator from obtaining water to proceed with operations. (852a)

Response: The Department has the authority to modify, suspend or revoke a water management plan for compliance violations whether the non-compliance is deliberate, repeated, egregious or accidental.

- 2140.** Comment: To ensure that Water Management Plans meet the requirements of Act 13 (58. Pa.C.S. § 3211 (m)) and Section 78.69 (i) (2-4) of the Proposed Regulations, the Department must provide detail on the criteria it will use, such as monitoring and reporting, to assure that compliance is demonstrated. (997a, 1142)

Response: Details on specific criteria such as monitoring and reporting is more appropriate in guidance documents rather in the regulatory language.

- 2141.** Comment: The Department must require compliance with the Susquehanna River Basin Commission's Low Flow Protection Policy as a condition to the approval of any Water Management Plan under Section 78.69, even in the Ohio River Basin. See. Proposed Regulations 25 Pa. Code § 78.69. (1142)

Response: Section 78a.69(h)(1-2) allows the Department to deny approval of a water management plan that adversely affects water quantity, (i.e. low flow conditions) to protect the water source.

- 2142.** Comment: Water Management Plans in the Susquehanna River Basin should require prior approval from Susquehanna River Basin Commission before the Department issues a permit. (1142)

Response: Water management plans are not reviewed or approved by the SRBC. The Department takes action separately from the SRBC.

- 2143.** Comment: Section 78.69(i) Denial - Suggested amendatory language: The Department shall review and approve water management plans based upon a determination that the proposed withdrawal, when operated in accordance with the proposed withdrawal operating conditions set forth in the plan, including conditions relating to quantity, withdrawal rate and timing and any pass by flow conditions, will:

- (1) Not adversely affect the quantity or quality of water available to other users of the same water sources;
- (2) Protect and maintain the designated and existing uses of water sources;
- (3) Not cause adverse impact to water quality in the watershed considered as a whole; and
- (4) Include a reuse plan for fluids that will be used to hydraulically fracture wells.

The Department shall notify an operator in writing if it has denied an operator's application for the withdrawal or use of a water source for inclusion in the operator's WMP. (1147, 1174)

Response: The Department disagrees with the proposed amendatory language because it changes the intent of the regulation and potentially circumvents many of the other provisions in § 78a.69.

2144. Comment: In its current form, subsection (i) is inconsistent with both section 3211(m) of Act 13 and the Department’s antidegradation requirements, and must be revised to ensure consistency.

Section 3211(m) of Act 13 establishes four statutory criteria that withdrawals and uses of water must satisfy to be approved in a WMP. Withdrawals must not “adversely affect the quantity or quality of water available to other users of the same water sources,” must “protect and maintain the designated and existing uses of water sources,” must not “cause adverse impact to water quality in the watershed considered as a whole,” and must “include a reuse plan for fluids that will be used to hydraulically fracture wells.”

In its current form, proposed subsection (i) restates the first three of these criteria and provides that the Department “may” deny WMPs that do not satisfy the criteria.

There are two problems with the Department’s approach.

First, to say that the Department “may” deny approval of a WMP that would fail to protect designated and existing uses is also to say that the Department may *approve* a WMP in these situations. Approval, however, would violate both the Department’s designated use protection regulation set forth at 25 Pa. Code § 93.4 and its antidegradation policy set forth at 25 Pa. Code § 93.4a. Under section 93.4, the designated use of a surface water must be protected unless “it is demonstrated that the designated use is more restrictive than the existing use, the use cannot be attained by implementing effluent limits required under [the Federal Clean Water Act] or implementing cost-effective and reasonable BMPs for nonpoint source control,” and a permit applicant shows that one of the factors set forth at subsection 93.4(b)(1)-(6) either prevents the attainment of a designated use or justifies its non-attainment. And under section 93.4a, “[e]xisting instream water uses and the level of water quality necessary to protect the existing uses *shall be* maintained and protected.” Moreover, the Department may not allow a withdrawal to degrade water quality in a special protection stream except, in some cases, for social and economic justification.

Given these regulations, the Department has no authority to approve a WMP that would fail to protect an existing use; the Department has limited authority to approve a WMP that would reduce water quality in a Special Protection stream; and the Department may not approve a WMP that would fail to protect a designated unless the operator satisfies the requirements of 25 Pa. Code § 93.4(b). Subsection (i) should be revised to reflect these limitations.

The second problem with the Department’s approach is that no part of proposed section 78.69 (including subsection (i)) requires operators to submit information that the Department needs to determine whether, in fact, a WMP will protect uses or cause an adverse impact to water quantity and quality.

Currently, the Department requires a person seeking a WMP approval to submit Form 5500-PM-OG0087, “Water Management Plan for Marcellus Shale Gas Well Development.” Section A of this form requests basic information about the proposed withdrawal: the name and HUC-8 code of the stream, the municipality and river basin in which it is located, and the proposed volume and rate of the withdrawal. Section B requests a water source and use monitoring plan unless the withdrawal is located in the Susquehanna River Basin or Delaware River Basin, in which case the form requests the approval number of an SRBC-approved water withdrawal and consumptive use metering and monitoring plan or a DRBC-approved water withdrawal and use monitoring plan. Section C applies to surface water withdrawals, and requests the stream’s Chapter 93 designated and existing uses; a

low flow analysis; an analysis of the proposed withdrawal's impacts on water quality, aquatic biota, threatened and endangered species, and wetlands; and the operator's plans for protecting designated and existing uses and avoiding or mitigating the withdrawal's various potential impacts. Section D requests similar information for proposed groundwater withdrawals, and Section E requests similar information for proposed uses of wastewater, cooling water, and mine water diversion sources.

We have used the term "request" rather than the term "require" with respect to Form OG0087's fields because the Department currently *treats* these fields as requests, at least when the applicant has obtained a water withdrawal approval from the SRBC. To cite one of many examples: on January 8, 2013, Anadarko E&P Company, LP submitted a form OG0087 application to add a new water withdrawal – a withdrawal from Lycoming Creek (CWF, EV) in the amount of 1,340,000 gallons per day for which Anadarko had previously obtained SRBC approval – to its approved WMP. Anadarko completed Sections A, C.1 ("Source Identification and Notification"), and C.2 ("River Basin Commission Approvals") of the form, but left blank the sections requiring a low flow analysis, information on stream classification and uses, information on threatened and endangered plant and animal species, and an analysis of withdrawal impacts. In lieu of completing these sections, Anadarko simply appended to its application its SRBC approval. On January 23, 2013, the Department approved Anadarko's WMP amendment, stating that "[u]pon review, the Department finds that the above-referenced Water Management Plan Amendment application demonstrates that [Anadarko's] proposed water withdrawal ... will satisfy the requirements under the 2012 Oil and Gas Act." No documents in the file suggested that the Department performed any analysis to support this conclusion or had enough information to support a meaningful analysis.

Because section 3211(m)(3) creates only a presumption that a withdrawal approved by the SRBC satisfies the criteria of section 3211(m)(2), the Department must, for all WMP applications, perform an independent assessment to determine impacts on designated and existing uses – and to do that, the Department must have all the information required by OG0087. For withdrawals from special protection streams, the Department must, in addition, determine whether a proposed withdrawal has the potential to degrade water quality. As the Department's Water Quality Antidegradation Implementation Guidance notes, "[w]ithdrawal of water from streams or lakes for various uses can have an adverse impact." Consequently, "[w]ater withdrawals must be designed and operated in a manner that maintains existing uses and/or quality depending on the applicable water use designation," and the Department may approve WMPs only if an operator makes this demonstration. It follows that the Department must require operators to submit all the information that the Department needs to make these determinations.

For all of the reasons stated above, we recommend that section 78.69(i) be retitled "Review and Denial," and be revised to provide as follows:

(i)"A WMP shall not be approved unless the Department determines, after review, that it satisfies all applicable requirements of Act 13, the Clean Streams Law, and the Department's antidegradation requirements set forth at 25 Pa. Code §§ 93.4a-93.4c. In addition, the Department may deny approval of a WMP for any of the following reasons:

(1) The WMP application is administratively incomplete. The Department will determine an application to be administratively incomplete for reasons including, but not limited to, an applicant's failure to submit an analysis on the proposed withdrawal's impacts on designated and existing uses and, for water bodies with designated or existing uses under 25 Pa. Code Chapter 93 of High Quality and Exceptional Value, on water quality.

(2) The WMP will adversely affect the quantity or quality of water available to other users of the

same water sources.

(3) The WMP will cause an adverse impact to water quality in the watershed as a whole.”
(852a)

Response: With regards to the comment concerning Section 78.69(i), the Department has made amendments; see Section 78a.69(g). The amendments state that the Department may deny a WMP application based on being administratively incomplete and/or demonstrating that the WMP requirements are not met.

With regards to the comment that no part of Section 78.69 require operators to submit information that the Department needs to determine whether a WMP will protect uses or create an adverse impact to water quantity or quality, the Department has made amendments; see Section 78a.69(c). The amendments list all the requirements that the Department needs to determine whether a WMP will protect uses or cause an adverse impact to water quality or quantity.

With regards to the assertion that the Department is failing to consider a withdrawal’s potential impacts to existing and designated uses where SRBC has issued a Docket approval, SRBC staff coordinates with and solicits comments from the Department (along with the PA Fish & Boat Commission and other state and federal regulatory agencies) throughout its review process concerning all proposed withdrawals. SRBC staff also conducts biological monitoring at the withdrawal sites providing baseline data before the withdrawal is implemented, as well as follow-up monitoring at intervals after the withdrawal is implemented. Moreover, the SRBC’s current Low Flow Protection Policy (SRBC Policy No. 2012-01), which was formed by a collaboration between The Nature Conservancy, SRBC and other stakeholders, incorporates criteria that considers existing and designated uses of waterbodies, as well as established Total Maximum Daily Loads (TMDLs) for impaired waters. Additionally, where applicable, flow protection levels are also determined by the PA-MD Instream Flow Study Method, which is designed to protect sensitive reproducing trout populations. The Department is satisfied with comprehensive analyses conducted by the SRBC, which it shares with the Department.

2145. Comment: Commentators advocate that the implementation requirements adopted by the more stringent regulations of the Delaware River Basin be imposed on the Susquehanna and Ohio basins and the Great Lakes Consortium. [78.69 (b) In addition to serving as aquatic habitats and tourist attractions, all of these rivers and lakes are sources of drinking water for millions. Withdrawal and reuse plans need to be addressed both individually and cumulatively to determine environmental impacts on our waters [78.69 (b) (c)]. Because of recent weather extremes and the large volumes of water withdrawn by unconventional natural gas drilling, the expiration date of such plans should be reduced from 5 to 2 years. [78.69(e)] To underscore water protection, suspending and revoking a water management plan should be triggered by any violation -without warning and chances to comply [79.69 (g)]. Reason for denials by the Department should also include cumulative impact of withdrawals within the basin. Further, the industry should bear the burden of proof that a plan will not adversely impact water quality within the basin [78.69 (i)]. Operators must be site-specific in their plans and be held accountable for their actions. (910, 1098)

Response: Water management plans are meant to protect water sources within the Commonwealth through meeting the requirements under Section 3211(m)(2) of the 2012 Oil and Gas Act. Those requirements that are considered and approved by a river basin commission are presumed to be achieved in the water management plan; see Section

78a.69(d). The Department disagrees with reducing the expiration date of water management plans from 5 years to 2 years. A two year plan would require multiple renewals during the life of a project. Suspension or revoking a water management plan can occur for any violation of the water management plan conditions. Water management plans are site specific but must consider the cumulative impact of withdrawals within the basin in which the withdrawal is taken.

2146. Comment: We support the requirement to prepare a WMP. However, we recommend that this requirement be applied to all well operations, not just unconventional well operations (shale gas wells).

We recommend that § 78.69 be revised as follows:

§ 78.69. Water management plans (WMPs).

(a) WMPs for well operators. A well operator shall obtain a Department-approved WMP under section 3211(m) of the act (relating to well permits) prior to withdrawal or use of water sources for drilling or completing a well (including stimulation treatments and well workovers).

(b) Implementation. The following requirements imposed by the Susquehanna River Basin Commission shall be implemented for the Ohio River Basin, Potomac River Basin, and all other river basins without River Basin Commissions:

- (1) Posting of signs at water withdrawal locations.
- (2) Monitoring of water withdrawals or purchases.
- (3) Reporting of withdrawal volumes, in-stream flow measurements and water source purchases.
- (4) Recordkeeping. Reports required in all river basins of the Commonwealth shall be submitted electronically to the Department.

(c) Reuse plan. A well operator submitting a WMP application shall develop a reuse plan for fluids that will be used to hydraulically fracture wells. The reuse plan shall meet or improve upon the standards required for a wastewater source reduction strategy in compliance with § 95.10(b) (relating to treatment requirements for new and expanding mass loadings of Total Dissolved Solids (TDS)). A well operator shall submit the reuse plan to the Department and the plan shall be made available to the public on the Department's web site.

(d) Approval. When applicable, the requirements of this section are presumed to be achieved for those portions of a WMP for which there is an approval from the Susquehanna River Basin Commission, the Delaware River Basin Commission or the Great Lakes Commission. This subsection does not affect the requirement in subsection (a) for a WMP approved by the Department. The Department shall adopt and incorporate the requirements imposed by any of the Commissions into its approval, and may supplement those requirements.

(e) Expiration. Individual water sources within a WMP are valid for 5 years.

(f) Renewal. A WMP renewal application shall be submitted at least 6 months prior to the expiration of the 5-year term for withdrawal or use of a water source under a WMP.

(g) Suspension and revocation. The Department may suspend or revoke an approved water source within a WMP for failure to comply with the WMP or for any reasons in sections 3211(m), 3252 and 3259 of the act (relating to well permits; public nuisances; and unlawful conduct).

(h) Termination. A WMP holder may terminate approval of any water source within an approved WMP by submitting a letter to the Department's Oil and Gas District Office requesting termination of the water source approval.

(i) Denial. The Department may deny approval of a WMP for any of the following reasons:

- (1) The WMP application is administratively incomplete.

- (2) The WMP will adversely affect the quantity or quality of water available to other users of the same water sources.
- (3) The WMP does not protect and maintain the designated and existing uses of the water sources.
- (4) The WMP will cause an adverse impact to water quality in the watershed as a whole.
- (5) The Susquehanna River Basin Commission, the Delaware River Basin Commission, or the Great Lakes Commission has denied a water withdrawal application. (1143)

Response: The Department disagrees with the revisions proposed by the commenter. Water used by conventional operators is significantly less than unconventional operators. Water management plans are required for water withdrawals or use of water for the drilling or hydraulic fracture stimulation of unconventional natural gas wells. Section 78a.69(a) states that no person may withdrawal or use water from water sources within this Commonwealth for drilling or hydraulic fracture stimulation of any natural gas well governed by this chapter except in accordance with a WMP approved by the Department.

2147. Comment: Due to the wide-ranging impact these revisions will have on oil and gas operations. We request clarification as to the effective dates for the new requirements. It is suggested that language be added to clarify the effective date for the new water management requirements and that wells constructed prior to that date are grandfathered in for purposes of the new requirements. (124, 861, 913, 861a, 913a, 124a, 1057)

Response: It is the intent of the Department to establish effective dates for requirements under the new regulations and to grandfather requirements for existing water management plans.

2148. Comment: We ask that the Board streamline the exact requirements for the suggested water management plan by incorporating the requirements into the proposed Rule or by creating a standardized form with reasonable requirements prior to the proposed Rule's effective date. The Department has suggested what information it will require in the water management plan in its *Water Management Plan for Marcellus Shale Gas Well Development Example Format*, Document No. 5500-PM-OG0087 , 4/2009 guidance. However, we recommend formalizing reasonable criteria for water management plans for oil and gas wells in the Rule itself. (1085)

Response: The Department's Document No. 8000-PM-OOGM0087 provides criteria for water management plans. Further, exact procedures are more appropriately contained in guidance documents, due to frequent changes, rather than in regulatory language.

2149. Comment: Based on comments received, we believe that the implementation procedures for 78.69(d), 78.69(f), 78.69(g) and 78.69(i) related to approval, renewal, suspension and revocation, termination and denial of WMPs lack clear implementation procedures for the regulated community. What are the timeframes for the Department to act on these decisions? What criteria are these decisions based upon? Is there a process for amending a WMP? Does the proposed language related to denying a WMP align with the intent of the General Assembly and Act 13? How and when will the Department notify an applicant of an approval, suspension, termination or denial? Is there a process to appeal a suspension or revocation? What are the criteria and requirements for monitoring and reporting? EQB should revise these subsections to provide clear and reasonable implementation procedures and compliance requirements. (1099)

Response: Implementation procedures for the regulated community are more appropriately contained in guidance documents rather than in regulatory language.

§ 78.70 Road-spreading of brine for dust control and road stabilization

2150. Comment: DEP should not create new obligations through the proposed permit by rule without clear and compelling factual justification. The suggested amendments bring the permit by rule into consistency with current practice or offer revisions that will not have a detrimental environmental impact.

Suggested amendatory language:

(a) Road-spreading of brine from oil and gas wells for dust suppression and road stabilization shall only be conducted pursuant to a plan approved by the Department and shall not result in pollution of the waters of the Commonwealth. ~~[Only production]~~ Production brines from conventional wells, not including coalbed methane wells, may be used for dust suppression and road stabilization pursuant to this section. The use of drilling, hydraulic fracture stimulation flowback, plugging fluids, or production brines mixed with well servicing or treatment fluids, except detergents, may not be used for dust suppression and road stabilization.

(b) Road-spreading of brine for dust control and road stabilization shall only be conducted on unpaved roads.

(c) Road-spreading plans shall be submitted annually to the Department for approval and shall include the following:

(1) The name, address and telephone number of the plan applicant and of each person who will conduct the actual road-spreading.

(2) The license plate number of each road-spreading truck.

(3) An original signed and dated statement from the person that owns or maintains the roads where road-spreading will be conducted authorizing the use of brine on roads and that that person will supervise the frequency of road-spreading.

(4) ~~[A national wetland inventory map identifying the following:~~

~~(i) roads where the road spreading be conducted;~~

~~(ii) any brine storage areas not located on a well site;~~

~~(iii) bodies of water and watercourses within 150 feet of the roads identified in (i);~~

~~(5)]~~ A description of how road-spreading will be conducted, including the equipment to be used and the method for controlling the rate of application of the brine.

(5) ~~[(6)]~~ The proposed rate and frequency of application.

(6) ~~[(7)]~~ The name of each well and the associated geologic formation from which the brine is produced.

(7) ~~[(8)]~~ A chemical analysis of the brine using parameters provided by the Department. A representative sample of the brine may be used, provided that the operator demonstrates that the representative sample is equivalent to the brine being used for road-spreading.

(d) Plans approved under this section automatically renew ~~[will expire]~~ on December 31st of each year unless previously submitted data needs to be updated and revised.

* * * * *

(f) Recommended application rates: The road shall initially be spread at a rate up to one-half gallon per square yard. The road shall subsequently be spread at a rate of up to one-third gallon per square yard. The application rate for race tracks and mining haul roads should be determined for each site and shall not exceed one gallon per square yard.

* * * * *

(j) Except for storage at the well site, all storage of brine shall be in tanks in a manner that complies with the applicable requirements set forth in 25 Pa. Code Chapter 299.

(k) The Department shall be notified at least 24 hours before road-spreading will begin. This notice shall be submitted either electronically to the Department through its website or by

telephone by Registered Small Businesses and include the date the road-spreading will occur and where the activity will occur. If the date of road-spreading changes, the operator shall re-notify the Department in accordance with this paragraph.

(l) The person identified on the road-spreading plan shall submit a quarterly [~~monthly~~] report to the Department on forms provided by the Department listing the locations, frequency and amounts of brine spread during the previous quarter [~~month~~]. Quarterly Monthly brine spreading reports must be received by the Department on the 15th day of the month that follows the quarter [~~month~~] the brine was spread. These reports must be submitted to the Department on a quarterly [~~monthly~~] basis even if no roadspreading of brine took place during the previous quarter [~~month~~]. (1135)

Response: The Department disagrees with the proposed changes. The proposed changes eliminate key environmental controls including the maximum application rates as well as the source formation. These controls were designed to protect public health and safety and the environment and the proposed language effectively eliminates them. Additionally it is appropriate for the Department to review road spreading plans on an annual basis. Finally, given the potential for pollution of waters of the Commonwealth, monthly reporting is necessary to ensure compliance with the approved plans and applicable regulations.

Regarding electronic submission of reports and notifications, see response to comment 219.

- 2151.** Comment: 78.70 – We support prohibition of brine from coalbed methane wells, drilling, hydraulic fracture stimulation flowback, plugging fluids, or production brines mixed with well servicing or treatment fluids.

However, we believe that this prohibition should apply to all road-spreading of production brine, until the EQB provides the public with scientific data demonstrating that the production brine treatment provided by Oil and Gas Operations in Pennsylvania results in treated brine that meets both EPA’s and Pennsylvania’s safe drinking water standards, unless the EQB allows spreading only of treated waters that meet that standard.

We are concerned that the production brine proposed to be spread on Pennsylvania’s road system may contain hydrocarbons, heavy metals, radionuclides, and other chemicals that can be harmful to humans, wildlife, and ecosystems and that it may contaminate nearby waters and soils. Oil and Gas Operations typically do not treat production brine to drinking water quality standards (as further explained below), and the amount and type of contaminants can vary widely by operator, field, and over time.

Currently the PADEP requires the operator to test any road-spreading brine for: calcium, sodium, chloride, magnesium and total dissolved solids. (PADEP, Roadspreading of Brine for Dust Control and Road Stabilization, Fact Sheet, 5500-FS-DEP1801 (rev. July 2010.))

The operator does not have to test for hydrocarbons, heavy metals, radionuclides, and other chemicals. While the PADEP requires “free oil” to be separated from the brine before spreading, the agency does not set a limit on the amount of oil, grease or other hydrocarbon contamination that can remain in the brine. Typically, produced brine, after one to two phases of separation, including gravity separation, can still contain 5 to 10 mg/l of hydrocarbons.

The term “production brine” is not defined at § 78.1, and should be defined to clarify intent.

Production brine (more commonly called “produced water” by petroleum engineers and the oil and gas industry) means the water produced along with the oil and/or gas from the formation. It also includes water and chemicals injected into the ground to enhance hydrocarbon production (e.g., water flooding or enhanced oil recovery (EOR) operations).

Produced water (mixed with hydrocarbons and other waters or chemicals introduced into the formation during water flooding or EOR) is produced at the wellhead and then routed by pipeline to be processed at the surface. Because produced water is in direct contact with hydrocarbons in the reservoir and is mixed with hydrocarbons as it is produced through the well and into the surface processing facilities, produced water (“production brine”) typically contains some amount of hydrocarbons (5-10 mg/l), (SPE, *Challenges in Reusing Produced Water 2* (Oct. 2011) (SPE White Paper)) depending on the amount and type of processing that is completed prior to use.

Hydrocarbons remaining in the production brine may contain VOCs such as benzene, toluene, ethyl benzene, and xylene (BTEX), which are known carcinogens. The production brine also will contain any contaminants in the water or chemicals with which it comes into contact along the pathway. Therefore, if production brine is spread on the road, residual hydrocarbon components and chemicals contained in the production brine may be released to the air, contaminate the road surface, and be washed by precipitation into streams and onto land, from which it can pollute groundwater.

In 2011, the Society of Petroleum Engineers (SPE) issued a paper describing the challenges of reusing produced water (production brine”). (SPE, *Challenges in Reusing Produced Water 2* (Oct. 2011) (SPE White Paper)). The SPE paper explains:

Produced Water and Typical Treatment. Produced water is the aqueous liquid phase that is co-produced from a producing well along with the oil and/or gas phases during normal production operations. This includes water naturally occurring alongside hydrocarbon deposits, as well as water injected into the ground. The following are the main contaminants of concern in produced water:

- *High level of total dissolved solids (TDS)*
- *Oil and grease*
- *Suspended solids*
- *Dispersed oil*
- *Dissolved and volatile organic compounds*
- *Heavy metals*
- *Radionuclides*
- *Dissolved gases and bacteria.*
- *Chemicals (additives) used in production such as biocides, scale and corrosion inhibitors, and emulsion and reverse-emulsion breakers*

The amount of produced water, and the contaminants and their concentrations present in produced water usually vary significantly over the lifetime of a field. Early on, the water generation rate can be a very small fraction of the oil production rate, but it can increase with time to tens of times the rate of oil produced. In terms of composition, the changes are complex and site-specific because they are a function of the geological formation, the oil and water (both in-situ and injected) chemistry, rock/fluid interactions, the type of production, and required additives for oil-production-related activities.

SPE further explains that to remove the main contaminants in produced water, many of the same methods used for drinking water treatment must be employed. Yet, most oil and gas processing

plants do not include this level of treatment for produced water, unless required by regulation. SPE described treatment needs and alternatives:

Treatment Alternatives

Considering the main contaminants present in produced water, treatment goals include deoiling, desalination, degassing, suspended solids removal, organic compounds removal, heavy metal and radionuclides removal, and disinfection. These treatment goals are essentially the same for potable, nonpotable reuse, or disposal, although the level of contaminant removal required for potable reuse can be significantly higher, depending on the quality of the produced water.

The SPE paper lists the type of produced water treatment options available (e.g., aeration, settling, sand filtration, ion exchange, reverse osmosis, coagulation, flocculation, filtration, etc.) describing treatment methods that are not typically used at Oil and Gas Operations and would have to be added to treat the water prior to road spreading. Alternatively, the produced water would need to be transported to a facility that could provide this treatment.

Ohio has tested production brine at various locations over a period of many years. (Oh. Dep't of Natural Res., Div. of Mineral Res. Mgt., *Spreading Oil-Field Brine for Dusts and Ice Control in Ohio, A Guidance for Local Authorities* 20 (rev. Sept. 2004) Ohio's testing found metals, including heavy metals, in the production brine. Table 4 from the Ohio report shows that metal content in Ohio production brine exceed EPA's maximum contaminant level for drinking water for several metals, including barium, cadmium, chromium, lead and nickel. While Ohio notes in their report that production brine, once applied to the road may be diluted further, there is no guarantee of the timing or magnitude of that dilution process. Dilution is not guaranteed or a reliably effective way to avoid contaminant accumulation above acceptable drinking water levels.

Trace Element	Range in Ohio Brines	Maximum Contaminant Level for Drinking Water
Barium	0.1 to 255 (mg/l)	2 mg/l
Zinc	0.05 to 4.1 (mg/l)	
Cadmium	0.4 to 181 (ug/l)	5 ug/l
Chromium	0.6 to 644 (ug/l)	100 ug/l
Cobalt	0.4 to 155 (ug/l)	
Copper	0.3 to 220 (ug/l)	1300 ug/l
Lead	5 to 1300 (ug/l)	50 ug/l
Mercury	0.70 to 0.915 (ug/l)	2 ug/l
Molybdenum	4 to 51 (ug/l)	
Nickel	0.7 to 637 (ug/l)	100 mg/l
Vanadium	0.6 to 30 (ug/l)	

The PADEP has not addressed well-founded environmental and health concerns with the road-spreading of production brine. The PADEP also has not issued—subject to impact analysis and public review—a specific “beneficial use” permit for the practice. This process should not be circumvented by allowing road-spreading in the proposed regulations.

We therefore recommend that § 78.70 be deleted in its entirety. (1143)

Response: With respect to the beneficial use of brine for dust suppression and road stabilization, the Board is not constrained by the residual waste beneficial use regulations. Chapters 78 and 78a are being promulgated under the authority of the Solid Waste Management Act, and therefore additional regulations related specifically to the beneficial use of brine may be included within these Chapters. Section 105(a) of SWMA provides the

Environmental Quality Board with the broad authority to adopt rules, regulations, criteria and standards of the Department to carry out the provisions of SWMA, including those relating to the protection of safety, health, welfare and property of the public and the air, water and other natural resources of the Commonwealth. These regulations may be contained in several chapters. Chapter 287 and more specifically, § 287.2(g) do not limit the Board’s broad statutory authority to promulgate regulations affecting the management of waste outside of this Chapter. As has been demonstrated by the unprecedented public participation process on this rulemaking, the Department in no way is “circumventing” impact analysis and public review of these requirements.

Conventional brine may be spread on roads for dust control and road stabilization under controlled conditions that require the brine to meet certain chemical parameters for use and sets limits on the application location, rate, and duration. Conventional operators have spread brine on roads for dust control and road stabilization for many years under these controlled conditions that limit the application location, rate and duration, and the Department believes that existing data support the continued use of this practice.

- 2152.** Comment: Prohibit the use of brine for dust suppression, de-icing, and road stabilization. Stormwater runoff carries brine into nearby waterways and wetlands. Not allowing the use of brine from shale gas wells is a positive step, but brine from conventional wells can also push salinity loads far above any naturally occurring conditions.(10,17, 18, 19a, 67, 72, 73, 79, 102, 104, 125, 148, 160, 161, 169, 182, 402, 475, 492a, 564, 565, 626, 632, 808, 842, 843, 848, 853, 853a, 865, 869, 869a, 884, 909, 922, 947, 1039, 1058, 1102, 1215, 1148, 1168, 4582 – 4584)

Response: See response to comment 2151.

- 2153.** Comment: No spreading of brine or flowback for dust suppression, de-icing or road stabilization. Spreading these dangerous and often radioactive fluids on roads provides a pathway for pollution of our streams and groundwater and can harm wildlife and kill vegetation. (5936-6089)

Response: See response to comment 2151.

- 2154.** Comment: Road spreading of brine should not be allowed. Especially in source water protection zones. This process might spread pollutants that are detrimental to source water quality and presents opportunities for tanker spills. Brine needs to be properly handled. (153, 477, 1150)

Response: The Department’s approval to spread brine under this section does not waive the requirement to comply with any applicable municipal ordinances adopted pursuant to a Department-approved wellhead or source water protection plan.

- 2155.** Comment: The safety of this practice has never been shown, and codification in Chapter 78 would allow DEP to evade its own beneficial use requirements. (853)

Response: See response to comment 2151.

- 2156.** Comment: The regulations before us today are also lacking in very basic protections for our environmental resources. The DEP’s proposed regulations for the road-spreading of brine pose unacceptable threats to the Commonwealth’s water resources – and would be unlawful. (Section 78.70a) (19, 21, 26, 165, 180, 181, 637, 843, 851, 868, 946, 958)

Response: See response to comment 2151.

2157. Comment: Any use of brine, is subject to regulation under the DEP's SWMA regulations at 25 Pa. Code Chapter 287. These regulations do not currently allow permits-by-rule for road-spreading, so the permit-by-rule scheme proposed in sections 78.70 and 78.70a is illegal. (180, 181)

Response: With respect to the beneficial use of brine for dust suppression and road stabilization, the Board is not constrained by the residual waste beneficial use regulations. Chapters 78 and 78a are being promulgated under the authority of the Solid Waste Management Act, and therefore additional regulations related specifically to the beneficial use of brine may be included within these Chapters. Section 105(a) of SWMA provides the Environmental Quality Board with the broad authority to adopt rules, regulations, criteria and standards of the Department to carry out the provisions of SWMA, including those relating to the protection of safety, health, welfare and property of the public and the air, water and other natural resources of the Commonwealth. These regulations may be contained in several chapters. Chapter 287 and more specifically, § 287.2(g) do not limit the Board's broad statutory authority to promulgate regulations affecting the management of waste outside of this Chapter.

2158. Comment: 78.70(a) – We recommend the elimination of this exception: The use of drilling, hydraulic fracture stimulation flowback, plugging fluids or production brines mixed with well servicing or treatment fluids, except detergents, may not be used for dust suppression and road stabilization. Generally, exceptions confuse and weaken regulations. The public generally wants assurance that brine generated from hydraulic fracturing fluids is not being applied on roads near their homes and private water supplies. Often homes are situated close to the road and the private water supply may be located within 100' of a qualifying road surface. We therefore urge the Department to modify this provision to apply solely to fluids generated from conventional formations. With this consideration, we clearly note that there are no acceptable conditions to permit unconventional flowback, plugging fluids, or production brines to be used in dust suppression and road stabilization and therefore, recommend the adoption of the provision to that end. (660a)

Response: See response to comment 1559. The bifurcation of Chapter 78 into Chapters 78 and 78a addresses the comment. As a result of bifurcation of Chapter 78, road spreading of brine will only be allowed under Chapter 78, and thus, apply to conventional formations only.

2159. Comment: Current DEP regulations do not ensure that the spreading of waste water brine from conventional oil and gas wells will prevent problems. There must be assurance that this brine doesn't contaminate soil, vegetation, groundwater or streams and rivers. This is especially true near drinking water supplies. (891)

Response: See response to comment 2151.

2160. Comment: Use of brine in all road applications needs to be specific to just conventional wells. There are too many variables with unconventional wells that create concerns. We need to protect our streams and private water supplies, often both are within 100' of a dirt and gravel or paved road. (1035, 1098)

Response: See response to comment 1559. The bifurcation of Chapter 78 into Chapters 78 and 78a addresses the comment. As a result of bifurcation of Chapter 78, road spreading of brine will only be allowed under Chapter 78, and thus, apply to conventional formations only.

- 2161.** Comment: 78.70(a) – Why prohibit brine spreading of unconventional well produced fluid without data and tests to support the prohibition? This determination should only be made after analysis of the brine is conducted per 78.70(c)(8). Analysis has shown that unconventional production fluid can have the same quality as conventional production fluid. The Department has not provided a scientific basis for not allowing the spreading of other fluids.

Suggested Regulatory Language:

(a) Road-spreading of brine from oil and gas wells for dust suppression and road stabilization shall only be conducted pursuant to a plan approved by the Department and shall not result in pollution of the waters of the Commonwealth. Only produced fluids from unconventional wells approved in accordance with (c)(8) or ~~Only~~ production brines from conventional wells, but not including coalbed methane wells, may be used for dust suppression and road stabilization pursuant to this section. The use of drilling, hydraulic fracture stimulation flowback, plugging fluids, or production brines mixed with well servicing or treatment fluids, except detergents, may not be used for dust suppression and road stabilization. (1153)

Response: Conventional brine road spreading has been occurring for decades and the Department believes that data support the continued use of this practice. Conversely, unconventional activity has only been conducted in Pennsylvania for a relatively short period of time and the Department does not believe that sufficient data exists regarding unconventional produced waters to determine the appropriate road spreading requirements that are protective of public health and safety and the environment.

- 2162.** Comment: No brine from hydraulically fracked wells should be used for application on the well pad, industry access roads, private roads or public roads due not only to salinity loads, but to the possible presence of toxic chemicals and radioactive particles that may be contained in flowback water (609, 912, 926, 938, 938a)

Response: See response to comment 1559. The bifurcation of Chapter 78 into Chapters 78 and 78a addresses the comment. Sections 78a.70 and 78a.70a prohibit the use of unconventional brines for road-spreading for dust control and road stabilization and pre-wetting, anti-icing and de-icing.

- 2163.** Comment: In section 78.1, brine is defined to be a regulated substance, spillages of which are to be reported. Then later in section 78.70 operators are given permission to spray brine on road surfaces. It should be needless to say that this use of brine is unacceptable and dangerous. (108)

Response: See response to comment 2151.

- 2164.** Comment: Brine is composed of salt and contaminants that should not be permitted as a viable option to treat dust. The topical application of this brine leads to runoff which contaminates streams and ground water areas where animals forage and children play/fish. These chemicals eventually end up in our drinking water. (104)

Response: See response to comment 2151.

- 2165.** Comment: The DEP's proposed regulations for the road-spreading of brine pose unacceptable threats to our water, our health and even our homes. Isn't it obvious that when it rains, this will wash off the roads and into our streams?

My neighbor was biking along our road with his dog. After he got home, he noticed a strange substance all over the dog's feet and the carpet. It injured the dog and damaged the carpet, and after researching what the substance was, we felt it was fracking brine.

Haven't you considered that people, pets and wildlife walk on roads, and then walk in our homes, where children play on the floor and then put their hands in their mouths, and the dogs lick their feet.

Please do not allow this to be put on our roads, or it will be unsafe for people and animals to walk there. The risks of spreading brine on roads outweigh the benefits.

Your purpose is to protect the environment, not to enable very rich companies to save money by putting their hazardous waste on our roads. (180)

Response: See response to comment 2151.

- 2166.** Comment: Despite the fact that DEP currently allows brine from conventional wells to be used on the Commonwealth's dirt roads for dust control, there is inadequate oversight of this activity. The brine itself is not consistently or comprehensively tested to assure that it does not contain dangerous pollutants, and township supervisors may not follow DEP's current guidelines for brine application. Without more stringent oversight, current policy poses unacceptable risks. (182)

Response: The regulation requires notice to the Department at least 24 hours prior to commencement of road-spreading. Additionally, the regulation requires the approved road-spreading plan to be maintained in the vehicle during road-spreading and any changes to the approved road-spreading must be submitted to the Department for approval. Finally, the regulation requires the person identified on the road-spreading plan to submit a monthly report listing the locations, frequency and amount of brine spread during the previous month. The Department believes that the regulation allows for sufficient oversight to ensure that protection of public health and safety and the environment.

- 2167.** Comment Residual waste disposal on roads and land from fracked waste water is not an acceptable use. Byproducts of this disposal can pollute waterways and land much more strongly than other wastes. The proposed rules allow spreading of Brine from conventional wells on roads but not from Marcellus wells. At present, DEP regulations will not prevent contamination of soil, vegetation, and ground water, especially near drinking water sources, streams and rivers. (111)

Response: See response to comment 2151.

- 2168.** Comment: Residual waste must NOT be disposed of on roadways. (400, 401)

Response: The rulemaking allows for beneficial reuse of some conventional formation production brines for road stabilization and de-icing of roadways. See response to comment 2151.

- 2169.** Comment: 78.70(a) -Why prohibit brine spreading of unconventional well produced fluid without data and tests to support the prohibition? This determination should only be made after analysis of the brine is conducted per 78.70(c) (8). Analysis has shown that unconventional production fluid can have the same quality as conventional production fluid. What is the scientific basis for not allowing the spreading of other fluids? (411)

Response: See response to comment 2161.

- 2170.** Comment: Section 78.70 (b) is confusing in that if a road is paved, there would be no reason for dust control or road stabilization. This section also stipulates that the application of brine to unpaved roads shall be performed in accordance with the plans approved by the department. Since Penn DOT has allowed brine application on unpaved roads for years, has the department consulted with Penn DOT on the appropriate rate of application, etc. for brine on unpaved roads? (415)

Response: As the commentator notes, there is no need for dust control or road stabilization on paved roads which is why that activity is prohibited under § 78.70(b). The Department has determined the appropriate rates of application to ensure protection of public health and safety and the environment.

- 2171.** Comment: 78.70(c) – Annual renewal of road spreading plans is not necessary or effective in most cases, especially where brine composition remains relatively constant from year to year.

Suggested Regulatory Language:

(c) After the initial approval by the Department, road-spreading plans shall be submitted for review and approval every five years unless brine composition changes by more than 20% from the previous year, in which case the road-spreading plan shall be submitted at the end of the year of the composition change. (1153)

Response: It is appropriate for the Department to review road spreading plans on an annual basis.

- 2172.** Comment: Section 78.70(c)(7) requires the applicant to name each well and the associated geologic formation that produced the brine. This requirement may be applicable for an applicant who is a producer of the brine that is applying the brine to a private access road associated with the drilling operation, but should not be for a municipality that uses brine to maintain their public unpaved roads. (415)

Response: The producer or vendor can provide the source of the brine to the municipality.

- 2173.** Comment: 78.70(c)(7) – This is a logistical issue for us as an operator as we approximately have 3200 gas wells on our bond. Listing each well and all producing formations which produce brine should not be necessary. It is impossible to know in advance what wells we will spread brine from over the course of a year. Perhaps a general statement in the application indicating the range of formations which we have/had produced in all owned wells is more appropriate. Delete subsection (c)(7). (411, 1153)

Response: Section 78.70(c)(8) allows for a representative sample of the brine may be used, provided that the operator demonstrates that the representative sample is equivalent to the brine being used for road-spreading.

- 2174.** Comment: 78.70(c)(8) – The list of parameters needs to be determined and listed in this section prior to implementation. (411)

Response: The Department disagrees that parameters should be added to this regulatory section. The Department needs to maintain flexibility to require specific testing based on the characteristics of the brine to be used and the area in which the brine will be spread. In the existing road-spreading program, sampling parameters are established as part of the

application for plan approval, and this practice will continue under the final-form rulemaking.

2175. Comment: **78.70(c)(8)** - What constitutes a representative sample? (411)

Response: A representative sample is made up of the material that is to be analyzed. The sample should be collected in a manner that allows general assumptions to be made about the entirety of the material to be analyzed.

2176. Comment: Section **78.70(e)(2)** seems to conflict with Section **78.70(f)** in that (e) (2) states that “the rate and frequency necessary to suppress dust and stabilize the road shall not exceed the rate contained in the plan,” while (f) states that “the applied rate shall be up to one-half gallon per square yard for the first application and one-third gallon per square yard thereafter.” Which is it? (415)

Response: There is no conflict between the two subsections. Subsection (f) provides a maximum application rate and (e) provides a performance standard to be met.

2177. Comment: **78.70(f)** – The amounts of brine allowed to be spread are minimal at best and may be cost prohibitive to operate under this section. Current practice allows for flexibility in the application rate, which should be retained if this rule is codified.

Suggested Regulatory Language:

(f) Recommended application rates: The road should initially be spread at a rate up to one-half gallon per square yard. The road should subsequently be spread at a rate of up to one-third gallon per square yard. The application rate for race tracks and mining haul roads should be determined for each site and shall not exceed one gallon per square yard. (1153)

Response: The Department disagrees with the proposed changes. The proposed changes eliminate the maximum application rates which are key environmental controls. These controls were designed to protect public health and safety and the environment and the proposed language effectively eliminates them.

2178. Comment:

- a. How do you apply brine to roadways without “pollution of the waters of the Commonwealth?”
- b. **78.70(f)** allows 6,400 gallons (or 1-1/2 tanker loads) for an area the size of a football field playing surface!
- c. The trucks utilized to spread brine need to have placards with more than just ‘Residual Waste’ displayed. (939)

Response: The rule prohibits direct infiltration to groundwater and specifies that brine may not enter bodies of water or watercourses. The processes outlined in this section include application rates and setback distances are reasonable and appropriate to ensure protection of waters of the Commonwealth. Trucks used to spread brine are required to have the applicant’s name and business address on both sides of the vehicle.

2179. Comment: **78.70(k)** – Have the necessary electronic reporting setup in GreenPort prior to the implementation of this section. (411)

Response: The Department acknowledges the comment and will make sure that electronic infrastructure will be in place prior to implementation.

2180. Comment: 78.70(I) – This information should be able to be submitted electronically through GreenPort. (411)

Response: The Department acknowledges the comment.

2181. Comment: We take exception to the answer to question 23 of the *Regulatory Analysis Form* that was completed by the department where it pertains to savings or cost for local government. The answer states that the department “does not anticipate that there will be any cost or savings to local government.” We would contend that based on the requirements of Sections 78.70 and 78.70a there will be a cost. As we read the proposed regulations, a municipality that would want to use “conventional well brine” for road stabilization or pre-wetting of roads would have to gather data, develop plans, provide notification, and provide a chemical analysis of the brine. We do not have any idea of what the cost may be, but the analysis of the brine alone could outweigh the benefit of using it. (415)

Response: The rulemaking does not include a requirement to use brines for pre-wetting or road stabilization but instead allows for it to occur when certain conditions are met. If the municipality or operator chooses not to conduct these activities, there will not be any associated cost.

2182. Comment: Section 78.70: This section deals with spreading of brine from conventional wells for dust control and road stabilization. We have several issues with this section.

First, we presume that this section pertains to both public and private entities (*based on the response to question 24 of the Regulatory Analysis Form*) that would or could use conventional well brine for dust control and road stabilization.

We contend that this section’s requirements as they relate to the state and local government are excessive and would be a deterrent for public use of this brine. A question that has to be raised is whether these regulations as they pertain to conventional well brine are different from regulations pertaining to other types of brine used on unpaved roads? This section is so convoluted that it will prevent municipalities from using conventional well brine, and as such, we must oppose these provisions. (415)

Response: The rulemaking does not include a requirement to use brines for pre-wetting or road stabilization but instead allow for it to occur when certain conditions are met. The requirements are reasonable and appropriate to ensure protection of public health and safety and the environment.

2183. Comment: One of the issues that was not addressed at the hearing in Indiana was the presence of bromides in oil and gas wastewater. Wastewater is being discharged on isolated dirt roads on state game lands for the purpose of dust control. This water contains bromides and is entering PA’s source water streams which feed all of PA’s major rivers including the Susquehanna which provides water for Harrisburg.

For your information bromo seltzer was reformulated in 1975 to remove all of the bromides. Therefore better regulation of bromides and other harmful matter entering our water supply are in order. (434)

Response: The rule prohibits direct infiltration to groundwater and specifies that brine may not enter bodies of water or watercourses. The processes outlined in this section include

application rates and setback distances are reasonable and appropriate to ensure protection of waters of the Commonwealth.

- 2184.** Comment: Section 78.70 would authorize the road-spreading of brine from conventional wells for dust control on dirt and gravel roads. How very convenient for the industry. Not only are there no chain of custody requirements here, but the risks of spreading this produced brine on roads so far outweigh the benefits that this permissibility is ludicrous, except of course, to the gas industry's bottom line in the disposal cost column. I propose: No brine should be spread on any road –ever. No exceptions. (644)

Response: See response to comment 2151.

- 2185.** Comment: Under the proposed regulations the DEP would allow brines from conventional gas wells to be spread on roads for dust suppression and de-icing. Brines spread on the roadways make its way through stormwater runoff, into nearby waterways or wetlands. Brines have the potential to push salinity loads far above any naturally occurring conditions, which would impact the quality and uses of nearby waters. The proposed regulations are not only imprudent but they are also contrary to existing regulation.

The beneficial use of brine for dust suppression has never been approved under the Solid Waste Management regulations. Furthermore, the Department has already attempted to issue a beneficial use general permit that would have allowed gas well brines to be used for both dust suppression and de-icing purposes. However, as a result of concerns about health and water quality impacts, the DEP withdrew the general permit in November 2012. Now, the proposed revisions to Chapter 78 would allow brine to be used for both dust suppression and de-icing - precisely what was attempted with the failed attempt earlier. In addition, these revisions would be unlawful if adopted because they would establish a "permit-by-rule" approval process. Chapter 287 regulations do not allow a new-permit-by rule approval for beneficial uses. (887)

Response: With respect to the beneficial use of brine for dust suppression and road stabilization, the Board is not constrained by the residual waste beneficial use regulations. Chapters 78 and 78a are being promulgated under the authority of the Solid Waste Management Act, and therefore additional regulations related specifically to the beneficial use of brine may be included within these Chapters. Section 105(a) of SWMA provides the Environmental Quality Board with the broad authority to adopt rules, regulations, criteria and standards of the Department to carry out the provisions of SWMA, including those relating to the protection of safety, health, welfare and property of the public and the air, water and other natural resources of the Commonwealth. These regulations may be contained in several chapters. Chapter 287 and more specifically, § 287.2(g) do not limit the Board's broad statutory authority to promulgate regulations affecting the management of waste outside of this Chapter.

The Department disputes the commenter's characterization of the decision not to renew WMGR064. That general permit was originally issued on September 22, 2000 (30 Pa.B. 5159). The Department decided not to renew WMGR064 on November 24, 2012 (42 Pa.B. 7175). Between September 2000 and November 2012, only three registrations for coverage under the general permit were approved by the Department (two other registrations were denied – one in 2001 and one in 2003). Residual waste general permits are issued on a regional or statewide basis for a category of processing and/or beneficial use of residual waste. Wastes must be similar physically and chemically and must be used and processed in a similar fashion in order for a general permit to be appropriate. Given the paucity of applications for

registration under WMGR064 (five in twelve years), there did not appear to be regional or statewide interest in beneficial use of production brine for prewetting, anti-icing and de-icing operations at the time renewal was being considered.

- 2186.** Comment: There are many toxins present in produced water. Furthermore, each truckload of brine is unique in chemistry depending on the formation and the time of flow from the well. It is impossible for an operator to test and certify the safety of each truckload of brine. Once a load of brine is dispersed, its chemicals will travel through surface flow and infiltration in unpredictable destinations, with unknown consequences. Furthermore, operators have no way to tally the combined effects of more than one brine application in an area. Permission to disperse brine will result in harm to leased property and neighbors due to read chemical presence and the perceived risk of chemicals. Just the permission to use brine will lower options for future use of the land because the presence or absence of a brine application will be hard to verify. (938, 938a)

Response: The regulation requires analysis of a representative sample of the brine. If the quality of the brine changes, then a new sample must be analyzed. See response to comment 2151.

- 2187.** Comment: Another area the SWPZs should be utilized is in DEP's review of any plans for spreading brine on paved and unpaved roads. The proposed regulation already requires the applicant to include the roads to be treated, so again, it would be a simple process to cross-reference with the SWPZs. If any of the roads are in the SWPZ, the affiliated water system should be notified and provided with a copy of the brine's chemical analysis. The water system should also be given the opportunity to submit a comment to DEP to be considered during the Department's review of the plan. (1054, 1150, 1169)

Response: See response to comment 2151.

- 2188.** Comment (also applies to 78.70a Pre-Wetting, Anti-Icing and De-Icing): Our review of 25 PA Code CH 78 did not reveal any references to additional regulations or stipulations that would require a coordinated permitting or approval process for any entity spreading brine on roads for dust suppression, anti-icing, or de-icing throughout the various municipalities or even on state roads. We are concerned that this may lead to multiple operators or other entities spreading brine in the same locations at or near the same time. If this were to occur, it could lead to an excessive build up and runoff of brine that may inadvertently affect waters of the Commonwealth or waters and associated resources managed by the NPS. If other state or municipal regulations exist we suggest a reference to those regulations be included in CH 78. If not, additional guidance on this issue is necessary in CH 78 to help protect water quality from potential excessive use of brine on roadways. In addition, any brine-spreading vehicles should be required to display sufficient signage to identify which agency or municipality they belong to, so that any brine-spreading practices by operators can be held accountable to established standards and regulations.

§ 78.70(c)(4) – We recommend that DEP require a detailed wetland/waterway investigation be done as a component of water management plans under § 78.69 to ensure that all potential waters of the Commonwealth that would be regulated under PA Code Title 25, Chapter 105 and Section 404 of the Clean Water Act be properly identified.

NWI mapping is not without its limitations. Some of these mapping limitations specific to non- tidal lands in the northeast region include: (1) use of summer leaf-on photography for photo-interpretation, (2) difficulty accurately identifying and delineating forested and linear wetland features, (3) farmed/mowed wetlands difficult to detect and thus map, (4) wetland habitats that are at

the drier end of the hydrologic spectrum are often not mapped, and (5) aerial photography age (e.g. most maps use photography from the 1980s) and mapping scale (e.g. 1:40,000 under optimal conditions) (Tiner, 1990; Tiner, 1997; Anderson and Hardin, 1992; Johnston and Meysembourg, 2002; Tiner, 2005; Munoz et al. 2009; Martin et al. 2012).

Of the aforementioned limitations mapping scale may have the greatest relevance to many NPS administered lands as even at the smallest scale mapping product commonly available through NWI (1:40,000) the target mapping unit or estimate of the minimum size wetland that the NWI mapping is attempting to consistently map is no smaller than 1 acre (Tiner, 1997). These limitations can cause NWI mapping to underestimate as many as 82% of the total wetland habitats on a landscape (Morrissey and Sweeney, 2006). (1062, 1133)

Response: The Department acknowledges the comment but does not believe any revisions are necessary to ensure proper coordination of roadspreading. The Department agrees that NWI maps do not identify all waters of the Commonwealth but believes that the established process is reasonable and protective of waters of the Commonwealth.

- 2189.** Comment: §§ 78.70 – 78.70a address the methods by which brine from oil and gas wells may be spread across roads for the purported purposes of dust control, road stabilization, pre-wetting, anti-icing, and de-icing. This practice is unnecessary, and amounts to a windfall for operators at the expense of Pennsylvania’s public natural resources. On February 15, 2014, the Potter County Water Dogs submitted comments (the “PCWD comments”) in opposition to this practice. I support the PCWD comments in this regard, and agree with their assessment that the guidelines which regulate this practice are effectively unenforceable. (1070)

Response: The regulation requires notice to the Department at least 24 hours prior to commencement of road-spreading. Additionally, the regulation requires the approved road-spreading plan to be maintained in the vehicle during road-spreading and any changes to the approved road-spreading must be submitted to the Department for approval. Finally, the regulation requires the person identified on the road-spreading plan to submit a monthly report listing the locations, frequency and amount of brine spread during the previous month. The Department believes that the regulation allows for sufficient oversight to ensure that protection of public health and safety and the environment.

- 2190.** Comment: Road spreading of brine: Don’t allow even low levels of Barium, Lead and BTEXs to be applied to roads since storm drains and culverts lead directly to streams. (901, 939)

Response: The rule prohibits direct infiltration to groundwater and specifies that brine may not enter bodies of water or watercourses. The processes outlined in this section include application rates and setback distances are reasonable and appropriate to ensure protection of waters of the Commonwealth.

- 2191.** Comment: The road spreading of brine for dust control, road stabilization (78.70) and the pre-wetting, anti-icing and de-icing (78.70a) should be prohibited. While using natural brine may be more appealing than adding rock salt to fresh water, it comes with significant liabilities. First, its salt content is variable. As defined, brine content can range from 3.5% to 26% sodium chloride. (910, 1098)

Response: A representative sample must be taken prior to spreading that meets applicable standards.

2192. Comment: Salt stays in the soil for years until leached out by water. Soils with high salinity dehydrate roots and prevent absorption of necessary nutrients. Salt can act as an herbicide having detrimental impact on nearby crops. Wildlife, pets and other domestic animals that drink such run-off can also have adverse health impacts. (910, 1098)

Response: The Department acknowledges the comment.

2193. Comment: Brine from conventional wells may contain other chemicals like corrosion inhibitors whose safety may be untested. The regulations only require that free oil be separated from the brine before spreading [(78.70(g)(1) and 70]. Without comprehensive testing and treating of brine to meet established safety standards, the risk of poisoning is too high. (910, 1098)

Response: The final rule requires testing of brines prior to spreading. The testing required includes parameters which are known to be common constituents in conventional brines and those which present a significant risk to public health and safety and the environment.

2194. Comment: Because of increasing needs and costs to dispose of brine, there is a natural tendency to overuse brine on road surfaces that may not need treatment. This creates unnecessary hazards. While such brine has been limited to conventional wells, this may be difficult to monitor and enforce based solely on required paperwork [78.70(c) and 78.70a(c)(l)(n)(p)(r)(s)] or notice [(78.70(k) and 78.70a(q)]. (910, 1098)

Response: The regulation requires notice to the Department at least 24 hours prior to commencement of road-spreading. Additionally, the regulation requires the approved road-spreading plan to be maintained in the vehicle during road-spreading and any changes to the approved road-spreading must be submitted to the Department for approval. Finally, the regulation requires the person identified on the road-spreading plan to submit a monthly report listing the locations, frequency and amount of brine spread during the previous month. The Department believes that the regulation allows for sufficient oversight to ensure that protection of public health and safety and the environment.

2195. Comment: Annual plan approval, rate and frequency of application and other requirements are not adequate to allow this practice [(78.70 (d)(e)(f)(g)(h)(i)(j)(k)(l)(m)(n)(o) and 78.70 (e)(f)(g)(h)(i)(j)(k)(l)(m)(n)(o) (p) it seems highly probably, given the magnitude and cumulative impact of such brine spreading that it will enter bodies of water or watercourses or infiltrate our groundwater – the life source of future generations. (910, 1098)

Response: The regulation requires notice to the Department at least 24 hours prior to commencement of road-spreading. Additionally, the regulation requires the approved road-spreading plan to be maintained in the vehicle during road-spreading and any changes to the approved road-spreading must be submitted to the Department for approval. Finally, the regulation requires the person identified on the road-spreading plan to submit a monthly report listing the locations, frequency and amount of brine spread during the previous month. The Department believes that the regulation allows for sufficient oversight to ensure that protection of public health and safety and the environment.

2196. Comment: 78.70 and 78.70a propose new language related to the use of brine from oil and gas wells. It is unclear as to why EQB proposes to place requirements related to road-spreading of brine under regulations addressing performance standards at oil and gas well sites. Why is it reasonable to include these sections within Chapter 78?

Commentators note that beneficial use of brine is subject to regulations under SWMA. Other commentators state that PennDOT has allowed brine application on unpaved roads for years. We note that these sections generated questions and concerns from local governments, who believe that these requirements are excessive. We agree that certain provisions, such as Paragraph (c)(7) under each section which requires an applicant to provide the name of each well and associated geologic formation from which the brine was produced, seem unreasonable, particularly for local governments. EQB should ensure that these proposed regulations align with existing applicable statutes. We ask EQB to explain in the Preamble and RAF of the final-form regulation how the provisions related to the use of brine in Sections 78.70 and 78.70a reasonably and adequately balance protection of the public health and natural resources against the fiscal impact on the oil and gas industry and others who must comply. (1099)

Response: The rulemaking in §§ 78.70 and 78.70a will raise current policies for road-spreading of brine for dust control and road stabilization and the recently expired WMGR064 general permit for anti-icing and de-icing for beneficial use on roadways to the level of regulations, thus allowing for consistent regulation and enforcement from the Department. By incorporating all the relevant Department requirements for post-production uses of brine into Chapter 78 and under the Oil and Gas Program's oversight, it will ensure these activities are properly approved on an annual basis and monitored by the Oil and Gas Program. This approach will ensure post production uses of brine from conventional oil and gas wells are properly applied to roadways and do not impact waters of the Commonwealth. The rulemaking provides a more economical option for operators to manage oil and gas well production brine. Plans must be submitted and approved on an annual basis. Detailed information for these plans must be submitted so the Department can conduct a thorough review of where the brine is coming from, what is in the brine and where it is going.

Road-spreading of brine for dust control and road stabilization:

The Department considered a complete prohibition of the road spreading of brine and determined that unconventional brines may not be spread on roads for any reason. Conventional brine may be spread on roads for dust control and road stabilization under controlled conditions that require the brine to meet certain chemical parameters for use and sets limits on the application location, rate, and duration.

Pre-wetting, anti-icing and de-icing:

The Department disagrees with the commenters that recommended complete prohibition of brine being used to de-ice roads. Application rates, location of application sites relative to water bodies, and site characteristics are designed and selected to prevent runoff from reaching waters of the Commonwealth. Production brines from conventional wells have a history of use as pre-wetting, anti-icing and de-icing agents, however, production water from unconventional wells does not have the same history and the Department believes this rulemaking will maintain public health and safety and the environment.

- 2197.** Comment: 78.70 (c) and 78.70a (c) These sections should include a requirement for a PNDI Environmental Review Tool receipt documenting that, at a minimum, there are no known occurrences of state and federally listed species in the vicinity of the application area. Fresh water mussels, including federally listed endangered and threatened species, are highly sensitive to salts that wash from roads receiving brine treatments during storm events. The National Forest Service should be notified of brine application on roads in the vicinity of federally listed mussels. (1134)

Response: The Department believes that the regulation allows for sufficient oversight to ensure that protection of public health and safety and the environment.

- 2198.** Comment: Proposed sections 78.70 and 78.70a establish an unlawful permit-by-rule program for the beneficial use of oil and gas well production brine, and should be struck from the rulemaking.

Production brines from oil and gas wells constitute residual waste under the Pennsylvania Solid Waste Management Act (“SWMA”) 35 P.S. §§ 6018.101—6018.1003.

Generally, the Department regulates residual waste under the SWMA regulations set forth at 25 Pa. Code Chapters 287-299. These regulations apply to all residual wastes in the Commonwealth except for wastes generated by oil and gas activities when the wastes are located *on the well site*. Under 25 Pa. Code § 287.2, this narrow (if voluminous) category of wastes is regulated under Chapter 78 exclusively. Section 287.2 provides: “[a] pit, impoundment, method or facility employed for the disposal, storage or processing of residual waste which is generated by drilling or production of an oil or gas well, and is located on the well site as defined in section 603a of the Oil and Gas Act (58 P. S. § 601.603a), *shall be regulated under Chapter 78 (relating to oil and gas wells), instead of this article* [Article IX, Ch. 287-299], if the owner or operator of the well meets the conditions of section 603a of the Oil and Gas Act.”

Proposed sections 78.70 and 78.70a would establish a permit-by-rule program for the beneficial use of brines from conventional oil and gas wells at locations not just on, but also away from well sites. Specifically, section 78.70 establishes requirements for the use of brines for dust control and road stabilization, then provides that persons conducting road-spreading of brine for dust control and road stabilization activities shall be deemed to have a residual waste permit by rule if those activities comply with the requirements of this section.” Similarly, section 78.70a establishes requirements for the use of brines for the pre-wetting, anti-icing, and de-icing of roads, then provides that persons using brine for pre-wetting, anti-icing and de-icing activities in accordance with this section shall be deemed to have a residual waste permit by rule.” Section 78.70 would codify brine-spreading requirements used by the Department in its current brine-spreading program. Section 78.70a would largely codify requirements that the Department proposed in 2011 under the auspices of Residual Waste General Permit WMGR064.

We do not object to the Department’s regulating the beneficial use of production brines away from well sites under the auspices of Chapter 78. However, the Department is proposing to do much more than this: it is proposing to allow the beneficial use of brines under Chapter 78 in a manner that is contrary to law, namely the Department’s beneficial use regulations set forth at 25 Pa. Code Chapter 287.

The SWMA authorizes the Department to “establish waste regulations to effectuate the beneficial use of municipal and residual waste, including regulations for the issuance of general permits for any category of beneficial use or processing of municipal waste or residual waste on a regional or Statewide basis *in accordance with the regulations adopted by the Environmental Quality Board*.” The SWMA authorizes the Environmental Quality Board (“EQB”) to “adopt the rules, regulations, criteria and standards of the department to accomplish the purposes and to carry out the provisions of this act, including but not limited to the establishment of rules and regulations relating to the protection of safety, health, welfare and property of the public and the air, water and other natural resources of the Commonwealth.”

Again, the EQB’s regulation at 25 Pa. Code § 287.2(g) provides: “A pit, impoundment, method or facility employed for the disposal, storage or processing of residual waste which is generated by drilling or production of an oil or gas well, and is located on the well site as defined in section 603a of the Oil and Gas Act (58 P. S. § 601.603a), shall be regulated under Chapter 78 (relating to oil

and gas wells), instead of this article [Article IX, Ch. 287-299], if the owner or operator of the well meets the conditions of section 603a of the Oil and Gas Act.”

The permit-by-rule program set forth in proposed 78.70 and 78.70a is at odds with the more stringent, detailed, and protective beneficial use approval program codified at 25 Pa. Code Chapter 287, Subchapter H. Among other things, that program includes public notice and comment requirements. The Department’s position appears to be that when the Department chooses to regulate off-well-site oil and gas wastes under Chapter 78, the requirements of Chapter 287 do not apply, notwithstanding the directive in section 104(18) of the SWMA that SWMA regulations established by the Department must be in accordance with the EQB’s regulations. We disagree with this position.

The language of Section 287.2(g) conflicts with the Department’s position that it can regulate brine outside the scope of its beneficial use program. The use of the phrase “instead of” in subsection 287.2(g) shows clearly that when the EQB wants to exempt a waste from regulation under Chapter 287, so that it will be regulated exclusively under chapter 78, the EQB knows how to do so. To date, the EQB has exempted oil and gas wastes from Chapter 287’s requirements *only when the wastes are located on well sites*. The EQB has not exempted oil and gas wastes from Chapter 287 when the wastes are *not* located on well sites.

While PADEP may have the authority to regulate oil and gas wastes not on well sites, under Chapter 78, it must ensure that those regulations are consistent with the regulations in Chapter 287. Proposed sections 78.70 and 78.70a are not consistent with the regulations in Chapter 287 because they would establish an unlawful permit-by-rule program. Under Chapter 287, “permit- by-rule” is defined as “[a] permit which a person or municipality is deemed to have for the operation of a facility or an activity upon compliance with § 287.102 (relating to permit-by- rule).” Section 287.102 “sets forth classes of facilities that are subject to permit-by-rule.”

Chapter 287 permits-by-rule are available for the beneficial use of residual wastes only to the extent that the beneficial use was approved by before July 4, 1992: “The beneficial use of residual waste which the Department has approved, in writing, prior to July 4, 1992, shall be deemed to have a residual waste processing or disposal permit if the person or municipality uses the residual waste in accordance with the terms and conditions of the written approval and the Department has not revoked the approval. The expiration date for permits issued pursuant to this subsection is July 4, 2002, unless a specific permit term is written as a condition of the prior written approval.” Chapter 287 does not authorize permits-by-rule for *new* beneficial uses. A person seeking authorization for a new beneficial use must obtain a general or individual permit under Chapter 287, Subchapter H, which generally “sets forth requirements for the processing and beneficial use of residual waste....”

In sum, the Department may not establish – and the EQB may not adopt – a Chapter 78 regulation that provides for a new permit-by-rule for the beneficial use of residual wastes because 287.102 does not allow for new beneficial use permits-by-rule. Any beneficial use of oil and gas residual wastes not located on a well site must be regulated in a manner consistent with 25 Pa. Code 287, Subchapter H. (852a)

Response: With respect to the beneficial use of brine for dust suppression and road stabilization, the Board is not constrained by the residual waste beneficial use regulations. Chapters 78 and 78a are being promulgated under the authority of the Solid Waste Management Act as well as several other environmental statutes, and therefore additional regulations related specifically to the beneficial use of brine may be included within these Chapters. Section 105(a) of SWMA provides the Environmental Quality Board with the broad

authority to adopt rules, regulations, criteria and standards of the Department to carry out the provisions of SWMA, including those relating to the protection of safety, health, welfare and property of the public and the air, water and other natural resources of the Commonwealth. These regulations may be contained in several chapters. Chapter 287 and more specifically, § 287.2(g) do not limit the Board’s broad statutory authority to promulgate regulations affecting the management of waste outside of this Chapter.

- 2199.** Comment: Section 78.70 outlines the procedures for road spreading of brine for dust control and road stabilization. Section 78.70(o) states that persons who are doing road spreading brine will have a residual waste permit by rule if they use the material for dust control and road stabilization activities. It is recommended that use of brine waste for road application be permitted under the Pa Residual Waste regulation and be tracked accordingly for use rates. We recommend clarity from the Department on how prevention of “direct infiltration” of brine to groundwater will be accomplished under this section. (1138)

Response: The rulemaking provides adequate safeguards against “direct infiltration” including application rates, application restrictions and setbacks from waters of the Commonwealth that protect health and safety and the environment.

- 2200.** Comment: Commentator applauds the proposed amendment’s explicit prohibition of the application of brines from unconventional shale formations on unpaved roads, for dust suppression and for pre-wetting, anti- or de-icing purposes, and Commentator urges the DEP to prohibit the use of brines from oil wells and conventional gas wells on unpaved roads for the same purposes.

The current thresholds for road application of oil and gas well brines far exceed those thresholds that treatment plants are required to meet before they discharge similar wastewater into streams. The liberal standards for brine application on roads are not protective, as stormwater and snowmelt can easily carry runoff from roads into streams—creating the same harmful impacts on streams as if the wastewater was discharged directly by an ill-equipped treatment facility. Stating in the proposed amendments, in §§ 78.70(e)(4) and 78.70a.(j), that brine shall not enter bodies of water or water courses, is ignoring the runoff problems associated with unpaved roads. For these reasons, we cannot support the use of oil and gas well brines on unpaved roads for dust suppression, pre-wetting, anti-icing or de-icing purposes. (1157)

Response: The rulemaking provides adequate safeguards such as application rates, application restrictions and setbacks from waters of the Commonwealth to protect health and safety and the environment.

- 2201.** Comment: According to the RAF, EQB does not anticipate that there will be any costs or savings to local governments. The Pennsylvania State Association of Township Supervisors (PSATS) disagrees with EQB on this matter. They believe the costs associated with the requirements for using conventional well brine for road stabilization or pre-wetting roads would outweigh any benefit of using the brine. We ask EQB to work with PSATS to develop a cost estimate associated with these provisions of the rulemaking. EQB also needs to demonstrate that the benefits of such a program outweigh the costs. (1099)

Response: The Department disagrees with the comment. The final-form rulemaking requirements in § 78.70 directly track the current road spreading for dust suppression and road stabilization program. The final-form rulemaking codifies these requirements but generally does not add new substantive requirements to the existing program. To the extent that municipalities are already working with oil and gas operators as the person who owns or

maintains a road where road spreading will be conducted, the municipality should have little or no new costs. To the extent that a municipality wishes to initiate such a program, the requirements to do so today are virtually identical to the requirements of the final-form rulemaking.

The Department also notes that municipalities may bear little or no costs if the operator handles all of the road-spreading activities and communication with the Department. A municipality's only explicit obligation established in the final-form rulemaking is that the operator must include an "original signed and dated statement from the person that owns or maintains the roads where road-spreading will be conducted authorizing the use of brine on roads and that that person will supervise the frequency of road-spreading." Supervising the frequency of spreading is not necessarily monitoring every moment of road-spreading, only the general compliance with the terms of the approved plan.

Finally, because road-spreading can be a safe and effective way for conventional operators to beneficially use production brines, the Department believes that there may be a significant cost savings to the local government. These cost savings would result from using the production brine instead of purchasing commercial deicing, road stabilization or dust suppression materials.

§ 78.70a Pre-wetting, anti-icing and de-icing

- 2202.** Comment: 78.70a(a) – There is no reason to prohibit brine spreading of unconventional well produced fluid without data and tests to support the prohibition This determination should be made only after analysis of the brine is conducted per 78.70a(c)(8). Analysis has shown that unconventional production fluid can have the same quality as conventional production fluid. The Department has not articulated a basis for not allowing the spreading of other fluids

Suggested Regulatory Language:

(a) Use of brine from oil and gas wells for pre-wetting, anti-icing and de-icing shall only be conducted pursuant to a plan approved by the Department and shall not result in pollution of the waters of the Commonwealth. Only production fluid from unconventional wells that complies with subsection (e) below and production brines from conventional wells, not including coal bed methane wells or wells drilled in hydrogen sulfide areas, may be used for pre-wetting, anti-icing and de-icing pursuant to this section. The use of drilling, hydraulic fracture stimulation flowback, plugging fluids, or production brines mixed with well servicing or treatment fluids, except detergents, may not be used for pre-wetting, anti-icing and de-icing activities. (1153)

Response: Conventional brine road spreading has been occurring for decades and the Department believes that data support the continued use of this practice. Conversely, unconventional activity has only been conducted in Pennsylvania for a relatively short period of time and the Department does not believe that sufficient data exists regarding unconventional produced waters to determine the appropriate road spreading requirements that are protective of public health and safety and the environment.

- 2203.** Comment: 78.70a – We support prohibition of brine from coal bed methane wells, drilling, hydraulic fracture stimulation flowback, plugging fluids, or production brines mixed with well servicing or treatment fluids.

However, we believe that this prohibition should apply to all production brine. Because salinity

loads must be kept elevated in order for production brine to function as an effective de-icer, the practice will push salinity loads far above natural conditions—making the practice inherently damaging to water quality and vegetation, particularly in areas already under stress from pollution.

While the proposed regulation at § 78.70a (for paved roads) is an improvement over the proposed regulation at § 78.70 (for unpaved roads), because it includes more specific limitations on the maximum contaminant levels allowed and the required tests that must be performed on the brine, the same environmental and health concerns apply here. We remain concerned the required sampling does not examine for the full suite of contaminants that may be contained in the brine and that the PADEP has not subjected the practice to the public review required for a beneficial use permit. For more detail, please see comment 2151.

We therefore recommend that § 78.70a be deleted in its entirety. (1143)

Response: Conventional brine road spreading has been occurring for decades and the Department believes that data support the continued use of this practice. Conversely, unconventional activity has only been conducted in Pennsylvania for a relatively short period of time and the Department does not believe that sufficient data exists regarding unconventional produced waters to determine the appropriate road spreading requirements that are protective of public health and safety and the environment.

2204. Comment: DEP should not create new obligations through the proposed permit by rule without clear and compelling factual justification. The suggested amendments bring the permit by rule into consistency with current practice or offer revisions that will not have a detrimental environmental impact.

Suggested amendatory language:

- (a) Use of brine from oil and gas wells for pre-wetting, anti-icing and de-icing shall only be conducted pursuant to a plan approved by the Department and shall not result in pollution of the waters of the Commonwealth. Production brines from conventional wells, not including coal bed methane wells or wells drilled in hydrogen sulfide areas, may be used for pre-wetting, anti-icing and de-icing pursuant to this section. The use of drilling, hydraulic fracture stimulation flowback, plugging fluids, or production brines mixed with well servicing or treatment fluids, except detergents, may not be used for pre-wetting, anti-icing and de-icing activities.
- (b) Use of brine for pre-wetting, anti-icing and de-icing shall only be conducted on paved roads to address winter driving conditions.
- (c) Plans required by subsection (a) shall be submitted annually to the Department for approval and shall include the following:
 - (1) The name, address and telephone number of the plan applicant and of each person who will conduct the actual road-spreading.
 - (2) The license plate number of each road-spreading trucks.
 - (3) An original signed and dated statement from the person that owns or maintains the roads where road-spreading will be conducted authorizing the use of brine on roads and that that person will supervise the frequency of road-spreading.
 - (4) A description of how the brine will be applied including the equipment to be used and the method for controlling the rate of application of the brine.
 - (5) The proposed rate and frequency of the application.
 - (6) The name of each well and the associated geologic formation from which the brine is produced.

(7) A chemical analysis of the brine for the parameters required by subsection (e). A representative sample of the brine to be spread may be used, provided that the operator demonstrates that the representative sample is equivalent to the brine being used for prewetting, anti-icing and de-icing.

(d) All plans will automatically renew on June 30th of each year unless previously submitted data needs to be updated and revised.

(q) The Department shall be notified at least 24 hours before brine or pre-wetted antiskid material spreading will begin. This notice shall be submitted either electronically to the Department through its website or by telephone by Registered Small Businesses and include the date the activity will occur and the location where the activity will occur. If the date changes, the operator shall re-notify the Department in accordance with this paragraph. (1135)

Response: The Department disagrees with the comment. Because there is the potential for pollution of waters of the Commonwealth if the plan is inadequate or not implemented properly, it is appropriate to have the plans expire after a year to allow the Department to review the plan for ongoing issues. In addition, the annual renewal requirement reflects the existing program administered by the Department for the road-spreading of brine for dust control and road stabilization.

Regarding electronic submission of reports and notifications, see response to comment 219.

2205. Comment: Only production brines from conventional wells, not including coal bed methane wells or wells drilled in hydrogen sulfide areas, may be used for pre-wetting, anti-icing and deicing. (10)

Response: The Department acknowledges the comment.

2206. Comment: Section 78.70 of the DEP's proposed oil and gas regulations would authorize the road-spreading of brine from conventional wells for dust control on dirt and gravel roads. Proposed section 78.70a would authorize the road-spreading of brine for de-icing purposes. Both sections would deem any operator that spreads brine on roads to have a "permit-by-rule" for the beneficial use of residual waste as long as the operator complies with the proposed Chapter 78 regulatory scheme.

DEP's approach is troublesome for two reasons. First, because the proposed regulations do not ensure compliance with the DEP's anti-degradation program or contain adequate chain-of-custody requirements, the risks of spreading brine on roads outweigh the benefits, which are largely confined to disposal-cost savings for the industry. (26, 90, 142, 192, 391, 637, 843, 946, 958, 1005)

Response: The regulation requires notice to the Department at least 24 hours prior to commencement of road-spreading. Additionally, the regulation requires the approved road-spreading plan to be maintained in the vehicle during road-spreading and any changes to the approved road-spreading must be submitted to the Department for approval. Finally, the regulation requires the person identified on the road-spreading plan to submit a monthly report listing the locations, frequency and amount of brine spread during the previous month. The Department believes that the regulation allows for sufficient oversight to ensure that protection of public health and safety and the environment.

2207. Comment: The second problem with sections 78.70 and 78.70a is a legal one. All wastewaters from oil and gas operations, including brine, are residual waste under the Pennsylvania Solid Waste Management Act ("SWMA"). It follows that any beneficial use of brine, including dust suppression

and de-icing, is subject to regulation under the DEP's SWMA regulations at 25 Pa. Code Chapter 287. These regulations do not currently allow permits-by-rule for road-spreading or any other beneficial use of brine. Beneficial uses of brine may be approved only under the general permit scheme set forth in Subchapter H of Chapter 287. Thus, the permit-by-rule scheme proposed in sections 78.70 and 78.70a is not only imprudent; it would also be illegal. (26, 90, 142, 192, 391, 637, 843, 946, 958, 1005)

Response: See response to comment 1580.

2208. Comment: The consideration of well brine to de-ice roads can be dangerous unless constant monitoring is in place. Trace cancer elements, along with various organics are of concern.(27)

Response: The rulemaking provides adequate safeguards such as application rates, application restrictions and setbacks from waters of the Commonwealth to protect health and safety and the environment.

2209. Comment: 78.70a(b) – The term “paved” should be further defined to include “tar and chip” sections of township roads.

Suggested Regulatory Language:

(b) Use of brine for pre-wetting, anti-icing and de-icing shall only be conducted on paved roads and tar and chipped roads to address winter driving conditions. (411, 1153)

Response: The Department agrees. Section 78.70a(b) has been modified to include “tar and chip” road surfaces in the final-form rulemaking.

2210. Comment: The Commonwealth of Pennsylvania should not adopt any plans for spreading brine for dust control and road stabilization or for Pre-wetting, anti-icing, and de-icing. The spreading of brines on roadways, paved or unpaved, could allow for possible ground water and soil contamination as well as harmful impacts to human health. “Gas well brines are highly mineralized and contain levels of some pollutants that are far above levels considered safe for drinking water supplies.(2)” (189)

Response: The rulemaking provides adequate safeguards such as application rates, application restrictions and setbacks from waters of the Commonwealth to protect health and safety and the environment.

2211. Comment: The Department's proposals that the Brine should not be spread within 150 feet of bodies of water and watercourses may not be a valid or reasonable distance as this is not taking site specific weather and soil types into account which could cause higher than estimated run off and contamination to unwanted areas. (189)

Response: The rulemaking provides adequate safeguards such as application rates, application restrictions and setbacks from waters of the Commonwealth to protect health and safety and the environment.

2212. Comment: Also, the proposal that “(l) Every 3 years each source of brine used for pre-wetting, anti-icing and de-icing shall be analyzed for the parameters in subsection (e) prior to submittal of the plan required under subsection (a). The analysis shall be for each individual well utilized or it may be a composite of one or more samples of brines from wells, which produce gas from the same formation. The well permit number and producing formations shall be submitted with the analysis. If

the brines used are obtained from a permitted brine treatment facility, the analysis of a representative composite sample shall be submitted along with the facility's National Pollutant Discharge Elimination System permit number." These statements allow for greater risk to occur as the increase in permits approved and wells drilled has multiplied exponentially in the areas of the Marcellus Shale Formation. A generalized statement that the brine could come from multiple wells should be changed and eliminated. (189)

Response: The Department disagrees with the comment. It is the quality of the composite sample that is important as this is the quality of the brine that is released in the environment. Brine from unconventional operations is prohibited for dust control and road stabilization or for pre-wetting, anti-icing, and de-icing.

2213. Comment: The spreading brine for dust control and road stabilization or for Pre-wetting, anti-icing, and de-icing proposal should be eliminated all together as the full and complete impacts on human health cannot be ascertained. Brine is known to contain high levels of radium. The decay of Radium occurs in seven known stages, one of them being Radon. According to the National Cancer Institute, "[Radon](http://www.cancer.gov/Common/PopUps/popDefinition.aspx?id=CDR0000046554&version=Patient&language=English) is a [radioactive](http://www.cancer.gov/Common/PopUps/popDefinition.aspx?id=CDR0000046554&version=Patient&language=English) gas released from the normal decay of the elements uranium, thorium, and radium in rocks and soil. It is an invisible, odorless, tasteless gas that seeps up through the ground and diffuses into the air. In a few areas, depending on local geology, radon dissolves into ground water and can be released into the air when the water is used.(6)" And according the American Cancer Society, Radon is the second leading cause of lung cancer in the United States (7). (See: <http://www.cancer.gov/Common/PopUps/popDefinition.aspx?id=CDR0000046554&version=Patient&language=English>, and <http://www.cancer.gov/Common/PopUps/popDefinition.aspx?id=CDR0000046550&version=Patient&language=English>) (189)

Response: The Department's 2015 TENORM Study Report observed that there is little potential for members of the public to exceed the public dose limit from exposure to Radium in brine-treated roads and recommended that the Department perform further study of brine-treated roads. The Department remains committed to protecting the public from unnecessary exposure to radiation and is actively pursuing the recommendations of the 2015 TENORM study report.

2214. Comment: Other health concerns from spreading brine include possibility of bacterial contamination. "Rock strata beneath the earth's surface are populated by bacteria, and the advent of air-lubricated drilling (without biocides) has introduced a risk of contaminating surface (fresh) water zones with bacteria and other microbes from deeper (brine) layers, where they often flourish. Of particular concern are sulfate-reducing bacteria, especially *Desulfovibrio desulfuricans*, an organism that thrives in fresh water where some sulfate (such as is present in pyrite or hematite) is available (50), (51). In fact, these bacteria are especially prevalent and aggressive in oil and gas producing regions, where they avidly form living black, sticky films in water wells and other structures (52). There they produce hydrogen sulfide (H₂S), characterized by a "rotten eggs" smell. Rock strata rich in gas are often also rich in this bacterium, and exposure to hydrogen sulfide along with methane raises significant health concerns –neurological syndromes in humans and, in livestock, elevated birth defect rates and diminished herd health. At high concentrations, hydrogen sulfate is lethal (53). The now-common use of air-lubrication (without biocides) while drilling the top one- to three thousand feet of gas wells (54) risks contaminating fresh water aquifers with sulfate-reducing bacteria from the deeper strata, but there is no clear evidence that this well-fouling mechanism is recognized by Pennsylvania DEP regulators." (189)

Response: Existing regulations and laws suitably address water supply impacts and other exposures associated with oil and gas operations. Specifically, laws and regulations related to water supply protection and replacement, gas migration and hydrogen sulfide currently address the concerns raised in this comment.

2215. Comment: On a personal note, and as another example of how the spreading of brine can potentially impact the health of people who are not quite near the actual spreading of it: My husband is a tractor trailer mechanic. During the winter months, when he is crawling on the ground and underneath these trucks, he becomes covered in a wet wintry slush. When the mechanics bring the trucks into the garage, or when a driver brings in a truck that same day to have work done, the ice and snow melt and drip from the trucks and into the garage due to the change in temperature. This in turn leads to the mechanics working on these trucks being covered and soaking wet with whatever was underneath or on that truck from their travels down the highway leading to the shop. This is particularly unnerving to me as most of these trucks drive through Ohio to get to their shop. Ohio already utilizes the spreading of brine on their highways without much if any regulation.

In addition to this personal story, and as a registered nurse, I am urging the Department to avoid any use of brine on the roadways of Pennsylvania. Failure to consult with the Pennsylvania department of health, the CDC, the NIH, or any other institutes of public health prior to authorization of this practice will be noted. Those who authorize such use will be held accountable in the court of law by the residents of this Commonwealth. (189)

Response: The Department acknowledges the comment.

2216. Comment: Section 78.70a: This section deals with pre-wetting, anti-icing and de-icing of roads. As with the last comment, Penn DOT has been using pre-wetting, anti-icing, and de-icing brine for several years. Has Penn DOT been consulted in drafting these regulations, and are they compatible? Again, if this section is to apply to public entities, than we oppose this section as over kill. As an example, Section 78.70a (q) mandates that the department be notified at least 24 hours before the brine is applied. Since the state and municipalities would only apply this agent prior to a storm, the 24 hour notice may not be feasible. (415)

Response: The 24 hour notification is only to alert the Department of the potential use of brine. The state or municipality may decide whether or not to apply the brine to the roads at any point prior to the storm.

2217. Comment: We recommend the elimination of this exception: The use of drilling, hydraulic fracture stimulation flowback, plugging fluids or production brines mixed with well servicing or treatment fluids, except detergents, may not be used for pre-wetting, anti-icing and de-icing activities. Generally, exceptions confuse and weaken regulations. The public generally wants assurance that brine generated from hydraulic fracturing fluids is not being applied on roads near their homes and private water supplies. Often homes are situated close to the road and the private water supply may be located within 100' of a qualifying road surface. We therefore urge the Department to modify this provision to apply solely to fluids generated from conventional formations. With this consideration, we clearly note that there are no acceptable conditions to permit unconventional flowback, plugging fluids, or production brines to be used in dust suppression and road stabilization and therefore, recommend the adoption of the provision to that end. (660a)

Response: The Department agrees. Only production brines from some conventional formations may be used.

2218. Comment: No spreading of brine or flowback for dust suppression, de-icing or road stabilization. Spreading these dangerous and often radioactive fluids on roads provides a pathway for pollution of our streams and groundwater and can poison wildlife and kill vegetation. (787, 1030, 1030a, 1064, 1073-1077, 1079-1082, 1084, 1101, 1158, 4584 - 4650)

Response: The Department's 2015 TENORM Study Report observed that there is little potential for members of the public to exceed the public dose limit from exposure to Radium on brine-treated roads and recommended that the Department perform further study of brine-treated roads. The Department remains committed to protecting the public from unnecessary exposure to radiation and is actively pursuing the recommendations of the 2015 TENORM study report.

2219. Comment: § 78.70a (a) - This section requires that the Department be given at least a 24-hour notice prior to road-spreading. Weather events, such as freezing rain, are difficult to predict. There may be instances where the Department has years of experience with people who conduct road-spreading operations and does not need to inspect all activities. It is recommended that the pre-spreading notice be modified to allow the Department to waive this notification requirement. (913)

Response: The 24 hour notification is only to alert the Department of the potential use of brine. The state or municipality may decide whether or not to apply the brine to the roads at any point prior to the storm.

2220. Comment: 78.70a(c)(7) – This is a serious logistical issue. An operator may have 3200 gas wells on its bond. Listing each well and all producing formations which produce brine should not be necessary. It is impossible to know in advance what wells we will spread brine from over the course of a year. Perhaps a general statement in the application indicating the range of formations which we have/had produced in all owned wells is more appropriate. Delete subsection (c)(7). (1153)

Response: Chapter 78.70a(c)(8) allows for a representative sample of the brine may be used, provided that the operator demonstrates that the representative sample is equivalent to the brine being used for road-spreading.

2221. Comment: Why allow even low levels of Barium, Lead and BTEX to be applied to roads? How can we prevent brine to enter water courses, since most road drains and culverts leading directly to streams? (939)

Response: The rule prohibits direct infiltration to groundwater and specifies that brine may not enter bodies of water or watercourses. The processes outlined in this section include application rates and setback distances are reasonable and appropriate to ensure protection of waters of the Commonwealth.

2222. Comment: **78.70a(e)** - This section contains parameters for brine used for pre-wetting and anti-icing on roadways. Allowable Levels for Pre-wetting and for Deicing are provided in table form. It is noted that some of these parameters have no standards under 25 Chapter 93. It is suggested that parameters for which no limits have been set to meet water quality standards be deleted. (124a, 913)

Response: These parameters are known to be found in production brine and provide for adequate protection to health and safety and the environment.

2223. Comment: **78.70a(f)** – EQB's proposed amounts of brine allowed to be spread are minimal at best

and may be cost prohibitive to operate under this section, i.e., there needs to be a lot of roadway to spread a standard 100 bbl (4200 gallon) truck volume. Current practice allow for flexibility in the application rate, which should be retained if this rule is codified.

Suggested Regulatory Language:

(f) The recommended application rates for use of the natural gas well brines should be 10 gallons per lane per mile for pre-wetting use, less than 50 gallons per lane per mile for anti-icing se, and less than 100 gallons per lane per mile for de-icing. (1153)

Response: The Department disagrees with the suggested regulatory language. Pre-wetting is the mixing of brine with anti-skid material prior to roadway application, so gallons per ton units are appropriate.

2224. Comment: Specific to de-icing, the brine should not be mixed with coal ash (78.70a(f)) that creates additional hazards and those that use brine for such purposes should not be deemed to have a residual waste permit by rule. [78.70a(u)]. (910, 1098)

Response: Section 78.70a(g) only allows the mixture of brine with bottom ash from the combustion of coal. Act 186 of 1986 specifically authorized the use of bottom ash from the combustion of coal as an anti-skid material. That statute also “dewasted” bottom ash from the combustion of coal used for that purpose.

§ 78.72 Use of safety devices—blow-out prevention equipment

2225. Comment: PADEP is proposing two separate pressure barriers that must be capable of being independently tested. Conventional wells operate at low pressures and pose little environmental risk with regards to oil and gas releases due to pressure. PADEP must better define “pressure barrier” or create an exemption for wells less than 3,000’ feet deep. (450)

Response: The Department made substantive changes to Subchapter D, including changes relevant to the use of Blow-out Prevention Equipment (BOP)s, as part of its February 5, 2011 rulemaking. Current changes to the section are not substantive: a cross-references to the section on control and disposal plans and Emergency Response Plans (ERP)s for unconventional sites has been added. Comments provided may be relevant in the context of a broader discussion on Subchapter D, which will take place at a later date.

2226. Comment: 78.72 – We recommend that the blowout prevention equipment regulation at § 78.72 be revised more substantially to improve safe well control practices.⁷⁶ The improvements are necessary to address problems such as that seen in 2010, when Pennsylvania suspended EOG Resources Inc.’s drilling activities at the Punxsutawney Hunting Club after a 16-hour well blowout caused by a failed blowout preventer.⁷⁷

All oil and gas wells should have a blowout preventer installed after the surface casing seat is set.⁷⁸ Diverter systems should be installed and used prior to the blowout preventer installation.⁷⁹ Design, pressure rating, installation, testing, and maintenance requirements should be improved to meet best technology and operating practice standards, such as those required in the states of Alaska,⁸⁰ California (California requires an accumulator system. See Calif. Code Regs. tit. 14, § 1722.5), and Texas (See, e.g., Texas Admin. Code §§ 3.13(a)(6)(B)(vii) (requiring that operators meet API RP 53); 3.13(a)(6)(B)(i) (requiring that operators install a diverter on the conductor casing when shallow gas is anticipated); 3.13(a)(6)(B)(vii) (requiring that operators test the blowout preventer using API RP 53 test procedures); 3.13 (a)(6)(B)(vii) (requiring operators use have the blowout

preventer independently certified once every 5 years).

We also recommend the use of a blind shear ram. Blind shear rams are designed to cut drill pipe and shut in the well in an emergency well control situation, they are a critical piece of equipment in a blowout preventer. Pipe rams can close off the annulus around the drill pipe, and blind rams can close the well off if the drill pipe is not in the hole obstructing the closure of the blind ram. However, a blind shear ram is the only device that is capable of severing the drill pipe and shutting in the well if the drill pipe is located in the hole. (The federal government and states including Alaska and California require blind shear rams to be installed in offshore blowout preventers. Blind shear rams provide an additional measure of safety and should be considered for use in Pennsylvania.)

If the EQB believes that there should be exceptions to this requirement, and drilling should be allowed to continue below the surface casing seat of any oil or gas well in Pennsylvania without a blowout preventer, the EQB should provide technical information to support its position.

We recommend that § 78.72 be revised as follows:

§ 78.72. Use of safety devices—blow-out prevention equipment.

(a) The operator shall install and test blow-out prevention equipment as soon as practicable, but no later than after setting surface casing with a competent casing seat and prior to drilling out of the surface casing. Blowout prevention equipment shall be installed, operated, tested and maintained in accordance with API RP 53 (Recommended Practices for Blowout Prevention Equipment Systems).

A diverter system, shall be installed on the conductor casing while drilling surface casing in geographic areas that have not yet been drilled, unless waived by the Department based on prior drilling data that confirms shallow gas and other drilling hazards are not present.

The required working pressure rating of all blowout preventers, and other well control equipment, shall be based on known or anticipated subsurface pressure, geologic conditions, and professional engineering practices and shall exceed the maximum anticipated pressure to be contained at the surface by a safety factor of at least 20%.

An accumulator system that provides 1.5 times the volume of fluid capacity necessary to close and hold closed all blow-out prevention components must be installed with an automatic backup. The system must perform with a minimum pressure of 200 psi above the pre-charge pressure without assistance from a charging. Minimum requirements for accumulator testing shall include pre-charge of accumulator bottle, accumulator response time, and the capability of closing on the minimum size drill pipe being used.

(b) Blow-out prevention equipment used must be in good working condition at all times. Prior to use on a well, the operator must ensure that the blow-out preventer selected is appropriate for the planned rig and well type, that the blow-out preventer or auxiliary equipment has not been compromised or damaged from previous service, and that the blow-out preventer will operate in the conditions for which it will be used. A blind shear ram must be installed and be capable of shearing any drill pipe in the hole under maximum anticipated surface pressures.

Operational and physical barriers must be installed on the blow-out preventer control panels to prevent accidental disconnect functions. The blow-out preventer control panel system must be

clearly labeled. There must be a management system for operating the blow-out preventer, including for the prevention of accidents or unplanned disconnects of the system. There must be minimum requirements for personnel authorized to operate critical blow-out preventer equipment.

(c) Controls for the blow-out preventer shall be accessible on the rig floor and allow for remote actuation of the blow-out preventer equipment in a rig evacuation. Remote blow-out preventer controls shall be located at safe distance away from the drilling rig, calculated by the drilling engineer responsible for the well design, based on the maximum well blow-out trajectory distance, so that the blow-out preventer can be actuated if control of the well is lost.

(d) The operator shall use pipe fittings, valves and unions placed on or connected to the blow-out prevention systems that have a working pressure capability that exceeds the anticipated pressures by at least by a safety factor of at least 20%.

(e) The operator shall conduct a complete test of the ram type blow-out preventer and related equipment for both pressure and ram operation before placing it in service on the well. The operator shall test the annular type blow-out preventer prior to the device being placed in service.

Testing shall be conducted in accordance with American Petroleum Institute publication API RP53, "API Recommended Practice for Blowout Prevention Equipment Systems for Drilling Wells." Blow-out prevention equipment that fails the test may not be used until it is repaired and passes the test.

Blowout preventer testing certification shall be obtained through an independent company that tests blowout preventers. Certification shall be performed every five (5) years and the proof of certification shall be provided to the Department within 7 days of certification.

The operator must notify the Department at least 24 hours prior to commencing any blow-out preventer testing. The operator must keep a written record of all design, installation, testing, and repairs on the blow-out preventer.

(f) When the equipment is in service, the operator shall visually inspect blow-out prevention equipment during each tour of drilling operation and during actual drilling operations test the pipe rams for closure daily and the blind rams for closure on each round trip. When more than one round trip is made in a day, one daily closure test for blind rams is sufficient. The annular-type preventer shall be tested by closing on the drill pipe at least once each week. Testing shall be conducted in accordance with American Petroleum Institute publication API RP53, "API Recommended Practice for Blowout Prevention Equipment Systems for Drilling Wells."

The operator shall record the results of the inspection and closure test in the drillers log before the end of the tour. If blow-out prevention equipment is not in good working order, drilling shall cease when cessation of drilling can be accomplished safely and the Department must be immediately notified. Alternative well control measures must be immediately instituted to secure the well. Drilling shall and not resume until the blow-out prevention equipment is repaired or replaced and successfully retested.

(g) All lines, valves and fittings between the closing unit and the blow-out preventer stack must be flame resistant and have a rated working pressure that meets or exceeds the requirements of the blow-out preventer system by a safety factor of at least 20%.

(h) When a blowout preventer is installed or required under subsection (a), there shall be present on the well site an individual with a current certification from a well control course accredited by the International Association of Drilling Contractors or other organization approved by the Department. The certification shall be available for review at the well site. The Department will maintain a list of approved accrediting organizations on its web site.

(i) Well drilling and completion operations requiring pressure barriers, as identified by the operator under § 78.55(d) (relating to control and disposal planning; emergency response for unconventional well sites), shall employ at least two mechanical pressure barriers between the open producing formation and the atmosphere that are capable of being tested. The mechanical pressure barriers shall be tested according to manufacturer specifications prior to operation. If during the course of operations the operator only has one functioning barrier, operations must cease until additional barriers are added and successfully tested or the redundant barrier is repaired and successfully tested. Stripper rubber or a stripper head may not be considered a barrier.

(j) A coiled tubing rig or a hydraulic workover unit with appropriate blowout prevention equipment must be employed during post completion cleanout operations or during a well workover.

(k) The minimum amount of intermediate casing that is cemented to the surface to which blow-out prevention equipment may be attached, shall be in accordance with the following:

Proposed Total Vertical Depth (in feet)	Minimum Cemented Casing Required (in feet of casing cemented)
Up to 5,000	400
5,001 to 5,500	500
5,501 to 6,000	600
6,001 to 6,500	700
6,501 to 7,000	800
7,001 to 8,000	1,000
8,001 to 9,000	1,200
9,001 to 10,000	1,400
Deeper than 10,000	1,800

(l) Upon completion of the drilling operations at a well, the operator shall install and utilize equipment, such as a shut-off valve of sufficient rating to contain anticipated pressure, lubricator or similar device, as may be necessary to enable the well to be effectively shut-in while logging and servicing the well and after completion of the well. (1143)

Response: The Department made substantive changes to Subchapter D, including changes relevant to the use of BOPs, as part of its February 5, 2011 rulemaking. Current changes to the section are not substantive; a cross-references to the section on control and disposal plans and ERPs for unconventional sites has been added. Comments provided may be relevant in the context of a broader discussion on Subchapter D, which will take place at a later date.

2227. Comment: In addressing the use of safety devices (78.72), we advocate that all phases of gas operations—not just those entitled control and disposal 78.55(b) use optimal protection to prevent blowouts. Safety devices should be consistent with best practices and be site-specific given the terrain and risks inherent in sensitive ecosystems [78.72 (i)]. Blowouts, such as those in Clearfield County (2010), the Tioga

State Forest (2011), here in Bradford County (2011), and Wyoming County (2013), must not be repeated. (645, 1098)

Response: As part of its February 5, 2011 rulemaking, the Department made substantive changes to Subchapter D, including changes relevant to the use of BOPs that take into consideration both drilling and completion activities and site-specific conditions, i.e., target formation depth. Current changes to the section are not substantive; a cross-references to the section on control and disposal plans and ERPs for unconventional sites has been added. The Department acknowledges, however, that the comments provided may be relevant in the context of a broader discussion on Subchapter D, which will take place at a later date.

2228. Comment: My testimony is concerning possible wellbore damage caused by natural occurrences like earthquakes and un-natural occurrences caused by inferior products used in the wellbore and human error that lead to oil and or gas leaks below the surface. We are all too familiar with the BP Gulf disaster undersea and the damage that leaking wellbore caused. At least, that leak was able to be cleaned up over time.

If we experience something of that magnitude underground we may be looking at something that can never be cleaned up for obvious reasons and it may affect whole communities not just wildlife. I am asking that this board give lots of consideration to requiring blowout preventers or B-O-Ps also be operational in the wellbore under the surface in the construction of the wellbore if aquifers or water sources are nearby. A B-O-P is already required at the wellhead under certain conditions as written in PA Code Title 25 Chapter 78 Section 72. Use of safety devices-blow-out prevention equipment. I provided this as an attachment

Oil and gas blowout preventers or B-O-Ps should be required in the wellbore and checked regularly for good operational state to prevent disasters from happening later down the road should a leak occur when normal means of controlling a leak underground would not be sufficient. This B-O-P should be placed in the wellbore below known water levels and left as long as the well exists. The oil industry developed this kind of safe guard after the BP Gulf disaster and now we have the chance to prevent this kind of disaster in Pennsylvania. This should be added to PA Code Title 25 Chapter 78 Section 72. Use of safety devices-blow-out prevention equipment.

I have attached a documented underground leak that occurred just days ago in Canada and thank God there was no aquifers in the area of that leak. I quote former General Norman Schwarzkopf: "You can't help but ... with 20/20 hindsight, go back and say, Look, had we done something different, we probably wouldn't be facing what we are facing today." (801)

Response: For matters related to the use of specific types of BOPs, please see response to comment 2226.

§ 78.73 General provisions for well construction and operation

2229. Comment: All wellheads and pipelines should be monitored closely with an array of sensors, with information summarizing current and past leaks summarized for the public (analogous to a weather report). (156)

Response: For matters related to acceptable monitoring protocols, please see response to comment 680.

2230. Comment: Limit the applicability of section 78.73(d) to operators of unconventional wells only. (1135)

Response: Both conventional and unconventional operators are obligated to address violations of the Clean Streams Law, which serves as the foundation of the provision.

2231. Comment: Wells in production should be tested yearly for integrity of casing and cement, and any that are leaking should be repaired, or sealed and abandoned. (156)

Response: Existing sections of the regulations address the mechanical integrity of operating wells and defective cement and casing. Quarterly inspections are currently required at all operating wells in the state.

2232. Comment: The proposed regulations would require that an operator identify abandoned oil and gas wells within 1000 ft. of their vertical and horizontal wellbore, report the findings, then use “sensory monitoring” of the abandoned wells to alert DEP when and where a problem may occur. So, I had to check my calendar on this one to be sure I was still in the 21st century since the sensory monitoring proposed is not something from a mechanical measuring device, but is instead akin to a “sniff test” by industry workers. A sniff test. Not an air monitoring device, not a water monitoring device inside the abandoned well, but a sniff test.

It’s a proven fact that abandoned wells in Pennsylvania act as pathways for both biogenic and thermogenic gases, and EPA research dating back to a 1989 study on Class II injection wells found that abandoned wells will often communicate with nearby injection wells resulting in the transmission of contaminants to the surface. But these are not problems that can be effectively monitored visually, or even by the expert nose of Scott Perry. Gases are invisible. It is believed the estimated over 250,000 abandoned wells will have cracked casings and cracked cementing along the well annulus. When gases from nearby fracked wells communicate with an abandoned well they’ll be released into the atmosphere undetected by the new “highly trained visual monitor guy.” The public deserves to have regulations that are in fact, “on the forefront of the curve.” This proposed regulation is a hangman solution leaving the public resources tied to a noose, vulnerable to reactionary measures and further contamination. The regulatory solution here is simple. When an abandoned well is located DEP should plug it. Afterward, it can be monitored using the best science available for detecting gas emissions at the surface. (849a)

Response: For matters related to acceptable monitoring protocols, please see response to comment 680.

2233. Comment: DEP should do surprise inspections of every well once a month during drilling and fracking, then once a year while in production, and once every 5 years afterward. Generous rewards should be publicized and given out to motivate the public and private firms to find and geolocate all abandoned wells in the state. (156)

Response: These comments are beyond the scope of this rulemaking, which is intended to mitigate risk during stimulation activities. However, it should be mentioned that the Act requires Department inspections during several stages of resource development which are judged to be highly critical. The Department reserves the right to inspect well sites at any time, but must be selective due to the number of wells in the state. Inspections are guided by complaints, data pertaining to the condition of wells, and other information that becomes available to the Department.

2234. Comment: DEP’s proposed Mechanical Integrity Assessment (MIA) guidance for reviewing casing and cementing standards ignores fundamental differences in the way conventional wells operate. There is not a compelling need to impose significant new casing, cementing and inspection standards in view of the reported number of well integrity problems. Even if there is some justification, DEP’s draft MIA forms and instructions for reviewing casing and cementing standards do not fully recognize fundamental differences in the way conventional wells are cased, cemented, and/or operated as compared with unconventional wells, or the disparate impact that proposed new inspection and other assessment standards will impose on the conventional industry. (413a)

Response: The Department acknowledges the comment, but notes that it is not pertinent to the matter being addressed under the current rulemaking: the mitigation of risk during stimulation activities.

2235. Comment: “(c) Orphaned or abandoned wells identified under § 78.52a (relating to abandoned and orphaned well identification) that likely penetrate a formation intended to be stimulated shall be visually monitored during stimulation activities. The operator shall immediately notify the Department of any change to the orphaned or abandoned well being monitored and take action to prevent pollution of waters of the Commonwealth or discharges to the surface.

(d) An operator that alters an orphaned or abandoned well by hydraulic fracturing shall plug the orphaned or abandoned well.”

The operator must be required to restore the area disturbed during plugging of an abandoned well altered by Hydraulic Fracturing. At present operators do whatever they feel like doing. Restoration of the site of an abandoned well should be exactly as that required for a new well being drilled. (92a)

Response: Environmental remediation and site restoration standards must be demonstrated in cases where operators alter an abandoned well.

2236. Comment: As explained in our comments on proposed regulation § 78.52a (Abandoned and Orphaned Well Identification), we recommend that all improperly abandoned and orphaned wells be identified and properly P&A’d before an operator pursues site development for new wells or conducts a stimulation in a nearby well. We do not support a regulation that would intentionally risk damage to existing wells – possibly causing groundwater contamination through the migration of methane and other contaminating substances – and then require that the operator to plug the well after the damage already has been done. Furthermore, there is no proposed requirement that the operator identify whether groundwater has been contaminated or to remediate any contamination. The operator is instructed only to plug the well. (1143)

Response: For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

All violations of the Clean Streams Law must be addressed and appropriate remediation standards demonstrated.

2237. Comment: It is unclear how the EQB is proposing to meet the standard of “visual monitoring of an orphaned or abandoned well.” Does this mean posting a staff member on watch at the surface of each orphaned or abandoned to see if the well leaks to surface during the entire stimulation process at the nearby well? Even such a measure would be insufficient, since while flow to surface would certainly be a catastrophic failure, and observation at the surface would not detect subsurface

contamination that is not visually indicated aboveground. The proposed method appears to place both the public and ecosystems at unnecessary risk and to give precedence to operator convenience over environmental protection. (1143)

Response: For matters related to acceptable monitoring protocols, please see response to comment 680.

- 2238.** Comment: We also recommend that the regulation clarify the type of casing seat it references, require immediate notification to the PADEP of the potential for well failure and groundwater contamination, and the preferential use of gas for fuel. (1143)

Response: The Department made substantive changes to Subchapter D as part of its February 5, 2011 rulemaking. Current changes to the section are intended to address monitoring and actions that must be taken when a frac communication results in alteration of an orphaned or abandoned well, and although "casing seat" is already defined in Chapter 78, the Department acknowledges this comment may be appropriate for future updates to Subchapter D.

This comment is referring to casing seat over pressuring in situations when gas is produced inside of coal or surface casing. It should be noted that immediate notification is required when a well is altered in section 78.73(c). The Department made substantive changes to Subchapter D as part of its February 5, 2011 rulemaking. Current changes to the section are intended to address monitoring and actions that must be taken when a frac communication results in alteration of an orphaned or abandoned well, although this comment may be appropriate for future updates to Subchapter D.

This comment is referring to the need to divert excess gas encountered away from operations during completion or stimulation. The Conservation Law currently addresses wasting of hydrocarbons. These provisions do not apply to reservoirs above the Onondaga Limestone where it occurs at depths of 3,800 feet or deeper. Options for venting are permitted and drilling, stimulation, and completion represent a small portion of the well's life-cycle. Controlled venting is permissible and addresses the priority of ensuring safety above all other potential concerns.

- 2239.** Comment: As explained in our comments on proposed regulations §§ 78.56, 78.57 and 78.58, we recommend that systems be installed to capture air pollution and route vapors to be sold or used for power (preferably), or alternatively to an incinerator or flare. The operator should be required to examine the technical and economic feasibility of using vapors for power, and only incinerate or flare when use as power is not feasible. Direct venting should be prohibited.

Gas flaring is environmentally preferable over venting because flaring reduces HAPs, VOC emissions, and GHG emissions. When incineration or flaring is required, regulations should set an upper bound on the maximum volume of gas incinerated/flared. A minimum incinerator or flare efficiency of 98% should be required. The incinerator and flare systems should be designed in a manner that optimizes reliability, safety, and combustion efficiency. Requirements should include: minimizing the risk of pilot blowout by installing a reliable system; ensuring sufficient exit velocity or provide wind guards for low/intermittent velocity streams; ensuring use of a reliable ignition system; minimizing liquid carry over and entrainment in the gas stream by ensuring a suitable liquid separation system is in place; and maximizing combustion efficiency by proper control and optimization of fuel/air/steam flow rates. (1143)

Response: For matters related to the use of excess gas produced during completion or stimulation, please see response to comment 2238.

2240. Comment: In accordance with comments 2236 through 2238., Commentator recommends that § 78.73 be modified as follows:

§ 78.73. General provision for well construction and operation.

(a) The operator shall construct and operate the well in accordance with this chapter and ensure that the integrity of the well is maintained and health, safety, environment, and property are protected.

(b) The operator shall prevent gas, oil, brine, completion and servicing fluids, and any other fluids or materials from below the water protection casing string casing seat (e.g., surface casing seat or intermediate casing seat, when intermediate casing is installed for water protection) from entering fresh groundwater, and shall otherwise prevent pollution or diminution of fresh groundwater.

(c) An operator that alters an orphaned or improperly abandoned well by hydraulic fracturing shall plug the orphaned or abandoned well.

(d) After a well has been completed, recompleted, reconditioned or altered the operator shall prevent surface shut-in pressure and surface producing back pressure inside the surface casing or coal protective casing from exceeding the following pressure: 80% multiplied by 0.433 psi per foot multiplied by the casing length (in feet) of the applicable casing.

(e) After a well has been completed, recompleted, reconditioned or altered, if the surface shut-in pressure or surface producing back pressure exceeds the pressure as calculated in subsection (d), the operator shall immediately notify the Department and take immediate action to prevent the migration of gas and other fluids from lower formations into fresh groundwater. To meet this standard the operator may cement or install on a packer sufficient intermediate or production casing or take other actions approved by the Department. This section does not apply during testing for mechanical integrity in accordance with State or Federal requirements.

(f) Excess gas encountered during drilling, completion or stimulation shall be used for fuel, where technically feasible, and otherwise flared, captured or diverted away from the drilling rig in a manner that does not create a hazard to the public health or safety. Notwithstanding the provisions of § 78.102(3), direct venting is prohibited. The operator must examine the technical and economic feasibility of using vapors for power or sale as fuel and may incinerate or flare only when use for power or sale as fuel is not feasible. If incineration or flaring is the only feasible option, an incinerator or flare efficiency of 98% is required. The incinerator and flare systems shall be designed in a manner that optimizes reliability, safety, and combustion efficiency. Requirements include: minimizing the risk of pilot blowout by installing a reliable system; ensuring sufficient exit velocity or provide wind guards for low/intermittent velocity streams; ensuring use of a reliable ignition system; minimizing liquid carry over and entrainment in the gas stream by ensuring a suitable liquid separation system is in place; and maximizing combustion efficiency by proper control and optimization of fuel/air/steam flow rates.

(h) Except for gas storage wells, the well must be equipped with a check valve to prevent backflow from the pipelines into the well. (1143)

Response: For matters related to the definition of the casing seat, please see response to comment 2238.

In order to identify which wells are altered, it is necessary to perform visual monitoring at the highest risk sites during stimulation activities. If communication occurs, it is assumed that the altered well has been improperly abandoned.

Immediate notification is required when a well is altered under section 78.73(c). The Department made substantive changes to Subchapter D as part of its February 5, 2011 rulemaking. Current changes to the section are intended to address monitoring and actions that must be taken when a frac communication results in alteration of an orphaned or abandoned well, although this comment may be appropriate for future updates to Subchapter D.

For matters related to the use of excess gas produced during completion or stimulation, please see response to comment 2238.

2241. Comment: In regard to general provisions for well construction and operation (78.73), we applaud inclusion of the monitoring of orphaned wells during stimulation activities [78.73 (c)]. We recommend that on-going prevention mechanisms be in place to prevent pollution and to monitor operations throughout gas production given the high and often fluctuating pressures of flow [78.73 (c)]. Because of the contamination risks, notification of any changes to an orphaned or abandoned well to the Department should be reinforced by on-site inspection prior and during the plugging of an altered well. Further, any excess gas encountered during drilling should not be flared but captured to prevent degradation of air quality and unnecessary contributions to climate change exacerbated by methane. (645, 1098)

Response: Current regulations require quarterly inspections at all operating wells in the state. The communication risk is greatest prior to flowback, as this is when pressures are highest.

For matters related to acceptable monitoring protocols, please see response to comment 680.

For matters related to the use of excess gas produced during completion or stimulation, please see response to comment 2238.

2242. Comment: **78.73(c)** – This section is written in a manner that raises more questions than it answers. It is difficult for an operator to determine if an orphaned or abandoned well “likely” penetrates a formation intended to be stimulated. “Visually monitored” during stimulation is not defined. There is not defined periodic obligation regarding visual monitoring in regards to the hydraulic fracturing process, especially if the orphaned or abandoned well is not on the operator’s lease. An operator likely will not be able to visually monitor a well if it is on an adjacent property and the operator has no legal access.

The Department may need to be involved in the monitoring process of these wells since an operator may not have the authority to access the property to monitor these wells. Also, an operator will not know whether it has penetrated the formation that is to be stimulated since these wells are abandoned, may have little or no available data regarding the well construction or the zone formerly produced and these wells are likely not registered with the Department. If there is no information regarding the depth, an operator may or may not be willing to assume that it is not “likely” to be penetrating the formation that will be stimulated.

There is significant concern regarding the geographic coordinates for a large number of wells that may exist in the Department's database. Many historic orphaned and abandoned well locations may have been derived from old mapping, which brings a great deal of concern regarding the accuracy of data that the Department and operators will be relying upon for abiding by regulations set in this section and 78.52a. In addition, it is anticipated there will be several cases in the future where wells will be buried or inaccessible for "visual monitoring". Commentator questions the Department's intention regarding the monitoring obligations going forward, as it is not practical to overburden the operator with significant monitoring over long periods of time.

Suggested Regulatory Language:

(c) Orphaned or abandoned wells in the vicinity of a well which is hydraulically fractured that are identified pursuant to section 78.52a and that can be located on the ground using reasonable efforts shall be monitored during periods of actual fluid pumping operations, provided that surface access to such wells can be obtained. Such monitoring shall include a visual inspection of the well at least every four hours, or following each stage of hydraulic fracturing, whichever is shorter, or other monitoring arrangement approved by the Department. The operator shall immediately notify the Department of any change to the well being monitored and take action to prevent pollution of waters of the Commonwealth or discharges to the surface. (1153)

Response: For matters related to acceptable monitoring protocols, please see response to comment 680.

The Department is developing clarifying guidance related to site access prior to promulgation of the final rule. Specifically, this issue will be addressed in a guidance document discussing the area of review requirements and the components of a suitable monitoring plan. The provision in the final-form rulemaking that addresses this matter is related to treatment pressure and volume monitoring. The Department believes that even in situations where identified wells cannot be visually monitored, monitoring at the well being hydraulically fractured will allow the operator to determine if anomalous frac growth is taking place that is indicative of a possible communication event.

For matters related to well site locational uncertainty, please see response to comment 626.

2243. Comment: § 78.73 (c) - It is suggested that DEP be the party that monitors these orphaned and abandoned wells since an operator may not have the authority to access the property to monitor them. Also, since these wells are abandoned and likely not registered with the DEP, the operator will not know whether the orphaned and abandoned wells have penetrated a formation that is to be stimulated. (1147)

Response: The Department is developing clarifying guidance related to site access prior to promulgation of the final rule. Specifically, this issue will be addressed in a guidance document discussing the area of review requirements and the components of a suitable monitoring plan. The provision in the final-form rulemaking that addresses this matter is related to treatment pressure and volume monitoring. The Department believes that even in situations where identified wells cannot be visually monitored, monitoring at the well being hydraulically fractured will allow the operator to determine if anomalous frac growth is taking place that is indicative of a possible communication event. Further, the Department has updated the language to address wells without available depth records.

2244. Comment: 78.73(c) – The location coordinates for a large number of wells that may exist in the Department’s database are likely derived from sources other than field GPS coordinates. Some coordinates may have been derived from old maps. For a variety of reasons, a well with lat/long coordinates in the Department’s database may not be visible on the ground, perhaps because the coordinates are inaccurate, or possibly because the well does not exist. The obligation to visually monitor wells is subjective and it may not be possible to get permission to access the surface near an abandoned well. It is not practical to continuously monitor wells over long periods of time. The use of electronic monitoring may be possible in some cases. Noble supports the MSC’s suggested language for 78.73(c) (1071)

Response: For matters related to well site locational uncertainty, please see response to comment 626.

For matters related to acceptable monitoring protocols, please see response to comment 680.

For matters related to well site access, please see response to comment 2242.

2245. Comment: “§ 78.73. General provision for well construction and operation.

(c) Orphaned or abandoned wells in the vicinity of a well which is hydraulically fractured that are identified pursuant to section 78.52a(c) and that can be located on the ground using reasonable efforts shall be monitored during periods of actual fluid pumping operations, provided that surface access to such wells can be obtained. Such monitoring shall include a visual inspection of the well at least every four hours, or following each stage of hydraulic fracturing, whichever is shorter, or other monitoring arrangement approved by the Department. The operator shall immediately notify the Department of any change to the well being monitored and take action to prevent pollution of waters of the Commonwealth or discharges to the surface.” (1071, 1147)

Response: For matters related to acceptable monitoring protocols, please see response to comment 680.

2246. Comment: 78.73(c) (Includes Conventional Drillers) (660a)

Response: The "area of review" requirements are considerate of the differences between conventional and unconventional operations. Further modifications have also been made accentuating the contrasts between both sides of the industry.

2247. Comment: **78.73(d)** – The STRONGER, September 2013 Review [page 51] encourages the Department to consider regulations to require operators to evaluate and mitigate potential risk of hydraulic fracturing communication with active, abandoned or orphaned wells and other potential conduits that penetrate target formations or confining formations above. (STRONGER Guidelines Section 9.2.1)

Provisions 78.73(c) and 78.73(d) provide for the following:

- 1 - Visually monitoring during stimulation activities
- 2 - Immediately notifying the Department of any change to the orphaned or abandoned well
- 3 - Take action to prevent pollution of waters or discharge to the surface
- 4 - An operator who alters an orphaned or abandoned well by hydraulic fracturing is responsible to plug that well.

There are some inherent problems with this provision. First, does it really meet the STRONGER recommendation? The STRONGER recommendation clearly notes mitigate the potential of risk with three types of wells – active, abandoned and orphaned. The procedure of visually monitoring an orphaned or abandoned well does not appear to be a method that may actually make an incident less severe should the unexpected event occur. Once the ‘visual’ is available, it is too late to prevent a geyser communication. Visual monitoring is inadequate mitigation of potential risk. Secondly, the provision does not include an evaluation of active wells. There needs to be an evaluation to determine whether or not certain well/s may need to be shut-in during the stimulating activity. Third, after the incident of environmental harm, the provision requires that the operator plug the abandoned or orphaned well. The noted STRONGER recommendation reads as a pro-active evaluation. The provision reads as a reaction to an environmental problem.

Therefore, we suggest the following. Once the identification has been completed as provided in 78.52a wells that are evaluated ‘at risk’ are then mitigated and thus, pro-actively measures are taken to make an incident less severe. For example, an ‘at risk’ active well may be shut-in during stimulation activities. An ‘at risk’ orphaned or abandoned well is plugged in advance of the stimulation activities. An orphaned or abandoned well that is not considered to be ‘at risk’ but is nearby, may be effectively monitored by using technologies. There are numerous down hole technologies that operators have available that can monitor for changes that would reveal that there is a trend or change in the orphaned or abandoned well. At that point, they would need to notify the Department and then perhaps plugging would be the course of action.

We realize that this is a more pro-active approach than the proposed provision. Since the provision was written, it has come to light that conventional drillers are commencing with horizontal operations at shallower depths than the unconventional drillers. These provisions need to be considered with that aspect.

The operator, by doing the identification after the well spud has been done, has ample opportunity to change their drilling plan and thus, totally avoid any responsibility for plugging an orphaned or abandoned well.

Act 13 of 2012 § 3211(f) Well Permits. Drilling – The Act provides for a 24 hour notice of commencement of drilling, and in the case of unconventional wells, the cementing of all casing strings, pressure tests of production casing, stimulation, abandoning, or plugging of an unconventional well. However, as noted in the STRONGER September, 2013 Review [page 52] there is no requirement that the operators monitor the annulus during fracture stimulation. Further, the Review recommends that the State consider requiring operators to monitor for operational and mechanical changes including annular pressures, during hydraulic fracturing to focus on specific factors that could be affected. (STRONGER 2013 Guidelines Section (9.2.1))

We therefore, strongly suggest that the Department implement this recommendation as a provision in this rulemaking. (660a)

Response: The regulation does not prevent operators from plugging well sites that are likely to be communicated with during stimulation activities. This option has been practiced by operators in the state historically. The language has also been updated and now requires that the survey be completed prior to drilling, permitting or stimulation, dependent upon the anticipated timing of stimulation activities, further allowing avoidance measures to be taken. Finally, by monitoring the highest risk sites, any environmental impacts can be greatly curtailed and addressed by the operator completing stimulation activities.

For matters related to the inclusion of other well types in the area of review survey, please see response to comment 626.

For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

The Department has modified the regulatory language to include a requirement to identify active, inactive, and plugged and abandoned wells within the area of review and notify operators, as appropriate, on adjacent leases prior to commencement of hydraulic fracturing so that appropriate actions may be taken.

For matters related to acceptable monitoring protocols, please see response to comment 680.

For matters related to the timing of the area of review survey, please see response to comment 627.

The proposed regulatory language has been modified and now contains a provision for treatment pressure and volume monitoring at the well that is being stimulated. The overall intent of the proposed section is to address nearby well site monitoring and actions that must be taken when a frac-communication incident occurs and the Department, therefore, suggests that portions of this comment may be appropriate for consideration as part of future updates to Subchapter D.

2248. Comment: § 78.73 (d) - This section requires an operator who alters an orphan well during hydraulic fracturing to plug it. § 3203 of the Oil and Gas Act of 2012 defines alteration as an operation which changes the physical characteristics of a well bore. While hydraulically fracturing into a nearby unknown orphaned or abandoned well may cause fluids to appear at the surface, hydraulic fracturing does not usually result in alteration of the well (i.e. changing the physical characteristics), as that term is defined in § 3203. Consequently, it is suggested that this section should be either modified to better address the situation or deleted.

In addition, other issues this section should address include the radius of influence, and responsibility if there is more than one nearby operator. (913)

Response: For matters related to the definition of alteration, please see response to comment 686.

For matters related to acceptable monitoring protocols, please see response to comment 680.

2249. Comment: We recommend expansion of the provisions to include the requirement of an investigation of all existing active gas wells that penetrate the impacted strata as well as all known geologic faults and natural fracture zones that transect the impacted strata. It is important to eliminate the risk that the hydraulic fracture treatment may communicate with the wells and result in protected water contamination or pose other environmental, health or safety risks. (1031)

Response: For matters related to the inclusion of other well types in the area of review survey, please see response to comment 626. Generally speaking, due to lithostatic pressure applied by overlying rock layers and the physics constraining fracture mechanics, the most likely pathway to fresh groundwater during hydraulic fracturing is represented by improperly abandoned oil and gas wells. If faults or zones of fracture concentration do play

some role in communication, it is by allowing propagated fractures to move out of zone and into an improperly abandoned oil or gas well. However, the Department has modified the regulatory language to include a provision for monitoring fracture treatment pressures and volumes at the stimulated well site. This provision is intended to allow for the identification of abnormal fracture growth.

2250. Comment: Industry needs to take advantage of all available technologies when monitoring orphaned or abandoned wells. The operators need to be responsible for all impacts to such wells. (1035)

Response: For matters related to acceptable monitoring protocols, please see response to comment 680.

2251. Comment: General provision for well construction and operation. (c) Wells identified pursuant to section 78.52a that likely penetrate a formation intended to be stimulated shall be visually monitored during stimulation activities. The operator shall immediately notify the Department of any change to the well being monitored and take action to prevent pollution of water of the Commonwealth or discharges to the surface. Please note that Shell generally endorses additional comments submitted by the American Petroleum Industry with respect to the proposed regulatory package. (1049)

Response: The Department acknowledges this comment.

2252. Comment: The proposed regulation does not recognize landowner rights. For example, in § 78.73(c) and (d) it is presumed that the landowner will grant access to the well operator to monitor orphaned and abandoned wells during stimulation and to plug the orphaned and abandoned well if it is altered by the stimulation. The landowner is not required to grant the operator access, so the operator might not be able to comply through no fault of its own.

§ 78.73 (d) - This section requires an operator who alters an orphaned or abandoned well during hydraulic fracturing to plug it. Section 3203 of the Oil and Gas Act of 2012 defines alteration as an operation which changes the physical characteristics of a well bore. While hydraulically fracturing into a nearby orphaned or abandoned well may cause fluids to appear at the surface, hydraulic fracturing does not usually result in alteration of the well (i.e. changing the physical characteristics), as that term is defined in § 3203. Consequently, it is suggested that this section should be clarified to apply only when the orphaned or abandoned well is altered, or the section should be deleted. (124a)

Response: For matters related to well site access, please see response to comment 2242.

For matters related to the definition of alteration, please see response to comment 686.

2253. Comment: 78.73 – General Provision for Well Construction and Operation: (c) - Orphaned or abandoned wells identified pursuant to section 78.52a that likely penetrate a formation intended to be stimulated shall be visually monitored during stimulation activities. The operator shall immediately notify the Department of any change to the orphaned or abandoned well being monitored and take action to prevent pollution of waters of the Commonwealth or discharges to the surface. --- It is suggested that DEP be the party that monitors these wells since an operator may not have the authority to access the property to monitor these wells. Also, since these wells are abandoned and likely not registered with the DEP how will the operator know whether they have penetrated the formation that is to be stimulated? If there is no information regarding the depth, is an operator to assume that it is not “likely” to be penetrating the formation that will be stimulated? (1057)

Response: For matters related to well site access and inadequate information pertaining to identified well depths, please see response to comment 2243.

2254. Comment: 78.73: *General Provisions for Well Construction and Operation- Clarify Requirements for Monitoring when Land is Inaccessible* --The proposed subsection does not address possible issues of operator inaccessibility to the abandoned and orphaned wells. Proposed subsections (c) and (d) require operators to visually inspect orphaned and abandoned wells identified under proposed § 78.52a during hydraulic fracturing activities that likely penetrate a formation intended to be stimulated during stimulation activities. However, access may be denied to property on which abandoned and orphaned wells are located - making it impossible for operators to comply with the provision. Talisman asks that the Board rewrite this section to address an alternative for operators when surface access is not achievable. See comment on landowner rights, pg. 2. (1085)

Response: For matters related to well site access, please see response to comment 2242.

2255. Comment: 78.73(c): *General Provisions for Well Construction and Operation- Delete or Clarify Ambiguous Language for Visual Monitoring of Identified Orphaned or Abandoned Wells* Talisman requests that this provision be further clarified. Subsection (c) proposes to require operators to notify the Department of “any changes” to those wells and to “take action to prevent pollution of waters of the Commonwealth or discharges to the surface.” The requirements for visual monitoring, what constitutes a change, taking action, and prevention are ambiguous. Without specification as to what constitutes a “change” and appropriate “action” to “prevent” in terms of scope and timing, Talisman is concerned that the proposal will likely result in the unintended consequence of further causing unreasonable burdens and distracting from the shared objective of the Board and the regulated community of mitigating impacts from the existing landscape of oil and gas wells in Pennsylvania.

Talisman asks that the Board further specify what is meant by these phrases in the revised provision while considering the potential options available to an operator who observes an actual threat of harm of surface discharge or potential for pollution to the waters of the Commonwealth. Talisman recommends rewriting the subsection to state: “(c) Wells in the vicinity of a well that is hydraulically fractured that is identified pursuant to § 78.52a(c) and can be located on the ground using reasonable efforts shall be monitored during periods of hydraulic fracturing, provided that surface access to such wells can be obtained. Such monitoring shall include a visual inspection of the well at least every four hours, or following each stage of hydraulic fracturing, whichever is shorter, or other monitoring arrangements approved by the Department. The operator shall immediately notify the Department of any permanent change to the well being monitored and take action to prevent pollution of waters of the Commonwealth or discharges to the surface.” (1085)

Response: For matters related to acceptable monitoring protocols, please see response to comment 680.

2256. Comment: 78.73(d): *Plugging an Altered Orphaned and Abandoned Well- Specify What Constitutes Alteration* -- The Rule should specify that alteration means an operation which changes the physical characteristics of a well bore. This section requires an operator who “alters” an orphan well during hydraulic fracturing to plug it. Section 3203 of Act 13 defines alteration as an operation which changes the physical characteristics of a well bore. While hydraulically fracturing into a nearby unknown orphaned or abandoned well may cause fluids to appear at the surface, hydraulic fracturing does not usually result in alteration of the well (*i.e.*, changing the physical characteristics),

as that term is defined in § 3203. Consequently, Talisman suggests the Board modify the language to address such a situation or delete the subsection. (1085)

Response: For matters related to the definition of alteration, please see response to comment 686.

2257. Comment: 78.73(c) and 78.73(d) establish new requirements related to the monitoring of orphaned and abandoned wells during the hydraulic fracturing activities. The regulation fails to specify if these new provisions apply to conventional well operators, unconventional well operators, or both. This should be clarified in the final-form regulation. (1099)

Response: The “area of review” requirements under Section 78.52a. are considerate of the differences between conventional and unconventional operations. As part of this rulemaking, in response to comments and recent legislation (the Act of July 10, 2014 (P.L. 1053, No. 126)), the Department split Chapter 78 into two separate Chapters – one for conventional oil and gas wells (Chapter 78) and the other for unconventional wells (Chapter 78a). The purpose of this amendment to the final rulemaking was to clarify the different requirements for conventional and unconventional wells. The Department believes that having two completely separate regulatory Chapters should serve to eliminate any confusion about what requirements apply to conventional and unconventional wells. In addition, having separate Chapters allows the Department to craft regulations to match the environmental risks posed by each segment of the industry.

2258. Comment: 78.73(c) requires operators to visually monitor orphaned and abandoned wells that “likely” penetrate a formation intended for stimulation. The term “likely” is vague and renders the provision open to interpretation by different operators. We recommend that a clearer standard be included in the final-form regulation. (1099)

Response: For matters related to which well sites must be monitored because of vertical proximity to the stimulated interval, please see response to comment 626.

2259. Comment: 78.73(c) -- The DEP’s database of wells may not be accurate as a result of using older resources to identify their coordinates, making it difficult to verify the wells that may need monitored during stimulation activities. Some wells may be challenging to locate due to inaccurate coordinates and may not even exist. Furthermore, this statement does not take into account surface owner permissions and access rights. An operator may not have been granted access to a well site requiring visual monitoring. If an operator is denied access to a property, the regulation needs to clearly define the operator’s alternative obligation.

More guidance needs to be provided regarding the visual monitoring of orphaned and abandoned wells. The regulation does not clearly define the specifics of the visual monitoring or the notification procedure in the event of a change to an orphaned or abandoned well. A maximum needs to be established as to how many wells can be visually monitored at once, and potentially plugged. The regulation is ambiguous and does not provide a clear direction for the industry. (1103)

Response: For matters related to well site locational uncertainty, please see response to comment 626.

For matters related to well site access, please see response to comment 2242.

For matters related to acceptable monitoring protocols, please see response to comment 680.

2260. Comment: The subsections of 78.73 assume that the land owner will allow operators access to the land to visually monitor those wells. What is an operator's obligation if access is denied by the landowner? This should be explained in the Preamble and final-form regulation. (1099)

Response: For matters related to well site access, please see response to comment 2242.

2261. Comment: Under 78.73(d), an operator that alters an orphaned or abandoned well by hydraulic fracturing must plug that well. Section 3203 of Act 13 defines the term "alteration." Is it EQB's intent to use that statutory definition to administer this provision? We recommend that this term be further clarified in the final-form regulation. (1099)

Response: For matters related to the definition of alteration, please see response to comment 686.

2262. Comment: Subsection (c) should be amended to provide better protection against fluid migration through orphaned or abandoned wells.

Subsection (c) requires that orphan or abandoned wells identified in preparation for hydraulic fracturing be visually monitored during stimulation. It seems that visual monitoring will only detect migration of frack fluids after migration beyond the intended area of influence, and will not detect migration to the freshwater zone in all cases. Commentator recommends a series of more protective measures that would begin with an obligation on the operator to avoid fracturing an area intercepted by an orphaned or abandoned well. If it is not practicable to avoid the area, then the operator should have an obligation to plug the well, or use instruments to monitor for migration of frac fluids in the orphaned or abandoned well. (852a)

Response: The Department will develop clarifying guidance related to the area of review requirements prior to promulgation of the final rule. Specifically, this issue will be addressed in a guidance document discussing the components of a suitable monitoring plan. Further, the Department has modified the regulatory language to include a provision for monitoring treatment pressures and volumes at the stimulated well site for evidence of abnormal fracture growth.

2263. Comment: Section 78.73 (c) requires a visual inspection of an orphaned or abandoned well that penetrates a formation that will be stimulated. If "changes" are noted, direct notice to the Department is required. It is unclear what visual inspection must be done, and under what conditions and timeframe notification to the Department is required. Clarity is being requested on this requirement. (1138)

Response: For matters related to acceptable monitoring protocols, please see response to comment 680.

2264. Comment: 78.73 (c) - The location coordinates for a large number of wells that may exist in the Department's database are likely derived from sources other than field GPS coordinates. Some coordinates may have been derived from old maps. For a variety of reasons, a well with a lat/long coordinate in the Department's database may not be visible on the ground, because the coordinates are inaccurate, or possibly because the well does not exist.

The obligation to visually monitor wells is subjective. It is not practical to continuously monitor wells over long periods of time. The use of electronic monitoring may be possible in some cases.

Suggested Language: (c) Orphaned or abandoned wells in the vicinity of a well which is hydraulically fractured that are identified pursuant to section 78.52a(c) and that can be located on the ground using reasonable efforts shall be monitored during periods of actual fluid pumping operations, provided that surface access to such wells can be obtained. Such monitoring shall include a visual inspection of the well at least every four hours, or following each stage of hydraulic fracturing, whichever is shorter, or other monitoring arrangement approved by the Department. The operator shall immediately notify the Department of any change to the well being monitored and take action to prevent pollution of waters of the Commonwealth or discharges to the surface. (1137)

Response: For matters related to well site locational uncertainty, please see response to comment 626.

For matters related to acceptable monitoring protocols, please see response to comment 680.

2265. Comment: § 78.73. General provision for well construction and operation.

(c) Abandoned or orphaned wells identified pursuant to section 78.52a must be remedied or properly plugged and abandoned prior to hydraulic fracturing activities if the operator determines, based on a review of Department records or the operator's own knowledge, that the hydraulic fracture treatment is likely to communicate with these wells and result in pollution of the waters of the Commonwealth or pose other environmental, health or safety risks. Other orphaned or abandoned wells identified pursuant to section 78.52a that likely penetrate a formation intended to be stimulated shall be visually monitored during hydraulic fracturing activities. The operator shall immediately notify the Department of any change to the orphaned or abandoned well being monitored and take action to prevent pollution of waters of the Commonwealth or discharges to the surface. (997a)

Response: For matters related to well plugging prior to hydraulic fracturing, please see response to comment 627.

2266. Comment: An operator that alters an orphaned or abandoned well by hydraulic fracturing shall plug the orphaned or abandoned well. (997a)

Response: The Department acknowledges this comment.

2267. Comment: (x) An operator conducting hydraulic fracturing on any well shall give at least twenty-four hours' notice to any operator of an operating or inactive wells identified pursuant to section 78.52a if the completion intervals are within 1,320 feet of one another, as well as to operators of wells at greater distance if the operator commencing hydraulic fracturing has reason to believe that wells at a greater distance may be impacted. (997a)

Response: For matters related to the inclusion of other well types in the area of review survey, please see response to comment 626.

The Department acknowledges the comment and has revised to regulatory language to provide a 30-day notice to other operators within the area of review prior to hydraulic fracturing.

For matters related to which well sites must be monitored because of vertical proximity to the stimulated interval, please see response to comment 626.

§ 78.75 Alternative methods

2268. Comment: The Department has regulatory authority since February, 2011 to designate alternative areas if the Department determines that well drilling requirements beyond those provided under Chapter 78 are necessary to drill, operate or plug a well in a safe and environmentally-protective manner. The STRONGER Review, September 2013 [page 83] notes that “Finally, the oil and gas regulations at section 78.75a allow DEP to establish areas of alternative methods in a manner similar to the development of a guidance document to establish more stringent requirements than those established by the regulations.”

The Department is recognized by the STRONGER Review, September, 2013 as having State/Regional Variations in Criteria, yet the Department has not implemented the use of this provision. This provision was created with our Northern Tier Region in mind, a Region that is prone to gas migration. Until we are at zero gas migration impacts or other unforeseen trends, we recommend that this provision is implemented as it was designed. While beyond the scope of this rulemaking, it is important to note our concerns regarding this particular provision. Recently, it seems that there may not be as many reported/determined water contamination cases. We are unaware whether that result is the effect of better practices which resulted from the February 2011 improvements in cementing and casing regulations or the fact that there are considerably less wells now being drilled. This provision to our understanding was to provide additional water protections for areas such as our region which has been somewhat prone to gas migration. As we inquired at a 2013 TAB meeting, the gas migration cases such as Sugar Run, Wilmot Township, Bradford County have had a lack of progress/success in solving the problem. We are concerned about this. This incident was first reported in September of 2010, and we’ve now surpassed three years with no resolution. Many homes were affected to which home treatment was considered a solution. But it remains that the Susquehanna River and Sugar Run continue to display symptoms of methane migration.

At a 2013 TAB meeting, it was stated that that 20 wells have been addressed in that area, and a recent review of Wilmot Township compliance reports reveal a large number of wells with poor cement jobs. However, the environmental impact remains. The operator, Chesapeake Energy has received penalty in part because of this environmental incident. This issue is bringing to mind concerns that need to be addressed. Section 78.75a has not yet been addressed or put into practice since it became effective in 2011. This was a measure in large part that will prevent future gas migrations. These measures need to be made a reality now that they have been effective for practically three years. When there are better methods and regulations to ensure the public’s health, safety and integrity of private water supplies in the Northern Tier Region, they need to be utilized.

Additionally, there needs to be a limit defined as to the time period that is actually allowable for an operator to continue drilling more wells in either the township/county/state when an environmental impact such as the methane migration into the Susquehanna River and Sugar Run remains unsolved. It makes no sense to keep drilling in area where there are already an abundance of wells with poor cement jobs, where there has been no resolution to the problem. Therefore, we suggest a five year review, that when there is no resolution by that period of time, all drilling by that operator in the corresponding township cease and all emphasis be placed completely on resolving the issue. Should the operator not be currently operating in that municipality, then another serious action is warranted to gain their attention and emphasis to resolving an environmental issue created by the operator. (660a)

Response: The Department acknowledges the comment and continues to evaluate various

geographic areas of the state for the potential application of an "area of alternate methods."

2269. Comment: Section 78.75 speaks to alternative methods and materials for casing, plugging or equipping a well. Such requests should be approved on a case-by-case basis, employ only best practices, and include language that hold the operator legally and financially accountable for damages in perpetuity. (645,1098)

Response: The Department acknowledges the comment and confirms that all proposals for alternate methods are reviewed prior to implementation and only approved if equivalent or superior environmental protections can be demonstrated.

2270. Comment: **The Department should append to subsection (a) language clarifying that an operator may not use an alternative method or material for the casing, plugging or equipping of a well until the Department has approved that alternative method or material.**

Under current subsection 78.75, operators employ alternative casing, plugging and equipping methods or materials, then seek after-the-fact approval for these materials or methods. This defeats the purpose of the regulation, which is to ensure that alternative methods be evaluated for safety *before* they are placed in use. Consequently, we recommend that Department add to subsection (a) the following language: "An operator shall not use an alternative method or material for the casing, plugging, or equipping of a well until the Department has approved that alternative method or material." (852a)

Response: Although substantive changes to this section are not part of the current rulemaking, the Department acknowledges that the comment is consistent with the way the current regulation is written and applied.

2271. Comment: Subsection (b) should require operators seeking approval for alternative methods to explain why they are seeking approval.

Currently, section 78.75(b) requires an operator seeking approval of an alternative casing, plugging or equipping method or material to describe the proposed alternative method "in reasonable detail," if appropriate with a drawing, and to indicate how the method or material "will satisfy the goals of the act and this chapter." We suggest that the Department also require operators to explain why they wish to use an alternative method or material, and to provide site- specific reasons in this explanation. Such a requirement would not only provide the Department with valuable information about industry innovations and trends; it would also enable the Department better to evaluate representations that proposed methods and materials will protect public health and safety and natural resources as well as the methods and materials codified by regulation. (852a)

Response: The Department acknowledges the comment and will consider it during future rulemakings addressing Subchapter D.

2272. Comment: Subsection (e) should be revised to provide that the Department will not approve an alternative method or material unless the operator demonstrates that the method or material provides equivalent or superior protection to public health and safety, waters of the Commonwealth, and natural resources, and the Department should develop written protocols for evaluating alternative methods and materials.

Although subsection (b) requires an operator seeking approval of an alternative method or material to indicate how it will satisfy the goals of Act 13 and Chapter 78, subsection (e) would apparently

allow the Department to approve an alternative even if it does not satisfy that standard: “If no objections are filed within 15 days from receipt of the notice, and if none are raised by the Department, the Department will make a determination whether to allow the use of the proposed alternative method or material.” This approach is unreasonable. The casing, plugging and equipping standards in Chapter 78 embody the Department’s judgment that these standards will protect public health and safety and natural resources. Subsection (e) should provide that the Department will not approve a deviation from these standards unless the operator shows that it will provide equivalent or superior protection to public health and safety and natural resources.

We also recommend that the Department develop written protocols to evaluate alternative methods for casing, plugging, and equipping wells. In 2013, PennFuture submitted a Right to Know Law request to the Department seeking, among other things, written protocols used by the Department to determine whether alternate practices that operators request for the disposal of residual waste on well sites provide “equivalent or superior protection” to the requirements of those sections. The Department provided no documents in response; consequently, it seems clear that the Department approves evaluates for “alternate methods” under section 78.62 and 78.63 on an ad hoc basis, without written protocols, and we assume that the same is true concerning section 78.75. To ensure consistency in the Department’s operations and ensure consistent protection of the Commonwealth’s natural resources, the Department should establish written protocols for evaluating requests for alternate methods under section 78.75 (as well as sections 78.62 and 78.63). (852a)

Response: This is consistent with the way the current regulation is written and applied. Because alternate methods differ based on site-specific conditions, it is not practical to establish a protocol indicating to the reviewer how the application should be reviewed.

2273. Comment: The February, 2011 created this provision that creates another layer of water protections for those living both in our watershed and region. To our knowledge, this provision has not yet been employed. We urge the DEP to use all necessary means at their disposal to protect our water supplies. We continue to have pads built and wells drilled and probably will for decades to come. We need to have the benefit of all available protections for our water supplies. The employment of an alternative method avoiding an impact is preferable to the employment of a water treatment system post-impact. (1035)

Response: For matters related to the application alternate methods, please see response to comment 2268.

§ 78.103 Annual monitoring of inactive wells

2274. Comment: **78.103** – We do not support a three-business-day notification period. A three-day period is too short for the PADEP to plan for and schedule inspectors to be at the well site. We recommend that proposed § 78.103 be further revised to require notice of at least 7 working days. (1143)

Response: The Department acknowledges the comment and will be considering modifications to the inactive status regulations in future rulemakings.

2275. Comment: **78.103** – We do not support only annual inspections of inactive wells. This limited inspection schedule could result in a leaking well going undetected and unmonitored for a year. We recommend the operator be required to inspect inactive wells on a monthly basis and immediately report and remedy any problems found during the inspection. (1143)

Response: The Department acknowledges the comment and will be considering modifications to the inactive status regulations in future rulemakings.

2276. Comment: **78.103** – The regulation is unclear about what type of monitoring and testing is required. We recommend this rule be clarified to read that monthly visual monitoring be conducted from the surface and that a mechanical integrity test be completed annually. (1143)

Response: The Department acknowledges the comment and will be considering modifications to the inactive status regulations in future rulemakings.

2277. Comment: We recommend that a petroleum engineer be required to complete a record review of the well's condition, conduct an on-site inspection, conduct a mechanical integrity test on the well, and certify that the requirements of § 78.102(1)-(4) have been met on an annual basis. This requirement will give the PADEP confidence that an engineer with specific expertise has examined the well condition and has certified that inactive status is still safe and appropriate for this well. (1143)

Response: The Department acknowledges the comment and will be considering modifications to the inactive status regulations in future rulemakings.

2278. Comment: In accordance with comments 2274 through 2277, Commentator recommends the following revisions of § 78.103:

§ 78.103. Annual monitoring of inactive wells.

The owner or operator of a well granted inactive status shall monitor the integrity of the well on a monthly basis, conduct an annual mechanical integrity test on the well, and report the results to the Department.

Any deficiency found during the inspection must be immediately remedied and a record of the work completed be submitted to the Department within 7 days of completion.

The owner or operator shall give the Department 7 business days prior notice of the annual and monthly monitoring and mechanical integrity testing.

A petroleum engineer must annually complete a record review of the well's condition, conduct an on-site inspection, conduct a mechanical integrity test, and certify that the requirements of § 78.102(1)-(4) have been met. The petroleum engineer's report must be submitted to the Department annually.

To qualify for continued inactive status, the owner or operator shall demonstrate, by the data in the monitoring reports, that the condition of the well continues to satisfy the requirements of § 78.102. (1143)

Response: For matters related to the inspection frequency at wells classified as inactive, please see response to comment 2275.

The Department acknowledges the comment and will be considering modifications to the inactive status regulations in future rulemakings.

For matters related to the notification timeframe related to wells on inactive status, please see response to comment 2274.

§ 78.121 Production reporting

2279. Comment: **78.121(a)** – We recommend several amendments to § 78.121. First, we recommend that all wells in Pennsylvania be required to file consistent amounts of production reporting information and that the two-tier reporting system be eliminated. Second, we request that the production reporting data be made available to the public on the PADEP’s website. We also recommend that the waste manifests be reported, including a characterization of the waste.

We recommend that § 78.121 be revised as follows.

§ 78.121. Production reporting.

(a) Each operator of a well shall submit a production and status report for each well on an individual basis, on or before February 15 and August 15 of each year. Production shall be reported for the preceding reporting period. When the production data is not available to the operator on a well basis, the operator shall report production on the most well-specific basis available. The annual production report must include information on the amount and type of waste produced and the method of waste disposal or reuse, including a waste manifest and waste characterization data. Waste information submitted to the Department in accordance with this subsection is deemed to satisfy the residual waste biennial reporting requirements of § 287.52 (relating to biennial report). Production reporting data shall be made publically available by the Department on its website within 30 days of receipt. (1143)

Response: The requirements regarding the frequency of production reporting in Sections 78.121 and 78a.121 parallel the requirements established in the 2012 Oil and Gas Act (conventional wells) and the Unconventional Well Report Act (Act of October 22, 2014, P.L. 2853, No. 173) (unconventional wells). To the extent that the commentator suggests amending those reporting requirement, that change should be a legislative change to the 2012 Oil and Gas Act.

The final rulemaking also requires reporting on the amount and type of waste produced and the method of waste disposal and reuse, including the specific facility or well site where the waste was managed. The Department is committed to public access to this information and the production and waste reports are available for public review on the Department’s website in several convenient formats. The production reports are typically available the next business day after the monthly production reporting deadline.

2280. Comment: Specificity in reporting well production is very significant and should be posted for public review (78.121). Strict enforcement of these provisions is required given their implications for all stakeholders and revenue. (645,1089)

Response: The Department agrees and requires production reporting to be done on the most well-specific basis available. The production reports are available for public review on the Department’s website in several convenient formats. The Department enforces the reporting requirements in accordance with the statement of policy entitled “Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations (#820-4000-001).

2281. Comment: It is necessary that production reporting be instituted on a monthly basis. Landowners

have a very difficult time reconciling their royalty production details and waiting six or more months to be able to actually compare such figures. Now is the time to re-evaluate this section. When this provision was created with a six month reporting period, landowner/royalty owner considerations were not part of the discussion. Due to numerous problems with royalty payments the time has come to not only consider this, but make a modification. Most gas producing states issue production reports monthly.

This is a world class play; Pennsylvania is expected to be the #2 gas producing state as was noted at the 2013 year end. <http://stateimpact.npr.org/pennsylvania/2013/12/17/pennsylvania-is-fastest-growing-state-for-natural-gas-production/> The Commonwealth needs to seriously apply this fact to not only monthly production reporting but also to supplying royalty owners with the tools they need to protect their interests. As the #2 gas producing state and the corresponding production that entails, the time has come when the reporting needs to be revised to a monthly schedule. While we do understand the production reporting is a self-reporting non-audited system, it is still better than a total lack of information in which royalty owners would otherwise have access. Providing transparency for the Commonwealth's royalty owners, in turn protects the Commonwealth's royalty tax revenues. Therefore, we strongly advocate that the production reporting be changed to monthly. (660a)

Response: In accordance with the Unconventional Well Report Act, the final rulemaking requires monthly production reporting for unconventional wells.

2282. Comment: Many of our members are also royalty owners. They pull and review production data hoping to make some sense out of their royalty checks. We recommend that the production reporting change to a monthly reporting basis. It is well needed. (1035)

Response: See response to comment 2281.

§ 78.122 Well record and completion report

2283. Comment: **78.122** – We support some of the improvements, but overall find that the reporting requirements do not provide the PADEP with an adequate record of the work completed on the well. We recommend that the proposed requirements at § 78.122 be expanded to include submission of a complete description of the sequence of events during all required blow-out prevention tests and copies of test results (California requires operators to submit a detailed well history that includes the chronological order on a daily basis all significant operations carried out and equipment used during all phases of drilling, testing, completion, recompletion and plugging and abandonment of the well. See Calif. Code Regs., tit. 14, § 1937.1), the grade and weight of each casing (Alabama requires a completion report to be submitted on Form OGB-7 and requires casing size, grade and weight. See <http://www.ogb.state.al.us/documents/ogbforms/OGBForms/ogb07form.pdf>. New Mexico requires a completion report to be submitted on Form C-105. See N.M. Code, § 19.15.16. Form C-105 requires casing size, grade and weight) the final cementing report (Alabama requires a completion report to be submitted on Form OGB-7 and requires information on the amount of cement used, depth it was placed, date it was installed, the type of cement, pressure test results and the name of the service company that installed the cement. See <http://www.ogb.state.al.us/documents/ogbforms/OGBForms/ogb07form.pdf>), a driller's log (including the results of coring, electric log, mud-logging, or testing completed) (California and Texas require that operators submit log results. Calif. Code Regs., tit. 14, § 1724.; Texas Admin. Code § 3.16(c-d)), an as-built well construction drawing, directional survey, and test data (Alaska's well completion report requires submittal of a final well schematic diagram on Form 10-407. See <http://doa.alaska.gov/ogc/forms/10-407.pdf>. North Dakota requires that operators have their

contractors submit a directional survey as part of their well completion Form 6, which also requires detailed testing information. See <https://www.dmr.nd.gov/oilgas/rules/forms/form6.PDF>). We also recommend that the operator (who holds the permit) be required to gather the data and ensure that the terms of its permit are met.

We recommend that proposed § 78.122 be revised as follows:

§ 78.122. Well record and completion report.

(a) For each well that is drilled or altered, the operator shall keep a detailed drillers log at the well site available for inspection until drilling is completed. Within 30 calendar days of cessation of drilling or altering a well, the well operator shall submit a well record to the Department on a form provided by the Department that includes the following information:

- (1) Name, address and telephone number of the permittee.
- (2) Permit number, and farm name and number.
- (3) Township and county.
- (4) Date drilling started and completed.
- (5) Method of drilling. A complete description of the sequence of events during all required blowout prevention tests and copies of test results.
- (6) Size and depth of conductor pipe, surface casing, coal protective casing, intermediate casing, production casing and borehole, and the grade and weight of each casing. A complete description of the sequence of events during all required casing tests and copies of test results.
- (7) The final cementing report, including: cement type and grade; list of all cement additives; mix water pH and temperature; cement volume, yield, and density; amount of cement returned to surface; cement pumping rate and pressures; a complete description of the sequence of events during the cementing operation; and a copy of all temperature logs and cement evaluation tool tests.
- (8) Elevation and total depth.
- (9) Drillers log that includes the name and depth of formations from the surface to total depth, depth of oil and gas producing zone, depth of fresh water and brines and source of information. The depth of lost circulation zones, depth of over-pressured zones and pressure. The results of coring, electric log, mud-logging, or testing completed.
- (10) An as-built well construction drawing, a directional survey, along with a copy of the final casing and cementing report, signed by the well owner and the well owner/operator's lead engineer certifying that the well has been constructed in accordance with this chapter and any permit conditions imposed by the Department.
- (11) Whether methane was encountered other than in a target formation, the location of the gas, and test or log data collected.
- (12) The country of origin and manufacture of tubular steel products used in the construction of the well.
- (13) The borrow pit used for well site development, if any.
- (14) Other information required by the Department.

(b) Within 30 calendar days after completion of the well, the well operator shall submit a completion report to the Department on a form provided by the Department that includes the following information:

- (1) Name, address and telephone number of the permittee.
- (2) Name, address and telephone number of the service companies.
- (3) Permit number and farm name and number.
- (4) Township and county.
- (5) Perforation record.
- (6) Stimulation record which includes the following:

- (i) A descriptive list of the chemical additives in the stimulation fluid, including any acid, biocide, breaker, brine, corrosion inhibitor, crosslinker, demulsifier, friction reducer, gel, iron control, oxygen scavenger, pH adjusting agent, proppant, scale inhibitor and surfactant.
 - (ii) The percent by volume and mass of each chemical additive in the stimulation fluid.
 - (iii) The trade name, vendor and a brief descriptor of the intended use or function of each chemical additive in the stimulation fluid.
 - (iv) A list of the chemicals intentionally added to the stimulation fluid, by name and chemical abstract service number, and the chemical characteristics of the base fluid if it does not meet the freshwater definition at § 78.1.
 - (v) The maximum concentration, in percent by volume and mass, of each chemical intentionally added to the stimulation fluid and contained in the base fluid.
 - (vi) The total volume of the base fluid.
 - (vii) A list of water sources used under an approved water management plan and the volume of water used from each source.
 - (viii) The total volume of recycled water used.
 - (ix) The pump rate and pressure used in the well.
 - (7) Actual open flow production and shut in surface pressure.
 - (8) Open flow production and shut in surface pressure, measured 24 hours after completion.
 - (9) The freshwater impoundment, if any, used in the development of the well.
 - (c) When the well operator submits a stimulation record, it may designate specific portions of the stimulation record, other than the chemicals intentionally added to the stimulation fluid or in the base fluid and the maximum concentrations thereof, as containing a trade secret or confidential proprietary information. The operator shall have the burden of proving, and shall submit with the stimulation record evidence proving, that any so designated portion of the record is a trade secret or confidential proprietary information. The Department will review the submitted evidence, make a determination whether the operator has satisfied its burden of proof as to each designated portion of the record, and prevent disclosure under the Right-to-Know Law (65 P. S. §§ 67.101—67.3104) only of the designated confidential information proven to be a trade secret or confidential proprietary information.
- (1143)

Response: The Department considered this comment and declines to make the suggested amendment to this rulemaking. If the Department finds that additional information is needed in the well record, the Department may make amendments to the well record forms and instructions.

2284. Comment: Although listing specific information to be included in a well-completion report and stimulation record is useful, we recommend the following:

- Define “altering” a well [78.122 (a)];
- Revert to the original language of “submit” a completion report not “arrange for the submission of” since this extends the timeline indefinitely. [78.122 (b)]
- Include
 - “volume and/or mass” of each chemical additive [78.122(6)(ii)]
 - Chemical formulas for each chemical intentionally added to the stimulation fluid [78.122(6)(iii)]
 - The mandatory addition of site-specific tracers with each stimulation record to establish liability in the event of unanticipated consequences.
 - Test results of the specific chemical composition of all “base fluids” be they recycled, freshwater, or other water and their source(s) [78.122(6)(vii)] and
 - Pressure readings measured 24 hours, 48 hours and 72 hours after

completion (78.122(8)).

Finally, test results of the base fluid and a list of all chemical constituents of the chemical additives used to hydraulically fracture a well must be submitted to the Department and available to the public without regard to “protections afforded by trade secrets and confidential proprietary information.” [78.122 (d)] (645,1098)

Response: The term “alteration” is defined in Section 3203 of the 2012 Oil and Gas Act. The current language in 78.122(b) is not intended to indefinitely extend the reporting deadline. It is intended to allow well service providers to submit completion reports on behalf of an operator. The 2012 Oil and Gas Act requires the maximum concentration of chemical additives to be reported in percent by mass. Section 3222(b.2) of the 2012 Oil and Gas Act grants well operators the authority to designate portions of the stimulation record as containing a trade secret or confidential proprietary information. This authority cannot be removed in this rulemaking as the commentator suggests. With respect to the remaining comments, the Department acknowledges the comment.

2285. Comment: In order to be consistent with practices in the majority of leading states, operators should disclose, as part of the completion report required in § 78.122(b), the type of base fluid used in the hydraulic fracturing treatment. § 78.122(b)(ii) should be rephrased to require disclosure of “the percent by mass of total volume of hydraulic fracturing fluid used of each chemical additive in the stimulation fluid.” (997a)

Response: The current completion report form requires operators to identify the type of base fluid used in the hydraulic fracturing treatment operation. The language in the rulemaking is consistent with the 2012 Oil and Gas Act.

2286. Comment: In order to be consistent with practices in the majority of leading states, § 78.122(b)(iv) should read: “A list of the chemicals intentionally added to the stimulation fluid or contained in the additives, by name and chemical abstract service number.” (997a)

Response: It appears that this comment is in regard to § 78.122(b)(6)(iv). The Department disagrees with this comment. The language in the rulemaking is consistent with the requirements of § 3222(b.1)(1)(iii) of the 2012 Oil and Gas Act.

2287. Comment: In order to be consistent with practices in the majority of leading states, § 78.122(b)(vi) should require disclosure of “the total volume and type of the base fluid.” (997a)

Response: It appears that this comment is in regard to § 78.122(b)(6)(vi). The Department disagrees with this comment. The language in the rulemaking is consistent with the requirements of § 3222(b.1)(1)(v) of the 2012 Oil and Gas Act. Please note that the Completion Report form does require operators to identify the type of base fluid used.

2288. Comment: The Proposed Rulemaking does not address § 3222.1(b)(11) of Act 13 (disclosure of trade secret or confidential proprietary information to health professionals). The Department should utilize this rulemaking process to facilitate, to the greatest extent possible, any request made by a health professional for chemical disclosure. This is a critical issue not only for public health, but also for public confidence in the Department and industry. (997a)

Response: The Department acknowledges the authority to develop regulations to address this topic. However, the Department believes that the procedures outlined in the referenced

section of the 2012 Oil and Gas Act serve as a functional process and declines to propose regulations relevant to Section 3222.1(b)(11) at this time.

2289. Comment: In addition to the required information outlined in § 78.122(a)(1)-(13), a well operator should include the following in standard form well records:

- A casing and cement report that includes the determined depth of the top of cement for each casing string, hole size, the amount and location of centralizers and the method used to make the determinations;
- Inclination and directional surveys; and
- Applicable depths and thicknesses of the geologic formations penetrated, complete with the relevant well log, mud log and/or other data known about the intervening zone above the zone(s) that received the hydraulic fracturing treatment. (997a)

Response: The Department disagrees with this comment. The data elements noted in this comment are either already required in the existing well record form or will be required in the revised well record form that the Department is currently developing. To the extent that additional information is needed, the Department will amend the well record form and instructions.

2290. Comment: The Department should ensure that an operator, or its duly authorized agent having personal knowledge of the facts, and representatives of the cementing company performing the cementing job, sign the form attesting to compliance with the cementing requirements. (997a)

Response: The current well record form requires the well operator's representative who is submitting the form to certify that the well has been properly cased and cemented in accordance with the requirements of 25 Pa. Code Chapter 78 and any conditions contained in the permit for this well.

2291. Comment: The Proposed Rulemaking improperly alters the timelines for chemical disclosure § 78.122(b) should read:

- *Within 30 calendar days after completion of the well, the well operator shall submit a completion report to the Department on a form provided by the Department*

We do not believe the Department has the authority to deviate from this 30-day deadline, nor do we believe it would be wise to do so. (997a)

Response: The requirements in section 78.122(b) relating to submission of the well completion report parallel the requirements in section 3222(b)(3) of the 2012 Oil and Gas Act.

2292. Comment: **78.122** – Commentator recommends adoption of the proposed required reporting of methane being encountered in other than a target formation, as well as, the country of origin and manufacture of tubular steel products used in the construction of the well, and any borrow pit used for site development if any be included in the drillers log. (660a)

Response: The Department acknowledges the comment.

2293. Comment: **78.122(a)(13)** – Operators should not have to identify borrow pits on their well records, which are often on locations owned and operated by third parties for the use of multiple activities,

including those other than oil and gas activities. There is no statutory authority or environmental justification to require this requirement in well records. Delete subsection (13). (1153)

Response: Borrow pits are only subject to the permit exemption in section 3273.1 of the 2012 Oil and Gas Act so long as they are used in the manner outlined in that section. Therefore, the Department must track their use and the well record is the most appropriate way for the Department to obtain the necessary information.

2294. Comment: **78.122(b)(9)** – Operators should not have to identify impoundments on their well records, which are by the new proposed definitions subject to separate permitting and approvals. There is no statutory authority or environmental justification to require this requirement in completion records. Delete subsection (9). (1153)

Response: Tracking the movement of waste water from impoundments to well sites is important both from the environmental protection and program management perspectives. Operators should be in possession of this information at the time the well completion report is required to be submitted.

2295. Comment: We recommend the addition of the new provisions. We request that any corresponding centralized waste impoundment also be included in the reporting. (1035)

Response: The Department has considered this comment and declines to make the suggested amendment. Please see the responses to comments on the centralized waste impoundment provisions.

2296. Comment: **78.122(a)**: Commentator contends that 30 days from “cessation of drilling” is a confusing trigger and a short time frame for a multi-well site. The information required in the reports is difficult to obtain in 30 days on a multi-well site. The language should be modified to require reports “90 days from rig release” or “90 days from the end of a completion of a well.” (1071)

Response: The requirements relating to timing of submission of the well record are established by section 3222(b)(2) of the 2012 Oil and Gas Acts. The suggested change should be a legislative amendment to the 2012 Oil and Gas Act.

2297. Comment: **78.122(a)**: It is recommended that the Department recognize and accept the submission of a computer based driller’s log. (1174)

Response: The Department will be developing an online application for the electronic submission of Well Records. The Department’s intention is to provide functionality within this application to allow operators to upload electronic well logs with their well record.

2298. Comment: **78.122(a)(12)**: Commentator recommends that the Department strike requirements to report country of origin and manufacture of tubular steel products used in the construction of the well. This requirement serves no protective environmental purpose and is difficult to obtain. (1071)

Response: This regulatory provision does not create a new reporting obligation. Operators are required to submit this information to the Department as part of the well record under section 3222(b.1)(2)(ii) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3222(b.1)(2)(ii)). This suggested change should be a legislative amendment to the 2012 Oil and Gas Act.

2299. Comment: § 78.122 (b) - There is no definition of the DEP's definition/interpretation of when a well is capable of production. Clarification should be provided. (124a, 913)

Response: A well is “capable of production” after “completion of the well”. The 2012 Oil and Gas Act defines “completion of a well” as “[t]he date after treatment, if any, that the well is properly equipped for production of oil or gas, or, if the well is dry, the date that the well is abandoned.” 58 Pa.C.S. § 3203. The Department considers a well to be “properly equipped for production of oil or gas” under the following circumstances:

For wells not intended to have the producing interval cased or stimulated prior to production (i.e., natural wells), the well is properly equipped for production when the well has been drilled to total depth.

For wells intended to have the producing interval cased, but not stimulated, prior to production, the well is properly equipped for production when the last perforation is placed.

For wells intended to be stimulated prior to production, the well is properly equipped for production upon commencement of flow back.

2300. Comment: 78.122 – Well Record and Completion Report : (b) Within 30 calendar days after completion of the well, when the well is capable of production , the well operator shall arrange for the submission of a completion report to the Department on a form provided by the Department that includes the following information: -- What is the DEP's definition/interpretation of when a well is capable of production? (1057)

Response: See response to comment 2299.

2301. Comment: § 78.122 (b)(8) - Since operators may be shutting in wells and waiting for facilities to be built, it is suggested that language is added to clarify that completion means after a well is turned in line. (913)

Response: See response to comment 2299.

2302. Comment: § 78.122 (b)(8) - Open flow production and shut in surface pressure, measured 24 hours after completion -- Since several operators are shutting in wells and waiting for facilities to be built it is suggested that language is added to clarify that completion means after a well is turned in line. (1057)

Response: See response to comment 2299.

2303. Comment: Section 78.122 sets forth requirements relating to well records and completion reports. With respect to the proposed revisions to Section 78.122(b) related to well completion reports, the revisions recognize the fact that vendors and service providers hired by well operators do not disclose to the operators certain information about the chemicals added to the stimulation fluid because that information is considered by the vendor or service provider to be a trade secret or confidential proprietary information. This dynamic is reflected in the current oil and gas regulations at 25 Pa. Code § 78.122(d), which recognizes the relationship among operators, vendors and service providers by allowing operators to arrange to have their vendors and service providers provide certain information directly to the Department when necessary. MSC appreciates that the Department has retained this concept in its proposed revisions to Chapter 78 and supports those proposed changes to Section 78.122(b).

In a scenario where a vendor or service provider is providing information directly to the Department in accordance with Section 78.122(b), as proposed, it is the vendor or service provider that considers the information to be a trade secret or confidential proprietary information.

Suggested amendatory language: When a stimulation record is submitted, specific portions of the stimulation record may be designated as containing a trade secret or confidential proprietary information. The Department will prevent disclosure of the designated confidential information to the extent permitted under the Right-to-Know Law (65 P. S. §§ 67.101—67.3103) or other applicable state law. (1147)

Response: The Department acknowledges this comment. The Department believes that it has addressed this issue by developing a separate form for the designation and submission of trade secret/confidential proprietary information by well operators, well service providers, and/or vendors that is not part of the completion report form.

- 2304.** Comment: **78.122(b):** Commentator requests that the Department clarify whether submission to FracFocus covers the reporting requirement. (1071)

Response: The chemical reporting requirements in §§78a.122(b)(6)(iii) through 78a.122(b)(6)(v) are consistent with the reporting requirements in §3222(b.1) of the 2012 Oil and Gas Act. They pertain to information that must be included in the completion report. These requirements are separate from, and in addition to, the requirements of §3222.1 of the 2012 Oil and Gas Act which require reporting through Frac Focus.

- 2305.** Comment: Act 13 includes several new notification requirements where operators are required to notify the Department a set time prior to conducting various activities. For example, operators are required to provide the Department “24 hours’ notice prior to cementing all casing strings, conducting pressure tests of the production casing, stimulation and abandoning or plugging an unconventional well” pursuant to Section 3211(f)(2) of Act 13. The commentator is concerned that there has been some confusion as to how these notices are to be provided to the Department. To avoid such confusion with the Board’s new provisions, the commentator suggests the following minor revisions.

78.122(a)(11): Delete Requirement Requiring Operator to Provide Unnecessary and Confidential Information -- The proposed language requiring an operator to include methane encountered other than in a target formation creates a competitive disadvantage for operators diligently comply in g with the provisions requirements. Commentator recommends deleting subsection (a)(11). (1085)

Response: The Department disagrees with this comment. The request is outside the scope of this rulemaking. Section 3222(b.1)(2)(i) of the 2012 Oil and Gas Act specifically requires operators to identify within the well record whether methane was encountered in other than a target formation. Any change to this requirement should be a legislative amendment to the 2012 Oil and Gas Act.

- 2306.** Comment: *78.122 (b): Well Record and Completion Report: Defining When a Well is Capable of Production:* Section 78.122(b) uses the ambiguous triggering event of “when a well is capable of production,” a term not defined by the Board in Chapter 78 and for which there is not a standard industry definition. Events that trigger reporting must be clear, reasonable, and easily identified to assure compliance. Talisman recommends replacing the triggering event in the first sentence of subsection (b) to read: “Within 30 days from the end of completion of a well, after the first 24 hours

of gas to surface, the well operator shall submit a completion report to the Department on a form provided by the Department that includes the following..” (1085).

Response: See response to comment 2299.

2307. Comment: According to the Preamble, this section addresses Act 13 requirements, including new well report and stimulation record requirements. Commentators point out several provisions of this section that are beyond the scope of Act 13. Other commentators request that this provision be expanded to require more information that would be protective of the environment. We ask EQB to provide a more specific citation to the section or sections of Act 13 that this provision is implementing. (1099)

Response: The well record requirement in §§ 78.122(a) and 78a.122(a) implements the well record requirements in Sections 3222(a)(1) and 3222(b.1)(2)(i) of the 2012 Oil and Gas Act. That section specifies that a record containing the information required by the Department shall be filed within 30 days after drilling a well.

Sections 78.122(a)(11) and 78a.122(a)(11) requires operators to submit information related to whether methane is encountered other than in a target formation. This is required by Section 3222(b.1)(2)(i) of the 2012 Oil and Gas Act.

Sections 78.122(a)(12) and 78a.122(a)(12) requires operators to submit information related to the country of origin and manufacture of tubular steel product used in the construction of the well. This is required by Section 3222(b.1)(2)(ii) of the 2012 Oil and Gas Act.

Section 78.122(a)(13) and 78a.122(a)(13) requires the operator to submit information related to the borrow pit used for well site development. It is reasonable and appropriate for the Department to require borrow pit information as part of the well record as borrow pits are subject to a permit exemption in Section 3273.1 of the 2012 Oil and Gas Act. Therefore, the Department must track the use of such facilities to ensure compliance. The well record is the most appropriate way for the Department to obtain the necessary information.

Under Section 3274 of the 2012 Oil and Gas Act, the Environmental Quality Board has the authority to promulgate regulations necessary to implement the statute. These requirements are needed to implement the statute.

The requirements in §§ 78.122(b) and 78a.122 largely mirror the well completion report requirements in Sections 3222(b)(3) and 3222(b.1)(1) of the 2012 Oil and Gas Act. The Department added §§ 78.122(b)(9) to the final rulemaking to require information be reported related to well development impoundments. It is reasonable and appropriate for the Department require this information because the Department must track the use of these facilities to ensure compliance. The completion report is the most appropriate way for the Department to obtain the necessary information.

Further, §§ 78.122(b)(10) and 78a.122(b)(10) were added to the final rulemaking for operators to certify that the monitoring plan required in the area of review provision in §§78.52a and 78a.52a was conducted as outlined in the operator’s report. This is important to ensure compliance with the area of review requirements. Under Section 3274 of the 2012 Oil and Gas Act, the Environmental Quality Board has the authority to promulgate regulations necessary to implement the statute. These requirements are needed to implement the statute.

Accordingly, the Department has the requisite authority for these provisions in the final rulemaking.

2308. Comment: If an unconventional well is drilled within a SWPZ, the affiliated water system and landowner should also receive a copy of the chemical additives in the stimulation fluid. (1149)

Response: The chemical additive information will be available to any interested party via the submitted well completion report. The Department's intent is to make this information available on our website.

2309. Comment: Comment: If an unconventional well is drilled within a SWPZ, the affiliated water system and landowner should also receive a copy of the chemical additives in the stimulation fluid. (1150)

Response: See response to comment 2308.

2310. Comment: 78.122 (9) - Range recommends changing impoundment to "impoundments" recognizing and allowing operator flexibility to efficiently acquire and utilize freshwater and flow back and minimize truck traffic and reduce transportation costs. (1174)

Response: The Department interprets "impoundment" to include any and all impoundments used in the development of the well.

2311. Comment: 78.122 (c) + (d) - Section 78.122 sets forth requirements relating to well records and completion reports. With respect to the proposed revisions to Section 78.122(b) related to well completion reports, the revisions recognize the fact that vendors and service providers hired by well operators do not disclose to the operators certain information about the chemicals added to the stimulation fluid because that information is considered by the vendor or service provider to be a trade secret or confidential proprietary information. This dynamic is reflected in the current oil and gas regulations at 25 Pa. Code § 78.122(d), which recognizes the relationship among operators, vendors and service providers by allowing operators to arrange to have their vendors and service providers provide certain information directly to the Department when necessary. The commentator appreciates that the Department has retained this concept in its proposed revisions to Chapter 78 and supports those proposed changes to Section 78.122(b). In a scenario, where a vendor or service provider is providing information directly to the Department in accordance with Section 78.122(b), as proposed it is the vendor or service provider that considers the information to be a trade secret or confidential proprietary information. Consistent with that framework, the commentator believes that Section 78.122(c), as proposed, should be revised slightly to recognize that the vendor or service provider (as opposed to the operator) may be the entity designating the information submitted directly to the Department as a trade secret or confidential proprietary information. These minor changes will harmonize the requirements in Section 78.122(c), as proposed, with the structure reflected in both Section 78.122(b), as proposed, and as currently exists in the oil and gas regulations. Suggested Language: (c) When a stimulation record is submitted, specific portions of the stimulation record may be designated as containing a trade secret or confidential proprietary information. The Department will prevent disclosure of the designated confidential information to the extent permitted under the Right-to-Know Law (65 P.S. §§ 67.101-67.3103) or other applicable state law. (1174)

Response: See response to comment 2303.

- 2312.** Comment: The language proposed for Section 78.122 conflicts with the requirements of Act 13 and should be deleted.

The Department proposes to change the obligation to submit a completion report within 30 days after completion and when the well is ready for production, to an obligation to “arrange for the submission” of a completion report. This provision makes the requirement unenforceable, as it is unclear what acts would constitute arranging for the submission of a completion report. More important, Section 3222 of Act 13 requires that a report containing information on the well be submitted to the Department within 30 days after drilling, and that a completion report be filed with and maintained by the Department within 30 days after completion and when the well is capable of production. (852a)

Response: The Department disagrees with this comment. The intent of the language within this section is to allow well service providers to submit a completion report on behalf of an operator. The language is not intended to extend the reporting deadline.

- 2313.** Comment: Section 78.122 should require analysis of the base fluid to account for chemicals not intentionally added to make up the frack fluid.

Subsection 6(iv) requires identification of chemical concentrations intentionally added for the frack water. Presumably the Department includes this qualifier to promote use and reuse of water or solutions that may have chemicals present when the operator prepares for fracking. The commentator suggests that another way of getting more accurate information would be to add a requirement that the operator take a representative sample of the base fluid and include an analysis of that sample as part of the report, so that the Department has a record of not only chemicals intentionally added, but an analysis of what chemicals are already present in the base fluid. (852a)

Response: The Department disagrees with this comment. The language in the rulemaking is consistent with the requirements of § 3222(b.1)(1)(iii) of the 2012 Oil and Gas Act.

- 2314.** Comment: 25 Pa. Code § 78.122 sets forth requirements relating to well records and completion reports. Certain changes are proposed to the current version of 25 Pa. Code § 78.122 to incorporate new requirements contained in Act 13. With respect to the proposed revisions to Section 122(b) relating to the content of well completion reports, the revisions recognize the fact that vendors and service providers hired by well operators do not disclose to the operators certain information about the chemicals added to the stimulation fluid that is used to hydraulically fracture a well because that information is considered by the vendor or service provider to be a trade secret or confidential proprietary information. This dynamic is reflected in the current oil and gas regulations at 25 Pa. Code § 78.122(d), which recognizes the relationship among operators, vendors and service providers by allowing operators to arrange to have their vendors and service providers provide certain information directly to PADEP when necessary. The commentator appreciates that the EQB has retained this concept in its proposed revisions to Chapter 78 and supports the following changes to Section 122(b):

78.122. Well record and completion report.

(b) Within 30 calendar days after completion of the well, **when the well is capable of production**, the well operator shall **arrange for the [submit] submission of** a completion report to the Department on a form provided by the Department that includes the following information....
(The changes shown above are in the original version of the proposed regulations.)

In a scenario where a vendor or service provider is providing information directly to PADEP in accordance with Section 122(b), as proposed, it is the vendor or service provider that considers the information to be a trade secret or confidential proprietary information. Consistent with that framework, HESI believes that Section 122(c), as proposed, should be revised slightly to recognize that the vendor or service provider (as opposed to the operator) may be the entity designating the information submitted directly to PADEP as a trade secret or confidential proprietary information. Accordingly, HESI suggests that the following changes to the first sentence of Section 122(c), as proposed, be made:

(c) When the well operator submits a stimulation record is submitted, it may designate specific portions of the stimulation record may be designated as containing a trade secret or confidential proprietary information. The Department will prevent disclosure of the designated confidential information to the extent permitted under the Right-to-Know Law (65 P. S. §§ 67.101—67.3103) or other applicable State law.

These minor changes will harmonize the requirements in Section 122(c), as proposed, with the structure reflected both in Section 122(b), as proposed, and as currently exists in the oil and gas regulations. (1173)

Response: See response to comment 2303.

2315. Comment: 78.122(b)(6)(i) The descriptive list needs to be further detailed to include diesel fuel and the corresponding CAS. This provides for another level of transparency that is needful as a result of the recent EPA memorandum regarding the permitting of diesel fuel in hydraulic fracturing operations. (660a)

Response: The Department interprets § 78.122(b)(6)(i), as well as § 3222(b.1)(1)(i) of the 2012 Oil and Gas Act, to require the inclusion of diesel fuel, if diesel fuel is used as an additive to the stimulation fluid. Please note the chemical abstract service (CAS) number is required pursuant to § 78.122(b)(6)(iv). The use of such substances subjects an operator to the requirement to obtain an Underground Injection Control permit from the United States Environmental Protection Agency, Region III and the Department in addition to the permit to drill or operate the well.

2316. Comment: 78.122(b)(6)(viii) The total volume of recycled water used needs to be further detailed to include the source of such water when it is processed at a temporary well site or other temporary location and whether that recycled water was generated at that particular well site or from another. This information will provide for a level of transparency regarding the justification of temporary on-site processing or whether sufficient volumes are more readily available for use at a WMGR123 location. (660a)

Response: The Department agrees with this comment, in part. The Department declines to make this suggested change to the final rulemaking. The latest revisions to the completion report form require operators to list the sources of recycled water used in the stimulation base fluid.

2317. Comment: 78.122(9) We recommend that any associated fresh water or flow back centralized waste water impoundment and any off-site temporary waste processing facility also be indicated. This will assist the Department in tracking the activity regarding such facilities and whether or not the last identified associated well has been completed such that the corresponding facility will now be moving towards closure and site restoration [that is for the impoundments]. With this

modification, we recommend this provision for adoption. (660a)

Response: See response to comment 2316.

§ 78.123 Logs and additional data

2318. Comment: Define recompletion of drilling to clarify if this includes restimulation or superfracking. Change data to read “including” not “such as” representative drill cuttings. Eliminate the word “not” in the final sentence so the interpretation of data is required to be filed and add “including significant changes in radioactivity readings, chemical composition, pressure, etc.” Shorten the filing period to six months after completion of the well-not “no more than three years”. An extension of the deadline for up to five years should be no more than one year from the date of well completion. Finally, all logs should be submitted in a standard format designed by the Department to promote enforcement and use for statistical purposes. (906)

Response: The Department has considered this comment related to the definition of recompletion and declines to make this suggested amendment to this final rulemaking. During the implementation of this rulemaking, if the Department determines that further clarity is needed the Department will consider defining this term in a future rulemaking or policy.

The Department does not agree that "such as" should be replaced with "including," as the proposed wording may place unintended restrictions on the type of data that the can be requested.

The Department does not agree that interpretations should be filed along with submitted data. Interpretations are based on professional discretion and may vary from one professional to another.

The Department does not agree that the suggested additional data should be included in the language, as similar data can either be gleaned through review of standard industry logs or is collected on other forms.

The Department believes the current language regarding data submission timeframes strikes a suitable balance between protection of proprietary information and the collection of data necessary for efficient and environmentally protective resource development.

Although the Department agrees with the intent of the suggested change related to data formats, such a requirement is not reasonable due to the variety of data compilation mechanisms and types of data collected. The Department will consider future changes that require logs to be submitted in a format that can be readily imported into available analysis software.

2319. Comment: The Department should require the following disclosures within 30 days of completion:

- the estimated fracture height and estimated true vertical depth to the top of the fracture achieved during hydraulic fracturing treatment, as determined by a three dimensional model acceptable to the Department.
- Initial well test information recording daily gas, oil and water rate, tubing and casing pressure;
- Initial gas analysis, performed by a lab approved by the Department for such purposes;

- The results of baseline water testing; and
- Calculated fracture length and fracture height for the hydraulic fracture treatment. (997a)

Response: The Department does not agree that all of the suggested items are necessary for ensuring that oil and gas development takes place in an efficient and environmentally protective manner. Further, the submission of baseline water quality data is already suitably addressed by §§ 78. 52 and 78a.52.

2320. Comment: The proposed revision to subsection (d) below appears to eliminate a long-standing and necessary protection of logs submitted under subsection (a) without justification. The three year protection should be reinstated.

Suggested amendatory language:

(a) If requested by the Department within 90 calendar days after the completion **[of drilling]** or recompletion **of drilling [of a well]**, the well operator shall submit to the Department a copy of the electrical, radioactive or other standard industry logs run on the well. **All such logs will be kept confidential by the Department for a minimum of three years.** (1135)

Response: The required 3-year period for submittal of information has only been changed relative to the submission of electrical, radioactive, and other standard industry logs. The Department modified the language for consistency with Act 13 and codified the existing practice that all logs are currently requested for every drilling permit issued.

The Department believes that data confidentiality is already preserved for an adequate period of time based on the existing language. The only type of information not falling under the provision are the logs which are currently requested for every drilling permit issued in the state.

2321. Comment: § 78.123(a): Logs must be submitted whether requested or not, and must include both pressure anomaly and microseismic data. The phrase “If requested by the Department” should be stricken: logs should be submitted in any case, and should cover all phases of site construction, well construction, drilling, and completion, including hydraulic fracturing. Submitted logs should become public records and be part of the material that is available through File Review. The logs must include the full record of micro seismic data. Such data may reveal unexpected potential pathways for contamination and unexpected faults. The logs must include all pressure anomaly data for well completion, including hydraulic fracturing. Such data may reveal unexpected potential pathways for contamination. (869a)

Response: The current language related to the area of review in §§ 78.52a and 78a.52a addresses the concerns expressed in this comment.

2322. Comment: § 78.123 (c) - It is unclear whether this requirement applies to pilot holes, development wells, exploration wells, appraisal wells, etc. (913)

Response: The data collection and submittal requirements in this section apply to all wells drilled that require a permit to be issued under the 2012 Oil and Gas Act.

2323. Comment: We recommend disclosure of the results of the pre-hydraulic fracturing assessment and the ultimate design used for hydraulic treatment to prevent fracturing fluids or hydrocarbons from migrating vertically or coming into contact with any strata that contain protected water.

We recommend that the Department require disclosure within 30 days of well completion the results of baseline water testing. (1031)

Response: For matters related to the collection of stimulation design data and baseline testing data, please see response to comment 2319.

2324. Comment: 78.123 – Logs and Additional Data : (c) - Upon notification by the Department prior to drilling, the well operator shall collect additional data specified by the Department, such as representative drill cuttings and samples from cores taken, and other geological information that the operator can reasonably compile. Interpretation of the data is not required to be filed. -- Clarify whether this requirement applies to pilot holes, development wells, exploration wells, appraisal wells, etc. (1057)

Response: For matters related to the applicability of the requirements in the section, please see response to comment 2322.

2325. Comment: **78.123(a):** To avoid confusion, the Department should strike “recompletion of drilling” and insert “recompletion of a well.” Additionally, the commentator supports that inclusion of a 2 year confidentiality clause to prevent the sharing of an operator’s logs and data, both of which represent a significant capital investment and competitive advantage. (1071)

Response: The current language with regard to completion and recompletion of drilling is consistent with the supporting statute.

For matters related to data confidentiality, please see response to comment 2320.

2326. Comment: § 78.123(a) Suggested amendatory language: If requested by the Department, the well operator shall, within 90 days of completion or recompletion of drilling, submit a copy of any electrical, radioactive or other standard industry logs which have been run. Any such data submitted under this subsection shall be held confidential by the Department for a period of three years following completion of drilling or deepening. (1147)

Response: For matters related to data confidentiality, please see response to comment 2320.

2327. Comment: Operators should be required to provide the data required under § 78.123 (a), (b), and (c) to the Department within 30 days after completion of drilling, without specific request from the Department as is currently contemplated. (997a)

Response: The Department agrees that electric, radioactive, and other standard industry logs should be submitted for every well drilled and has modified the language to reflect this position. With regard to other data collected during drilling, the Department believes that having flexibility concerning which data are requested is beneficial from a records management standpoint, as not all information is of equal value with regard to ensuring efficient and environmentally protective oil and gas development.

2328. Comment: 78.123(a): *Logs and Additional Data- Define Triggering Events for Department Log Requests: The Board should enumerate the triggering events for when the Department can request logs and additional data and further specify details of this provision given the propriety nature of the information requested.* Talisman recognizes that Act 13 gives the Department the authority to request copies of any electrical, radioactive or other standard industry logs. The Department is currently requesting this information in each individual unconventional drill permit itself. Talisman

is concerned that this request exposes compliant operators submitting such logs for each well to a competitive disadvantage to other operators who are not providing this information. By defining the events that can trigger the Department's request, the Board will limit the disadvantageous effect on operators that submit Jogs. Additionally, the language "other standard industry Jogs" should be deleted from this section as there are no such additional Jogs by which operators select logging programs. Thus, this language appears to create unnecessary confusion. (1085)

Response: The Department does not agree with the recommended changes, as adequate protections are already in place and logging technology has evolved over time and will likely evolve in the future.

2329. Comment: 78.123(a)-(b) – Define recompletion of drilling to clarify if this includes restimulation or superfracking. (1098)

Response: For matters related to the definition of recompletion, please see response to comment 2318.

2330. Comment: Change data to read "including" not "such as" representative drill cuttings. (1098)

Response: For matters related to limitations regarding the type of data requested by the Department, please see response to comment 2318.

2331. Comment: 78.123(c) – Eliminate the word "not" in the final sentence so the interpretation of data is required to be filed and add "including significant changes in radioactivity readings, chemical composition, pressure, etc." (1098)

Response: For matters related to the submittal of data interpretations, please see response to comment 2318.

2332. Comment: 78.123(d) – Shorten the filing period to six months after the completion of the well – not "no more than 3 years!" An extension of the deadline for up to five years should be no more than one year from the date of well completion. (1098)

Response: For matters related to the changing of timeframes for the submittal of data, please see response to comment 2318.

2333. Comment: 78.123(d) – The proposed revisions to subsection (d) have removed the current three year protection for logs generated under subpart (a) without providing a timeframe in which such information should be submitted to DEP. Revisions to Subpart (d) also refer to "required" data that would only be "required" if requested in a timely manner by DEP under subparts (a) through (c).

Suggested Regulatory Language:

(a) If requested by the Department within 90 days of completion or recompletion of drilling, the well operator shall submit a copy of any electrical, radioactive or other standard industry logs which have been run. Any such data submitted under this subsection shall be held confidential by the Department for a period of three years following completion of drilling or deepening. (1153)

Response: For matters related to the timeframe for submittal, please see response to comment 2320.

The Department agrees that the language related to “requested” and “required” information was unclear and has updated the final-form rulemaking language for clarification.

2334. Comment: The Department should retain some discretion, but not unlimited discretion, under Section 78.123(d) to extend the deadline for submission of logs and other data from three to five years. The language of section 78.123(d) should be amended to read that the Department *for good cause may extend* the deadline up to five years upon request. (852a)

Response: The Department agrees with the comment and has updated the language to reflect this suggestion.

2335. Comment: **78.123(e)** – All logs should be submitted in a standard format designed by the Department to promote enforcement and use for statistical purposes [78.123(e)] (1098)

Response: For matters related to standardized reporting, please see response to comment 2318.

2336. Comment: 78.123(a) - The existing regulations provide that operators have 3 years following “completion of drilling or recompletion of a well” to submit logs and other data requested by the Department, effectively providing a 3 year period of confidentiality. The draft revision seems to require that log be submitted within 90 days of “completion or recompletion of drilling.” It seems reasonable that such data should be kept confidential for a period of time, particularly if requested by the operator. It also seems reasonable that the Department should have access to such information, upon request for use in environmental investigations or violations or to otherwise protect public health and safety. Suggested Language: (a) If requested by the Department within 90 calendar days after the completion of drilling or recompletion of drilling of a well, the well operator shall submit to the Department a copy of the electrical, radioactive or other standard industry logs run on the well. Any data submitted pursuant to paragraphs (a), (b) and (c) shall be held confidential by the Department for a period of three years following completion of drilling or deepening.(1174)

Response: For matters related to data confidentiality, please see response to comment 2320.

The Department agrees that access to data for the purposes of completing investigations or enforcement proceedings is important and has updated the language to reflect this suggestion.

2337. Comment: 78.123(d) - We recommend that the deadline extension shall be for entire period of the five years, rather than an additional five years. The Department needs to anticipate that wells will be flipped to other operators and with that, perhaps the details may not always transfer to the new owner. The longer the time passes; often records become lost or destroyed. Ideally, we want to see every operator comply with the three year filing. An additional two year extension shall be the exception to the rule, and therefore, we recommend the Department have a conservative view with any extensions that may be approved. With consideration of this modification we recommend this section for adoption as it is written. (660a)

Response: For matters related to the changing of timeframes for the submittal of data, please see response to comment 2318.

Subchapter G, Bonding Requirements

2338. Comment: The DEP's proposed regulations regarding bonding are inadequate, because they fail to ensure that well sites and impoundment sites will be finally restored before they are released from operators' bonds. (Subchapter G) (19, 21, 26, 55, 142, 165,192, 391, 843, 851, 946, 958, 1005)

Response: The revisions to the bonding subchapter were intended only to update citations and directly implement changes to the bonding structure legislated by the 2012 Oil and Gas Act and the 2012 amendments to the Fiscal Code. No additional substantive changes to bonding were proposed as part of the rulemaking, therefore this comment is beyond the scope of the rulemaking. Section 3225(a) of the 2012 Oil and Gas Act does grant the Environmental Quality Board the authority to adjust bond amounts every two years. That analysis is ongoing and such changes may be the subject of a future rulemaking. Such changes are not appropriate in a final rulemaking where the rulemaking did not contain any substantive bonding amount changes, however.

2339. Comment: Under Act 13, an operator can obtain one blanket bond in the amount of \$600,000 that covers all of an operator's well sites in the Commonwealth. Despite the extremely low amount of this bonding requirement (and of all of Act 13's bonding requirements), the bond is supposed to secure all of the operator's legal duties regarding water supply replacement, restoration and well-plugging. The DEP may not have the power to require higher amounts for bonds than the Act 13 amounts, but it can and should establish a process to ensure that operators are not released from liability for particular well sites until those sites are properly restored. The DEP's proposed revised bonding regulations (set forth in Subchapter G of Chapter 78) fail to do this. They condition release from liability only on the filing of a certificate of plugging. Release from liability should also be conditioned on the adequate final restoration of the well site after the last well on the site has been plugged. (26, 142, 192, 391, 843, 946, 958, 1000, 1005)

Response: Please see response to comment 2338.

2340. Comment: Bonding regulations (G) are inadequate. Although the DEP may be limited by Act 13's bonding requirements, regulations should ensure that operators are not released from liability for wells until the sites are fully restored.(153, 165, 1161)

Response: Please see response to comment 2338.

2341. Comment: Due to the risks posed by the fracking process, the oil and gas industry must be required to provide up front financial assurance commensurate with the potential for damage. By holding operators fully accountable, these strong financial assurance requirements can deter some of the riskiest practices and ensure that the industry, rather than the public, bears the brunt of the costs. Requiring such assurance up front – i.e., before drilling occurs – helps ensure that the public is not left holding the bag when the boom is gone and drilling operators have left the scene.

PennEnvironment believes that the blanket bonding amount proscribed by Act 13 of \$600,000, which covers all of an operators wells in the Commonwealth, is insufficient. Although the DEP does not have the authority to require higher amounts for bonds, it is within the DEP's power to establish a process that holds operators better accountable by not releasing them from liability for particular well sites until those sites are proven to be properly restored. Currently the regulations condition release from liability only on the filing of a certificate of plugging. Release from liability should also be conditioned on the adequate final restoration of the well site after the last well on the site has been plugged. In addition, the DEP could establish forfeiture rules for an operators' bond, in the event of repeat or egregious violations or accidents.

To the maximum extent possible under the law, the DEP should also require broad accountability for fracking-related costs. Drillers should be required to provide financial assurance to cover well plugging and reclamation, restoration of damage to the environment and natural resources, compensation to victims for damage to property and health, provision of alternative sources of drinking water in case of water contamination, and full restoration of damage to public infrastructure, such as roads. We are including link to our recent report prepared specifically on bonding requirements, Who Pays the Cost of Fracking? Weak Bonding Rules for Oil and Gas Drilling Leave the Public At Risk - [Who Pays the Cost of Fracking?](#), which includes specific recommendations on how to provide financial assurance that protects the public, and ensures that the legacy of pollution left by the coal industry in Pennsylvania is not repeated by the fracking industry. The DEP should evaluate the recommendations in the report, and update this section of the proposed regulations in order to better financially assure that the citizens of Pennsylvania will be held accountable for damage done by the industry, especially on public lands. (1161)

Response: Please see response to comment 2338.

2342. Comment: Since the current bonding of unconventional wells is inadequate to assure that these wells will be plugged once they are no longer producing profitably, the regulations should require plugging of the wells and proper restoration of drilling sites before releasing operators from liability. Surely we do not need to add these huge wells to our already existing inventory of unplugged wells in the state.(182)

Response: Please see response to comment 2338.

2343. Comment: I also wish to point out the unfair attention oil & gas operators receive in terms of state road bonding. If we so much as cause a hairline crack in a state road we have bonded, we are issued a letter from PennDOT that demands the road is repaired to its original condition. On roads where there is no weight restriction, however, the state has no one to pay for its roads and they are left to deteriorate. If transportation funding mirrored the expectations PennDOT holds oil & gas companies to, our road quality would no longer be the joke of the nation. (613)

Response: This rulemaking does not address state road bonding and the comment is beyond the scope of the rulemaking. Further, this issue is outside the scope of the Department's jurisdiction.

2344. Comment: While Act 13 of 2012 laid out the bonding framework, we are not comfortable with the overall bonding schedule. The bonding schedule as proposed is woefully optimistic and inadequate. We especially recommend that the Department take a closer review of the costs entailed with plugging unconventional wells. There is information available from the Cabot plugging and other dry holes that have been encountered in the Northern Tier Region.

We are concerned regarding a known trend that smaller operators may overtime obtain ownership of marginal unconventional wells and not have the funds to plug and will abandon wells. We are concerned about an unforeseen incident, such as so large in scope that it may conceivably result in a financial hardship that an operator abandons wells. Lacking adequate bonding, we are very concerned that we may add to our heritage of legacy wells, but with much larger problems being the footprint of unconventional wells are so much larger. When we hear the industry say we are going to be here for a very long time and we will not be abandoning wells, it is easy enough to view the state of Wyoming whom now is dealing with a recent play [1995-2004] boom that has left them already with 1,200 abandoned wells that need plugging. We need not be so self-assured by an industry that has a heritage of not always necessarily leaving an area better than when they arrived.

This only benefits industry of not funneling appropriate funds for bonding and potentially leaving further extended generations of drillers to pay increasing plugging fees for other's misdeeds, along with the Department's further inability to address an additional backlog of wells that may threaten public health and safety and the environment, especially our water resources.

With conventional operators, such as Penneco now drilling conventional lateral wells, it is imperative that the Department further review the conventional bonding schedule to ensure that it is adequate to address those types of abandon wells in the future.

Based on the information provided along with comparison to this bonding summary, it is clear that Act 13 of 2012 did not properly consider all relevant information with the calculation of the new bonding schedule. Some of this information, such as conventional horizontal wells and the state of Wyoming's recent boom and bust 1,200 abandoned wells were not even news items in 2012. In further consideration, that the bonding is a "financial incentive to ensure that the operator will adequately perform the drilling operations, address any water supply problems the drilling activity may cause, reclaim the well site, and properly plug the well upon abandonment," we do lack confidence that the present bonding schedule is sufficient to make those goals a reality. We strongly recommend that the Department consider our concerns regarding the bonding issue and revise these sections towards more stringent requirements. (660a)

Response: Please see response to comment 2338.

- 2345.** Comment: No drilling or fracking in Pennsylvania! Companies who apply for drilling or fracking permits must provide a bond 25 times the value of the projected output in order to apply for a permit. This money will be held as a down payment on 100% cleanup costs. If clean up exceeds the amount of the bond, the driller/fracker must cover every penny of the cost. This cost cannot be forgiven or reduced by any government or regulatory agency. The EQB must engage independent (no oil or gas ties) assessment organizations to monitor every step of the process and produce daily reports on every action and the daily quality of the all environmental factors. If the reports are found to be inaccurate both the reporting organization and the EQB will each be responsible for a fine 25 times the cost of all remedial actions.

No more lying about the processes, about the risks, about the damage, about the costs, about the health hazards, and no more weaseling out of responsibility for any and all negative results. (782)

Response: Please see response to comment 2338.

- 2346.** Comment: Under Act 13, an operator can obtain a single blanket bond in the amount of \$600,000 that covers all of their well sites in the Commonwealth. Though DEP cannot require higher bonding, something the Commonwealth needs to revisit, bonding is designed to secure all of the operator's legal duties for potential water supply replacement, for site restoration and for well-plugging. DEP should establish a process that ensures operators are not released from liability for well sites until those sites are properly restored.

The proposed revised bonding regulations in Subchapter G of Chapter 78 do not do this. Release from liability is conditioned only by filing of a certificate of plugging. Release from liability should also be conditioned on the adequate final restoration of the well site after the last well on the site has been plugged. Based on a presentation arranged by the Sullivan County Energy Task Force in the winter of 2012 on well casing cementing and well plugging, it appears to me the Commonwealth also needs to re-visit well bonding requirements to insure adequate funds are placed in trust for investment so as to insure money is available for future generations to re-plug

wells in distant eras when cementing has deteriorated to the point where re-plugging becomes necessary.

As described to us that day in Laporte by a cementing company professional, much like a gravesite in a cemetery, perpetual care will be required over many centuries for plugged wells. A thoughtfully designed perpetual care fund would probably not be a great expense to operators and its available investment capital could be lent to operators specifically for environmental upgrades that rational economic choice may put on the back burner but that would benefit the environmental quality of the Commonwealth while helping the operators bottom line. For instance gas fired mobile compressors at the well site for fracking, conversion of company vehicles to run on NG or “green completion” systems. Or loaned to citizens for energy efficiency or conservation projects that would provide a rate of return adequate to grow the fund. (846,1109)

Response: Please see response to comment 2338.

2347. Comment: To prevent taxpayers from paying the costs of natural gas development, adequate bonding requirements are essential. The following recommendations are provided:

Increase bond amounts well beyond the 2500 per well or 25,000 for a blanket permit [78.303(e)(1)] and [78.303(e)(2)]. Adopt a scale consistent with Michigan that starts at \$10,000 per well and \$100,000 for a blanket permit. Incremental increases should correlate with increasing depth. Provisions should be made for review of additional bonding costs at set time intervals as based on updates, projected costs, the number and length of horizontal bores, superfracking, and other technological advances.

Require letters of credit from operators not exceed the fair market value of all their assets. Enforce this by shutting down operations if cash collateral is not forthcoming within 30 calendar days. [78.306(b)]

Eliminate and/or limit phased deposits of collateral to small, private operators that are not subsidiaries of large corporations [78.309(a)]. The amounts specified are inadequate and need to reflect the projected costs of potential consequences.

Eliminate phased deposits of collateral for individuals as amounts of \$500 per well are insignificant and serve to prompt reckless development. [78.309(b)].

Protect tax payers by limiting replacement of existing bonds so that transfer and accrued liability do not obfuscate real risks and actual costs [78.310(a)] (906)

Response: Please see response to comment 2338.

2348. Comment: Increase well bonding amounts from \$2,500 per well to \$250,000 per well and ensure that these bonds also work to prevent orphaned wells with no one left responsible for plugging them. (901,939)

Response: Please see response to comment 2338.

2349. Comment: We realize the bonding revision was established by Act 13. However, based on the recent development in the State of Wyoming with a new inventory of abandoned wells [1,200] and considering the magnitude of the BP Gulf spill, we are concerned the present schedule is inadequate.

BP took a big financial hit with that incident, how is Pennsylvania protected in the event an incident of a large magnitude such as the BP spill, especially the operator is too small to bear it? (1035)

Response: Please see response to comment 2338.

2350. Comment: We support the PADEP's collection of bonds and other forms of financial security before issuing well permits. Bonds and other forms of financial assurance require potential polluters to demonstrate—before the fact—that there is sufficient funding to correct and compensate for property, health, and natural resource damages and to fund resource reclamation obligations. However, we are concerned that the amount and type of financial assurance required by § 3225 of the Act is insufficient to meet the stated purpose of § 3225 of the Act. We recommend the EQB propose legislative amendments to § 3225 of the Act to make improvements in the amount and type of financial assurance required.

We are concerned that the bond amount collected is based solely on the cost to plug and abandon a well. This is inconsistent with § 3225(a)(1) of the Act's stated intent to provide funds to cover all drilling, water supply replacement, restoration and plugging requirements. If the stated purpose of requiring a bond is to provide funds for damage that may arise during drilling operations, to correct adverse impacts to water supplies (including replacement), and to provide funds to restore the well site or plug the well, then the amount of the bond should include all these potential liabilities, not just the cost of plugging the well.

It is our position that operators should be required to hold bonds and/or pollution insurance in an amount sufficient to cover all drilling, water supply replacement, restoration and plugging requirements, and that operators that are unable to obtain a bond due to an inability to demonstrate sufficient financial resources should not be allowed to operate in Pennsylvania.

During the last revision to § 3225(a)(1)(i), the bond amount of \$2,500 per well was increased to \$4,000 per well (less than 6000' deep) and \$10,000 per well (6,000' or deeper). While, the bond increase was an improvement, these amounts are still well below the actual cost to plug and abandon a well and do not provide funds to address the other costs the Act proposes to cover. By comparison, Colorado uses a substantially higher cost estimate of \$10,000 for wells less than 3,000' deep and \$20,000 for wells 3,000' deep or greater, and requires several other types of financial assurance to address to correct and compensate for property, health, and natural resource damages and to fund resource reclamation obligations (Colo. Oil & Gas Comm'n, 700. Series Rules, Financial Assurance, Rule 706). California requires a bond of \$25,000 for each well up to 10,000' deep, and \$40,000 for wells over 10,000' deep, plus a bond of \$5,000 for each idle well more than 5 years old (Calif. Dep't of Conserv., Div. of Oil, Gas, and Geothermal Res., Bond Information (Feb. 2014)).

We recommend that the EQB gather information on the actual current cost to plug and abandon wells in Pennsylvania. Based on that information, we request that the EQB propose legislative changes to increase the amount of financial security to plug and abandon both new and existing wells.

We also recommend that the EQB gather information on the actual current cost to correct and compensate for property, health, and natural resource damages and to fund resource reclamation obligations. Based on that information, the EQB should propose legislative changes to increase the amount of financial security required.

During the last revision to § 3225 the maximum statewide blanket bond of \$25,000 for a company drilling wells less than 6,000' deep was increased to \$35,000 (for 1-50 wells) and to \$250,000 (more than 250 wells). The maximum statewide blanket bond for wells 6,000' and deeper was raised to \$140,000 (for 1-25 wells) and to \$600,000 (more than 150 wells). While increases in the maximum statewide blanket bond amounts are an improvement over the prior cap of \$25,000 per operator, the statewide blanket bond will be insufficient to plug all the wells owned by a single operator (existing and new) and address other damages if an operator were to go bankrupt. By comparison, California requires a statewide blanket bond of \$2,000,000 (Calif. Dep't of Conserv. Div. of Oil, Gas, and Geothermal Resources, Bond Information (Feb. 2014)) and Colorado requires an additional \$10,000 to \$20,000 per idle well over and above its statewide blanket financial assurance requirement to ensure there are sufficient funds to address both new wells and the backlog of idle wells that still have yet to be plugged (Colo. Oil & Gas Comm'n, 700. Series Rules, Financial Assurance, Rule 707).

For example, the EQB estimates a cost of \$10,000 per well to plug and abandon a well 6,000' or deeper. If the operator has 150 wells, the total cost to actually complete the plugging work would be \$1,500,000. Therefore, the proposed maximum blanket bond cap of \$600,000 falls \$900,000 short to complete the plugging and abandonment work alone; there would be no funds left to address other damages or restoration required under the Act. If the operator has more than 150 wells or if adverse impacts to water supplies (including replacement), or restoration the well site must be completed, the funding shortfall grows.

The statewide blanket bond reduces the per well bond amount by offering a reduced rate based for operators with large numbers of wells. For example, if an operator in Pennsylvania just has one well (6,000' or deeper), it must have a \$10,000 bond for that well. However if an operator in Pennsylvania has more than 150 wells (6,000' or deeper), it is only required to have a \$600,000 maximum statewide blanket bond, which equates to \$4,000 per well. If the cost to plug a well is actually \$10,000 (as currently estimated by Pennsylvania), then there will be an actual shortfall of \$6,000 per well if an operator goes bankrupt. This means that if an operator goes bankrupt, and the bond must be used to plug all 150 wells (in this scenario) the bond would be \$900,000 short. The amount of the bond should be consistent with the actual cost. Discounts should not be given to operators with larger numbers of wells.

We oppose the bond alternatives provided in § 3225(d) that afford substantial leniency to operators that are unable to obtain a bond due to an inability to demonstrate sufficient financial resources. The bond alternatives provided in § 3225(d) allow operators that are not able to obtain a bond to pay a fraction of the bond cost over a period of time. Operators that are unable to obtain a bond due to an inability to demonstrate sufficient financial resources should not be granted a permit to drill oil and gas wells in Pennsylvania. All applicants should be required to meet the same financial standards, without waiver.

We are concerned that § 3225 of the Act includes no financial responsibility requirement to address general pollution liability, surface facilities, and seismic operations (in addition to well plugging and abandonment costs) for oil and gas operators. By comparison, California, Ohio Colorado, and Alaska require substantially more financial assurance for oil and gas operators in total.

To provide the best protection, we recommend that the EQB propose legislative changes to § 3225 of the Act that consider California, Ohio, Colorado, and Alaska financial assurance requirements explained below.

□ Colorado requires financial assurance to: protect surface owners that are not party to a lease (Rule 703); reclaim centralized exploration and production waste management facilities (Rule 704); conduct seismic operations (Rule 705); plug and abandon new wells (Rule 706); plug and abandon existing inactive wells (Rule 707); provide \$1,000,000 in general liability insurance (Rule 708); and, address damages that could occur from natural gas facilities (Rule 711) and injection wells (Rule 712). (Colo. Oil & Gas Comm'n, 700. Series Rules, Financial Assurance).

Rule 703 requires operators to provide financial assurance to the Commission, prior to commencing any operations with heavy equipment, to protect surface owners who are not parties to a lease, surface use or other relevant agreement with the operator from unreasonable crop loss or land damage caused by such operations. Financial assurance of \$2,000 per well for non-irrigated land, or \$5,000 per well for irrigated land, or a statewide, blanket financial assurance of \$25,000 is required.

Rule 704 requires operators of centralized exploration and production waste management facilities to provide the Commission financial assurance in an amount equal to the estimated cost necessary to ensure the proper reclamation, closure, and abandonment of such facility.

Rule 705 requires operators conducting seismic operations (ahead of drilling to determine where to drill) to provide a statewide blanket of financial assurance, in the amount of \$25,000, to ensure proper plugging and abandonment of any shot holes and any required surface reclamation.

Rule 706 requires operators to provide a financial assurance for each new well permitted to provide funding to plug and abandon that well in the future. The amount of the bond is \$10,000 for wells less than 3,000' deep and \$20,000 for wells 3,000' deep or greater. Alternatively, a statewide blanket financial assurance of \$60,000 (for 1-100 wells) or \$100,000 (for more than 100) wells is required.

Rule 707 provides funding for inactive wells. The operator must provide an additional \$10,000 for wells less than 3,000' deep and \$20,000 for wells 3,000' deep or greater for each inactive well if the funding provided in the statewide blanket financial assurance under rule 706 is insufficient to cover the total number of wells owned/operated.

Rule 708 requires the operator to provide \$1,000,000 in general liability insurance.

Rule 711 requires natural gas gathering, natural gas processing, and underground natural gas storage facilities to provide \$50,000 for statewide blanket of financial assurance.

Rule 712 requires Class II Commercial Underground Injection Control (UIC) wells to provide \$50,000 for statewide blanket of financial assurance for each injection facility.

□ California requires a bond of \$25,000 for each well up to 10,000' deep, and \$40,000 for wells over 10,000' deep, plus a bond of \$5,000 for each idle well more than 5 years old. (Calif. Dep't of Conserv., Div. of Oil, Gas, and Geothermal Res., Bond Information (Feb. 2014)). Alternatively, an operator can obtain a blanket bond of \$200,000 for 1-50 onshore wells (\$5,000 for each idle well more than 5 years old), or \$400,000 for more than 50 onshore wells (\$5,000 for each idle well more than 5 years old), or a blanket bond of \$2,000,000 that covers all onshore wells including idle wells. The bond funds are available to California if an operator fails to plug and a plug and abandon a well; but it can also be forfeited for other reasons, such as a failure to clean up a spill or screen a sump associated with a well.

□ Ohio requires a well bond and insurance. A surety bond for single well is \$5,000, \$10,000 for two wells, or a blanket bond for all wells of \$15,000. (Ohio Rev. Code (ORC) ch. 1509 ; Oh. Admin. Code (OAC) § 1501:9-1-03 (A)). Additionally, liability and bodily injury coverage not less than \$1,000,000 must be maintained until all wells are plugged or transferred to another insured owner. In urban areas, all well owners shall obtain liability insurance of not less than \$3,000,000 for bodily injury and property damage coverage. (ORC § 1509.07).

□ Alaska requires a \$100,000 bond for each well, or a blanket bond of \$200,000 for all wells in the state. An applicant can obtain approval for a bond less than \$100,000 if it can show that the cost of well abandonment and location clearance will be less than \$100,000. (10120 AAC § 25.025(b). A bond and, if required, security must be in the amount of not less than \$100,000 to cover a single well or not less than \$200,000 for a blanket bond covering all of the operator's wells in the state, except that the commission will allow an amount less than \$100,000 to cover a single well if the operator demonstrates to the commission's satisfaction in the application for a Permit to Drill (Form 10-401) that the cost of well abandonment and location clearance will be less than \$100,000). Additionally, Alaska requires financial responsibility of: \$1,670,000 per incident for onshore oil exploration and production facilities less than 2,500 barrels of oil per day; \$8,360,000 for oil production facilities 2,500 to less than 5,000 barrels of oil per day; \$16,720,000 for oil production facilities 5,000 to less than 10,000 barrels of oil per day; and \$33,440,000 for oil production facilities more than 10,000 barrels of oil per day. (18 AAC § 75.235).

Section 3225(a)(1) of the Act requires bonds for wells drilled on or before April 18, 1985:

A bond for a well in existence on April 18, 1985, shall be payable to the Commonwealth and conditioned upon the operator's faithful performance of all water supply replacement, restoration and plugging requirements of this chapter.

The proposed regulations do not require a bond for wells drilled before April 18, 1985. Therefore, the proposed regulations are inconsistent with the revised statute. Section 3225(a)(1) of the Act requires new well bonds to cover all drilling, water supply replacement, restoration and plugging requirements, and wells drilled on or before April 18, 1985 to cover water supply replacement, restoration, and plugging requirements. This key component of the statute is not reflected in the regulations. We recommend that the purpose for the bonds be clearly stated in the regulation.

We are also concerned that § 3225(a)(3) and § 3225(b) has an internal inconsistency about when liability under the bond is released. Section 3225(a)(3) states that liability under the bond continues until one year after the well is plugged and the plugging certificate is filed with the PADEP. Section 3225(b) states that liability under the bond is not released until the requirements of § 3225(a) are met, which includes more than just plugging the well. The bond should not be released until plugging, water supply replacement and restoration obligations are all complete. We believe the more stringent of the two should be codified in the regulations. (1143)

Response: Please see response to comment 2338. The Department notes that the required bonds are performance bonds; that is, they become payable to the Department upon the failure of the operator to perform water supply replacement, restoration and plugging. The amount of the bond required, however, is to "reflect the projected costs to the Commonwealth of plugging the well." 58 P.S. § 3225(a)(1).

The Department also notes that the bonding requirements for conventional wells (including, by definition, all wells drilled prior to April 18, 1985) were amended by the General Assembly after the passage of the 2012 Oil and Gas Act. Act 87 of 2012 amended the conventional well

bonding requirements by amending the Fiscal Code, rather than the 2012 Oil and Gas Act. Act 87 stated:

SECTION 1606-E. Conventional oil and gas well bonding.

(A) Requirement.--Notwithstanding 58 Pa.C.S. § 3225(a)(1) (relating to bonding), the bond amount for conventional oil or gas wells shall be \$2,500 per well or a blanket bond of \$25,000. The Environmental Quality Board shall undertake a review of the existing bond requirements for conventional oil and gas wells.

(B) Nothing in this section shall be construed to alter or repeal Section 1934-A of the Act of April 9, 1929 (P.L.177, NO.175), known as the Administrative Code of 1929.

Section 1934-A was added to the Administrative Code by Act 57 of 1997, which was an omnibus amendment to the Administrative Code, and not a specific amendment of the 1984 Oil and Gas Act. The section states:

No bond or bond substitute shall be required for any well drilled prior to April 18, 1985, where such well would have otherwise been subject to the bonding requirements of section 215 or 603.1 of the act of December 19, 1984 (P.L. 1140, No. 223), known as the “Oil and Gas Act.

Therefore, the final-form rulemaking accurately reflects the state of bonding for conventional wells, including those drilled prior to April 18, 1985.

2351. Comment: To prevent taxpayers from paying the costs of natural gas development, adequate bonding requirements are essential (Subchapter G). The following recommendations are provided:

- Increase bond amounts well beyond the 2500 per well or 25,000 for a blanket permit [78.303 (e) (1)] and [78.303 (e) (2)]. Adopt a scale consistent with Michigan that starts at \$10,000 per well and \$100,000 for a blanket permit. Incremental increases should correlate with increasing depth. Provisions should be made for review of additional bonding costs at set time intervals as based on updated, projected costs, the number and length of horizontal bores, superfracking, and other technological advances.
- Require letters of credit from operators that do not exceed the fair market value of all their assets. Enforce this by shutting down operations if cash collateral is not forthcoming within 30 calendar days [78.306 (b)].
- Eliminate and/or limit phased deposits of collateral to small, private operators that are not subsidiaries of large corporations [78.309 (a)]. The amounts specified are inadequate and need to reflect the projected costs of potential consequences.
- Eliminate phased deposits of collateral for individuals as amounts of \$500 per well are insignificant and serve to prompt reckless development [78.309 (b)].
- And protect taxpayers by limiting replacement of existing bonds so that transfers and accrued liability do not obfuscate real risks and actual costs [78.310 (a)'] (1098)

Response: Please see response to comment 2338.

2352. Comment: DEP must establish adequate bonding to address abandoned wells and future environmental problems. DEP must also prohibit the application of any water or solid waste to any Commonwealth soil. (1223)

Response: Please see response to comment 2336.

§ 78.402 Inspections by the gas storage operator

2353. Comment: 78.402 (inspections by the gas storage operator)
Subsection (c) requires the gas storage operator to record evidence of leakage or other conditions that would pose a threat of harm to the environment or public health and welfare. The Department should use this opportunity to amend this subdivision by adding a requirement that operators report any potentially harmful condition to the Department within 24 hours of observation. (852a)

Response: The Department acknowledges the comment and will be considering modifications to the gas storage regulations in future rulemakings.

§ 78.403 Gas storage well integrity testing

2354. Comment: Updating citation in sections dealing with Gas storage well integrity testing is useful. (906,1098)

Response: The Department acknowledges the comment.

§ 78.404 Maximum storage pressure

2355. Comment: Updating citation in sections dealing with maximum storage pressure is useful. (906,1098)

Response: The Department acknowledges the comment.

§ 78.902 Policy

2356. Comment: The final statement regarding policy is problematic. Commentator understands that policies cannot create a duty or obligation to conduct a minimum or maximum number of inspections per year or during a certain period of time. (906,1098)

Response: The Department acknowledges the comment. This Statement of Policy has been deleted from Chapter 78 and inspections and oversight are now addressed in the Department's policy document "*Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations*," No. 802-4000-001, January 17, 2015.

General Comments

2357. Comment: Thanks for taking public comments on the state's oil and gas regulations, known as Chapter 78 of the Pennsylvania Code. I want to make sure that the new regulations protect the air, water, and health of everyone in PA. (36, 200 - 385)

Response: The Department thanks the commentator for their support on this rulemaking.

2358. Comment: I strongly support legislation that will protect the land, air and water for the citizens of Pennsylvania. At no time should our lives and the lives of the citizens of tomorrow be put in jeopardy by big business who is concerned only with making a profit at the expense of our health. (43)

Response: The Department thanks the commentator for their support of this rulemaking.

2359. Comment: American Refining Group, Inc., in Bradford, McKean County, Pa., submits the following comments regarding proposed new regulations on the production of oil and gas in the Commonwealth. As the only Penn Grade crude refinery in the Commonwealth, we urge the Environmental Quality Board and the PA DEP to work with the industry to achieve a reasonable and common-sense approach to protecting the Commonwealth's natural resources through regulatory compliance. (85)

Response: The Department acknowledges this comment.

2360. Comment: It is well-known that The State Review of Oil & Natural Gas Environmental Regulations (STRONGER), a national non-profit organization charged with assessing states' oil and gas regulations, reviewed Pennsylvania's oil and gas regulatory program in May 2013 at DEP's request. STRONGER released its report in September 2013 and found that Pennsylvania's program "is, over all, well-managed, professional and meeting its program objectives." STRONGER lauded the DEP on many of its initiatives and regulations. WPX implores this Board to recognize STRONGER's assessment and credits the DEP for employing STRONGER to review our environmental regulations in light of the natural gas industry's operations and economic growth for all.

WPX Energy appreciates and respects the communities in which we operate and we are dedicated to protecting Pennsylvania's environment. We thank you for your efforts and desire to continually seek better and more efficient ways to regulate our industry and safeguard Pennsylvania's environment. (123, 638, 123a, 798, 123b, 883, 940, 638a)

Response: The Department thanks the commentator for their support of this rulemaking.

2361. Comment: Although wells have been hydraulically fractured for more than 60 years, thanks to industry innovation and technological advancements, shale formations across the country that were previously "stranded resources" are now productive due to the combination of horizontal drilling and hydraulic fracturing. Shale formations including the Marcellus have produced 1.4 trillion cubic feet of natural gas during the first 6 months of 2013, supporting national energy security. Pennsylvania's contribution in this success story is demonstrated by the fact that Pennsylvania supplied 8.8% of the nation's demand for natural gas in 2012. This renaissance has not taken place in a vacuum. All aspects of the oil and natural gas industry have been and continue to be highly regulated. Since the outset of increased activity in PA, DEP and other regulatory agencies have put into place additional regulatory requirements that reflect the technological changes that have taken place in the industry. Over the last several years, DEP has put into place more stringent regulations relating to well construction and casing. Act 9 of 2012 and the corresponding regulations already incorporated into Chapter 78; require emergency response safety measures at unconventional drill sites. Act 13 of 2012 provided for enhanced water protections, well setbacks and casing standards. Other regulatory measures include enhanced general permits for air and more stringent exemption criteria, discharge changes prohibiting municipal wastewater treatment plants from accepting oil and gas waste fluids, and increased recycling of produced water.

The State Review of Oil & Natural Gas Environmental Regulations (STRONGER}, a national

nonprofit organization charged with assessing states' oil and gas regulations, reviewed Pennsylvania's oil and gas regulatory program in May 2013 at the request of the DEP. STRONGER released their report in September 2013 finding that Pennsylvania's program "is, over all, well-managed, professional and meeting its program objectives." Key excerpts from the report include:

- The review team commends DEP for increasing its staff levels to address additional permitting, inspection and enforcement activities related to increased unconventional gas well development. Over the past four years, as unconventional gas well development has increased in Pennsylvania, the Office of Oil and Gas Management has increased its staff from 64 to 202 employees.

- DEP is commended for initiating a comprehensive evaluation of radiation levels specifically associated with unconventional gas development. This TENORM study is the first of its kind in the nation.

- DEP is commended for its hydraulic fracturing program. Standards for well casing and cementing require that the operator conduct those activities to control the well at all times; prevent migration of gas or other fluids into sources of fresh groundwater; and prevent pollution of fresh groundwater.

API-PA supports strong environmental safeguards and stewardship, and commends DEP on their regulatory oversight program; however, we do have concerns with several provisions contained in the proposed rulemaking that we plan to outline in detail in our formal written comments to the Department. In the interest of time, I will highlight some general comments that we have and also provide comments on some of the provisions contained in the proposed rulemaking that address pipelines and water management plans. (124, 124a, 861, 913, 861a, 913a)

Response: The Department acknowledges the comment.

2362. Comment: I am generally supportive of natural gas as a relatively clean energy resource in the transition to renewable energy sources. Now I am going to tell you, respectfully, I hope, how to do your job.

Fracking has brought an old human habit, and now American bad habit, into the consideration of natural gas as a resource for our good. This old habit is to take what one wants and leave the residue of that act for another day. All Native Americans have experienced the results of this. The plains buffalo, American eagles and the Schuylkill shad are among many creatures that have borne the brunt of this habit. Pennsylvania's heritage of defunct coal mines and dumps and injured waters also bears witness to this. Now fracking opens a new access to riches in the earth subject to the same human bad habit, to take with the least eye to later effect, which clouds the value of potentially clean natural gas.

The fracking industry is operating so far much as if in a recreation of the "untamed" west. For various political motives, which seem to be related to immediate electoral gratification, there has been little but a "go get it boys" atmosphere fostered by our state government. This is an industry with so much to gain and this is a state with so much to lose. From the industry there has been a minimum of self-regulation or self-monitoring, but a lot of commercial and lobbying promotion. From the state there has been belated movement toward demand for clarity or accountability in the taking of the resource. What you are now doing at the DEP is critical to altering this situation. Thank you for assuming the job before you and thank you for helping us all to curb bad habits which can haunt us. (114)

Response: The Department thanks the commentator for their support of this rulemaking.

2363. Comment: Passing the proposed changes in environmental regulation at oil and gas sites is a good policy and these regulations should be passed. Every effort needs to be acted upon to monitor this drilling activity. Please employ trained qualified inspectors to enforce these regulations. (191)

Response: The Department thanks the commentator for their support of this rulemaking.

2364. Comment: We commend you for this effort to update the regulations of the oil and gas industry in Pennsylvania. We further encourage you to write into this document that you will revisit the regulations every three years so that Pennsylvania citizens can be insured that the state regulations are keeping up with the fast changing technologies of unconventional gas drilling. (566)

Response: The Department thanks the commentator for their support of this rulemaking. The DEP will continue to study the efficacy of its regulatory programs and make improvements to the rules as necessary.

2365. Comment: As property owners with both oil and gas wells on our farm we support new and improved regulations of this industry. We believe that the protection of PA natural resources is key to the well-being and prosperity of PA residents both now and for future generations. (581)

Response: The Department thanks the commentator for their support of this rulemaking.

2366. Comment: We are not supporters of the Gas and oil industry in PA and believe they should have more regulations. Without regulations we believe they will run wild. In short the only thing between them and the environment isn't a conscience it's you!!! Please continue your excellent work and advance regulation to protect the environment we share in PA. Due to your hard work and commitment we can maintain the standards of PA for many generations to come. The environment we leave for future generations will be here long after the "Quick" money is gone. (501)

Response: The Department thanks the commentator for their support of this rulemaking.

2367. Comment: Support the 25 PA. CODE CH. 78 Environmental Protection Performance Standards at Oil and Gas Well Sites (744)

Response: The Department thanks the commentator for their support of this rulemaking.

2368. Comment: Live Well Luzerne County envisions that wellness will be supported by a safe, healthy environment in our county. Our mission is to empower healthier lives through education, coalition building, advocacy, and research.

Although there are currently no active hydraulically fractured wells in Luzerne County, we still have concerns about the effect of this process on our local air and water quality as well as for our neighboring counties with active sites. How will this process affect the entire state? There are impacts of hydraulic fracturing statewide in the transport of gas and waste materials. We strongly support the new provisions for unconventional gas wells regarding identifying impacts to public resources, standards for freshwater and wastewater impoundments, well site containment systems, wastewater processing and water management plans. (604)

Response: The Department thanks the commentator for their support of this rulemaking.

2369. Comment: While these amendments proposed by DEP are a first step toward more responsible development of these resources, as citizens of Pennsylvania and members of Live Well Luzerne, we

believe that continued surveillance of the physical environment and population health are important as these natural gas extraction industries develop in the Commonwealth. Additional funds are needed to better research and communicate findings on the impact of this activity in Pennsylvania on human health, as well as the environment and to mitigate potential unexpected events.

In summary, we appreciate the opportunity to comment on this issue. Like any new technology or development, hydraulic fracturing brings both potential for growth and risk. Any extractive industry both improve lives by making mineral resources available for industrial use, but also can have negative impacts on the physical environment and on population health. (604)

Response: The Department acknowledges the comment.

2370. Comment: We encourage EQB to continue its efforts to strike the appropriate balance of protecting the health, safety, environment and property of Pennsylvania citizens while allowing for the optimal development of the oil and gas industry in Pennsylvania. Input from legislators and interested parties should continue to be included as EQB moves forward with this proposal. We also ask EQB to continue to consult with the Oil and Gas Technical Advisory Board (TAB), created by Act 13, as it develops the final-form regulation. In addition, we recommend EQB issue an Advance Notice of Final Rulemaking to help facilitate the reaching of consensus on the issues this proposal presents. (1099)

Response: The Department agrees. An Advanced Notice of Final Rulemaking was published in the *Pennsylvania Bulletin* on April 4, 2015 (45 Pa.B. 1615) with a 45-day public comment period and three public hearings. The Oil and Gas Technical Advisory Board (TAB) has been involved in all stages of this rulemaking, and the Conventional Oil and Gas Advisory Committee (COGAC) has been involved on the conventional regulations since its formation in March 2015.

2371. Comment: All such regulations should apply not only to unconventional drillers but to conventional drillers as well. Since more and more conventional or shallow well drillers are using hydraulic fracturing methods, it is imperative that they also be included in all DEP proposed regulations. (922)

Response: See response to comment 2627.

2372. Comment: Any new regulations must apply to conventional and unconventional wells. Due to the topography of much of PA that overlies the Marcellus, water tables fluctuate significantly. The proposed regulations must recognize this fact, and include the seasonal high water table as a component of the regional groundwater table. (1078)

Response: See response to comment 2627.

2373. Comment: I would first like to commend you all on the excellent job you do regulating the oil and gas industry in Pennsylvania and specifically in our County. As a result of your efforts, our region has remained a tourist destination and is just as beautiful as ever. However, unlike six years ago, our towns are now prospering economically too, giving our area the best of both worlds. I believe there is a responsible way to develop the Marcellus Shale conscientiously and for Pennsylvania to aid America in becoming an energy independent nation. The DEP has been doing a wonderful job to encourage economic growth while maintaining our beautiful landscape. (1092)

Response: The Department acknowledges the comment.

2374. Comment: I'm glad the DEP has decided to strengthen the environmental protections in Chapter 78 of the PA Code (under the Oil and Gas act) but don't think that the proposed regulations go far enough to ensure short- and long-term protection of our health and environment of the people of Pennsylvania.

Thanks for all you are able to do to protect the people of Pennsylvania and their natural environment. I believe that through government regulation we will get not only an improved environment but also a more sustained (i.e. longer lasting) development of our natural gas resources that will yield, in the long-run, much greater economic development for the people of Pennsylvania, and that this system will reward those in the drilling industry who are already environmentally responsible and doing the right thing now. (1033)

Response: The Department acknowledges the comment.

2375. Comment: Our advocacy is based on our statewide positions on natural gas extraction from Marcellus Shale and pipelines. The League of Women Voters of PA supports requiring the use of best practices, comprehensive regulation, and adequate staffing across government agencies to provide the maximum protection of public health and the environment in all natural gas operations. We also act based on the Pennsylvania Constitution that provides each of us the right to clean air, pure water, and the preservation of our natural resources. (941, 980)

Response: The Department acknowledges the comment.

2376. Comment: We've been anxiously waiting many years for the regulations to be enacted. Some of these provisions are policies that are around four years old, while others are based in Act 13 almost two years old. Thus, we ask that with attentive consideration given to the information provided during the comment period that these regulations move forward without further delay. Thank you for the opportunity to submit comments on this most important rulemaking which directly affects our region. (660a)

Commenter also submitted numerous attachments available in Appendix 3.

Response: The Department acknowledges the comment.

2377. Comment: I have been observing and experiencing first-hand the Marcellus shale development over the past four years. Within a two mile radius of my home I have six active well pads, with approximately sixteen spudded wells, the Hirkey Compressor Station, and one freshwater impoundment. The closest well is within 3500' of my house. I want you to know that I actually feel, hear, see, and breathe Marcellus development twenty- four hours of every day.

I am here to state my support for the quick passage of the revisions to the Chapter 78 Oil and Gas Wells Code. I have read reports on both industry and environmental comments from hearings in other parts of the state. Industry states the proposed regulations kill jobs. Environmentalists state the regulations are not strong enough. As I see it, these regulations will help create jobs in the local environmental and engineering firms that currently exist in Pennsylvania. The Industry will not stop drilling because of the Regulations- they are not prohibitive, so their argument about job loss is unfounded, in my opinion. On the other side, the Environmentalists want strict regulations that may impede Industry. The proposed Regulations are much better than what we have currently- so it is a benefit to the environment to enact these Regulations. We need compromise in the middle- which is what I think these proposed regulations represent. It is my understanding that both Industry and

Environmental groups worked on roundtable subcommittee discussions about these regulations over this past year. That was the time to debate and fight it out.

I wanted to use my five minutes this evening to express how critical it is to me as a resident leased landowner in the development area to have these regulations in place to better protect the health, safety, and welfare of my community. I live in a county and township that has no zoning or protections for landowners on any of these issues. I feel regulations are extremely important when you have an industry that has a large amount of operators – seventy-three – according to the DEP Executive Summary Document. Speaking for residents of the Shale region, we need action now and I urge no further delay. (870)

Response: The Department acknowledges the comment.

2378. Comment: Once again it appears that Pennsylvania will come to the rescue of its residents and the whole Nation by working toward the energy independence that we have hoping to achieve all these past years. We as Pennsylvanians should consider ourselves lucky to have a governor in Tom Corbett with a vision and the desire to achieve the goal of energy independence and at the same time bring economic prosperity to our Commonwealth. I would also like to acknowledge the intensive work that the Department of Environmental Protection has applied to the permitting process and field oversight. The Department mission statement say it all:

The Department of Environmental Protection's mission is to protect Pennsylvania's air, land and water from pollution and to provide for the health and safety of its citizens through a cleaner environment.

We reside in a State that values individual and property rights and stopping the exploration of minerals and other natural resources is not an easy task if impossible however due to the fact that the Pennsylvania Constitution guarantees the people the right to clean air, pure water then it is imperative that regulations are enacted to assure that the mission of DEP becomes a reality. (860)

Response: The Department acknowledges the comment.

2379. I am writing today in reference to Notice of Proposed Rulemaking, Proposed Amendments to Pa. Code § 78 (Relating to Oil and Gas Wells). I urge you not to enact any regulations that would hurt natural gas production in Pennsylvania. As member of Pennsylvania's energy sector, I know first hand that our industry is committed to safety and environmental protection. Improving technologies and practices have made energy development safer, while also increasing production. As you know, Pennsylvania's natural gas production has increased dramatically over the last five years. Our state has gone from being an importer of natural gas to a net exporter. The natural gas industry is supporting hundreds of thousands of Pennsylvania jobs. Not only is natural gas production helping Pennsylvania businesses and workers, but it's also helping provide revenue for public services. Since 2008, the natural gas industry has paid over \$1.7 billion in taxes. Through the Act 13 impact fee program, over \$400 million in revenue has been provided to local communities. These benefits can continue for decades to come if the Pennsylvania Environmental Quality Board takes a balanced approach to revising regulations that provides safeguards without imposing costly, unnecessary regulations on energy development. Please keep this in mind as you revise the state's oil and gas regulations. Thank you. (7236 - 7520)

Response: See response to comment 2456.

2380. Comment: Fracking regulations are currently loose and need to be strengthened in order to better protect the environment. (51a, 54)

Response: The Department acknowledges the comment.

2381. Comment: Clean Water Action welcomes the Department of Environmental Protection's decision to update Chapter 78 of the Oil and Gas Act and views it as a potential step toward better protecting our health, safety and environment. However, DEP needs to strengthen many of the vital regulations being proposed. (886)

Response: The Department acknowledges the comment. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. However, the commenter did not provide suggestions as to how the regulations could be strengthened.

2382. Comment: Establish mandatory regulations using the best technology known to eliminate pollution from all natural gas related facilities. (13, 976, 976a)

Response: The Department acknowledges the comment. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The Department guidelines and recommendations include the best known technologies and Best Management Practices available to control potential pollution and the Department is accepts proposals to review new and improved Best Management Practices to better control potential pollution.

2383. Comment: These shortcomings of the new regulations for oil and gas development are common sense. The absence of such regulations constitutes neglect and – in many cases – completes dereliction of the DEPs legal obligations. To be effective, regulations need to be both comprehensive and enforceable, and the proposed regulations do not accomplish this. I hope the DEP will take these comments into consideration when revising these regulations. (26)

Response: The Department believes the revisions to Chapters 78 and 78a are comprehensive, enforceable, are consistent with applicable statutes and provide appropriate protections for public health and safety and the environment. The commentator did not suggest how the regulations could be “comprehensive and enforceable,” therefore; the Department is not able to comment specifically regarding how comprehensive and enforceable the rulemaking is with regard to this comment specifically.

2384. Comment: Our environment is most important to every living being on this planet. Please review the current environmental regulations and make certain that they clearly and decisively make our health the more important issue over the funding of companies and political campaigns. (32)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2385. Comment: I am very concerned because the proposed changes do not go far enough to control the damage our communities and environment are experiencing as the gas and oil industry develops its wells, frack pits, impoundments, pipelines, and other operations across the entire state. I support the tighter controls you are proposing in some areas, but they are too few and simply do not go far enough to stem the damage going forward. (5936-6089)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2386. Comment: As residents who are served by the Municipal Water Authority of Westmoreland County, we urge the EQB to amend the proposed regulations to better protect water resources, and to better regulate the disposal and storage of drilling materials and waste. Marcellus drilling activities have been permitted at the Beaver Run Reservoir, a reservoir that supplies water to approximately 150,000 customers. In the last year alone, Consol Energy's CNX Gas has been cited for a) failing to construct pits and tanks "with sufficient capacity to contain polluttional substances," b) failing to "properly control or dispose of industrial or residual waste to prevent pollution of the waters of the Commonwealth," and c) allowing "stream discharge of industrial waste." In July of 2012, a similar release involving the "discharge of polluttional material" occurred. See, <http://www.portal.state.pa.usgas/reports/>. The comments submitted by the Westmoreland Marcellus Citizens' Group and Representative Mundy are necessary to protect the health and welfare of citizens of Pennsylvania. Indeed, to date over 1600 residents of Pennsylvania have entered their names onto the List of the Harmed, avowing that after drilling operations began in their area, they became ill. (5925-5935)

Response: The Department acknowledges the comment. The Department believes The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2387. Comment: It is very important that the public be very strongly protected from any contamination caused by oil or gas drilling, pumping, fracking or other means of extraction and/or transport of fossil fuels. The standards should include heavy fines and other penalties for even small leakages or contamination. Our health and safety should have first and greatest priority; enough to ensure that the drillers, frackers, etc. pay very serious and thorough attention and effort to ensure that no leaks, etc. do occur. (33)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. Reporting and remediation of spills and releases are addressed in Sections 78.66 and 78a.66.

2388. Comment: Make it more difficult for oil and gas companies to drill and extract fuels. The government must scrutinize their process more carefully to prevent pollution, put a greater burden on these companies to prove their diligent behavior on behalf of the environment. (48)

Response: The Department acknowledges the comment. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The Department may not impose unnecessarily burdensome regulations on the oil and gas industry.

2389. Comment: The proposed protections are so weak and ineffective for the Commonwealth as to be laughable. There are virtually no protections incorporated for private domestic wells, and the required "notifications" begin at distances that do not sufficiently protect. The proposed regulations contain no adequate protections for establishing minimum standards for well casings to prevent the types of contamination that has already occurred in the Commonwealth. (53)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2390. Comment: As a physician with extensive experience in medical biochemistry research I know there is no safe method of extracting natural gas using hydraulic fracturing technique. That's why the strongest environmental protection ruling is indispensable while dealing with this industry. Thank you for allowing our comments to be taken into account! (58)

Response: The Department acknowledges the comment.

2391. Comment: I ask that the rules be as stringent as possible in order to assure that safe water supplies are maintained, chemicals used are made known, independent laboratories verify the condition of water supplies prior to drilling, hazardous waste is handled as required for other industries, provision is made to cover road and other infrastructure maintenance and improvement, etc. (63)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2392. Comment: In general, I am for fracking in PA, but I don't think that the gas companies doing the drilling are regulated enough. They need to (1) pay more in taxes to the state; (2) ensure little to no leakage of methane from their wells; (3) reveal just what chemicals are included with the water being injected into the wells and (4) allow people who open up their private land to fracking to sue them in court. Tight regulation is the only guarantee to a sure future for fracking. I don't buy the argument that the gas companies cannot afford these measures. (77)

Response: The Department acknowledges the comment. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The Department is not authorized to assess taxes on oil and gas operations except to the extent specifically authorized by the Legislature. Further, existing regulations address the mechanical integrity of operating wells. The Department's Mechanical Integrity Assessment Program under 25 Pa. Code § 78.88 requires quarterly inspections at all operating wells and operators are obligated to report and quantify, if possible, all methane flows. Liquid leaks to fresh groundwater and to the surface must also be reported. The Bureau of Air Quality regulates other emissions reporting in association with unconventional well sites. Chemical additives in the stimulation fluids must be reported to the Department under section 3222(b.1) of the 2012 Oil and Gas Act and sections 78.122 and 78a.122. Finally, the Department cannot create a cause of action through a regulation.

2393. Comment: Pennsylvanians across the Commonwealth have lost confidence in Governor Corbett's oversight, of the gas industry. To restore public confidence and to protect resources and people, Pennsylvania must strongly regulate, strongly zone and strongly tax the gas industry. And it is not doing any of those things today. Regulation, zoning and taxation must work together and reinforce each other in order to protect resources, safety and our environment.

To be clear, resources and people cannot be protected and regulation cannot work if the ability of local communities to zone, when they choose to do so is gutted. Local governments must be allowed

to separate industrial activity from residential areas, and I support the decision of the Pennsylvania Supreme Court finding unconstitutional major portions of Act 13.

In turn, state regulation will not work to protect resources and people unless Pennsylvania adopts the strongest rules in the country. Protective, strong rules require the use of best practices and best technology, they stop drilling in sensitive areas, will keep it from expanding. And they impose company-specific moratoria in places like Dimock, where drilling mistakes caused methane to contaminate water wells.

Protective, strong rules include substantial sanctions for violations, like making violators pay two times the property value of homes whose water wells are contaminated by drilling mistakes. Protective, strong rules must have enforcement mechanisms, like a DEP staff that is big enough to do its job. Today, the DEP staff regulating the gas industry is at least about 105 positions too small.

As measured by these criteria, the proposed regulations are not adequate and will not strongly protect resources and people. (1055)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the constitution, and authorizing statutes and provide appropriate protections for public health and safety and the environment. The Department is not authorized to assess taxes on oil and gas operations except to the extent specifically authorized by the Legislature. The Department is only authorized to issue sanctions to the extent authorized by the Legislature. Staffing issues are beyond the scope of this rulemaking.

2394. Comment: I write to comment on the proposed changes, pursuant to Act 13, to Chapter 78 of the Pennsylvania Code. I urge you to strengthen drilling regulations as much as possible to make present and future drilling operations the least harmful to our environment and health as possible.

In particular, and at least, I urge you to adopt the suggested changes made by a coalition of environmental protection groups including Clean Air Council and the Delaware Riverkeeper Network. Thank you for carrying out your duties of protecting our health, welfare, and environment. (99)

Response: The Department acknowledges the comment.

2395. Comment: We support the protection of our public lands for the values for which they were originally set aside. Considering the rapid succession of technological changes that have occurred within the natural gas industry, we agree that it is an appropriate time to adopt regulations that can help avoid and mitigate for negative impacts to Pennsylvania's natural resources.

We also agree with the suggestions for best management practices, including installing well pad liners and barrier systems, eliminating waste pits and open-top tanks for long-term waste storage, and eliminating the practice of using wastewater for "dust control."

AMC's members, who hike, hunt, climb, kayak, and backpack in Pennsylvania treasure the recreational opportunities that our Commonwealth provides. We recognize that natural gas development and related activities can have adverse effects, such as forest fragmentation and habitat loss, which can minimize those values for outdoor recreation and the thriving outdoor recreation economy. We consider these proposed changes a good step towards ensuring that our state's public

lands see no net losses to their ecological and recreational value, and we encourage you to make the necessary changes to strengthen them before their adoption. (188)

Response: The Department acknowledges the comment. The Department has amended the final rulemaking to ban the use of pits for temporary waste storage at unconventional well sites. The Department has determined that it is appropriate to remove this practice because it is not commonly used by unconventional operators. Additionally, the typical type and scope of use by unconventional operators is generally incompatible with technical standards for temporary pits prescribed under § 78.56. Conversely, the typical type and scope of use by conventional operators is generally compatible with the technical standards for temporary pits prescribed under § 78.56. The Department believes that the technical standards for temporary pits prescribed under § 78.56 ensure protection. Section 78.57 and Section 78a.57 eliminate the use of open top structures for the collection of brine and other fluids during the operation of the well.

The Department has revised Chapters 78 and 78a to clarify and homogenize the meaning of the terms identified by the commenter including addition of definitions for primary and secondary containment and deletion of the definition previously proposed for containment system. The Department acknowledges that engineering controls such as use of check valves or modified unloading procedures may reduce the potential for spills and releases, but ultimately a competent secondary containment system provides the necessary protection against spills and releases from creating a pollution event.

2396. Comment: I applaud your decision to update Chapter 78 of the PA Code issued under the Oil & Gas Act, but urge you to strengthen some of these critical protections. Now is the time to make serious changes to these policies. I appreciate your consideration of these rule changes, and your dedicated efforts to keep my family and all Pennsylvanians safe and healthy. I look forward to your response. (193, 199)

Response: The Department acknowledges the comment.

2397. Comment: I am concerned that this bill lacks the language needed to protect our environment, to guard our valuable aquifers, and to hold polluters responsible for their actions, especially corporations. I hope you will take these concerns seriously, because most all voters share my concerns. (259a)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. Other changes may require action by the Legislature.

2398. Comment: I live in Mt. Pleasant Twp. and have witnessed the onslaught of drilling activities here since 2008. It has completely changed our small, quiet community forever. Our air quality has been harmed by the sheer number of diesel engines used in drilling activities, including water trucks, compressor stations, and releases of who knows what. Roads are patches on patches. I've had truck drivers use my well-kept yard as a turnaround. I feel as if we are the lab rats of the state here due to Range Resource's heavy handed approach in our area.

My biggest concern is the inevitable loss of property value from this activity. I have had to have an appraisal done for a divorce proceeding and know the value of my property, which is unique as it is a passive solar earth-shelter. After the divorce is final, will I have anything left to count as equity in

my home? Please strengthen the regulations to protect the citizens who have invested their lives in this area. (388)

Response: See response to comment 2843.

2399. Comment: I'm taking time out of my busy schedule to write and recommend tougher rules for natural gas drilling so we can protect our water and our health.

Do you have children? Do you have pets? Do you have grandchildren? What kind of environment are you going to leave them if you don't take the time now to do the right thing?

I am joining hundreds of families and tax payers in PA requesting strongly that DEP enact great, stable, long-lasting protections for our drinking water and public health. It seems anything worth doing right in this world, comes at a cost. Don't cheapen our health or cut corners. (589, 974)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. Sections 78.51 and 78a.51 of the rule making requires a well operator who affects a public or private water supply by pollution or diminution shall restore or replace the affected supply with an alternate source of water adequate in quantity and quality for the purposes served by the supply as determined by the Department. Additionally, if, prior to pollution, a water supply was of a higher quality than required under Pennsylvania Safe Drinking Water Act Standards, the requested or replaced water supply shall meet the pre-pollution quality of the water.

2400. Comment: Please strengthen the proposed rules for hydraulic fracturing to protect our water, air, forests, and state and national parks. Pennsylvania has a deplorable history when it comes to protecting "Penn's Woods". Every law PA passes doesn't have to benefit some oil or gas company somewhere. I would like to see clean air and clean water here for future generations. (654, 685, 1056)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2401. Comment: Oil and gas well sites should be STRONGLY regulated AND OVERSEEN to protect people from being affected by contaminated air or drinking water. This is especially true of state forests and other wild spaces and also farmland. (33a)

Response: The Department acknowledges the comment. Regarding air related issues, see response to comment 2843. The regulation does not specify special attention to state forests, "other wild places," and farmland in the Commonwealth; however, all requirements of Chapters 78 and 78a apply to all areas of the Commonwealth. Sections 78.15(f) and 78a.15(f) of the final-form rulemaking implement a public resource impact screening process in accordance with Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. The Department believes the revisions to Chapters 78 and 78a are consistent with the Constitution and applicable statutes and provide appropriate protections for public health and safety and the environment.

2402. Comment: Strengthen the proposed rules for hydraulic fracturing. (695)

Response: The Department acknowledges the comment. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2403. Comment: While I support the updating of our drilling regulations, which currently don't adequately address the environmental dangers posed by unconventional natural gas drilling, I'm concerned that the new regulations don't provide sufficient protection for the state's environmental resources, including air and water. (1100)

Response: The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2404. Comment: I feel that any and all precautions that can be taken to ensure clean water supplies for Pennsylvania should be enacted. The most important of these should be contained systems for frackwater in any form. As you make your decisions, please keep in mind the words of the Pennsylvania Supreme Court's ruling on Act 13 which says "By any responsible account, the exploitation of the Marcellus Shale Formation will produce a detrimental effect on the environment, on the people, their children, and the future generations, and potentially on the public purse, perhaps rivaling the environmental effects of coal extraction." Your job is to protect us to the maximum of your ability. We want the cleanest environment possible for our state. Please do your job of ensuring that this happens. (10, 946, 992)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the constitution and applicable statutes and provide appropriate protections for public health and safety and the environment.

The Department has amended the final rulemaking to ban the use of pits for temporary waste storage at unconventional well sites. The Department has determined that it is appropriate to remove this practice because it is not commonly used by unconventional operators. Additionally, the typical type and scope of use by unconventional operators is generally incompatible with technical standards for temporary pits prescribed under §78.56. Conversely, the typical type and scope of use by conventional operators is generally compatible with the technical standards for temporary pits prescribed under §78.56.

The Department has revised sections 78.59c and 78a.59c to require any new centralized impoundments to be authorized by a residual waste permit under Chapters 287-289. In addition, those sections also require operators of existing centralized impoundments permitted under a Dam Permit for a Centralized Impoundment Dam to either (a) submit a closure plan to the Department within six months and close the centralized impoundment within three years of the effective date of the rulemaking or (b) obtain a residual waste permit for the operation of the centralized impoundment within three years of the effective date of the rulemaking.

2405. Comment: I am a PA resident who has directly profited from the current wave of fracking, and the son and grandson of oil and gas men. I also think the industry needs to be kept under tight controls where their actions can have an impact upon the local environment. (52)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2406. Comment: I have some serious concerns about fracking and resulting wastewater. Not to mention the disruption of nearby wells, as well as these underground explosions.

And first of all, I should mention, I grew up in King of Prussia, Pennsylvania, not far from here. And when I was young, we used to play down by the river, Schuylkill River, fishing, swimming and just running around. That was 1965. Twenty-five (25) years later, I found out that the area we lived in actually was identified as a superfund site, Tysons Dump.

I was also reading the results of some of the research done of the information on that site, and the neighbors living in the proximity of it, and the resulting diseases that came from it. One of which is kidney cancer, which I have had for the last eight years. There is no kidney cancer or any cancer in my family for the last three generations.

I have always felt that the idea of economic growth being more important than environmental concerns, I feel is insane. As was previously mentioned, the cost of cleaning up the 10, 15 percent of the aged and failed wells will soon eat up any profits left once the out-of-state corporations have taken an inflated share.

I just feel it's an adult's duty to leave the world a better place than they found it for their children. And unknown environmental damage is slowly ruining the planet. And I also feel that, going back to the subject tonight, fracking waste pits are not the answer. Just look at the other industrial waste pits in different industries around the country. I know it's not the same thing, but old flow waste pits in North Carolina have caused massive environmental problems for the local especially the local farming community. (1109)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The Department recognizes that flowback and produced water may pose a threat of environmental harm. In order to address that potential harm, the rulemaking establishes an approval process, safe handling, and storage requirements. See response to comment 2404.

2407. Comment: The proposed regulations for Act 13 are riddled with many issues that we still have the opportunity to address. Irresponsible disposal and storage of drilling fluids and waste, inadequate conservation of environmental resources, and the misguided mission of the Department are all issues I ask the Environmental Quality Board to resolve during its deliberations. (165)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The Department recognizes that flowback, produced water and other waste may pose a threat of environmental harm. In order to address that potential harm, the rulemaking establishes an approval process, safe handling, and storage requirements.

2408. Comment: Strengthening current regulations and enforcing them is essential to meeting your responsibility as the Department of Environmental Protection. We are still living with and paying for the hazardous practices of the coal industry that were allowed in the past century, please learn from

that mistake and require the Gas and Oil Industry to meet high standards that protect the water we need to survive the air we breathe, and the land we live on. (865)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2409. Comment: Given the legacy of the timber and coal industries in the Commonwealth, taxpayers can ill-afford to pay for the damage and real costs of industrial development. Natural gas operations are extracting a huge toll on our well-being in terms of our environment, finances, and public health. This boom and bust process will leave us with poisoned air, land and water, a general fund that cannot support our schools and public services, and many sick children and adults. It is imperative that regulations be modified so that the burden of planned and unanticipated consequences falls on those responsible. (120)

Response: The Department the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with applicable statutes and provide appropriate protections for public health, safety, and the environment.

2410. Comment: If you do what you expect from others, you serve to instill a positive role. As you review these regulations for the Department of Environmental Protection, consider its mission and the expectation placed on you to protect Pennsylvania's air, land and water from pollution and to provide for the health and safety of its citizens through a cleaner environment. Do not be swayed by efforts to optimize the ability of the industry to develop the oil and gas resources of Pennsylvania. Do your job and, in doing so, you will set the standard and inspire others to do the same. Thank you. (120)

Response: The Department acknowledges the comment.

2411. Comment: I found out that Range Resources was going to put a well about 300 feet from my house. So I started with DEP and I'm happy about the changes in Act 13. But as you can imagine, I often have opposition from Range and other sources. Ultimately, I was successful in getting them to move the well site 1000ft. after much ado.

Now, this was in the middle of my farm. So why it has to be next to a row of houses' property lines is beyond me, but that's where they decided to put it. They ultimately may move it. It has not been drilled yet. I probably may move before that happens.

The review of the regulations that were currently regulations, they were completely inadequate. They were clearly based on old drilling style, things were not updated. The townships were completely inadequate to handle it. They didn't have the expertise to handle it. The zoning board members don't have the expertise. If you think the drilling sites are the real problem, visit one of those compressor stations. They have five or six diesel locomotives running full steam completely outside of PA regulations. And they will be here forever, for so long as gas is coming out. (890)

Response: The Department's oil and gas regulations have been updated to address many issues including issues related to unconventional drilling. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. It is beyond the scope of this rulemaking to specifically limit or prohibit the location and utilization of compressor stations.

The Commenter's specific concerns regarding compressor stations are unclear to the Department. To the extent that the commenter is concerned about noise, see the Department's response to comments submitted on § 78a.41. To the extent the commenter is concerned about air emissions, air emissions from are regulated by the Department under Article III. Changes to Article III are beyond the scope of this rulemaking.

2412. Comment: I believe the companies that drill for gas and oil should do so carefully. The ability to drill without checking existing sites can only create a wasteland. No business should be allowed to foul the air or water. If so, they must restore the water to a standard accepted by the Federal Government. The land must also be restored to acceptable standards. Hazardous waste must be hauled off the property as hazardous waste and not dumped in a poor neighborhood. In short, since these companies do not live in the neighborhoods they are destroying, they must treat it well. They would not want their families dying from contaminated air and water and neither do we want to be sickened by their sloppy actions. Pennsylvania need not become a superfund type site because of greedy actions of a few companies. Thank you. (89)

Response: The Department acknowledges the comment. Protection of water supplies and reporting and remediating of spills are addressed in Sections 78.51, 78.52, 78.66, 78a.51, 78a.52 and 78a.66. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2413. Comment: The rapid proliferation of gas drilling in Pennsylvania has brought on some very unsettling environmental and health ramifications. I am therefore urging you to make the necessary proposed changes to Pennsylvania's oil and gas regulations. The Quecreek coal mining accident drew worldwide attention as trapped miners struggled to survive the accidental penetration of an abandoned mine. We need to learn from past mistakes. Our water in Pennsylvania is one of our most precious resources. The present chemical contamination in Charleston, WV is one recent example of poisoned water resulting from fossil fuel procedures. This water contamination cannot be purified but only diluted in an effort to minimize health effects. Long term complications are not known. (104)

Response: The Department acknowledges the comment. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2414. Comment: Will PA become the next WV chemical spill in water supply?

We should make sure what happened in West Virginia does not happen to our water supply. I feel it not worth the risk if it is not 100% foolproof for protecting our water supplies. I feel we should do everything possible to protect our water and not look for quick and cheap ways to get rid of the chemicals and brine waste.

Plans must be made to protect our ground water under all conditions, including high water and flooding. Planning for average conditions is not good enough.

To ensure the best protection of our water, the DEP's investigation should extend to all oil and gas activities.

It is DEP's responsibility to put what is right for the environment, first. I only hope we will not have

to go through what the people of West Virginia are going through. (181)

Response: The Department acknowledges the comment. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2415. Comment: I have pleaded with regulators and Jerry Brenan, the now deceased owner/operator for Norris Oil Co. to do something about the contaminants leaking out of the wells and related infrastructure as they fell further into disrepair over the past 24 years.

DER (now DEP) and EPA were informed numerous times over the years of how Mr. Brenan operated. His actions in conjunction with the lack of regulatory enforcement devalued my land. Mr. Brenan failed to use any management practices and operated out of regulatory guidelines on a regular basis over the past two decades.

Mr. Brenan regularly ignored and intentionally broke clean stream laws, dumping waste and other oilfield associated fluids on my land and into Knapp Creek. In addition to the equipment that was in operation until Brenan's death, strewn across my land is over two decades of discarded Norris Oil Co. equipment, dismantled and tossed aside. As more of Norris Oil's equipment fell into disrepair, and the plumes of contamination grew; more acreage of our land became unusable because of the contamination.

The DER, DEP or EPA did nothing to prevent further damage. I was told by several DER, DEP and EPA agents that "you will never see it in writing, but we were told to drop any further action against Mr. Brenan", allowing him to conduct his business of producing oil. "We can't put an old man out of business." Please check it out in the records from the 1989-1990 era of our reporting to DEP and EPA.

Now there is a form letter circulating in this area stating that "shallow oil producers leave a small footprint on the environment" is a load of CRAP!!

There are untold tons of contaminated soil on our land; contaminated with oil and brine. Many tons of equipment in various stages of disrepair including leaking oil storage tanks, power lines, pipelines and various equipment associated with oil production has been abandoned and also discarded over the past two decades. Equipment is strewn across many acres, in the creek and tangled in vegetation.

I contacted Susan Ghoweri from the DEP's orphan and abandoned well plugging program and I tried to describe the magnitude of the destruction and requested that she visit the site. I have yet to receive a response to my invitation I sent months ago.

A spokesman for DEP, Kevin Sunday, released a statement to the local newspaper regarding the contamination of my property which downplayed the extent of the (ongoing) contamination, alleging the total amount spilled was merely "10 gallons" total. Not only was he (Kevin Sunday) unqualified because he has not been to the site, no one from the DEP can make a qualified estimate of the amount of oil and contaminants entering the watershed yearly NO ONE has done a study. I find this blatant mischaracterization totally offensive! The release surpassed the 10 gallons in one day recently when the separator tank reported to both DEP and EPA leaked the entire fluid contents into the Allegany watershed.

This is an atrocity and the agency charged with the responsibility to provide oversight regulations

has proven to be negligent, derelict of its duties to protect the environment, and unqualified. Oil continues to flow from this facility and into the watershed daily, and large areas of our land continue to be contaminated and devalued.

The regulations conventional, independent oil producers need to be strengthened. Judging from the damage to our land; the current regulations fail to protect surface owner's rights, property and the environment.

For over a century operators have been drilling wells, making money, raping the land and leaving unplugged, leaking wells in their wake.

Oil is contaminating our land and our well water contains potentially explosive levels of methane. There are days when we have inversions; the air is heavily laden with the smell of crude. It smells like if you lit a match, the air would catch fire. At those times, we have to stay indoors.

Please visit the following links to see photos of our property, yard and also information on our experience while we try to attain justice:

http://www.cardcreek.com/Other/Duke-Center-Wells/28890531_sxPNqz#!i=2454649975&k=sQSFwXC

Spreadsheet with well location info, photo and map links:

<https://docs.google.com/spreadsheets/Uccc?key=OAgV75wo61hJPdE92VTE4a1daeU51NEkzUGpFTDh6ekE&usp=sharing>

<https://www.facebook.com/pages/Duke-Center-PA-Historic-Wells/148967731950176>

<http://saveourstreamspa.blogspot.com/2013/12/life-on-wrong-side-of-oil-field-tracks.html>.

Now, DEP is striking a deal for the estate to plug 7 out of 19 wells that were in the original order to plug, with 32 identified and marked wells. There is a map in the McKean County courthouse showing at least 65 wells. The remaining 12 will go on the DEP abandoned wells list for the taxpaying citizens of PA to foot the bill. ARE YOU KIDDING ME????!! What happened to the enforcement of the law stating if the well hasn't been produced for 365 days, it will be plugged???? This producer did in fact produce at least 10 oil wells on my land at the time of our purchasing this land. He also operated a "water plant" and an unknown number of enhanced recovery wells well into the mid 1990's. I can't say what others he produced prior to our purchase of this parcel of land. If the producer/operator can't pay for clean-up, take the land and personal property holdings of the producer/operator. Don't let the responsible party get off with only a token clean-up and saddle the taxpaying populace to finish the job at some nebulous, undetermined time in the future.

This "negotiation" is one more example of why regulations for conventional operators need to be strengthened. We need to do better than this!

Tons of equipment including broken down wooden oil storage tanks are in need of proper disposal. These need to be hauled to a hazardous waste facility for proper disposal. The deal may relieve the estate of this expense also. And what about remediation of contaminated soil?

The DEP doesn't seem to have a department that addresses hazardous waste associated with abandoned oil facility removal. It appears the DEP isn't taking this into account; this is a very legitimate grievance.

These operational practices may have been acceptable and the norm in the past 150 years, but we need to start protecting the environment, water resources, surface owner's rights and more importantly limited public resources. Citizens and state agencies should not be burdened with these expenses. This "negotiation" is an absolute regulatory failure the very fact the DEP will negotiate a deal allowing the estate to walk away may also undermine any claims for restitution we may be entitled to for the extensive damages to our property should we choose to pursue remediation through legal channels.

We thought the greatest harm was suffered during our two decade long ordeal of neglect from the owner/operator and the DEP and EPA, not if the producer/operator is let off cleaning up our land from the mess he made.

If the Commonwealth doesn't attempt to clean it up and recoup expenses from the estate holding the personal property of the producer/operator and they get away with only a token clean-up, why even bother revising regulations? The perception we have is that DEP doesn't enforce the regs, the agency sits back and allows operators to destroy others land, and then negotiate sweetheart deals with these operators.

My husband and I expected the regulations to be enforced, and when the operator passed away we had reasonable expectations the DEP would hold the estate responsible for the needed cleanup and remediation. (473)

Response: The Department acknowledges the comment.

- 2416.** Comment: Mother Nature is being destroyed on a daily basis. Much of this destruction is being carried out by corporate polluters in search of higher profits. This has got to stop. Along with that comes the threat to water and air quality. Take a look at what happened to W Va. Think of the average person and not Wall St., when you make your decisions. The rules and regulations concerning oil and gas drilling should be very stringent. Along with these rules and regulations should come constant inspections of the drilling sites? (594)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

- 2417.** Comment: Per our Rights under the Pennsylvania Constitution, our property rights were violated by operators who drilled only 250 feet from our home and our water well. In addition, PA DEP has determined that the operator contaminated our water well and issued an order; neither of which have been enforced. This has reduced the property value of our land and home and the quiet enjoyment of where we live on land zoned "R1 Residential" in Pleasant Township of Warren County, PA. These Chapter 78 proposed changes do not serve this inalienable right. We ask that you revise the proposed rulemaking to include consideration of how to meet this mandate. There is an enormous difference between toothless guidelines, masquerading as regulations, which suggest a proper procedure "should" be done, and serious regulations that command a directive "must" or "shall" be done. (1030a)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2418. Comment: To date, the gas industry has been caught violating existing regulations 4,685 times. We all know the operative word there is “caught”. I do not believe the current fines levied are by any means an adequate deterrent, nor begin to cover the real cost of human suffering and ecological damage that these thousands of violations represent.

Chapter 78 regulations must be further tightened, loopholes closed, the nebulous and over used term “practicable” defined in enforceable, legal terms, bonds and fines increased.

After poring over these proposed rules for hours, this is my conclusion: We remain at risk. The regulations do not go far enough to offer real protection from harm and potential disaster. Oversight is inadequate. The gas industry is given far too much leverage in both reporting and self-regulation. (644)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The Department is only authorized to assess penalties to the extent permitted by law. Any changes thereto may be made by the Legislature only.

2419. Comment: I would urge this board to do three things: provide more public disclosures, limit the use of grandfathering, and adopt the most stringent regulations that the law will allow. (635)

Response: The Department acknowledges the comment. The regulations are consistent with the 2012 Oil and Gas Act and other relevant laws. Implementation requirements and grandfathering provisions are addressed throughout the rulemaking, as appropriate. The Department intends to establish an effective date for the new regulations that will provide sufficient time for regulated industry to meet any new requirements.

2420. Comment: Please count me among the citizens of our beautiful commonwealth who is very concerned about the potential undue influence of the gas-oil lobby on your decision-making.

I fervently hope you will remember your name: the “Environmental Quality Board” of the “Department of Environmental Protection”. Everything that is of true and lasting importance to those of us who cherish our state parks, wild lands, wildlife, and water quality is embodied in those titles and the responsibilities inherent in them: environmental quality and protection.

You must keep those responsibilities in the forefront of your considerations and decision-making. I know the monetary temptations to the Commonwealth and many of its citizens are great. Of far greater value are our natural resources. Please, please protect them against dangerous and destructive exploitation.

I leave you with a song lyric: “Don’t it always seem to go that you don’t know what you’ve got ‘til it’s gone...” (729)

Response: The Department acknowledges the comment.

2421. Comment: Stop all rule making and institute a moratorium on unconventional shale oil and gas extraction until a Pennsylvania state wide scientific study of all human health impacts is initiated and conducted with full public disclosure and participation in the process to identify all impacts to citizens, their health and the environment prior to establishing regulations.

I am very concerned because the proposed changes do not go far enough to control the damage our communities and environment are experiencing as the gas and oil industry develops its wells, frack pits, impoundments, pipelines, compressor plants, gas processing plants, metering plants, generators and related operations across the entire state. I support the tighter controls you are proposing but they are too few and simply do not go far enough to make a difference in the harm that is being done.

First and foremost, this Rulemaking Process is corrupted by Pennsylvania legislators who actively conspired with Governor Corbett to sell votes to protect special interest groups in the oil and gas industry in order to pass the unconstitutional Act 13 law to usurp Pennsylvania citizen's constitutional right to clean air and pure water while the legislators and PA government actively failed to carry out their constitutional duty upheld by the Pennsylvania Supreme Court "to protect the public trust for present and future generations." The duty of government to protect the public trust is not an option, it's a citizen right guaranteed by the Pennsylvania Constitution. (1158)

Response: The Department acknowledges the comment. The Department does not have the statutory authority to ban hydraulic fracturing within the Commonwealth. Banning hydraulic fracturing would require an act of the Legislature. Further, amendments to the 2012 Oil and Gas Act may only be made by the Legislature, not the Department. The Department believes the revisions to Chapters 78 and 78a are consistent with the constitution and applicable statutes and provide appropriate protections for public health and safety and the environment.

2422. Comment: I appreciate the opportunity to offer comments on proposed regulations for Act 13 of 2012, to the Pennsylvania Department of Environmental Protection's Environmental Quality Board on the proposed revisions to 25 Pa. Code Chapter 78 (Oil and Gas Wells). The proposed regulations are necessary because our current regulations for drilling are outdated and inadequate given the large amount of land and water used, as well as the amount of waste and pollution produced in shale gas development. While critical, the regulations as proposed are nonetheless insufficient in properly regulating unconventional gas drilling in Pennsylvania. (1139, 1160)

Response: The Department acknowledges the comment. The comments do not indicate how the regulations are "insufficient" with respect to regulating unconventional gas drilling; therefore, the Department cannot address those concerns within the comment specifically. However, the Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2423. Comment: My study of high volume slick water hydraulic fracturing in Pennsylvania convinces me that the pace of oil & gas development far exceeds the necessary regulatory framework to protect the natural environment or public health. More resources need to be provided for on-site DEP inspections at all phases of the extraction process, including the related infrastructure. Better data management is sorely needed as are quicker, more professional responses to citizen complaints of contamination. Industry workers - including a gas company owner!!! - have told me that they consider the paying of fines to be part of 'the cost of doing business.' That tells me that the fines are so low and so infrequently imposed that they provide little incentive to follow the rules. (401)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable

statutes and provide reasonable protections for public health and safety and the environment. The Department's enforcement strategies are beyond the scope of this rulemaking.

2424. Comment: We need regulations that don't have wording such as the industry will oversee itself and report on itself. We need DEP and the State of PA to get serious about regulating this industry, to put the boots on the ground, to spend the money which they can get from the industry if there was any kind of reasonable tax in place. (1213)

Response: The Department takes its enforcement responsibilities of regulations relating to the oil and gas industry very seriously. Tax policies relating to the oil and gas industry are developed by the legislature, not the Department.

2425. Comment: There is another type of shale that the drillers want to exploit called Utica. The rules that govern exploiting Utica Shale provide even more leverage to the drillers. So I am concerned for myself, for my own health and welfare. We have heard representative from the industry refer to practices as well-managed. I fail to see how one can refer to something as well-managed in light of the testimonials that we've heard tonight regarding water. (1213)

Response: The Department has made no separate rulemaking or specific rules or regulations to specifically address resource extraction from the Utica Shale formation. In accordance with the definition of "unconventional formation," wells targeting the Utica Shale will be covered by Chapter 78a.

2426. Comment: We want to see a robust environmental protection program to ensure the areas we love most and live within, are adequately protected for public health and safety, the environment and our communities at large. We want to see adequate measures to protect our environment and thus our water resources, to ensure that our region will continue to have economic development coupled with a desire by our families continuing to live here, and for tourists continuing to visit our region experiencing in our opinion, one of the most scenic regions of our great Commonwealth. It is very possible to ensure the integrity of our region, the public and industry within the shadow of each other, without knowing of the other, whether it is on private or public lands. The key to attaining this, are robust regulations that create this reality in the future. (660a)

Response: The Department acknowledges the comment.

2427. Comment: I am very concerned because the proposed changes do not go far enough to control the damage our communities and environment are experiencing as the gas and oil industry develops its wells, frack pits, impoundments, pipelines, and related operations across the entire state. I support the tighter controls you are proposing but they are too few and simply do not go far enough to make a difference in the harm that is being done.

This is especially true today because of the Pennsylvania Supreme Court ruling that requires government to consider how actions being taken affect the reserved environmental rights of Pennsylvania citizens and public natural resources. (Robinson Twp., Washington Cnty. v. Com.,--- A.3d ---, 2013 WL 6687290,33 (Dec. 19, 2013). I believe you must consider how these proposed regulations fulfill Article 1, Section 27 of the Pennsylvania Constitution before you act.

In my opinion these Chapter 78 proposed changes do not serve this inalienable right. I ask that you revise the proposed rulemaking to include consideration of how to meet this mandate. (649, 787, 947, 1073, 1074, 1075, 1076, 1077, 1079, 1080, 1081, 1082, 1084, 4584 - 4650)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2428. Comment: I want to first comment on the background and purpose of the proposed regulations. In hindsight, the purpose of the proposed regulations are first an overall admission to the public that fracking is a new technology which needs to be regulated differently, and secondly that DEP regulations used to protect the public resources from fracking for the past 10 years have been pathetically out-of-date. In fact, the proposed regulations talked about tonight are stated by DEP to quote “be on the forefront of the curve” for how the Department protects Pennsylvania’s resources. This really deserves applause! However, after what I know about researching DEP’s GMI case files, or what’s riddled throughout DEP’s complaint files, these regulations are nothing more than a freshman level attempt to regulate fracking. (849a)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2429. Comment: Please STRENGTHEN standards for fracking. So much is not known about the long-term effects, and the short-term effects in Pennsylvania have been devastating to people and wildlife. Please protect our parks, our communities, our environment, and our children from fracking. (821)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2430. Comment: People across the state will be weighing in on your new proposed regulations for oil and gas. They will recommend additional provisions, setbacks, definitions, etc. I hope and pray that you heed their suggestions. But it is my belief that regulations in general simply give the industry permission to pollute; it just a matter of how much they are allowed to poison our environment and exploit our natural resources. (1094)

Response: The Department acknowledges the comment. The Department considered more than 25,000 comments on proposed and almost 5,000 comments on the Advanced Notice of Final Rulemaking and made appropriate revisions to the final-form rulemaking as a result of that effort. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2431. Comment: It is time to put the health of Pennsylvania’s children and their environment before the profits of the fossil fuel industry!

Current and proposed rules and standards for the oil and natural gas industry are too lenient. Oil and gas companies are already polluting Pennsylvania with impunity. The fossil fuel industry must pay to clean up the contaminated water and soil it has already polluted. It should also be forced to pay punitive fines for past and any future contamination it has caused.

I don’t want more jobs for people from outside of Pennsylvania. Let Texans, Oklahomans and people from other states pollute their own backyards before they come here to disrupt our lives with noise pollution, light pollution and increased road traffic. Tell them to go home if they won’t work to

keep Pennsylvania safe and clean!

Pennsylvania's rules for environmental protection performance standards at oil and gas well sites should be the strongest in the nation. Every drop of spilled oil, even one milliliter, should be cleaned within one hour of it being spilled. Fines should be at least \$10000 per liter of oil spilled or leaked with no maximum penalty. All gas released into the environment should be fined at least \$10000 per liter with no maximum penalty.

If the oil and gas industry cannot operate without regularly spilling oil or releasing gas into our atmosphere, that industry should stay out of Pennsylvania! (1061)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. Reporting and remediation of spills and releases are addressed in §§ 78.66 and 78a.66. To the extent that the commenter is concerned about noise, see the Department's response to comments submitted on § 78a.41. To the extent, the commenter is concerned about air emissions, air emissions are regulated by the Department under Article III. Changes to Article III are beyond the scope of this rulemaking.

2432. Comment: A couple of surface installations that are notable for their absence in this document are compressor stations and pig launchers. Both of these emit significant amounts of toxic fumes, and once again, are permitted close to occupied buildings and communities. The regulations should take these compressor stations, pig launchers and similar facilities into consideration as well, sharply limiting the level of emissions permissible at any time (including spikes), and making continual air monitoring mandatory - with results available to the DEP and to the public real-time via the internet. (945)

Response: Air emissions are regulated by the Department under Article III. Changes to Article III are beyond the scope of this rulemaking.

2433. Comment: There are many opportunities to strengthen these regulations, which must be done if they are to provide effective and enforceable protection for our natural resources - our clean air, land and water, as protected under Pennsylvania's environmental rights amendment. (929)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The commenter did not provide suggestions as to how the regulations could be strengthened.

2434. Comment: Good evening. I own an organic farm up in Jefferson County. I have placed a unique conservation easement on my farm that asserts and defends the Rights of Nature - on the surface and below the surface - from violation by an extreme industrial practice such as fracking for shale gas.

We are here tonight to consider proposed regulations of shale gas extraction to better control activities that occur at the surface, but there is a fundamental flaw with that.

The problem is this: The Earth is One. It is above us in our climate, under our feet and around us as an ecosystem sustaining our lives, and below us as the deep, living biosphere. To limit these hearings on regulations to what happens on the surface of the Earth for an activity whose essential nature requires penetration far below the surface of the Earth truncates all too much the discussion

we should be having.

So before addressing the proposed regulations, I'd like to speak about what happens from below that will affect surface living for generations to come. GIVEN that oil and gas industry data show that well casings (both steel and concrete) can fail at a rate up to a 50% over just 30 years time;

- AND given that these casings must hold up IN PERPETUITY to protect the groundwater aquifers under Pennsylvania;
- AND that the gas industry plans to drill more than 100,000 wells for the next 50 years that will put at risk groundwater aquifers under half the land mass of PA;

THEREFORE, DEP should require that casings of the type and engineering that are failing now be immediately PROHIBITED, and cause the following to happen:

- All casings henceforth shall employ fail-safe engineering that will prevent the degrading and failure over time so that they can contain completely, in perpetuity, all gas, fluids and shale elements from below;
- Chemical markers and physical monitors shall be placed in every well that will provide evidence of such leakage over time and who is responsible for that leakage;
- All gas companies shall provide a bond adequate to pay in full for whatever is needed to achieve remediation of groundwater supplies, or replacement of water supplies, when the wells leak methane or chemicals into the aquifers.

To do anything less than this is to risk irreparable harm to the water sources of the Commonwealth and to the human, animal and plant life that depend on that water.

Water is Life, and this industry poses an existential threat to us because it will inevitably ruin, as it is practiced now, the water sources by which we live at the surface. (67a)

Response: Well design, construction, stimulation, and bonding requirements are beyond the scope of this rulemaking. Further, the regulations related to design, construction and stimulation were updated on February 5, 2011 and are judged to be protective of water resources and in alignment with technological advances related to the use of appropriate materials and monitoring. The Department will consider updates to these regulations in future rulemakings.

With regard to bonding, these levels were recently updated in Act 13 of 2012, although a subsequent amendment to the fiscal code, Act 87 of 2012, reverted bonding levels for conventional well sites back to those established in the Oil and Gas Act of 1984. The Oil and Gas Act does provide the Department with the authority to reassess the appropriateness of the current bonding levels and the agency is committed to completing these assessments as the need arises.

2435. Comment: It is extremely important that the EQB and DEP act not solely in the interests of the gas industry but primarily in the interests of the citizens of our state in preserving our environment. This includes proper regulation as well as proper oversight. What I have found over my 40 years in industry is that environmental and safety directors when held accountable will typically follow lawful regulations since they are primarily the fall guy and would be blamed for inadequacies by those further up the management tier. This implies again the need for real regulations. (916)

Response: The Department acknowledges the comment.

2436. Comment: When I sat down to write my comments I was going to start out by saying that the proposed regulations fall short in many respects. Not only is each regulation lacking, but there are many others needed. For instance, nothing was said about cement casings, many of which start out with cracks that allow methane migration and the others break down over time. It's easy, unconventional natural gas drilling should be banned.

The unconventional gas industry is being allowed to grow unrestrained; it's been given carte blanche access to our land, our homes and our health. It has fostered an unprecedented breakdown in the fabric of neighborhood cohesiveness. Our elected officials have turned their backs on the PA voters who entrusted them. Many citizens have been sickened by tainted water. Air pollution and with it lung conditions have increased. To say that our environment's scenic, historic and esthetic values are being preserved is a lie, rather they are being undermined and I mean that both figuratively and literally. And how can our elected officials say that PA's natural resources are the property of all the people when division between mineral rights owners and surface rights owners is rampant?

However, there is a solution but we must all raise our voices to be heard. We must forgo our dependence on fossil fuels and instead embrace renewable energy. I will end by referencing two of my favorite songs, Bob Dylan's ... "The Answer My Friend is Blowing in the Wind, and Let the Sunshine in from the musical Hair." (909)

Response: The Department acknowledges the comment.

2437. Comment: While I commend the Board for recognizing the need to adopt revised environmental protection performance standards, it is important to note that the proposed standards are far weaker than what the law requires. Regrettably, it appears that the authors of the Proposed Rulemaking have ignored several fundamental issues related to oil and gas development. Instead, the Proposed Rulemaking wrongly prioritizes a narrow aim of fast tracking and accommodating the extraction of the Commonwealth's oil and gas resources. (887)

Response: The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The commenter did not specify how the standards are "far weaker than the law requires" nor how fundamental issues relating to oil and gas development have been ignored, therefore the Department cannot specifically address those concerns.

2438. Comment: There are several deficiencies of the rules as they affect "other" stakeholders. Consider the plight of a surface owner who is not the owner of the gas rights. There should be a requirement that the surface owner be notified of spills. There should be a requirement that the surface owner give consent for on-site waste disposal methods. (869)

Response: Sections 78.66 and 78a.66 address spill reporting and remediation requirements and established a process for reporting and remediation of spills. This process includes notification of affected water supply owners among other notification requirements. Sections 78.60-63 and 78a.60-63 address onsite waste disposal and require the operator to notify the landowner of the location of waste disposed onsite.

2439. Comment: Thank you for some of the improvements that have been proposed that will at least provide a great deal more protection than we currently have. But I think some basic principles are

not being fully applied that really should be in this instances. First of all, taking the necessary protections to safeguard the public and safeguard the environment. DEP needs to be careful not to be splitting the difference between what oil and gas industries would like to see and what advocates for public health and the environment are saying.

Really the whole measure should be what is going to protect the environment and the public. Secondly, we need to learn from the past. So Pennsylvania has a very sad and serious legacy with pollution from extraction of coal and oil and gas in the past. So we know enough to be particularly cautious about where we go from here. Those principles in mind, I would recommend the following. If pit liners have been known to leak in the past, and they have, then don't play any more Russian Roulette with Pennsylvania's groundwater. (842)

Response: The Department acknowledges the comment. Chapter 78 and other Department regulations apply to gas drilling. See response to comment 823 regarding use of open pits for temporary storage.

2440. Comment: The regulation in my opinion needs to go further and not just dealing with the tip of iceberg. They need to benefit the residents as well as the environment, not protect and benefit the oil and gas industry. The regulations have to be tight with no wiggle room; no exemptions. No wiggle room for the oil and gas companies to get out of their responsibilities to the community, the environment and the residents. The most rigorous oversight of inspection on a regular basis, which will mean hiring tons of additional people. The fines have to be raised up so they won't pay the industry to ignore regulations. Right now, the fines are probably so low that the oil and gas can afford to continue to pollute and just pay the fines because they are probably lower than the cost of rectifying this problem. (879)

Response: The Department acknowledges the comment. The Department disagrees with the comment regarding fines. The Department just recently levied a fine of \$8.5 million against an oil and gas operator for violations under the Oil and Gas Act.

2441. Comment: Since compressor stations are part of gas operations, rules governing these stations must be written and included in these new regulations. Likewise, industry must be held responsible for all damage to water supplies, property, air, and health. DEP must clearly state that fines must be equal to the cost to the environment. Not only must fines be leveled, but in every instance, the violation for which those fines are issued must be stopped immediately. Continued violations by operators should be severely punished as well. I suggest that a three strike and you're out rule be added to the regulations.

These are my suggestions for tightening up what might be a good set of regulations for this new industry and something that could address DEP's stated mission "to protect Pennsylvania's air, land and water from pollution and to provide for the health and safety of its citizens through a cleaner environment." (823)

Response: The Commenter's specific concerns regarding compressor stations are unclear to the Department. To the extent that the commenter is concerned about noise, see the Department's response to comments submitted on § 78a.41. To the extent the commenter is concerned about air emissions, air emissions are regulated by the Department under Article III. Changes to Article III are beyond the scope of this rulemaking.

The Department enforces the rules and regulations to the point that penalties are assessed based on severity of the violation, whether or not pollution occurred as well as a violator's history regarding repeat offenses and willingness to correct violations.

2442. Comment: In addition to the proposed amendments to Chapter 78, we also support increased regulation and oversight, a process which would provide better protection of our state resources, and favor those companies which follow best practices in the hydraulic fracturing process. We acknowledge the ability of the industry to develop the oil and gas resources of Pennsylvania and generate profits for the state as well as private enterprise. We believe impact fees linked to ongoing extraction rather than just drilling of new wells may be warranted, especially since there will be ongoing industrial impacts. Additionally, we appreciate the Marcellus Legacy Fund dollars generated to date and would like to encourage greater state oversight of these funds to ensure their effective use. (604)

Response: The Department acknowledges the comment. The Department is not authorized to set impact fees linked to ongoing extraction. Development of an impact fee or extraction tax is a matter for the Pennsylvania Legislature.

2443. Comment: The regulations should take into account the accumulated harmful effects of many wells in an area. Where a single well may not present pollution which causes alarm, a concentration of wells in an area should be taken as a whole when evaluating air and water quality.

I would like to urge you to take into consideration the danger imposed on the Commonwealth by the lightly or self-regulated hydraulic fracturing of the oil and gas industries, as they try to drill as quickly as possible before stricter regulations reign them in. Their main consideration is profit for the industry. Pennsylvania has been a very attractive state to do business, due to the political alliance of the current PA administration and lower "impact fee" rather than a tax imposed on them. Consequently, Pennsylvania is the cheapest state for them to do business.

But, please take into account the terrible environmental devastation they have brought to places in Colorado, West Virginia, Ohio, and Texas. With tens of thousands of hydraulic fractured wells planned for Pennsylvania, we desperately need strict regulations and oversight of this industry. (1146)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The reference to the "current administration" refers to the previous administration.

2444. Comment: I know that most of the operators and the DEP care about the health and environment as anyone. But I've also learned that there are bad players in the industry who might skirt best practices to save a buck. What we need is clear regulations from you, the DEP, and strong enforcement of those regulations. I urge you to listen to the experts, listen to folks in the industry, and get a move on it. (934)

Response: The Department acknowledges the comment.

2445. I am very concerned about far reaching impacts from both conventional and unconventional oil and gas development to our environment and our communities. As you update regulations for oil and

gas drilling, I believe these rules should be strengthened to make protecting the health of Pennsylvania residents the first priority.

The proposed changes do not go far enough to protect our communities and environment from the orphaned or abandoned wells, frack pits, impoundments, pipelines, roads and related operations across the state.

The current proposal is far too weak to address the complex problems associated with unconventional drilling, and in most cases would exclude the application of best technology advances for conventional wells. At a minimum, these regulations must address the public health impacts of oil and gas development, require state-of-the art technology, mandate testing and remediation of harm to our water supplies, outlaw open pits at well sites and protect communities from abandoned and orphaned wells.

Please take the necessary steps to strengthen rules for oil and gas development in our state. (8363 - 10327)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2446. Comment: Let's protect our state from the oil and gas well companies from ruining our state. (64)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2447. Comment: I favor a moratorium on all gas drilling in Pennsylvania, because the gas industry and the DEP have, in recent years, been reckless about conserving our clean air and water, and the risks to public health and the environment are high.

Short of a moratorium, the changes to gas drilling surface practices that I recommend:

I want to live a long, healthy life, and I want the same for my kids, and those goals appear to be at risk due to reckless pursuit of quick gas industry profits in recent years. By instituting strong regulation of the industry, however, public safety and public trust can be secured.

I favor a moratorium on all gas drilling in Pennsylvania, because the gas industry and the DEP have, in recent years, been reckless about conserving our clean air and water, and the risks to public health and the environment are high. (156)

Response: The Department acknowledges the comment. See response to comment 2508.

2448. Comment: Please ask the scientists about the research that has, and is, being done by researchers from universities including Carnegie Mellon, Cornell, Duke and Yale regarding air quality, human and animal health, effects on water treatment plants and local government response to shale gas development.

Why has gas drilling and fracking been exempted from following the restraints of the underground injection control program of the Safe Drinking Water Act? Please refer to the Duquesne University Fracking Conference held on November 25, 2013.

Please consider that fracking contributes to increased mercury and bromides in our watersheds. Please consider the acute toxicity in the emissions from well pads in the Marcellus Shale. People are being exposed BY EPISODE. Gas drilling health findings show the acute toxicity in episodes to be respiratory, neurologic, dermal, vascular bleeding, abdominal pain, nausea, vomiting and stress!

Please EQB, hold big oil and gas accountable for its actions. Please save Pennsylvania and put a moratorium on Hydraulic Fracturing until Chesapeake Energy, Range Resources and all of the other big oil and gas companies PROVE (by scientific testing and disclosure of the toxic chemicals being poured into and coming out of the earth) that it is safe. Demand that environmental impact studies be done by independent scientists (not the oil companies). (429)

Response: The Department acknowledges the comment. See response to comment 2508. Hydraulic fracturing was exempt from regulation under the federal Safe Drinking Water Act as a result of a provision in the 2005 Energy Bill enacted by Congress.

2449. Comment: The DEP's purpose is to protect the public's right to a clean environment. This is your constitutional obligation! The DEP should be required to take whatever actions are needed to condition permits in a way that protects public resources.

Plans must be made to protect our ground water under all conditions, including high water and flooding. Planning for average conditions is not good enough.

A local engineer, who works on gas drilling, told me that eventually, probably in 20 years, all our water would be contaminated. Aren't our water, our health, and our lives more important than someone's profit? Don't you care about doing your job, and protecting our water?

Can't you see that our health and our environment are much more important than money in someone's pocket? Our water must be protected forever! If our water is damaged I don't think there should ever be a release from liability. If there is a release from liability, it should certainly be conditioned on the adequate final restoration of the well site after the last well on the site has been plugged.

Please put what is right for the environment, above all else. Please consider what will happen when liners and containers start leaking. That is what you were hired to do. Our lives depend on you. (180)

Response: To the extent that the commentator suggests that additional protections are needed, Chapters 78 and 78a, as well as other regulations, permits and policies implemented by the Department under Pennsylvania's environmental laws, establish a comprehensive regulatory scheme for oil and gas well development activities to ensure protection of public health, safety and the environment.

To the extent that the commentator suggests that additional protections are needed for waters of the Commonwealth, please see the response to comment 274.

To the extent that the commentator suggests that additional protections are needed to address flood conditions, several provisions in this rulemaking address floodplains and floodways. Please refer to Section 78.60, 78.61, 78.62, 78a.60, 78a.61, 78a.68, 78a.68a.

To the extent that the commentator refers to release from liability, the Department interprets the commentator to be referring to the release of a bond. Bonding issues are outside the scope

of this rulemaking. In accordance with Section 3225 of the 2012 Oil and Gas Act, bonds are not released from an individual well until the site is properly restored and the well is properly plugged, as is evidenced by the Department inspecting the well and issuing a plugging certificate. Operators may potentially be liable for pollution of the waters of the Commonwealth even after the bond is released under the environmental laws implemented by the Department.

2450. Comment: There would never be enough oil and gas regulations in PA to protect the people and the environment. Put people and nature above money and greed. Ban hydrofracking and invest in renewable energy sources, not fossil fuels. (496)

Response: The Department acknowledges the comment. See response to comment 2501.

2451. Comment: I can understand why industry is resistive to regulation. And one only needs to look to history to see the consequences of that lack of regulation. When series of earthquakes due to deep well injection of fracking material happened near Youngstown, OH, a panel was convened to study the impact of the deep well injection and the correlation to earthquakes, one can determine that there was no regulation against causing earthquakes. So Ohio resumed deep well injection of fracking material.

It is hard to trust industry rhetoric when they say they are working for the interest of the national security, yet they sell our resources for international consumption and don't stock pile for future use. It's hard to trust that the industry is not working with other organizations like the Fish and Boat Commission that have worked out a way to sell PA lake water in the use of fracking industry practices.

It's hard to trust the rhetoric that says that this is ok and safe, and there have never been accidents when we don't know what chemicals are even used in the fracking process due to industry secrets of what recipe is actually in the fracking chemical compound. It's hard to believe the industry when the physicians are having gag orders on them for what chemicals patients are exposed to.

So until organizations like the Southwest PA Environmental Health Project and other medical organizations have determined what are the safe levels of exposure to these contaminants and carcinogens, until we know what we are actually up against, how can an open pit full of chemicals possibly be something that is safe? (1206)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. See response to comment 823 regarding the use of pits.

2452. Comment: I just want to remind everybody that we have a Constitution in the Commonwealth and it says that people have right to clean air, pure water, the preservation of the natural scenic, historic and aesthetic values of the environment. PA's public natural resources are the common property of the people, including the generations yet to come. As trustees of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.

When I moved here four and half years ago, I was very pro the industry being here. I have a large piece of property that I'm a shared owner in. We have a gas lease. I let them put a pipeline across my property. And what I've seen so far is nothing but problems. I have 161 documents; one of them says Dimock, which clearly states that natural gas drilling contaminated private water wells.

The industry told all of us when they came here they're experts. They've been doing this for 70 years on fracking. They've been putting pipelines in everywhere. If they're such experts, why couldn't they get a piece of pipe going under a simple creek in my backyard done without damaging the entire creek?

Then we caught them dumping what looked like 100,000 gallons of unknown liquid on my private property. By the way, the DEP later found them guilty of doing it and so did Fish and Boat. They fined them and then did not have them come and clean up the spills on my own property. If you want to make us feel better about your industry here, if the industry does want us to feel better about them, stop sending predatory land men in signing old ladies up in nursing homes like my grandmother was done. Stop ripping off your landowning partners by taking high production costs out of their checks.

So stop the activities. Stop putting in compressor stations and have them blow up all down the line here. We've had at least six in the area. So my focus is, you can put every regulation you want on this industry and without taking the landowner into consideration. I would love to see the industry be able to come in here and do this properly and get the gas out from underneath my property, and oil. But it doesn't look like they are proving themselves wrong every single time with their own actions.

And the next person that tells me it's America's fuel, can please explain to me why there are 33 export terminals going in? Four have already approved. If this is America's fuel why they are shipping abroad? It will cause the price to go up. So I would appreciate if DEP not only puts in new regulations but actually enforce them. (1211)

Response: The Department acknowledges the comment.

2453. Comment: We've been mostly talking about putting a compressor station and well pads to put computerized monitors. I've also called PADEP. If they hang up the phone in PA, what are we going to do in NY when they start coming? So we don't want them in NY. We have too much to lose in NY. We have too many people depending on the water that's being brought down to the five boroughs and people up here. The Susquehanna River is already enough polluted.

And I have family in Sidney too. I have a grandchild coming along. So we don't want people have cancer from all kinds of ingredients that they put into these things and we just keep polluting the air and everything else.

We also need to have them do less pollution. And we have to maybe get Homeland Security to oversee all of it. Homeland gets involved with terrorist. We have terrorists in our backyard, the oil companies and all the industries. So we need Homeland Security to come and clean up houses the way they clean up houses and organizations in Manhattan and all over the place. (1212)

Response: The Department acknowledges the comment.

2454. Comment: When you're drilling tens of thousands of wells over two-thirds of the state, this is an ecological disaster in the making, which few people are considering, because we're all going to get rich. I was a member of the citizens Marcellus shale commission. We had hearings all over the state and at these hearings we asked is there a technology to do drilling safely for the 100 year mark very acceptable, low incidence of contamination, is that currently available? And the answer is no. Is it in the pipeline literally? The answer is no. Is it even conceptualized? The answer is no.

I think DEP might want to track the plague of poison going across the state from this industry. You don't have to go back and track all the oil stuff that's already happened, but going forward. And along with the water contamination, which DEP said 398 complaints were filed. That you might want to track the progress of whose homes were contaminated and where they are, and also a new species, called water buffalos, a herd that is evidently growing, so that we can see where we want to live and choose where we want to get our food from, at a minimum. (1214)

Response: The Department acknowledges the comment.

2455. Comment: In the 80's, when I first started working as a geologist for a company called Petra-Tech, as an exploration geologist, they never gave me all the money I wanted to go drill with. So I had to be real careful where you put your wells. In the old days, you used to be able to take a map on one piece of paper, draw the lease, put 20 spots on it and then locate them with the plats. A two page document would be a blanket permit for a lease. What was the cost of that?

Now, as a geologist, if I go out to a lease and I drill one well here, how many months do I have to sit around waiting for the permits to come back? Three. And the two-page document that was free now has turned into this, a single permit to drill one well on a lease, 32 pages. It's detailed. It's got maps. It's got plats. It's even got the green cards where we have to notify all landowners in all townships around the county or the township that we're going to drill in, which takes an extra couple weeks. Since one permit consists of 32 pages, if anyone wants to drill six or seven, those 32 pages go in each time.

In addition, before anyone is able to get a permit, they have to write to PA Fish and Boat Commission to make sure that there's no snakes or other things on there that would be endangered. So there are a couple more weeks waiting for this 20-page document to come back. And then to make sure that there is no wetlands near the drilling area. Everybody knows that what we think of as wetland isn't necessarily really a wetland If you find a piece of rush grass out there. You better go and get a delineation done. This is 74 pages.

After all these hurdles everyone has to get an erosion and sedimentation plan. (1232)

Response: The Department acknowledges that environmental regulations have changed since the 1980s. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2456. Comment: I own and operate wells in the Otto and Elder Township area of McKean County. I have a son who seven months ago got out of the Marine Corps, was discharged from the Marine Corps honorably. He served nine years. When he got out last summer, he wanted to come back here. And I told him no. I said the state of Pennsylvania is in the process of regulating us out of business. I told him that there is no future for him in PA.

So eventually he stayed working out of Camp Pendleton. He worked there for three months and got himself a job at a prison in upstate NY in Adirondacks - lasted two months there. Finally he got a job in Texas. He is working on a gas compressor station. They are working on Eagle Ford Shale. I told him that's where his future is. I said the environmentalists are going to kill the oil and gas business here in PA if not with this regulations, the next ones that come. I asked him to go somewhere where people are going to appreciate him. Go to Texas, North Dakota, Louisiana, Alaska or even Kansas.

He is making \$70,000 a year. All I can ask is whatever control you folks have, let our kid come home. Let's quit sending them south. Don't drive us out of business. (1235)

Response: The revisions to Chapters 78 and 78a provide reasonable protections for public health and safety, and the environment. Chapter 78, which pertains to the conventional well industry, has been specifically tailored to meet the unique needs of this industry and is in no way intended to impose unnecessary regulatory burdens. Examples of the ways in which the conventional industry is treated significantly different from the unconventional industry include the continued ability to utilize pits during well drilling, completion, and servicing and the ability to dispose of drill cuttings at the well site without first needing to obtain a permit from the Department.

However, statutory changes resulting from the passage of Act 13 of 2012 as well as environmental protection gaps in the Department's current regulatory requirements necessitate modest, common sense revisions. These revisions include specifying spill reporting and remediation requirements and the identification of abandoned and active wells prior to hydraulic fracturing. Cleaning up spills in a timely manner to standards that apply to all industries in the Commonwealth is necessary to ensure that ground and surface water is protected. Similarly, identifying wells that could be impacted during the hydraulic fracturing process is also necessary to protect these important resources. The Department believes that these modest regulatory revisions are necessary and appropriately tailored to the purposes served.

2457. Comment: Conventional oil and gas production in Pennsylvania has sustained countless jobs in PA for many years. If revisions are not made to Chapter 78 the combined result with the recent enacted Act 13 will end a 150 year industry and hundreds of jobs will be eliminated. Manufacturers of equipment material and service companies will be negatively affected. Please vote "no" to the proposed changes to Chapter 78. (396, 449, 472, 4703 – 4743, 5918 – 5924)

Response: See response to comment 2456.

2458. Comment: Ergon and American Refining Group depend greatly on the unique sweet crude that comes from our wells. Local wells are paraffin based, and are used in many of the products that we all depend on every day. Shutting down these small well producers with unnecessary regulations will not impact only me, but many of my neighbors too, just when they need this money the most during these uncertain economic times? Many others jobs in refining will surely be affected as well.

Since I live in a remote country area, I'm well aware of the environment, and cherish the clean air and clean water. I go out of my way to live in harmony with the animals and plants which live in the same ecosystem as I do. The new rules you are enacting may actually hurt the environment. You see when the bills need to be paid; we may have to cut down cherished trees to pay obligations, to fill in for an oil well that is not harming the environment. Land that I once planned to turn into a fruit tree forest might be needed to plant corn. I'm sure you're well aware of how bad corn, or traditional plow and seed farming are for the soil, causing erosion, and contributing to the algae blooms in the Gulf of Mexico.

I hope to continue planting fruit and nut bearing trees, grapes, and even allowing fields to turn into forests. However, if the money is needed, it will be earned growing corn, or cutting trees. I do not wish to be forced to be part of our planet's problem; I want to be part of the solution. I imagine many of my neighbors are considering the same undesirable actions. (618)

Response: See response to comment 2456.

2459. Comment: I am a lifelong resident of western Pennsylvania, am a graduate of Norwin High School, and graduated with highest honors from California University of Pennsylvania. I have been working in the oil and gas industry for three years. I am writing because I want to see the delaying adoption of gas drilling regulations by companies and activist groups to stop.

Natural gas is an efficient, effective and clean burning energy - things that don't get spoken of very often. Natural gas is also allowing America to use more of their own resources instead of importing them from other countries.

I have personally seen lives changed because of the oil and natural gas drilling in our region. I have seen third and fourth generation farmers who were in jeopardy of losing their family farm because they were not generating enough money, come back and flourish because of the signing bonuses and royalties they have received from natural gas leases and wells. Or a family who couldn't afford to heat their large old farm house because the gas bill was over \$800 per month in the winter, but because of the natural gas well they had and the free gas usage that was granted to them, because of that well, they were able to heat their home and keep their kids warm. You don't ever hear these types of stories in the media. The media blows everything out of proportion and uses scare tactics to make people, who may not even have any interest or stake in the Marcellus drilling, scared to drink their tap water.

This career has changed my life, it's allowed me to meet many great people and help me get out of crippling debt I piled on while in college. I want more work in Pennsylvania and the way activists and lobbyists are acting, I don't know if that is going to happen! It is completely unfair to the residents of Pennsylvania who have the right to the oil and natural gas under their land, has anyone thought about the residents who actually want to lease their property and are unable to because of these activists' actions? Or about the leasehold owners in Wayne County, Pennsylvania who have had their leases revoked because of the moratorium put in place by the Delaware River Basin Commission?

The safety of the land owner weighs very heavily on the minds of the oil and gas companies. For a lot of companies safety is literally their number one priority! Every safety precaution you can imagine is taken from the very beginning in seismic testing, the whole way to drilling and casing a well, and thereafter while the well is producing. I know water quality after hydraulic fracturing is a big topic of interest to residents and activists; extensive testing has been done and continues to be done to make sure the water is safe. The process of hydraulic fracturing takes place many thousands of feet below the surface and the water supply.

The first commercial gas well in the nation was drilled in Murrysville in the 1870s-1880s. As I drive past a sign welcoming me to Murrysville, their sign says Murrysville - the location of the first commercial gas well - that seems like a town that is proud. Drilling in Pennsylvania has been going on for over 140 years; this isn't something that is going away. A lot of us in this field aren't just here for a week or two and then moving on to the next town. We live here; we put great amounts of money back into the local economy. I think that is a stigma of the business that I am in, people think 'oh you're just here to get my land, ruin it and then leave'. That couldn't be more false. I want to live in western PA for the rest of time, but if I don't get more work here, I will be forced to relocate and that goes for many people in this field. Think of all the money that will be taken from the local economy and spent elsewhere, if things don't change.

Please vote NO to adopting rules that would have consequences such as fewer oil and gas wells

drilling - which in turn means fewer jobs and also less tax revenue for all levels of government.
(489)

Response: See response to comment 2456.

2460. Comment: I am here today to testify at this public hearing on the proposed rulemaking of Chapter 78 under the Oil and Gas Act on behalf of my own company which is a government and public relations firm specializing in energy. Some of my current clients mine coal generates electricity, and an engineering company that provides services to the natural gas industry.

I also represent a wastewater treatment company that treats a variety of liquid waste that is generated by the natural gas industry. Liquid waste can be flowback and production water, but also cement water, rain water that collects in secondary containment, tank cleanings and other liquid waste generated at a well site or pipeline transmission such as dirty water from boring holes under roads. The plant is a zero-discharge facility. It treats the all of the fluids that it receives into treated brine for reuse by operators for fracking other wells. By treating and reusing brine water, this reduces the amount of fresh water needed and the amount of wastewater to be disposed of injection wells.

I also provide this company business development services which require me to attend many natural gas conferences and participation in gas associations' events, conferences and meetings such as the PA Independent Oil and Gas Association (PIOGA), PA Grade Crude Coalition (PGCC), PA Independent Petroleum Producers (PIPP), the Marcellus Shale Coalition (MSC) and a few others.

As a member of PIOGA, I serve as the Subcommittee Chair on Water, Waste Management and Recycling as part of the Environmental Committee and have had the honor of attending the Oil and Gas Technical Advisory Board (TAB) Workgroup public hearings on Chapter 78 on behalf of PIOGA.

Why is this relevant? Because one thing that has impressed me since I first learned about the Marcellus Shale in 2008 is how diligent the natural gas industry is at developing and utilizing best management practices; as well as working the PA Department of Environmental Protection (DEP) to ensure that the environment is protected.

I have great respect for both DEP and the industry and commend them both on the thousands of man hours that have gone into this proposed regulation to get it to this point. However, I agree with the aforementioned associations in that due to the recent PA Supreme Court decision on Act 13 of 2012, those sections that are affected by the decision should no longer be part of this proposed rule.

Act 13 contains language aimed at strengthening PA's regulatory landscape to provide greater environmental protection. However, some of the proposed revisions of Chapter 78 could be viewed as contradictory, unclear or over burdensome on the industry. (636a)

Response: The Department acknowledges the comment. It is not clear from the comment which provisions of the revisions may be "contradictory, unclear or over burdensome on the industry." See response to comment 2456.

2461. Comment: I am in opposition to the Environmental Quality Board (EQB) adopting the revisions proposed by the Pennsylvania Department of Environmental Protection (PADEP) to 25 Pa Code Chapter 78 "Oil and Gas Wells" in their current form. As a vendor, I have firsthand experience with the extraordinary efforts made by Pennsylvania's oil and gas industry to be good stewards to the

environment and good neighbors to the communities where they live and work. Based upon those experiences, I find the proposed revisions to lack sufficient justification. The increased costs to the operators will, on the other hand, certainly reduce exploration and development and therefore be detrimental to the state and municipalities (reduced income taxes and sales taxes) and our citizens in general (fewer jobs, reduced economic activity). Further, Pennsylvania citizens whose land won't be drilled or leased as a result are thereby deprived of an opportunity for significant economic benefit; this is unfair to them and their families. The compliance costs and other costs of these proposed revisions may be especially harmful to operators of conventional wells, making it economically unfeasible to develop such conventional wells. (854a)

Response: See response to comment 2456.

2462. Comment: From a regulatory standpoint, these four issues can create a number of unintended and adverse consequences for the Department. For example:

- The prescriptive nature of the revisions can discourage operators from seeking superior environmental solutions, impede the use of new practices and technologies, and foster resistance;
- The lack of a streamlined approval process can add unproductive costs, increase delay and frustration, and distract the Department and operators from equally or more important issues;
- The limited opportunities for variances can reduce flexibility, constrain innovation, and limit the Department's ability to better balance prescription and performance; and
- Insufficient attention to implementation can undermine compliance and create unnecessary disruption. (1071)

Response: The comment is vaguely written and it is not clear to the Department which specific provisions the commenter is referencing. The Department believes that the regulations provide sufficient flexibility to accommodate the potential issues raised by the commentator. See, for example, sections 78.63a and 78a.63a, which allow operators to request Department approval for alternative waste management practices other than those outlined in §§ 78.56-78.63 and 78a.56-78a.63, respectively. The majority of the prescriptive sections of the rulemaking include allowances for alternate practices as long as they provide equivalent or superior protection.

2463. Comment: First I am not a member of the gas or petroleum industry. I am not a member of an environmental interest group. I am not being paid to address you. I am an average citizen that will benefit directly from lower costs to heat my home. I am an average citizen that will benefit from the expanded economic activity supplying more jobs and community tax revenues.

I am here to request rational regulations based upon the facts and cost benefit analysis. I am here to ask you to resist any temptation to pander to special interest groups. I am asking you to respond to the needs of the average citizen for inexpensive energy to heat our homes and energy to create new job opportunities in Pennsylvania while protecting our environment.

I am here to ask you not to be bullied by zealots asking you to believe the worst that can happen, will become the average.

We citizens realize that economic activity has risks associated with it. It was really not that long ago that our great-grandfathers were warned that George Westinghouse's alternating power and light were much too dangerous and that people would be electrocuted daily in the streets and that on a daily bases homes heated with natural gas would blow up and burn to the ground.

Do people get electrocuted? Yes they do. Do homes blow up? Yes they do.

But what if regulators had over reacted to warnings and fears and regulated electricity and natural gas use out of existence or made it so expensive that only a few could afford it? Thousands and perhaps millions would be at risk from breathing candle soot and smoke from burning wood. Improved technology and reasonable regulations provide barriers between us and danger and yet electricity and natural gas are affordable and safe for the masses.

Now is not the time to over-regulate with new regulations that will make energy more expensive for the average citizen, curtail job creation, and continue our dependency on imported energy from a volatile Middle East.

Because of natural gas from Marcellus shale gas prices have fallen and many of us and especially the poor have saved hundreds of dollars heating our homes this winter. Perhaps environmental zealots live on trust funds, but the average citizen many retired in our region are on fixed incomes and cannot afford unnecessary and expanded regulations.

Now is not the time to establish new barriers to economic development and job creation. Unnecessary and expanded regulations related to “special concern species” raises questions about list generation and efforts to mitigate impacts. We need reasonable regulations not a full employment act for the legal profession.

Regulation needs to consider the human cost of destroying jobs in the Commonwealth that will deprive thousands of trained apprentices and workers low on the totem pole a chance at a decent wage.

Regulation must consider the impact on the individual’s mineral rights and the owner’s ability to optimally develop his or her own gas rights. We the citizens do not benefit from the illegal taking of private property rights by over regulation. Class action suits by the citizens deprived of their private property and unable to develop their Marcellus shale rights are costly to the public and stall economic activity.

It is time to retain reasonable regulations that provide cheaper energy, more jobs, and protection of property rights. Please be aware that the average citizen doesn’t have time to run to hearings all over the state; all we ask is for reasonable regulations and a DEP that considers the average citizen’s needs in its decision making. (989)

Response: See response to comment 2456. Regarding “special concern species, see the response to comment 224.

2464. Comment: Act 13 set a high bar for environmental performance, which has been copied by other states, and accordingly it is not necessary, nor in some cases lawful, for the Pennsylvania Environmental Quality Board (EQB) or the Department of Environmental Protection (DEP) to add additional burdens onto the industry. Unfortunately, we believe that in several areas the DEP has proposed doing just that.

We believe the Proposal should not: 1) exceed statutory authority, for example, by expanding the regulatory provisions beyond the terms of Act 13; 2) impose standards on oil and gas operations that are more stringent than those for other industries; 3) introduce operational complexity or obligations that have no meaningful environmental benefit; or 4) create ambiguities or duplicative requirements.

While the Proposal contains many appropriate provisions to enhance environmental protections, it also contains several excessive and costly provisions that go beyond Act 13, impose unique and unnecessary burdens on the industry and are overly prescriptive with little if any environmental benefit. (638a)

Response: The Department disagrees that this rulemaking exceeds its statutory authority. Chapters 78 and 78a are promulgated under the authority of several environmental laws including The 2012 Oil and Gas Act; Article I, Section 27 of the Pennsylvania Constitution; the Clean Streams Law; the Dam Safety and Encroachments Act; the Solid Waste Management Act; the Pennsylvania Law Recycling and Environmental Remediation Standards Act; the Radiation Protection Act; the Administrative Code of 1929; the act of July 10, 2014 (P.L. 1053, No. 126); and the Unconventional Well Report Act, the act of October 22, 2014 (P.L. 2853, No. 173). Accordingly, the Department's authority for the provisions in this rulemaking is not limited to the 2012 Oil and Gas Act.

The provisions in Chapters 78 and 78a provide appropriate protections for public health and safety and the environment. The regulations are based on sound science and are the result of significant public input from the regulated community as well as the public.

2465. Comment: Regulations are necessary to ensure industries are provided the necessary governmental guidance to conduct themselves in a responsible manner. Regulations are typically “written in blood” so to speak in that they are intended to prevent the reoccurrence of negative events having already occurred or those having an extremely high probability of occurring.

Over regulation is a dangerous phenomenon that occurs when regulators through totally honorable intentions raise the noble purpose of regulations beyond their legitimate need to that of creating a perfect world. This dangerous departure from real regulatory needs has a much more detrimental effect than no regulation at all as it can literally kill an industry.

As such, I ask the Environmental Quality Board to revisit their proposed regulatory package and subject each section to the litmus test of “Reality versus Perfect World”. If there is adequate past history to support a section, then, so state this specific history and adjust the measured regulatory response as deemed appropriate however, if the basis for requirements in each specific section serve rather to create a perfect world as opposed to a measured response for preventing reoccurrence of a negative event, then these sections must, by definition of a truly needed regulation, be deleted.

Propaganda regarding the environmental effects of drilling are rampant in both camps. It is the role of good government to seek out the truth and act on facts, not emotions of a vocal few. (927)

Response: The revisions to Chapters 78 and 78a are consistent with the Oil and Gas Act, as amended, and provide appropriate protections for public health and safety and the environment. The regulations are based on sound science and are the result of significant public input from the regulated community as well as the public.

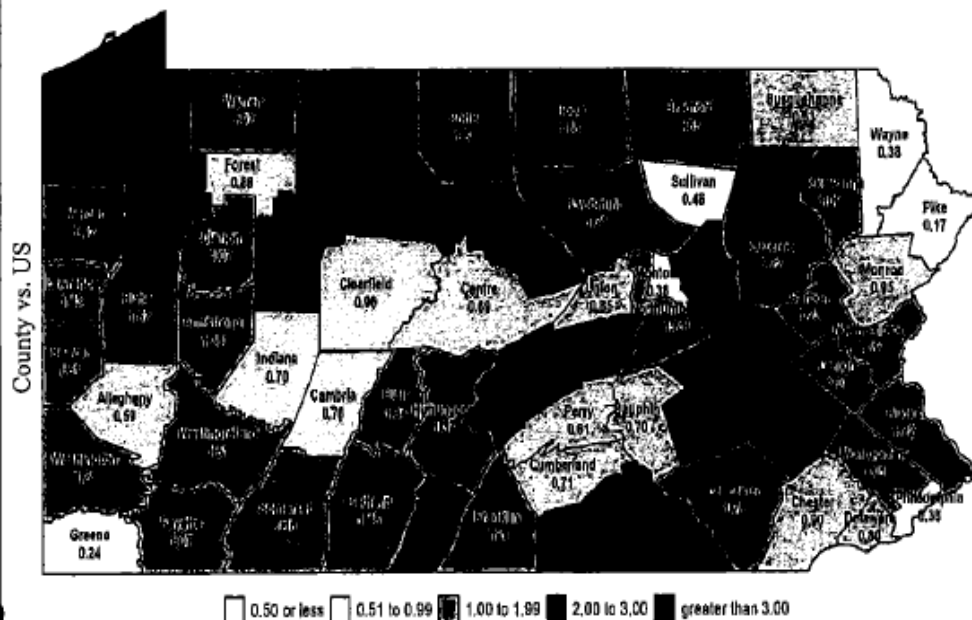
2466. Comment: We need to ensure that Pennsylvania's regulatory process is predictable. Our regulatory environment and uncertain fiscal climate have positioned us behind other areas in terms of attracting capital investments in oil and gas. Other states and countries have strict regulatory standards but receive a more favorable rating for oil and gas investments according to The Fraser Institute, which found that Pennsylvania's regulatory and tax climate are a major deterrent for “attracting oil and gas investment.”

<http://www.fraserinstitute.org/research-news/news/display.aspx?id=20590>

Our state is recognized for having some of the nation's strongest regulations on oil & gas development. We do not need onerous rules but rather we must continue to invest in a highly-trained and competent local workforce. We encourage the DEP to continue working with industry to support technical trainings for industry and agency personnel.

We are concerned that some of the proposed regulatory changes to Chapter 78 provide little to no additional benefit for our natural environment and will weaken Pennsylvania's ability to sustain shale development to benefit our residents.

MANUFACTURING LOCATION QUOTIENT COUNTY MAP¹



¹Based on 2013 March QCEW Employment.

PA MANUFACTURING QUARTERLY WORKFORCE INDICATORS - DEMOGRAPHICS BY EDUCATION LEVEL¹

	1996	2003	2009	2012
311 Food Mfg.	15.8%	37.6%	30.1%	16.5%
312 Beverage & Tobacco Product Mfg.	11.5%	37.1%	32.8%	18.5%
313 Textile Mills	13.7%	39.1%	29.3%	17.5%
314 Textile Product Mills	14.7%	41.7%	29.0%	14.8%
315 Apparel Mfg.	18.4%	36.0%	27.8%	17.8%
316 Leather & Allied Product Mfg.	16.1%	42.7%	28.1%	13.1%
321 Wood Product Mfg.	15.2%	43.1%	28.8%	13.0%
322 Paper Mfg.	10.7%	39.9%	31.9%	17.5%
323 Printing & Related Support Activities	10.0%	38.1%	32.5%	19.4%
324 Petroleum & Coal Products Mfg.	8.1%	34.1%	31.2%	26.6%
325 Chemical Mfg.	8.3%	27.7%	30.4%	33.6%
326 Plastics & Rubber Products Mfg.	12.7%	39.7%	30.9%	16.7%
327 Nonmetallic Mineral Product Mfg.	12.0%	40.5%	30.1%	17.4%
331 Primary Metal Manufacturing	10.4%	39.7%	31.9%	17.5%
332 Fabricated Metal Product Mfg.	11.4%	40.4%	31.5%	16.8%
333 Machinery Mfg.	9.7%	38.6%	32.0%	19.7%
334 Computer & Electronic Product Mfg.	8.5%	33.3%	32.2%	25.9%
335 Elec. Equip., App., and Component Mfg.	10.7%	36.8%	31.9%	20.6%
336 Transportation Equip. Mfg.	10.3%	35.7%	31.4%	22.6%
337 Furniture & Related Product Mfg.	13.2%	40.8%	30.1%	15.5%
339 Miscellaneous Mfg.	10.4%	35.4%	32.1%	22.1%

Source: US Census Bureau, Local Employment Dynamics

For 2012 Quarter 4:

- Chemical Manufacturing had the highest percentage of workers with at least a bachelor's degree (33.6%), followed by Petroleum & Coal Products Manufacturing (26.6%), and Computer & Electronic Products Manufacturing (25.9%).
- Apparel Manufacturing had the highest percentage of workers with less than a high school diploma (18.4%), followed by Leather & Allied Product Manufacturing (16.1%), and Food Manufacturing (15.8%).

- Overall, approximately 89% of individuals working in manufacturing in Pennsylvania have at least a high school diploma, and more than half have completed education beyond high school.

¹ Please note these education levels apply only to Local Employment Dynamics Data, and do not correspond to the educational attainments in the definition section of this document.

(924)

Response: The Department acknowledges the comment. This rulemaking applies throughout the Commonwealth. The revisions to Chapters 78 and 78a provide appropriate protections for public health and safety and the environment. The Department agrees that educating those involved in the industry as well as Department staff is a vital part of ensuring successful implementation of the regulations. The Department believes the regulation will provide substantial benefits to the Commonwealth.

2467. Comment: Our organization started in 1985 after passage of the oil and gas act of the previous year. When Act 223 became law, most small producers were unaware of what was being done to them in Harrisburg. PIPP was an outcome of the anger felt and its members vowed not to let what happen to them in 1984 ever happen again.

Now, almost 30 years later, having lost about half of our membership as a result of the 1984 oil and gas act, here we are again-not blindsided this time but misled. We were aware of new oil and gas legislation being negotiated in Harrisburg. But, our local legislators, based on information they were given by the committees and bureaucrats writing the legislation, assured us that the new law would have no effect on shallow or “conventional” wells. This new legislation was needed to address the unique circumstances of drilling to the deeper, shale strata. So, here we are again, fighting to save the legacy wells that our organization was founded to protect.

I chose to be one of the last speakers tonight because I wanted you to hear from the members of our organization who have already spoken. I wanted you to see that our members are hardworking people who love what they do and just want government to get off their backs and out of their pockets so they can continue producing a product our region and our country needs.

Most of the people here tonight would rather be out working instead of in this courtroom, begging for mercy. Many of the people you have heard from tonight have never before spoken in public, especially presenting testimony to a government panel. But they are doing it because they know what’s at stake - stopping the passage of regulations that would make it impossible for them to operate their wells profitably. Remember, most of these wells produce only gallons of oil or small amounts of gas a day, leaving little or no room for the cost of yet more regulations, especially regulations that do little if anything to protect the environment, as the DEP’s name implies.

PIPP members do not have staff to deal with all the requirements of these regulations. “Integrity Well Testing,” for instance, is just some bureaucrats’ pipedream and will bring zero compliance from PIPP members who operate marginal stripper wells. Some of our operators don’t even own a computer and therefore can’t even report production, let alone attempt the enormous task of reporting well integrity.

Even if these regulations are sent back to DEP and requirements for conventional and nonconventional wells are separated, as we are asking, we still face the ludicrous regulations on disposal of production water, which is one of the other battles we are fighting. If the Department doesn’t work with the small producers to find a solution, there will be hundreds more scofflaws in Pennsylvania, operating outside the law not because they choose to but because they cannot afford to comply with unreasonable regulations. It’s mindboggling to think that the state can spread tons of salt on the roads each year (even brine from gas wells) yet one drop of production water on the ground can bring NOV’s and fines.

Our industry is unique. We can't just close up shop, load up our wells and equipment and move to another state with a more favorable business climate, or sell our wells to the highest bidder. There aren't too many people crazy enough to become involved in a business that requires a lot of hard work with uncertain rewards, where inspectors can walk onto your property uninvited, with no warning, simply because you operate out in the open instead of in a building that can be locked up and only accessed with your authorization. Haven't we learned any lessons from the way government has regulated most manufacturing businesses in our country out of business here to operate overseas?

As you are deciding how to vote on these regulations when they come before you for final passage, think of the people you have heard from tonight. Can you justify destroying their way of life and depriving them of doing the only thing most of them have ever known all their lives, many being fourth- and fifth-generation producers? If oil and gas production was destroying the environment and killing and maiming babies, as some of those who have come before you in these hearings have claimed, these producers and their families wouldn't want to live here themselves and certainly wouldn't live into their 80's and 90's, as my husband has.

Consider what forcing thousands of oil producers out of business will do to the economy of a region which has depended on oil production for over 150 years. How would the state benefit by forcing operators to walk away from wells that they would otherwise continue to operate and eventually plug after their useful life is over when it can't even plug the wells it is responsible for?

When will government stop trying to fix something that isn't broken? You should know by now that it usually ends up doing more harm than it does well. (923)

Response: As part of this rulemaking, in response to comments and recent legislation (the Act of July 10, 2014 (P.L. 1053, No. 126)), the Department split Chapter 78 into two separate Chapters – one for conventional oil and gas wells (Chapter 78) and the other for unconventional wells (Chapter 78a). The purpose of this amendment to the final rulemaking was to clarify the different requirements for conventional and unconventional wells. The Department believes that having two completely separate regulatory Chapters should serve to eliminate any confusion about what requirements apply to conventional and unconventional wells. In addition, having separate Chapters allows the Department to craft regulations to match the environmental risks posed by each segment of the industry (compare, for example, section 78.56 and section 78a.56, which contain significantly different requirements for temporary storage at conventional and unconventional well sites, respectively). See response to comment 2456.

- 2468.** Comment: More governmental regulation results in less liberty, generally speaking. We could easily view over-regulation as a reflection of the current, leftist administration's aim to diminish the private sector and expand government. Application of one-size-fits-all regulation on different aspects of the oil and gas industry is an unfocused and potentially destructive effort. Close "partnership" with the industries involved is absolutely critical to, in the end, promote the general welfare in the cause of freedom and liberty.

Governmental regulation is necessary due to changes in technology and other relevant factors of necessity. Limited government regulation is necessary for the promotion of the general welfare. For example, the General Aviation Restoration Act of 1994 (GARA), which protected general aviation aircraft manufacturers from excessive, crippling legal action, was enacted to protect the general aviation industry from certain destruction.

Too much governmental regulation can crush businesses. Look at the history of the American family farm. Excessive governmental regulation has nearly eradicated that icon of America!

Your mission statement asserts that you will partner with individuals, organizations, governments and businesses. Partnership connotes an element of trust. Trust must be earned. For a partnership to work, there must be trust. Can you be trusted to work with Pennsylvanian private businesses to promote the general welfare and free commerce? Please determine to earn and keep that trust!

Though your intent certainly is to do good work for your appointed office, please do so in a way that promotes the general welfare, and that preserves liberty! (921)

Response: The Department acknowledges the comment.

2469. Comment: According to the Energy Information Administration, the Commonwealth is currently producing 18 percent of the nation's natural gas. To continue to develop domestic energy and eliminate our dependence on foreign fuel, the EQB should require the PADEP to technically evaluate the proposed regulations without pressure from citizen groups that may be unfamiliar with or unaware of the scientific facts. The PADEP should revise the proposed regulations in order to establish justified, practical, scientific and cost-effective regulations. (908)

Response: The Department acknowledges the comment. The regulations are based on sound science and are the result of significant input from TAB, the regulated community and the public. The majority of the membership of TAB consists of professionals highly knowledgeable and experienced in oil and gas operations.

2470. Comment: Like our industry partners, we oppose the proposed amendments to Chapter 78 in their current form. As articulated by other commenters tonight, by those at previous hearings held by the EQB, and by comments submitted in writing, and in addition to the comments that we submitted to EQB on January 9, 2014, we note the following: that the costs of alteration to water impoundments have been severely underestimated; that the Regulatory Review Act has not been complied with; that the rules impose unreasonable standards upon conventional operators; and that the standards which require restoration of water quality to greater than previously-existing levels are unfeasible. In addition, the proposed rules regarding public resources and species of special concern are beyond the Department's authority to promulgate under Act 13, especially in view of the Pennsylvania Supreme Court's decision in the *Robinson Township* case, and the conditioning of well permits regarding public resources fails to comport with the legislative intent of Act 13, because the regulations do not articulate any of the statutorily required criteria for so doing. We ask the Board to vote against passage of the amendment at this time.

We appreciate the EQB's scheduling of this additional meeting and the corresponding opportunity to comment, and the commitment the Board hereby demonstrates to its critical purpose.

As an attorney, and by necessity a student of our language, I would not reach too far to claim that the founding action of any civilization is the writing of its rules. In a single composition, a community starts its values, competing interest are arbitrated, duties and rights are meted out, and a destiny of sorts is tendered to each party to be bound to the social contract. The writing of rules is irrefutably a creative, identity forming act for its intended audience. Like any other work, rules are also a window into the clarity of mind and determination of purpose of the writer. The rule itself judges the author, and the society to which the rules belong.

I am often called upon and endeavor to practice on the writing of agreements, or essentially the set of rules by which parties abide, at first by choice, if not later, by the compunction of law. As I've been told many times, and so believe myself, there is limited use for a contract to which no one will sign. An imposing set of requirements may act as a statement of the author's values, indeed may be issued with all seriousness, and at best may ward off frivolous offers. The great risk then is there will be no one to affirm-no counterparty, acting as a mirror, in which those values can manifest. There is further little value in a contract so one-sided as to impair or weaken the non-drafter, who yet maintains the cyclical, tremulous decision whether to engage the agreement.

In good faith, we do not want, nor do we believe the Commonwealth wishes to render, an unacceptable offer, or a set of terms so onerous to any interest that rights are not protected, and frustration is unduly fostered. We believe that the common ground of reasonable regulation and vital development of Pennsylvania's natural resources exists. As one part of the chorus in that discussion, we ask that when the industry's comments are issued by men and women devoting their lives to their gainful employ, when they speak from the knowledge procured from personally fostered expertise, and when they resound in urgency about the threat of these proposed amendments as written, that these comments be duly noted and assigned their merited credibility.

I hope not to presume upon the Board in this comment, as if its members are unaware of the gravity or nature of its task. We ask the Board to consider these amendments unfinished, and to enable the realization of the governing body that much more work needs done: the work of critical thinking that closely tailors language to its least burdensome and most effective mandate; the draftsmanship of avoiding unintended consequences; the work of listening to the critiques of the governed; and the tireless calculation of the elusive but attainable equilibrium of fairness, which is the fuel on which consenting society is powered. (899)

Response: See response to comment 2456.

See responses to comments 2798, 2800, 2801, and 2802 regarding compliance with the Regulatory Review Act.

See response to comment 224 regarding other critical communities.

See response to comments 264 and 265 regarding consideration of public resources.

2471. Comment: We are a locally run Oil & Gas Production & Servicing Company. We've been based in Warren County for 32 years. Jake & I have always been working partners, and have grown to see our sons, my brother & my son-in-law work with us, as well as my Dad, after his retirement. I got my start in the oil field in 1975, when my Dad got me a job with a third generation, local producer, I L Geer & Sons. In 1982, a local bank took a chance on us and we started our company, servicing and open hole Fracing, for any local producer that would hire us.

In 1993, we expanded into Production, buying PGE's interests in Brokenstraw & Pittsfield Townships. Over the next 20 + years, we have continued to contract out open hole Fracing, all through PA & NY. All the while drilling & Fracing our own wells, and plugging more than 220 of our own depleted wells, within the last 4 years. As most of you know, there is no money in plugging your own wells! We just didn't believe it would be right to saddle someone else with our responsibility, when they needed to be plugged. Like most of you out there, we just want to do what we do best... Produce the good ones & plug the depleted correctly.

I've seen a lot of changes over the last 3 decades. But, none as severe as what we are dealing with

now. All of us here, work hard & responsibly, but it's getting harder & harder with the constantly changing rules & regulations ... I'm not sure anymore, what we will leave the next generation. Maybe just the desire to take a chance and the will and determination to see it through. But, if these new regulations are passed, I believe that it will take more determination and cost that I think I can stomach. (888)

Response: See response to comment 2456.

- 2472.** Comment: Under Natural Resources positions adopted by LWVUS, we believe government policies should promote an environment beneficial to life through the protection and wise management of natural resources in the public interest. Based on our state-wide study, consensus and position, we support the encouragement of employment opportunities at the local level and economic development related to natural gas extraction that will result in new streams of revenue for state and local government agencies but not at the expense of tourism related to natural recreation areas. (15, 867)

Response: The Department acknowledges the comment.

- 2473.** Comment: I am a husband, father of 2, grandfather of 2 and a registered regular voter. I was born & raised in southwest Pennsylvania. I grew up on our family farm in Mt. Pleasant Twp. Washington County. Dad was a full time steel worker and put all his extra time into the farm & family. I hunt & fish in PA. For the last 33 years, my family & I have owned & operate a small supply company called SunnySide Supply, Inc. In 2008 we employed 5 people; by 2012 we have added 10 new employees. We now provide 15 employees (with plans of adding 3 more) all family sustaining incomes, due to the Shale Gas Industry. Here is a very interesting fact; from 2008 to 2012 our employee's average salary increased 60% because of the natural gas industry in PA. Let me be clearly transparent, I live, work & play in the Marcellus Shale Gas play of southwest Pennsylvania.

By the way, the name SunnySide came from the optimism my wife & I had 33 years ago to provide solar equipment to people for the SunnySide of your house. Business was fair, but when the Government Subsidies ran out so did the buyers of solar products! Sound familiar? So we changed our business focus to Industrial Safety Products and kept the name.

I believe solar & wind can generate electricity. However, is the solar & wind industry ready to meet the demand that we need as a nation today? Shale Gas can be the bridge fuel that will safely get us to that point. (133)

Response: The Department acknowledges the comment.

- 2474.** Comment: Let me share with you my views about the Shale Gas Industry here in southwest Pennsylvania. I have heard people talking about different concerns, so let's break the issues down by topics of concerns. Then I'll share my firsthand view as someone living and working in the heart of the Marcellus Shale Play.

Environment

- a. The industry has added layers of safeguards to protect the environment from spills, emissions and venting. I have seen firsthand how the industry has moved from using secondary containment under each machinery to lining the complete pad with multiple layers of continuous seamed liners.

- b. Regularly scheduled emissions testing on the gathering field compressors that have been upgraded with the addition of very expensive catalytic convertors and ultra-lean burn engines all to reduce emissions and meet your standards.
- c. I have seen in the last 6 years an assertive effort to reduce stray vented gas by using improved seals and attention to proper maintained on pipe line connections along the gathering pipe lines, compressors stations and plants. Where there is venting due to safety blow downs, I see that gas being captured and run through state of the art incinerators that have been installed.
- d. Take a minute to read the attached article from the Wall Street Journal written by, Russell Gold, April 19, 2013 “Rise in U.S. Gas Production Fuels Unexpected Plunge in Emissions”

Below is a short excerpt of the article.

“Energy-related emissions of carbon dioxide, the greenhouse gas that is widely believed to contribute to global warming, have fallen 12% between 2005 and 2012 and are at their lowest level since 1994, according to a recent estimate by the Energy Information Administration, the statistical arm of the U.S. Energy Department.”

“Few people predicted this drop in carbon emissions.” Everybody just figured that emissions were just going to continue to increase rapidly,” says Ted Nordhaus, chairman of the Breakthrough Institute, an energy and climate think tank based in Oakland, Calif. “Nobody was expecting the worst recession since the Great Depression, but also no one was really expecting this remarkable shift from coal to gas either.”

e. Also read the short article posted by John Hanger, Wednesday, April 3, 2013, “Pennsylvania Leads Nation In Cutting Sulfur Dioxide Emissions by 600 Million Tons From 2007 to 2011” I feel this article supports the need for the natural gas industry in Pennsylvania from an environmental stand point.

f. I see firsthand how the industry is willing to make the necessary investments into equipment, processes and training to make the industry safe for its workers, the communities and the environment.

g. In the fall of 2013, the State Review of Oil & Natural Gas Environmental Regulations (STRONGER), a national non-profit organization dedicated to assessing states’ regulations and assisting in strengthening them, reported that safe shale development in the commonwealth is overseen by some of the nation’s toughest regulations.

- i. STRONGER has reviewed Pennsylvania in 1992, 1997, 2004, 2010 and 2013.
- ii. STRONGER determined that the Department of Environmental Protection’s (DEP) Oil and Gas program which is already in place, without consideration of the currently proposed revisions, is “well-managed, professional and meeting its program objectives.”
- iii. This follows a September 2010 STRONGER report that called Pennsylvania’s hydraulic fracturing regulations among the nation’s most stringent.
- iv. I have studied STRONGER credentials and read your recent reviews, you should be proud of your work. Congratulations!

April 19, 2013 | [@MarcellusGas](#)

Rise in U.S. Gas Production Fuels Unexpected Plunge in Emissions

The Wall Street Journal

By Russell Gold

U.S. carbon-dioxide emissions have fallen dramatically in recent years, in large part because the country is making more electricity with natural gas instead of coal.

Energy-related emissions of carbon dioxide, the greenhouse gas that is widely believed to contribute to global warming, have fallen 12% between 2005 and 2012 and are at their lowest level since 1994, according to a recent estimate by the Energy Information Administration, the statistical arm of the U.S. Energy Department.

While other factors, including a sluggish U.S. economy and increasing energy efficiency, have contributed to the decline in carbon emissions from factories, automobiles and power plants, many experts believe the switch from coal to natural gas for electricity generation has been the biggest factor. Carbon-dioxide emissions account for nearly 84% of greenhouse-gas emissions, while methane—the main ingredient in natural gas—makes up 8.8%, according to a recent Environmental Protection Agency report.

Natural gas emits half as much carbon dioxide as coal when used to make electricity, though the calculation fails to take into account the release of methane from natural-gas wells and pipelines, which also contributes to climate change.

Few people predicted this drop in carbon emissions. "Everybody just figured that emissions were just going to continue to increase rapidly," says Ted Nordhaus, chairman of the Breakthrough Institute, an energy and climate think tank based in Oakland, Calif. "Nobody was expecting the worst recession since the Great Depression, but also no one was really expecting this remarkable shift from coal to gas either."

Last year, 30% of power in the U.S. came from burning natural gas, up from 19% in 2005, driven by drilling technologies that have unlocked large and inexpensive new supplies of the fuel.

The U.S. trend hasn't led to a global decline in carbon emissions, which increased 15% from 2005 through 2011, according to federal statistics. An International Energy Agency report this week concluded that China's rising reliance on coal to fuel economic growth jeopardizes progress toward what the IEA calls "a low-carbon future." But the U.S., which has decreased its carbon-dioxide output tonnage more than any other nation, demonstrates that market forces can have an impact on greenhouse gases even as politicians continue to disagree over what, if any, federal regulations are needed to force industries to reduce their emissions.

White House spokesman Clark Stevens said important progress had been made reducing emissions and the federal government was committed to implementing standards that "help ensure that we remain on a path to reduce these emissions."

U.S. carbon-dioxide output rose steadily in the 1990s and 2000s, peaking in 2007. In 2008, the economy weakened and power generation from natural gas and renewables began to increase, a combination that led to a sharp reduction in emissions. The Energy Department, which had been expecting increasing emissions, began lowering its forecasts in 2009. It now says carbon-dioxide emissions will begin rising year-on-year in 2015 but won't return to 2005 levels through 2040.

These rapid U.S. declines may be short-lived, as natural-gas prices rise and utilities increase coal consumption. "Our coal-fired generation has certainly picked up" in recent months, says Nick Akins, chief executive of Ohio-based American Electric Power Co. AEP +0.91% Natural-gas prices have risen for eight straight weeks, recently closing at \$4.40 per million British thermal units, more than twice its price a year ago.

Mr. Akins also says that stronger economic growth in the U.S. would reverse some of the recent changes. "If the economy were to pick back up considerably before you are able to put new natural-gas capacity in place," he said, "you would expect carbon emissions to increase because coal is going to pick up as well."

As the U.S. has reduced its coal consumption, it has increased its coal exports to Europe, which rose 23% in 2012 from a year earlier, according to federal statistics. Gérard Mestrallet, chief executive of French power group GDF Suez SA, GSZ.FR +1.34% says that European utilities imported and burned that coal, raising carbon-dioxide emissions from power plants in Europe. He said as-yet unpublished figures for GDF will show an increase in emissions last year.

Other European utilities used more coal also, likely reversing a recent trend of carbon reductions. European carbon emissions fell 8% between 2005 and 2011, the latest year for which data are available. In February, the German environment ministry said it expected there was a 1.6% rise in greenhouse-gas emissions in Germany last year.

European officials have criticized both the U.S. and China at recent United Nations climate summits for a lack of political will to reduce greenhouse-gas emissions. The European Union instituted regulations requiring its member states to lower emissions. The EU has also reduced its overall greenhouse-gas emissions to meet requirements of the Kyoto Protocol, a U.N. compact adopted in 2005 which the U.S. hasn't signed. Late last year, the EU said its emissions have fallen 17.5% since 1990 and were "on track" to meet its 20% reduction target under the Kyoto agreement by 2020. Since 1990, U.S. greenhouse-gas emissions are up 8%. But since 2005, U.S. emissions have fallen faster than Europe's.

The rapid decline in U.S. emissions has taken some pressure off the White House after the 2010 failure of a cap-and-trade bill meant to put a price on carbon emissions. Instead, the Obama administration has embraced environmentally responsible production of natural gas as a relatively painless way to meet both energy and environmental goals.

The decline in U.S. emissions from 2005 to 2012—706 million metric tons of carbon dioxide—puts the U.S. a long way toward achieving the 17% reduction in greenhouse-gas emissions from 2005 the Obama administration set as its 2020 goal a few years ago.

Groups in favor of cutting greenhouse-gas emissions to reduce the threat posed by climate change say far deeper reductions than that 17% are needed. "The wildfires, storms and droughts we've seen over the past few years have shown us we need to make even steeper reductions in emissions that were proposed a few years ago," says Michael Brune, executive director of the Sierra Club.

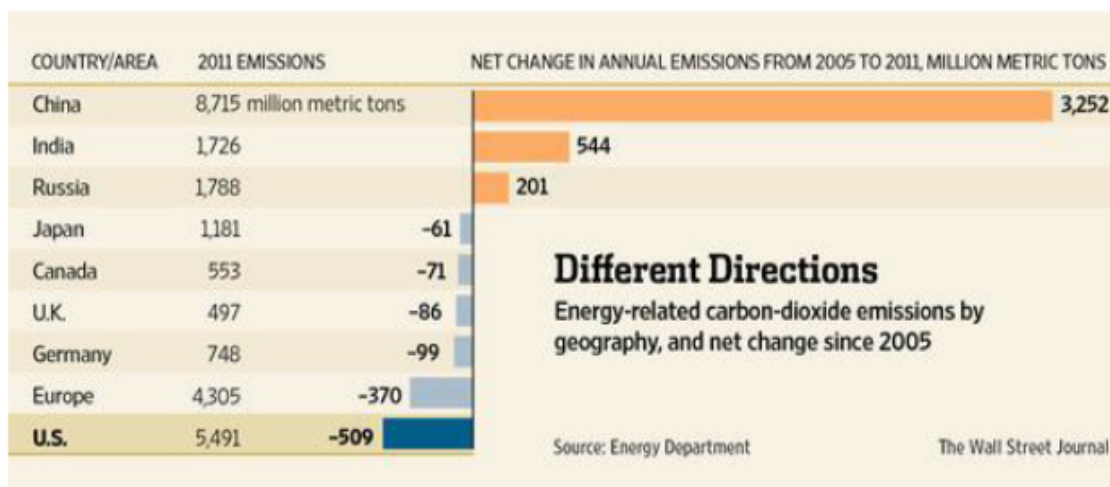
There is considerable worry by many observers of the gas industry that federal figures of overall greenhouse-gas-emissions reductions may be misleading because they fail to account for the impact of natural gas that leaks into the atmosphere from drilling and pipelines. A recent EPA report noted that U.S. greenhouse-gas emissions, including carbon dioxide, methane and other contributors, were 6.9% below 2005 levels, but this data didn't include 2012.

"The fundamental question is, are we making progress in reducing global warming—and that is a question of whether or not we are controlling methane leaks," says Mark Brownstein, head of the U.S. Climate and Energy Program at the Environmental Defense Fund, which is leading new studies to determine how much natural gas leaks from wells and pipelines.

"If you measure the extent of the problem, you can manage the problem," he says. "We just haven't been measuring and therefore we haven't been managing."

Some states require natural-gas companies use technology to capture gas during the construction and drilling of wells. While much of the energy industry has resisted such requirements as too expensive, some companies that use this technology report that it pays for itself. Houston-based Southwestern Energy Co., SWN -0.75% a large shale-well driller, said capturing gas is no more costly than burning it off, or flaring it.

Take a minute to really look at this chart. China is producing 3,252 Million Metric Tons of emissions while the USA has REDUCED its emission to -509 Million Metric Tons. The reduction is the result of using Natural Gas.



Wednesday, April 3, 2013

Pennsylvania Leads Nation In Cutting Sulfur Dioxide Emissions by 600 Million Tons From 2007 to 2011

Unlike China, America's air is getting cleaner, and Pennsylvania is leading the way, where sulfur dioxide emissions were slashed by nearly 600 million tons from 2007 to 2011 or by about two-thirds. Georgia was second with a 400 million ton reduction. <http://www.eia.gov/electricity/monthly/update/>.

The Clean Air Act targets sulfur dioxide for reduction, because it is a precursor to particulate matter that causes sickness and early death and because it causes acid rain. The huge declines are nothing but good news.

The sharp declines in sulfur dioxide emissions are caused by large investments in scrubbers for coal-fired power plants, the shift to natural gas power plants, as they emit very little sulfur dioxide, and more renewable energy and energy efficiency.

Posted by [John Hanger](#) at 6:45 AM

(133)

Response: The Department acknowledges the comment.

2475. Comment: Natural Gas has helped to improve our air quality. The industry is not perfect, however it is important to continue to embrace the industry which helps our environment, wildlife and economy. I urge you to not undermine our current strong, consistent regulatory framework. Instead, I urge you to continue to work in a cooperative manner with the Oil & Gas Industry to maintain a balance between strong environmental protections and a strong economically competitive Pennsylvania! Pennsylvania Shale Gas is Clean, Abundant, Affordable and Red White & Blue Energy!!! (133)

Response: The Department acknowledges the comment.

2476. Comment: I am a Community Outreach Manager in southeastern/ northeastern Pennsylvania for the Marcellus Shale Coalition, an association working with regional partners since 2008 and currently comprised of nearly 300 exploration and production, midstream, and supply-chain companies committed to developing clean-burning natural gas resources. In 2012, our members were responsible for 96 percent of the natural gas produced here in Pennsylvania.

Responsible shale development has been among the most transformative turning points in our Commonwealth's history. And indeed, natural gas development can serve to enhance and improve our natural resources.

Significant investments have been made across the Commonwealth by our industry to provide needed habitat and restore lands and watersheds. Partnerships with conservation groups are examples of our industry's willingness and commitment to voluntarily protect and preserve our natural resources. And our industry has raised the bar for shale development further with practices designed specifically to lessen the impact on surface disturbance and provide strategies to improve habitat and landscapes.

The benefits do not end there. Take, for example, the fact that the Commonwealth accounted for 18 percent of the nation's natural gas production in recent months, according to the Energy Information Administration. This has led to:

- More revenue: The natural gas industry has paid over \$1.8 billion in taxes since 2008 and \$406 million over two years to communities, counties, and the state in impact fees.
- More jobs: More than 200,000 new hires in Pennsylvania are supported by industries associated with shale development.
- Less costly heating fuel: According to the Associated Press, about two-thirds of Pennsylvanians heating their homes this winter will pay the lowest prices in a decade.
- And cleaner air: The U.S. EPA confirmed in October 2013 that carbon emissions are at their lowest since 1994, thanks to increased use of natural gas.

These benefits, unfortunately, are at risk. Pennsylvania has a complex regulatory environment and an uncertain fiscal climate, which has resulted in the Commonwealth falling behind. And there is even less certainty in the wake of a decision of the Pennsylvania Supreme Court to reject portions of Act 13 of 2012 that established a statewide standard for oil and gas development. Moreover, a plurality of the Court ruled to roll back many of environmental protections under Act 13 – including more stringent well setbacks. Nevertheless, our industry will voluntarily comply with these setbacks, at the Governor's request.

Other regulatory provisions spurred by Act 13 and the Chapter 78 revisions that followed add to the Commonwealth's strong regulatory framework, which the State Review of Oil & Natural Gas Environmental Regulations, or STRONGER, a national non-profit organization dedicated to assessing states' regulations, referred to last fall as "well-managed, professional and meeting its program objectives." And for that, we applaud both the General Assembly and the Pennsylvania DEP.

At the same time, many of the DEP's proposed regulatory changes to Chapter 78 stretch beyond legislative intent and will undercut the Commonwealth's ability to compete for capital – while providing little or no additional benefit with regard to safe and secure oil & gas development. These include:

- Establishment of special concern species, which raises questions about how any such list is generated, what criteria are used to determine whether there is an impact to these species, and how DEP proposes to mitigate impacts to such species.
- Treatment of abandoned wells, which would lead to open-ended obligations for identifying these wells.
- And the "better than standard," which requires the oil and gas industry to upgrade private water supplies, at industry expense, beyond that which existed pre-drilling – despite the Technical Advisory Board's recommendations otherwise."

The Marcellus Shale Coalition will provide detailed written comments on the Department's proposed regulations in the weeks to come. Our over-arching message, though, is straightforward: instead of undermining our strong, consistent, and predictable regulatory framework, we should work cooperatively to revise these proposals to maintain a balance between strong environmental protections and a competitive economic climate. It does not need to be a false choice between the two, and we urge the DEP to continue working with our industry and stakeholders across the Commonwealth on a reasonable, competitive path forward. Thank you for the opportunity to provide this testimony. (134, 871)

Response: The Department disagrees with the comments that address the regulation.

In response to the commentator's comments about special concern species, please see responses to comments relating to the definition of "other critical communities." Specifically, please see response to comments 265 and 342.

With respect to identifying abandoned well prior to hydraulic fracturing, this is a recommendation by the STRONGER organization as a necessary component of a minimally acceptable oil and gas regulatory program. As the commentator recognizes, the recommendations of this organization should be followed.

Finally, the commentator takes issue with the statutory requirements of Act 13 for water supply replacement. The Department is bound by this act of the legislature and cannot change the water supply restoration requirements by regulation. The Department believes the revisions to Chapters 78 and 78a are reasonable, appropriate and consistent with the constitution and applicable statutes.

2477. Comment: As a lifelong resident of Western PA, I'm very pleased to see the growth of the economy here after decades of decline that resulted from the loss of heavy manufacturing. The natural gas industry, in partnership with careful control by the DEP has breathed economic life back into the State of Pennsylvania. Horizontal drilling and hydraulic fracturing has brought forth

enormous volumes of natural gas – enough to last more than a century. The possibilities seem endless, from power generation using efficient combined cycle gas turbines to replace coal fired boilers, and the chemical, plastics and pharmaceuticals industries as well as the birth of new businesses; gas will furnish the needs of all these industries. Let's remember that for each new job created; five to seven jobs are created in the local economy – equipment suppliers, restaurants, banks and clothing stores. Local Impact Fees allow communities across the state to repair roads, upgrade water and sewer systems, and build ball fields for our kids to play on. To date, several hundreds of thousands of Pennsylvanians are now bringing home paychecks... and the best is yet to come as the gas industry is years from maturity.

In response to stringent regulations set forth by DEP, drillers and the industries that support them have standardized on a myriad of innovations like advanced well sealing systems, frack fluid reprocessing and they are working on the conversion of drilling rig diesel engines to quieter, cleaner electric drives. Innovations like these simultaneously improve productivity and safety of operations while reducing emissions and preventing pollution of groundwater. DEP has expanded its staff to support added permitting, inspection and enforcement activities from dozens of employees to several hundred. And the beneficiaries are the people of Pennsylvania who get the benefits, but will no longer live with the threat of contaminated air, aquifers and streams.

Going forward, it is important that DEP continue to set forth guidelines for the industry to follow as it further expands. As I understand it, Chapter 78 is a very good addition. But as a retired technology manager, I caution that any new regulation must be clear, concise and complete in itself, and it must be consistent with other regulations already in place. It's important that industry users are not sent on paper chases in which regulations direct users to other parts of the Code (or worse – to other Codes). Please be sure to eliminate any potential inconsistencies as they will surely lead to misinterpretation, confusion and mistakes which can vary from loss of time and productivity to dangerous accidents which can harm property, workers and nearby residents. You must review each section from the viewpoint of an unfamiliar user of average intelligence who is rushed for time and under pressure to perform. What mistake might that user make, and if he does, what might be the consequences and resulting damage? If you take that approach, users will fully understand how to proceed. New wells will be safely drilled and natural gas will be brought into production through newly laid gathering and transmission pipelines to customers located here in Pennsylvania and abroad.

We stand at the threshold of a wonderful new industry – one that will replace the steel industry that was lost a generation ago. As Pennsylvanians, we have embraced this new found bonanza, but we are determined to proceed in the safest possible manner. As regulators, you are charged with the heavy responsibility making sure that natural gas is harvested in the safest and most efficient manner so that it benefits present and future generations of Pennsylvania's residents, communities and corporations alike. Thank you for shepherding this new industry to a promising tomorrow for the benefit of us all. (143)

Response: The Department acknowledges the comment. The Department believes that the regulations are clear and unambiguous. The revisions to Chapters 78 and 78a are consistent with applicable statutes and provide reasonable protections for public health and safety and the environment.

2478. Comment: Please support drilling and fracking for oil and gas. Please follow your excellent oversight, licensing and inspection. (648)

Response: The Department acknowledges the comment.

2479. Comment: 150 years ago there was a problem: A need for alternatives to Whale Oil, used for lighting. Whale oil was getting difficult to get, and a rumor that a substance called “rock oil” may solve the problem. Thus, the beginning of the crude oil era was launched, and the whales were spared.

We have a situation today with the EQB that changes the way Crude oil has been produced by the small Producer in shallow wells that appears to have a “one that fits all” approach, but that is far from the Truth. It is like imposing the same rules on a rowboat as there are for a Carnival Cruise ship.

First, a trip back in Time.

The substance we know as Pennsylvania Crude Oil was used and traded by the American Indians. Crude oil was skimmed or gathered using blankets, as it floated down the Alleghany River and Oil Creek. It was a natural occurrence, to have crude oil on our waterways! Crude oil is also thought to have come from pits dug in various locations by the Indians, to be traded with other commodities to other tribes throughout at least one area known as the “New England States”. One personal example of the uses: When we had our first child, one of the gifts we received from an elderly lady was a small bottle containing crude oil..... For when and if our child got the Croup, give her a teaspoon of crude oil!

We have a responsibility to protect our natural resources given to us by God, and use them for the betterment of man. For 150 plus years, a group of dedicated men and women have sweated, labored, bled, and even died, to preserve this natural resource while make a living for their family.

Pennsylvania crude oil is a remarkable substance. The paraffin base makes it quite unique. It is used in many medicines, a base for lipstick and cosmetics, “Johnsons baby oil”, Vaseline, ultra-fine lubricating oil, and maybe a 147 different uses including the sealing wax my wife uses for making strawberry jam!

One problem with the new additional purposed regulations: It is about the value of information required, why, and by whom, for whom, and what’s the value and purpose? If it has not been needed for the past 100 years, why is it needed now? Redundancy is not needed. Has anyone on the rules committee ever “walked in the shoes” of the small family producers?

My suggestion -An independent “Value Engineering Study by a Certified Value Specialist should be executed to study the regulations. Certified Value Specialists are required on many Federal and Pennsylvania State Government Projects, especially on PARTNERING ACCORD- STUDIES.

Mother Nature has been very effective in cleaning up what we do to contaminate the Environment. Take this year. Millions of gallons of 23% brine solution have been dumped on the roads and bridges with tons and tons of rock salt and other chemicals are poured on Public highways, without any problems that DEP is aware of, or even cares about. Yet, out in the woods, if 1gallon is accidentally spilled on private property; fines are handed out for thousands of dollars. Other chemicals like Grass killing chemicals are routinely applied to roadsides that eventually wind up in the streams and water supplies no problem with the DEP! The “Valley that changed the world” was cleaned up by Mother Nature in a natural process. Brine and crude oil in small lots are great fertilizers! (Look at the site of old wooden tanks. The biggest trees grow out of and around the tanks,) If nature does not mind a little brine and crude oil in the wild, than why should you be so critical against one small group, and so blind with the real world, the real facts? There MUST be a better way. Maybe the old ways of dispersing brine at each well site are best.

My Son, my wife and I manufacture The Oil Well Sentry, a Pump-off control that is “Self-Managing “.It operates on the shallow wells to monitor the fluid level in Working Barrel, and then automatically shuts the Production Cycle “off” when the fluid level pumps low, and records the time of production. The Sentry eliminates unproductive time and activity, saves wear & tear on equipment, lets Producers work more effectively, and make better use of their time. It also increases production, decreases energy requirements, make more money, and give them information about each well that is not possible any other way. I pray my business will continue if not forced out with useless regulations designed for completely different Industries and methods.

I’m asking the DEP and the EQB to join me, in making the life of our Independent Producers better. Streamline all the “paperwork” required, and be one of the “good guys”, in helping solve problems, not constantly searching for a fault and fining them. They are doing what producers do in operating and producing our precious natural resource: Pennsylvania Crude Oil, not filling out worthless forms and test. After all, it is their land, their well, their crude oil which they will give to their kids for generations to come. Do not end this family connection! (903)

Response: The Department acknowledges the comment. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The rulemaking provides the framework for electronic notifications and permitting that is intended to streamline processes for operators and the Department as well as make information more readily available to the public in general through the Department’s website. The Department is responsible for preventing pollution to the natural resources and administering penalties when necessary due to pollution events.

2480. Comment: I am writing today in reference to Notice of Proposed Rulemaking, Proposed Amendments to Pa. Code § 78 (Relating to Oil and Gas Wells). I urge you not to enact any regulations that would hurt natural gas production in Pennsylvania.

As member of Pennsylvania’s energy sector, I know firsthand that our industry is committed to safety and environmental protection. Improving technologies and practices have made energy development safer, while also increasing production. As you know, Pennsylvania’s natural gas production has increased dramatically over the last five years. Our state has gone from being an importer of natural gas to a net exporter. The natural gas industry is supporting hundreds of thousands of Pennsylvania jobs.

Not only is natural gas production helping Pennsylvania businesses and workers, but it’s also helping provide revenue for public services. Since 2008, the natural gas industry has paid over \$1.7 billion in taxes. Through the Act 13 impact fee program, over \$400 million in revenue has been provided to local communities.

These benefits can continue for decades to come if the Pennsylvania Environmental Quality Board takes a balanced approach to revising regulations that provides safeguards without imposing costly, unnecessary regulations on energy development. Please keep this in mind as you revise the state’s oil and gas regulations. (190, 975, 6090 – 7235)

Response: The Department acknowledges the comment.

2481. Comment: I work in the oil and gas industry, and the environment is very important to me and my family. I can say with absolute certainty that, if I thought that the oil and gas industry was not doing

everything in their power to keep the environmental impact of their work to a minimum, I would not be writing this letter.

I know that the biggest concern from local residents regarding the industry is the environmental impact it will have on the area. I would like to point out a few findings from the national non-profit group State Review of Oil & Natural Gas Environmental Regulations (STRONGER). This is a group whose primary goal is to assess each state's environmental regulations, and make them better wherever possible.

In the fall of 2013, the State Review of Oil & Natural Gas Environmental Regulations (STRONGER), national non-profit organization dedicated to assessing states' regulations and assisting in strengthening them, reported that safe shale development in the commonwealth is overseen by some of the nation's toughest regulations.

- STRONGER determined that the Pennsylvania Department of Environmental Protection's (DEP) Oil and Gas program is "well-managed, professional and meeting its program objectives."
- This follows a September 2010 STRONGER report that called Pennsylvania's hydraulic fracturing regulations among the nation's most stringent.
- Key excerpts from the 2013 report include:
 - The review team commends DEP for increasing its staff levels to address additional permitting, inspection and enforcement activities related to increased unconventional gas well development. Over the past four years, as unconventional gas well development has increased in Pennsylvania, the Office of Oil and Gas Management has increased its staff from 64 to 202 employees.
 - DEP is commended for its hydraulic fracturing program. Standards for well casing and cementing require that the operator conduct those activities to control the well at all times; prevent migration of gas or other fluids into sources of fresh groundwater; and prevent pollution of fresh groundwater.

As someone who lives, works and plays in the area, this report makes me feel as though the regulations already in place are doing exactly what they were designed to do. I do not feel that adding more red tape and government interference to the industry will equate to any measurable environmental benefit. These proposed regulatory changes, in my eyes, will do little more than undercut Pennsylvania's ability to compete for capital. All that the proposed regulations will accomplish is adding new processes and more paperwork, neither of which will positively impact the environment.

If many of these revisions are adopted, Pennsylvania will be risking its ability to compete for capital against other regions and states. What it comes down to in the end is that all of these laws and regulations should be designed to promote a healthy working relationship between the Commonwealth and the Oil and Gas industry. Boggling down the system with overly-broad proposals, restrictions and laws does not promote a health relationship. Some lawmakers seem to think that the industry needs to be bullied into doing the right thing. It has been my experience that the workers in the industry, as well as the companies that they work for, want to keep Pennsylvania just as beautiful and clean as the people who live here. A big part of this is the fact that people working in the industry are the people who live in the area.

The Oil and Gas Industry is not perfect, and I understand the importance of making sure that the appropriate regulations, checks and balances are in place. With this in mind, I urge you to not

undermine the strong, consistent regulatory framework that is already in place. The Oil and Gas industry is here to stay, as long as we don't force them out. Please work to continue to build on the already cooperative relationship shared between the industry and the Commonwealth. (196)

Response: The Department acknowledges the comment. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2482. Comment: I am writing to ask that the proposed revisions to PADEP's oil and gas rules not be finalized in their current form. I am a property owner who earns royalty revenue from conventional oil and gas activity on my land/My (husband's, wife's, son's, daughter's, father's, mother's, friend's, neighbor's, etc.) job relies on PA having a healthy and robust conventional oil and gas industry, and I am concerned that the added burden of increased regulation and associated costs could significantly harm the industry while provide little or no added benefit to the environment.

From what I see, Pennsylvania's environment is in good hands with the oil and gas industry. Those who work on my property and others I encounter in this industry live, work and play in the same areas where the oil and gas industry operates, and they all share a passion for protecting the Commonwealth's natural resources. It is obvious that they -like me -want to pass on the legacy of a clean, healthy environment to our children and grandchildren.

I understand that regulations are necessary and must be updated periodically to match current laws and industry best practices. At the same time, however, the costs of regulations cannot outweigh their benefits. It is obvious to me that the onset of Marcellus shale drilling has sparked these proposed changes so why not concentrate on regulating that portion of the industry and leave the conventional industry as it currently is? When applied to conventional operators, many parts of these proposed rules go beyond what is called for under existing laws and impose requirements that go further than what is needed to effectively protect our environment.

I am concerned that the result will be fewer oil and gas wells drilled which could mean smaller royalty payments for me and my neighbors. For many of us, royalty revenue has breathed new life into family farms and small businesses all across Pennsylvania. Decreased oil and gas activity will also mean fewer jobs in the industry and in the communities that support it, at a time when we desperately need more jobs. It will also mean less tax revenue for all levels of government, placing even greater burdens on already-stressed government services. Fewer oil and gas wells will also mean less oil and gas supply which will once again increase our dependence on other countries for our energy needs.

Please vote "no" to adopting this rule unless it is substantially revised to reflect full consideration of the costs and benefits of the regulation. Show us that the wellbeing of our people, the prosperity of our communities and our energy future are every bit as important as Pennsylvania's natural resources. (410, 448, 454, 464, 476, 562, 567, 569, 570, 571, 572, 573, 574, 582, 583, 584, 585, 587, 588, 599, 600, 602, 603, 617, 620, 621, 646, 785, 824, 931, 1236-1394, 1395 – 1668, 1669 - 1682, 1683 – 1684, 1685- 1758, 1759 – 2175, 4016 – 4428, 4557 – 4558)

Response: The Department acknowledges the comment. As part of this rulemaking, in response to comments and recent legislation (the Act of July 10, 2014 (P.L. 1053, No. 126)), the Department split Chapter 78 into two separate Chapters – one for conventional oil and gas wells (Chapter 78) and the other for unconventional wells (Chapter 78a). The purpose of this amendment to the final rulemaking was to clarify the different requirements for conventional

and unconventional wells. The Department believes that having two completely separate regulatory Chapters should serve to eliminate any confusion about what requirements apply to conventional and unconventional wells. In addition, having separate Chapters allows the Department to craft regulations to match the environmental risks posed by each segment of the industry (compare, for example, section 78.56 and section 78a.56, which contain significantly different requirements for temporary storage at conventional and unconventional well sites, respectively). The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

The Department has made a complete assessment of the costs of the rulemaking. The Department used cost information provided by the industry to develop the Regulatory Analysis Form. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2483. Comment: We're paying you guys fox what you're doing here. And Bradford County, thanks to oil and gas, we've been able to eliminate all our county debt, cut taxes for every Bradford county resident. It's been terrific and we're very blessed.

We do demand safe, responsible drilling of our natural resources. I support development of our natural resources. County Commissioners are 100% residents. I'm glad you guys are there to oversee it with oversight. And I believe in state-based regulations because I think you guys do a really good job.

Bradford County has 36,000 parcels of property. 14,000 of those are one acre and under. Seventy percent of our population sees ten acres or under. This is not about large property owners, however, it's been terrific for our farms, but it affects every working family and every retired person. It's terrific. We're not talking about great sums of money in oil, fees but we're talking about a bunch of people who are proud to contribute to the United States of America for energy development, for national security. We're proud that we contribute money to state coffers of Pennsylvania as well as the complete economic blessings that we've seen locally.

We have 50 freshwater withdrawals. It's our rivers, the streams, the creeks; we have a hundred freshwater impoundments with a thousand miles of installed permitted gathering Lines. We have 500 plus oil pads. We have 2,000 drilled wells. We have 20 built and ready compression stations, if any of you folks are aware that we're approaching 800 billion cubic feet of gas to be produced out of Bradford County, and I'll tell you, we're proud of it.

The jobs that grow from prosperity you can't ignore because what you folks do with the oversight of natural gas is a result of that. And we thank you very much for it. We've seen things happen in our county beyond our wildest dreams.

Heard someone talking about roads. We've seen \$300 or \$400 million worth of full-depth reclamations put in our roads in Bradford and close to the surrounding. That is an environmental blessing to all of us because that's berms and ditches and drainage. And you folks know that's asphalt, seven inches of asphalt that our township could never ever have done through natural gas.

We've seen increased growth to our tax base, to our local economy, filling, again, the state coffers through the Marcellus region. We've seen new hospitals and healthcare grow as a result of this. The good news just goes on.

We appreciate what you folks do for water testing, when it comes to our water wells, through your casing and grouting standards you implemented a few years ago. It has just been terrific.

And I'm going to tell you something right now as a County Commissioner. I personally am tired of the Chicken Little naysayers that go around spewing misinformation about what goes on in Marcellus. The industry does a great job. You guys do a great job of oversight. But I will tell you it hurts counties and businesses when people get misinformation. We have had more people visit our county. We take them on pickup truck tours. And when they leave, their words are – carpenter locals, from all over New York came down and went on a tour – this isn't what we're told.

We've had film crews from Norway. We've had Japan. We've had them all over the place. And because of what they hear outside the Marcellus region from chicken little naysayers they walk away saying, this is beautiful. Good job on what you folks do, the reclamation, the pipeline. The wildlife is flourishing up there. You know, the Industry will plant food plots for wildlife. People need to go and look.

Due to record high gas prices, high coal heating fuel prices, our seniors and working families have to struggle today. What we do in Pennsylvania to help fuel this country is ever --- of most importance. Dan Yello is here. I was in New Mexico trying to learn as much as I can about natural gas. He called me because we had people at a County Commissioners meeting that were coming to Pennsylvania to put in sand reclamation off wellheads, a new procedure that they do. Dan called me up to say, the DEP can help you with these people to get them here in Pennsylvania. We will help --I've never had that. One time in ten years of being a Commissioner. My hat's off to you.

It's safe, responsible to science and Law first... Let's get the job done. It's a great way to do it and I'd like to thank you folks for the work that you do. And I believe you keep state-based regulations to make sure those unconventional drillers are taken care of as well as conventional. (857)

Response: The Department acknowledges the comment.

2484. Comment: Significant investments have been made across the Commonwealth by the natural gas industry to restore lands and watersheds and provide needed habitats for our wildlife. Partnerships with conservation groups are examples of our industry's willingness and commitment to voluntarily protect and preserve our natural resources. As a company, and collectively as an industry, we have raised the bar for shale development even further with practices designed specifically to lessen the impact on surface disturbance and provide strategies to improve habitat and landscapes.

The proposed amendments to Chapter 78 can put these benefits, unfortunately, at risk. Pennsylvania has a complex and robust regulatory environment. However, this situation has turned less certain in the wake of the decision of the Pennsylvania Supreme Court to reject portions of Act 13 of 2012 that established a statewide standard for oil and gas development. Moreover, a plurality of the Court ruled to roll back many of environmental protections under Act 13 – including more stringent well setbacks.

We support and endorse the Marcellus Shale Coalition technical comments that have been submitted as part of this review process. As a company, and an industry, we believe many of the DEP's proposed regulatory changes to Chapter 78 stretch beyond legislative intent and will undercut the Commonwealth's ability to compete for capital – while providing little or no additional benefit with regard to safe and secure oil & gas development. As currently proposed, the amendments to Chapter

78 do not state when they will be implemented. This results in a great degree of uncertainty for operators in the Commonwealth which could lead to a sudden increase in costs.

In conclusion, instead of undermining our strong, consistent, and predictable regulatory framework, we should work cooperatively to revise these proposed amendments to maintain a balance between strong environmental protections and a competitive economic climate. It does not need to be a false choice between the two, and we urge the DEP to continue working with our industry and stakeholders across the Commonwealth on a reasonable, competitive path forward. (1145)

Response: The Department acknowledges the comment. The commenter does not specify how the revisions to Chapter 78 stretch beyond legislative intent and will undercut the Commonwealth's ability to compete for capital. The final regulations will be implemented on the effective date specified in the Preamble to the final rule.

2485. Comment: My main focus pertains to jobs. Whether it is direct or indirect, the oil and natural gas industry provides and supports hundreds of thousands of jobs in PA, and not just in the area of the state that are realizing the development of this energy resources. The natural gas industry is a job multiplier, so for students seeking a career in supply chain management, mechanical engineering, civil engineering as well as communications like me have a better chance of finding a job within their field of studies. In fact, a lot of industries will be able to grow and provide more jobs to residents of Pennsylvania as natural gas becomes a consumer resource across our state. The more careers the state can provide its youth, the more of a chance Pennsylvania's youth will be able to work and raise their families here in PA. (1087)

Response: The Department acknowledges the comment.

2486. Comment: Even though I am returning this form letter and want you to know and agree whole heartily with the gas and drilling company. They are protecting our land while bring much needed money to our area. (622)

Response: The Department acknowledges the comment.

2487. Comment: When discussing agriculture issues within the farming community, change is constant, and that statement exemplifies the transformation that has occurred in Pennsylvania Agriculture over the past several years due to the Marcellus shale activity throughout the Commonwealth. All too often the discussion of Marcellus shale and agriculture center on the farmer who signed a lease or had a well pad on his/her property and the immediate and future benefits that individual will receive. In many causes, the farmer has used this new income stream to expand and grow the farming operation.

For many people outside the Marcellus Shale arena, the story stops here. They view the Marcellus Shale activity as impacting a chosen few who have the good fortune of living in an area of Pennsylvania that has active Marcellus Shale drilling and not impacting the overall economy of the Commonwealth. However, the reach of Marcellus Shale has gone much further and touches a wide variety of agriculture businesses, both large and small all across the Commonwealth and is not restricted to solely the areas where Marcellus Shale is evident. The overall benefits include decreased heating and electricity costs, increased sales of seed and fertilizer, and companies retrofitting agriculture structures such as bins, tanks to accommodate the needs of the shale companies. (633a)

Response: The Department acknowledges the comment.

2488. Comment: Wildlife and Natural Resources

- a. I still live in the country next to the family farm. I see the pipe lines that come through and the effort that is taken to properly put the surface (at least the slope & vegetation) back to its original state. The priority of this work is to establish vegetation and stabilize the soil and prevent erosion. Interestingly, when the snow falls in the winter, guess where the deer come to graze? The pipe lines!
- b. I do not feel that the wildlife numbers are declining due to being displaced from their habitat from pipe line work. If anything I believe we see more wildlife (deer & turkey) in the last 6-8 years. I don't think the wildlife is any more displaced then when a housing plan, shopping mall, or 4 lane highway is constructed.
- c. Take a look at the PA Insurance carrier's auto/wildlife claims. Each year there are more and more claims. Is the deer population really shrinking?
 - i. "In fact, AAA Mid-Atlantic spokeswoman Jenny M. Robinson said Tuesday, deer crash claims increased 10.6 percent between 2010 and 2012. The Insurance Information Institute estimates about 1.6 million deer-vehicle crashes occur annually nationwide. In those crashes, about 200 motorists die, tens of thousands are injured and damage claims exceed \$3.6 billion." By George Mattar, Posted: Wednesday, October 9, 2013, Bucks County Courier Times
 - ii. "The chance of a Pennsylvania driver striking a deer is 1 in 76, a new State Farm study shows. That is the fifth-highest rate in the nation. "In each of the top five states, the rate of deer-related collisions per driver rose from a year ago. The insurance company uses its claims data and state licensed driver counts from the Federal Highway Administration to monitor collision chances. In 2011, the odds of striking a deer with your vehicle in Pennsylvania were 1 in 82, making the state fourth in the nation." By Joseph Kohut, Published: October 29, 2012, The Times Tribune, Scranton PA
- d. The process and equipment that is used to transport fresh & production frack water has changed dramatically. Again the industry has heard the concerns and put Best Practices in place to protect the environment by implementing new procedures and equipment to reduce the chance of a failure which will protect both land and water ways. The industry has also developed a process to recycle their production water reducing the amount of fresh water that they use.
- e. The industry has raised the bar for shale development further with practices designed specifically to lessen the impact on surface disturbance and provide strategies to improve habitat and landscapes.
- f. Partnerships with the conservation groups are examples of our industry's willingness and commitment to voluntarily protect and preserve our natural resources.
- g. Significant investments have been made across the Commonwealth to provide needed habitat and restore lands and watersheds. (133)

Response: The Department acknowledges the comment.

2489. Comment: This letter is regarding the revisions to PADEP's oil and gas rules that will be finalized. I'm writing as the owner of a property that had a vertical Marcellus Well drilled in 2010.

Our experience has been positive and we are thankful for the royalty income that we have received. Our property was impacted for almost one year once the site preparation began and was ultimately finalized with the re-grading of the drilling pad. We experienced an oil and gas company, BLX, which appeared to comply with all regulations and took into consideration not only our needs, but the needs of the surrounding property owners. They responded in a positive way to all complaints that they received including the construction of a sound deadening building to limit the sound that was bothering an adjoining property owner.

There is no question that the industry must be regulated, but a complete overhaul of the regulations appears to be unnecessary. Some of the more onerous regulations will affect property owners and affect the number of wells drilled and the number of people employed by the industry without improving the overall safety of the property owners. I was pleased to see how many people were employed with the drilling of one vertical well and it included excavators, line layers, drillers, security people, engineers, truck drivers, and tank contractors. The material needed to drill the well created numerous offsite jobs.

It is important that the board members take into consideration the costs and benefits of the proposed regulations which will certainly add additional costs to the well drillers and the industry, but may not provide additional safety to the community. Protecting our land, water, and resources is a necessity, but exaggerated requirements that go further than necessary, supporting a limited agenda, can only hurt land owners. (607)

Response: The Department acknowledges the comment. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The Department does not believe the regulations are unnecessarily burdensome on the oil and gas industry. As explained in the RAF, the Department considered the costs and benefits of the regulations.

2490. Comment: Most people think that crude oil was first discovered near Titusville, PA on August 27th of 1859 by Colonel Edwin Drake in a well drilled to 69 feet deep, and it was a brand new mineral for the white man's use.

However, crude oil had been seeping up through crevices in the ground for eons before the white man came to America. The local Indians would skim it off the surface of the water (using blankets) on Oil Creek, and then use it for medicinal purposes. So it wasn't just coincidence that Col. Drake decided to drill for oil where he did.

Penn Grade Crude that is also produced in the western tier of New York, parts of eastern Ohio, of course western Pennsylvania, and in West Virginia is unique. This crude is a paraffin based medium in comparison to crude oil found throughout the rest of the U.S. and around the world, which is mainly an asphalt (or tar base) crude.

In addition to excellent motor oils, lubrication greases, gasoline, kerosene, and diesel fuel. Penn grade Crude generates over sixty different products, many of which are found in our homes and everyday lives. These include, waxes, furniture polishes, hand & skin lotions, cosmetic creams, and wax uses in food items such as M & M's & Hershey's candies to dilute and soften the chocolate, and many other products including a wide range of plastic resins (polyethylene, polypropylene, urethane,

nylons, PETs, and polycarbonates).

Left on the ground, Penn Grade Crude will breakdown and disappear over time. This is not true for the asphalt based crudes found around the world and imported into our country. These have a tendency to turn into tar when left out in the sun.

In the early days of our country, most homes were heated with fire wood readily available from the surrounding forests. On the plains where trees were seldom seen, buffalo dung became a readily available source of fuel. As time progressed and demand for nighttime lighting around towns and cities increased, and man came up with the idea of using whale oil for burning in street lights. This became quite an industry, but at the expense of killing off large numbers of whales around the world. Today many of these are endangered species. Of course for home lighting, the primary light source was candles made from animal fat. Today these candles are made from the waxes of Penn Grade Crude.

So where does this leave us for the future? Wind and solar power can supplement major energy sources, but are problematic and inconsistent. Hydro power can also supplement, but is not the total answer. Problems and concerns come with Nuclear power which was once considered the solution of our future energy needs. A big problem there is the challenge of what to do with the spent fuel.

This leaves us (an industrial nation) with few options for the near future;

Low sulfur coal

Fuel Oil

And one of the greener energies, Natural Gas as a variable answers for the foreseeable future. Unless of course, we want to return to using firewood and buffalo dung? (624a, 624b)

Response: The Department acknowledges the comment.

2491. Comment: I want to say thank you for holding these hearings and having regulations that are more stringent than they have been in the past. Let's acknowledge that the regulations you're putting out there are more stringent, including some of the ones people are asking you do I see in here, like let's don't have open storage of water, those sorts of things. So thank you for answering their request before they ask it.

I wanted to share with you all as someone who sees these wells all the time, Let me tell you what I'm seeing up there. It's not all bad. It is not Three Mile Island. It is not a person who's doing some secondary work on coal like in West Virginia.

I've been watching ever if they do store the water in open pits, the way they've been putting double and triple liners inside there. I can see the way they've been handling the water up there working with the community, not against the community. And so I mean I've seen my share of bad things and I've seen my share of good things.

And so what, I'm telling you, if you want to listen to the stories and read The New York Times, you're going to hear the things that sell newspapers. But if you want to know what's actually happening, I would recommend you go and talk to the people, the landowners up there, talk to those that are around there, because we actually care very deeply about what happens to Rose Valley Lake. Rose Valley is a State property. It's managed very closely and very carefully.

We care deeply about that because in part it brings people to our area. And one of the things we like

about it is that it's been shown respect by Anadarko, by Seneca, by EXCO, even Atlas, which if we're going to talk about a driller that may be running or more of a shoestring, they are demonstrating tremendous respect for the environment around the area.

Now they did do a burn-off, the 24 hours hearing that burn-off and seeing the light in the middle of the night is kind of not cool. Actually it was quite hot. You could feel the heat if you got within 5,000 feet of it. But it was 24 hours and then they were done, and then they capped it, they cleaned up everything and it looks really good up there.

I do want to say when we talk about what happens when the corporations go into townships. They have improved the roads; they've improved the other infrastructure. They're putting pipelines in that can be used for other things later. They're rolling money back in because there is money coming from the state, because they are being taxed. The impact funds are rolling back into the townships for the townships to improve and for the county to improve what's going on with the county and the township.

So it's not all bad. It's not all fear. I do appreciate the empirical Data that gets put forward by the people, the engineers that know the engineering data. I believe that the state actually has good engineering data to use when they build the regulations. (1090)

Response: The Department acknowledges the comment.

2492. Comment: Every day, I wake up grateful for this incredible resource below our feet. However, increased or a complex regulatory environment will hamper this entire industry and all of its cascading opportunities.

I, as well as my co-workers, am on the "frontlines" everyday keeping people informed and handling matters directly attributed to our local drilling activity. This hands-on approach allows us to combat issues quickly and efficiently without the need for micromanaged legislation. If this same approach is echoed throughout the industry, we can help stay in front of the need of excess governing.

Our most important duty is to try to keep people informed and satisfied with our operations. The easiest way for me to describe my work to friends and family, is to relate to a golf course. I tell them the well site is the putting green but much flatter, much bigger and obviously louder. I try to keep the people who live along the "fairways" happy and calm with the different phases of our operations.

We introduce ourselves to landowners as part of a "notification" process during the initial construction of a well site. We do this to all the homes nearby. This usually starts the, what I call, the "rest easy" process. We not only answer any questions but also extend our direct contact information for any round-the-clock concerns. We also keep the residents informed of every phase of the activity.

In the last four years, I've noticed that the more knowledge residents have about the drilling process the more at ease they are with our operations. The "fear of the unknown" is usually the biggest obstacle for people to get over when talking about drilling. Making personal contact with the neighbors and knowing that they can call us anytime is great peace of mind. Having such a strong company behind our work, helps tremendously.

Throughout the course of our week, we have issues we have to take care of. We don't let these issues go unresolved. Our prompt attention helps to maintain a positive persona of the industry in the areas we work. Whether it's a damaged mailbox or a hazardous road condition, we jump on it

ASAP. This is vital!

We are in people's back yards, front yards and side yards! They know however, when the construction, drilling and tracing is over, things will get back to normal. We pride ourselves on the fact that we may have to come back into the area in the future so it is important that we maintain a positive relationship with our neighbors.

If you are a resident near an existing or proposed well, you more than anyone else, have the right to your opinion! If you have an issue, make sure you voice it to the company directly involved with the activity. Don't let the issue fester; give the company a chance to address your problem.

The drilling companies are here and want to stay. They want to do things right. They have a lot of money invested and are putting food on a lot of tables. Please let them continue to have this opportunity without over regulation! Lastly, please keep an open mind and stay informed! (999)

Response: The Department acknowledges the comment.

2493. Comment: After being at the EQB hearing in Williamsport on Monday and hearing how harmful our oil and gas is according to the environmental people who were there, I thought I would tell you about how every one's day was probably like.

This morning as every morning probably is, we all picked our heads up off of our pillows when the alarm clock went off. We then swung our feet to the side of the bed and put on our slippers and headed to the kitchen to eat breakfast. We take a plastic bowl out of the cupboard and pour in our cereal. Then pour ourselves a glass of milk or juice. After eating and reading the morning newspaper we go brush our teeth and jump into the shower. After enjoying the hot water, we shampoo our hair or what's left of our hair. Then we open the shower curtain and get out. Next most people blow dry their hair and comb it. Some women use hair curlers. Men put on shaving cream to shave. Then the women start with their makeup, lip stick, deodorant, nail polish and perfumes. If they are older they use denture adhesive, then perhaps put on their glasses to see what they are doing better. Some people wear soft contact lenses instead of glasses. Now people are taking their clothes off of the hanger and getting dress. Women put on either panty hose or nylons, and then come the shoes. Now everyone is ready to go jump into their car and drive to work.

I could go on and on with this story but hopefully I will have gone far enough to have made my point. The point is that the pillows, alarm clock, slippers, plastic bowls, milk or juice container, the newspaper and how it got there, tooth paste and tooth brush, the hot water heated by gas, shampoo, the shower curtain, blow dryer, the comb, hair curlers, make up, lip stick, deodorant, nail polish, perfumes, shaving cream, razors, the denture adhesive, glasses, soft contact lenses, the clothes hanger, panty hose or nylons, shoes, next comes almost every part of the car and it's fuel. Everyone one of these items I have mentioned come from paraffin based crude oil which is what Penn Grade Crude Oil is. From the way you people describe it, I think it's a miracle we are still all alive. Crude Oil is in every part of our lives every day.

Most of the environmental people were calling for no drilling and no fracking in Pa. and I'm sure you don't want it anywhere in the United States. In 2012 there were 124,092 automobile accidents in Pa. 87,846 people were injured. 1,310 were killed. 168 pedestrians were killed. 4,548 were injured in car accidents in 2012. 210 motorcyclists were killed and 3,919 were injured. 16 bicyclists died and 1,377 were injured. I could not find 1 death directly connected to health issues from oil and gas. If you people want to save the world find a way to reduce automobile accidents in the state and leave us to do our job and help this country become less reliant on foreign oil.

Are you willing to send your sons and daughters to the Middle East to keep peace and fight a war so we can have a supply of oil? At Monday's meeting you talked about how you are doing this for your children. Let me tell you this secret, we in the oil and gas industries have children also. Do you really think that we would harm our own children?

The people of the United States need to start working together to become energy independent. The attitude of not in my back yard is destroying our country. Energy can be produced in an environmentally safe way. It would help this country if you spent time trying to find new forms of energy, instead of trying to destroy the only sources of energy that actually works. We are proud Oil and Gas people, but we are also proud to be environmentalist. We try our best every day to protect the earth and still do our job. We want a healthy world for our kids also. (863a, 863b)

Response: The Department acknowledges the comment.

2494. Comment: In Pennsylvania alone, we have seen the creation of thousands of jobs, both within the industry itself and outside of the industry in areas you may have never imagined. We have seen new jobs provided by the energy companies that are establishing themselves here, along with more directly related industries such as water recycling, trucking, and steel and pipe manufacturing to name a few. We will also see countless new businesses and industries come to our Commonwealth once the proposed "cracker plant" in Beaver County is constructed. There will also be jobs in areas that many of us would have never even considered. I once had the pleasure of meeting a woman that owns a diner in Washington County and she told me that her diner would do well, but a few years ago when the Marcellus Shale drilling began, her small business was really able to take off. She now provides food on numerous drilling sites for the workers and because of this, she has had to greatly increase the number of people she employs.

I would also like to take a moment to point out that in the last census, we saw growth in many of the counties where there is significant drilling. The fact is over the past few decades, we have seen thousands of Pennsylvanians leave our state for others that have greater job opportunities and more robust economies. The oil and natural gas industry has provided us with one of the best solutions to this problem that we have seen since our population decline began; it is not only bringing new people into Pennsylvania, but keeping Pennsylvanians here by providing them with solid jobs, especially in rural areas where the number of jobs was limited.

We must also look at an issue that is not only important to Pennsylvania, but to the entire United States and even the whole world. Much of the energy produced on Earth is not produced by nations that always have the best interests of Americans and its allies at heart, but rather their own. These nations raise and lower energy production to best serve their own economic and political interests. With Pennsylvania and other states, like West Virginia and North Dakota, seeing such a great increase in energy production, we are able to sell our own oil and natural gas in the United States and to other countries. With continued development, energy independence is a true reality for our nation and the ability to buy energy from allies becomes a more realistic option for many others.

I have listed several of the benefits that the energy industry has provided Pennsylvania and others tonight through the development in the Marcellus and Utica Shale regions. We are seeing new jobs, new people, and a more secure Pennsylvania. We have seen nearly \$2 billion in tax revenues since these developments began and will continue to see even more as the industry continues to develop. This tax money is helping to develop our communities, fund our schools, and fix our roads. We are seeing low energy costs that greatly benefit every Pennsylvanian, especially during our cold winters. I would also like to say that none of us here want to see the industry be allowed to operate

unchecked by our lawmakers and regulatory agencies. We all support proper rules and regulations that will ensure the safety of Pennsylvania and its environment, but I will ask that we also work to allow this industry to grow without unneeded restrictions and allow all Pennsylvanians to continue to benefit. I thank you for allowing me to speak tonight regarding this important issue. (822)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2495. Comment: The proposed regulatory revisions are needed but contain serious shortcomings, do not sufficiently address the risks posed by the oil and gas industry and run counter to the overall goal of the rules. (853a, 1165, 1168)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The commenter did not specify how the regulatory revisions “contain serious shortcomings”; therefore, the Department cannot specifically address those concerns.

2496. Comment: I find the proposed environmental protection performance standards for oil and gas well sites totally inadequate in protecting the environment, the drill workers and the 15 million members of the public dependent on the water coming from the Delaware Watershed. With DEP’s budget and staff being cut and the number of wells proposed and drilling permits sought this is at best a joke and at worst an outrage to protect the environment and our water supply. Where is the monitoring of the air, water, ground and drill casings? Where is all of this waste water going to be stored or treated? What if there is a well blow out or waste pond overflow? Where is the emergency response team and plan? The industry record and response to past events leaves much to be desired. If an existing well pad has a potential regulation violation, the DEP inspector has to first submit their findings to Harrisburg for review. Either these regulations are followed or they are not worth the paper they are printed on. Political contributions from the gas and oil drillers should not trump following environmental health and safety regulations. I am not sorry if the drillers find these regulations “burdensome” in any way. Where is their sense of environmental integrity? They say they are drilling in an environmentally responsible way, but that is not what I am reading in the newspapers or seeing on TV or in the movies. How are leaks and flaring of the methane going to be monitored? If the chemicals used to frack these wells are so safe, why are they exempt from the Safe Drinking Water Act? Why are medical professionals treating workers or residents near the well pad drill sites under gag orders? The chemicals used, proprietary or not, should be publicized. The public has the right to know what these chemicals are. If there is a leak or accident, how will the public know what they are, if they don’t know what to watch out for? These chemicals are not the same ones found under our kitchen sinks. Far from it. What are they trying to hide by saying they are “proprietary.” That is not being environmentally friendly. If the DEP had any real intentions of protecting the public and the environment, they would outlaw and band the practice of hydraulic fracturing. But since you are owned by campaign contributions of the gas and oil drillers, and rely on voluntary reporting by them, I don’t have any faith in these regulations, the DEP or the gas and oil drillers to follow them and report any violations. I Don’t Expect Protection from the DEP or these regulations. I will continue to advocate for the total ban and outlawing of these environmentally dangerous procedures that are too expensive to be done safely and totally unnecessary for our energy needs. (1)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2497. Comment: I am strongly in favor of careful consideration of the human and environmental impacts of drilling, especially fracking. The harmful chemicals injected into the wells absolutely must be kept out of soil and drinking water in the area drilled. In general, I am strongly opposed to any sort of drilling, preferring that funds be channeled instead into development of clean, safe, renewable resources such as wind and solar power which do not adversely affect our water--a precious and finite resource. (3)

Response: The Department acknowledges the comment.

2498. Comment: First off, as a citizen of this planet, not just this state and country, it is time to stop drilling. We need to focus on GREEN ENERGY! We are going to run out of oil sooner than later so it is time to move on now so we can save this planet for future generations.

If drilling has to be done, PLEASE! PLEASE! PLEASE use the highest standards of safety, to keep our water clean, our air breathable, and people and the planet safe. Use the highest EPA standards and then some. (4)

Response: Except a small number of certain types of hydraulic fracturing activities, the EPA currently does not regulate oil and gas drilling. This rulemaking strengthens the standards for oil and gas development in Pennsylvania.

2499. Comment: What are the companies doing to guarantee our water supplies will NOT be contaminated? What happens when water IS poisoned? Are they putting up a bond for this? Why aren't we taxing them more? They are getting away paying basically NOTHING for any damage that may (probably) be caused. Why aren't they paying for road repair instead of taxing the poor motorist who cannot afford it? They made large contributions to the governor that is why he won't touch them! HOW CORRUPT! (5)

Response: The Department is not authorized to set impact fees linked to ongoing extraction. Development of an impact fee or extraction tax is a matter for the Pennsylvania Legislature. If the Department determines that an operator's activities have caused pollution to waters of the Commonwealth, or violated an approved permit, the Department assesses penalties and requires corrective action to take place to cease pollution occurrence and clean up pollution.

2500. Comment: Sirs, I ask you to listen to the groups that are horrified at the total and wanton destruction our precious water that is not renewable!!!! Please listen to Damascus Cit. For Sustainability Catskill Mountain Keeper and other real people who are trying to keep our water safe. I myself have been personally impacted by leaking methane from old wells that are not regulated and never will be, since the corruption of PA makes another scandal like "Kids for Cash" seem like nothing compared to the outright corruption and total arrogant. I have had 2 operations for cancer, and now broke because of the victim's inability to prove this is coming from wells or pipelines. Look to what happened in Sullivan County NY Horrific Terror from the forced Evacuation from 'their mishap' I suffered thru a "mishap" it's called cancer of which I blame the companies who drilled before I made the mistake of moving here!!! And nobody will buy me out!!! This is something that can never be regulated as long as the comp. are exempt from all environmental and Clean Water Act. Please look at Gasland the movie, please!!!! Listen to us!!!! (7)

Response: The Department acknowledges the comment.

2501. Comment: After reading even more on fracking and watching the TV version of the movie Gasland and also even checking info from the gas companies, I have now changed my opinion and feel that, at this point, fracking should be BANNED in Pennsylvania, and elsewhere as far as that goes. It is an extremely dangerous technique that has already produced a great number of wells that LEAK poisonous liquid that contaminates creeks, lakes, wells, ground water sources and even the air we breathe!. The refuse from fracking that is buried or “sealed” is also a pollutant and has been illegally dumped into woods, rivers, and marshes.

The gases created and given off by fracking have and are causing serious health conditions in people living nearby and even in fetuses. People near these sites have had to move from their homes losing hundreds of thousands of dollars in real estate losses. It is also unconscionable that the gas companies are forcing silence onto people who have settled law suits with them. This should not be permitted.

It was careless and irresponsible that the state legislature permitted fracking anywhere in our state. Neither people nor animals can live without water---CLEAN water! Fracking should be stopped immediately. Thank you. (8a)

Response: The Department acknowledges the comment. The Department does not have the statutory authority to ban hydraulic fracking within the Commonwealth. Banning hydraulic fracturing would require an act of the Legislature.

Well drilling can be done in a safe and environmentally sound way, provided applicable laws are adhered to. The regulatory changes included in Chapters 78 and 78a are intended to further strengthen these standards to ensure the Commonwealth’s environment and the health of its citizens is properly protected. The Department will continue to study the efficacy of its regulatory programs and make improvements to the rules as necessary.

2502. Comment: Fracking is wrong. It’s bad for people, good for greedy corporations. Even if it continues it needs to be managed better, but stopping it is a far better thing. Your God will judge your decisions. (35)

Response: The Department acknowledges the comment. See response to comment 2501.

2503. Comment: The only rule that will protect us from fracking is to ban fracking; it is the rape of the earth which impregnates our ground water with cancer causing chemicals. Outlaw it NOW! (38)

Response: The Department acknowledges the comment. See response to comment 2501.

2504. Comment: I would like to see a moratorium on fracking in PA immediately. I have been a UGI gas customer most of my life, and heat my home with gas right now. Yes, it is costly during the winter, but I have never once thought that I would like to see my beautiful state destroyed so I could get a few dollars off my bill. I didn’t want fracking and don’t want it in the future. Stop now. (42)

Response: The Department acknowledges the comment. See response to comment 2501.

2505. Comment: First off, my family and I would like all fracking to be halted until the Halliburton loophole is rescinded. It is so outrageous that oil and gas companies can pump who knows what chemicals into our land and no one can even prove anything if their water or property are

contaminated (look at the suffering families in Dimock, PA). Many disturbing incidents of farm animals sickened and suddenly dying after exposure to fracking contaminants cannot be ignored as is currently happening. The safety of our water, land and our food system is in SERIOUS JEOPARDY. TOM CORBETT HAS SOLD OUR HEALTH AND PEACE OF MIND TO THE HIGHEST BIDDER. WE EXPECT YOU TO PROTECT THE CITIZENS OF PENNSYLVANIA WITH THE STRICTEST RULES AND OVERSIGHT AND TO FORCE THESE COMPANIES TO SUPPORT THE FAMILIES THAT HAVE HAD THEIR DRINKING WATER POISONED AND THEIR ANIMALS KILLED!!!! (59)

Response: The Department acknowledges the comment. The Department understands the commentator's reference to the "Haliburton loophole" as a reference to an amendment to the federal environmental laws. The Department may not amend federal laws in this rulemaking.

That said, recent studies, including a recent draft report issued by the EPA, have not found that fracking results in widespread impacts on drinking water resources within the United States.

To the extent that the commentator suggests that additional protections are needed, Chapters 78 and 78a, as well as other regulations, permits and policies implemented by the Department under Pennsylvania's environmental laws, establish a comprehensive regulatory scheme for oil and gas well development activities to ensure protection of public health, safety and the environment.

To the extent that the commentator suggests that the chemicals used in hydraulic fracturing activities are unknown, please refer to Sections 3222 and 3222.1 of the 2012 Oil and Gas Act as well as Sections 78.122(b) and 78a.122(b). These sections outline the chemical disclosure requirements.

2506. Comment: Since the rules for oil and gas drilling were all written before fracking was invented, new rules need to be written. Fracking has proven to be a highly toxic process, and causes much air and water contamination. Fracking needs to be halted until safe methods of fracking are invented. (65)

Response: The Department acknowledges the comment. See response to comment 2501.

2507. Comment: Fracking is dangerous, not necessary and is merely gangster money laundering. If permitted you all should go to jail and rot there.



(71)

Response: The Department acknowledges the comment.

2508. Comment: My first hope would be for a moratorium on all gas and oil drilling and extraction in the state and country. (362, 4582-4584)

Response: The Department acknowledges the comment. The Department is not authorized to issue a moratorium on oil and gas operations. Issuing a moratorium would require an act of the Legislature.

Well drilling can be done in a safe and environmentally sound way, provided applicable laws are adhered to. The regulatory changes included in Chapters 78 and 78a are intended to further strengthen these standards to ensure the Commonwealth's environment and the health of its citizens is properly protected. The Department will continue to study the efficacy of its regulatory programs and make improvements to the rules as necessary.

2509. Comment: Fracking has caused a tremendous amount of damage. If it is to continue, which I don't think it should, it must be effectively regulated so our environment will not continue to be badly compromised. We get only one planet; we are obliged to care for it, for our children and grandchildren's sake. We cannot afford to ruin and waste large amounts of water, and to put methane into the air. Governments should have the vision to lead the way in an intense effort to move away from fossil fuels, and to CONSERVE energy--something that is seldom mentioned. We use energy extremely wastefully; it doesn't have to be that way. (75)

Response: The Department acknowledges the comment. See response to comment 2501.

2510. Comment: Fracking is a disaster since it can and does destroy our water and natural resources. Only a few individuals would profit from selling off these resources, which once are destroyed, cannot be restored. Please do your part to protect the public and our state's precious resources from these money-hungry, short-sighted fracketeers. (80)

Response: The Department acknowledges the comment. See response to comment 2501.

2511. Comment: Also there should be a cap on the number of wells each gas company can drill or have a collective annual cap. And each time a gas company has a violation their number of potential annual wells should be reduced in concert with any other fines or penalties. If we don't incentivize these folks to do it right then they won't. For the record my vote is to ban fracking in Pennsylvania. At the very least I am in favor of imposing a four year moratorium to perform a large scale impact study of the effects of fracking in the Marcellus shale. Well leakage rates should also be heavily regulated. In order to see any climate benefit from burning shale gas we need 1-1.5% leakage. The industry reports 6-17% and a recent study suggests atmospheric methane levels are 50X higher than previously estimated. (98)

Response: The Department acknowledges the comment. See response to comment 2501.

2512. Comment: I don't know if you believe you are here on this planet to fulfill a purpose, but I hold such a belief. I know my purpose is to be a voice for the earth. In fact I have a master's degree in the little known field of Eco psychology which believes that our psyches are intimately connected to the natural world, and our mental, physical and spiritual health depend upon our honoring and nurturing this connection. I grew up walking barefoot through the south central Pennsylvania Mountains and fields, and dangling those same feet in the icy cold waters of her creeks and rivers. I love my home, and I believe you do too. You won't be surprised when I say I am opposed to any of our current methods of obtaining shale gas. I don't believe it can be done without harming our environment and ourselves. That is, the cost: benefit ratio is unacceptably high. Among other things, fracking releases significant amounts of methane (CH₄) into the atmosphere. According to the U.S. Environmental Protection Agency, "Pound for pound, the comparative impact of CH₄ on climate change is over 20 times greater than CO₂ over a 100-year period (<http://www.epa.gov/climatechange/ghgemissions/gases/ch4.html>). A better solution might aim toward limiting our growth and conserving our precious resources. In general, I think more meaningful penalties should be in place for well operators who fail to follow any of DEP's regulations, including criminal penalties for intentional disregard of regulations. We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect. ~Aldo Leopold, A Sand County Almanac (108)

Response: The Department acknowledges the comment.

2513. Comment: I have been concerned about hydraulic fracturing since I became aware that this process was starting in upstate Pennsylvania. There are many important considerations about fracking in an area as densely populated as the greater Philadelphia is. Also implied in any discussions of fracking is the human rights issue. Do natural gas companies have the right to threaten the rights of people to clean water and air? (111)

Response: The Department acknowledges the comment.

2514. Comment: After carefully reading the DEP proposed amendments to the PA oil and gas regulations, it is clear that the primary intention of these regulations is to encourage the expansion of

the oil and gas industry in Pennsylvania, and not to protect the environment, the unique ecology of PA, our valuable forests and state lands, or people who live in the communities in the shale regions.

I hear the usual code words such as “minimizing, acceptable practices, lessening the impact”, etc., but nowhere in the rules and regulations do I see any measure for shutting down what are commonly referred to as “bad actors”. The only consequence for any violations, caused either by negligence, intent, or by accident, are scandalously low and inadequate fines. There are also no mentions of any measures that the state would impose upon any operator to justly compensate, or restore the quality of life of those who will be negatively impacted. On the contrary, the rules are clearly slanted in the industry’s favor.

To date, more than 1600 residents of Pennsylvania have entered their names onto the List of the Harmed, avowing that after drilling operations began in their area, they became ill. 161 of those cases have been documented and confirmed by the DEP via a Right to Know request.

Research from the Colorado School of Public Health indicates that persons who live within ½ mile of fracking operations have an increased risk of disease-- both cancers and non-cancers due to exposure to toxic chemicals.

Dr. John Adgate, Colorado School of Public Health, found that the chronic health risks near drilled areas were highest for neurological disease, hematological disease, respiratory effects, and developmental effects.

A study recently released by Cornell University, found decreased birth weight for babies of mothers who experienced their pregnancy near unconventional gas drilling operations. The research on the effect to developing babies is horrifying. There has been shown to be a 25% increased prevalence of low birth weight if the mother lived within 1.5 miles of an unconventional gas well.

Dr. Currie of Princeton University looked at the Pennsylvania birth records from 2004 to 2011 of infants born within 1 mile of unconventional gas drilling sites, and found the likelihood of low birth weight increased by more than half.

Research out of Duke University found that water wells within 1 mile of unconventional gas wells had 17 times the thermogenic methane as compared to reference sites. Another Duke study found thermogenic methane 6 times higher and ethane 23 times higher if a home was within one quarter mile of a gas well.

Dr. Warner of Duke University expressed concerns about natural pathways that might allow gases from gas wells to put drinking water supplies at risk.

Kevin Schug of the University of Texas found elevated levels of arsenic and selenium in water closest to gas extraction sites.

Avner Vengosh of Duke University found that brine from Marcellus shale contains bromide and radium which is radioactive.

The Texas Commission on Environmental Quality analyzed fracking fluids. Associated health problems included: 65% of the chemicals were associated with serious health effects, 94% with skin, eye, and respiratory harm, 93% with gastrointestinal problems, 87% with respiratory system damage, 83% with brain and neurological effects.

Many of the chemicals used in gas drilling operations are known carcinogens, neurotoxins, and endocrine disruptors. Many, such as the BTEX group, have long been known to be linked to chronic and fatal diseases.

Over 40% of the chemicals used in unconventional gas drilling have been found to be endocrine disruptors.

A recent University of Missouri study done by a team of researchers, including Susan Nagel, head of the Endocrine Disruptors Group found that water samples collected from sites in a drilling dense region of Colorado exhibited more estrogenic, anti-estrogenic, or anti-androgenic activity than reference sites. The risk of disrupting the endocrine systems of our born and unborn children is unconscionable with the potential to lead to a multitude of chronic diseases and developmental disruption. The state of Pennsylvania has yet to conduct comprehensive public health and environmental studies, yet in the state of Pennsylvania, we have well sites located within 2 miles of at least 190 day care facilities, 223 schools, and 5 hospitals.

“Regulation” by its very definition means: the adjusting, organizing, or controlling of something, or the state of being adjusted, organized, or controlled, or to regulate the flow.

In closing I must conclude that there is no such thing as regulations that will adequately and sufficiently protect the people, or ensure the safety and protect the health of our children. If there are, I would like to know what regulatory model the DEP and the EQB have been studying.

Therefore, all the regulations, and the amendments to current regulations you propose do nothing more than attempt to adjust the rate of damage to the environment, public health, and the safety and security of our communities, and our children.

Finally, I would like to echo the wise words of Supreme Court Chief Justice Ron Castille who wrote the Supreme Court’s decision on the unconstitutionality of some of Act 13’s provisions when he said:

“By any responsible account, the exploitation of the Marcellus Shale Formation will produce a detrimental effect on the environment, on the people, their children, and the future generations, and potentially on the public purse, perhaps rivaling the environmental effects of coal extraction.” - PA Supreme Court Chief Justice Ronald Castille, December 19, 2013

Therefore, the only responsible and acceptable solution that will protect our constitutional rights, the public health and safety, and the environment of Pennsylvania is to initiate a ban on this dangerous and invasive practice of extreme fossil fuel extraction, and move towards developing a renewable and sustainable energy policy. (136, 912)

Response: The Department acknowledges the comment. The Department disagrees that the regulations are not intended to protect the public and the environment. Rather, the Department believes the revisions to Chapters 78 and 78a are consistent with the constitution and applicable statutes and provide appropriate protections for public health and safety and the environment. See response to comment 2501.

2515. Comment: As I read through the proposed regulations I just couldn’t help but think how much time they spent developing these regulations and the others that we have. I also kept in mind the expense that’s going to be involved for the operators. Our time and money should go to truly clean, renewable energy, not invested into mile-long or longer holes that open pathways into an unknown

future. For we still have no definitive study that says absolutely the practice of hydraulic fracturing is foolproof and safe. What we do know is that the leaks, spills, blowouts and failed well casings that hydraulic fracturing bring pollute the water we drink. And that the compressor stations, processing plants and pipelines have polluted the air we breathe. No amount of regulation will change those problems, only a ban on any future hydraulic fracturing will truly mitigate the impacts of this industry.

Varying setbacks are mind-boggling; 200 ft here, 500 ft here, 100 ft here. To think that a five acre industrial site can be a hundred feet from a blue line stream, or 200 ft from a natural landmark, less than a football field away, it's ridiculous. Make all setbacks a truly meaningful distances. A mile sounds good to me. And make it away from everything. (1215)

Response: In Section 3215(a) of the 2012 Oil and Gas Act, the General Assembly established setbacks prohibiting the drilling of oil and gas wells within certain distances from buildings and drinking water wells. For a conventional well, this distance is 200 feet; for an unconventional well, this distance is 500 feet. Additionally, unconventional wells may not be drilled within 1000 feet of a public water supply. To the extent, the commentator suggests that the General Assembly should extend these setbacks, that change should be made through an amendment to the 2012 Oil and Gas Act.

The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2516. Comment: I was born here 35 years ago and I have two kids. I am a gardener and I'm learning more and more about the soil every year and how important that is to us and how connected we are to everything that we see, breathe, think about etc.

I have a sign on my front fence that says no fracking. I have a friend in Australia who is very close with the damages that have done. I told a trucker one day that I really don't appreciate him being a trucker for the water. And he said how the truckers just dump their stuff all over the place.

I really love the outdoors in PA. There is a place called Tionesta and it is the most beautiful place in PA. This place is over 3000 acres of old growth. There is this huge swath going through it of a pipeline. And there was a day I walked by and I'd say a year before and there's bubble coming up from nastiness. You can't even find the place and I'm sure they want you to not find the place because of the gas that's coming up underneath the most beautiful place in PA.

Please do your job. If you don't honor the soil and the things beneath you, it's going to come and bite you. (1216)

Response: The Department acknowledges the comment.

2517. Comment: I'm from the future and they sent me back here to PA because there were some unfortunate decisions made here in PA which made future a dark place. I would like to talk to this Board about defining your legacy. Because in the future, we look down upon you all. We are sad that you made the wrong decisions and did not regulate and stop fracking.

To my fellow human beings who happen to work for the oil and gas companies, I'd like to talk about defining one's life. Your great great grandchildren are my friends in the future and they are ashamed

of you all working for the oil and gas companies that wrecked our planet, poisoned people and gave people cancer. They are not proud to talk about you all. And I say that with love and with compassion, because as fellow human beings, I want the best for you all. That's real talk.

And to my friends from oil and gas companies, I have a message from your ancestors-to-be. They asked me to tell you to please join the resistance to stop oil and gas and quit your job and fight for what is right. (1218)

Response: The Department acknowledges the comment.

2518. Comment: I wish that you all would go door to door and talk to people impacted by fracking, like a lot of people in this room do, and hear why people signed gas lease. My family, being one of those people. And it's because there are no economic alternatives in this state. And it's time to explore how to keep young people in our beautiful state through implementing community resiliency and sustainability projects. Rather than extracting fossil fuels, we should be finding alternative and locally-based economies that will sustain themselves and create healthier lives for the generations we're leaving this place for.

I am a seventh generation Pennsylvanian and I have no interest in bringing the eighth into the world that I was left by my family and that you all are responsible for leaving behind. And I think that the regulations you're proposing should lead to an immediate ban, otherwise you're allowing the slow death and painful illness of this state and the people living in it.

I just spent \$450 fixing my car due to a rusted cooling system, which the garage owner attributed to road brine spreading and said that he's been seeing it more and more these days. So if you care about the economic well-being of people here, if not their health, put a halt on brine spreading. Let me know where to send my repair bill to, because I never asked for that.

And also the guy from WPX said that they are here to protect our environment, but they forgot about that objective when they drilled the Martin well two miles from my farm that got clogged and none of the fracking fluids were ever recovered from the ground. They didn't offer water tests or water-quality alerts for those of us that live around it. And so now I'm constantly terrified of the water coming out of my tap. And when people visit my home, they ask me if I have poisoned water because I live in Northeastern PA.

I think you all will regret of these permits that you all have been rubber stamping, because you live here, too. (1219)

Response: The Department acknowledges the comment. See response to comment 2501.

Unconventional operators are not allowed to spread brine on roads for any reason.

Conventional operators have spread brine on roads for dust control and road stabilization for many years under controlled conditions that limit the application location, rate, and duration of spreading using only brine that meets water quality requirements.

2519. Comment: I want to thank you for adding a hearing to Bradford County and thank you for attempting to change the regulations that are still locally inadequate even after the 2012 revisions. Apparently, last week after having brown water well water, my daughter has no water at all in her house and it is totally due to the industry and the well pad that was next to them. Their spring ran dry. We have been told that there is a large amount of production water coming off of the well pad than any other pad and so they are draining her aquifer.

She has no water in her home and I made 15 or 20 phone calls today. I was told by the DEP that my procedures were inconvenience to them, so I'd like to address some of the things that I'd like to see changed. I want to speak about some of our elected officials who are not seeking the whole truth for us. When I heard the testimony of Commissioner McLinko, it sounded like some commercial for the gas industry and he actually had nothing to add in way of commenting on regulations.

I have not been able to look through all the written comments, so I am not sure as to whether any of the commissioners in Bradford County or other counties have actually taken the time to comment on the proposed regulations. I would think that if they are in a taxpayer-paid position that required them to protect the public, then they should have submitted recommendations for change or, at the very least, comments.

Of all of Commissioner McLinko's praise of the industry, he failed to mention all of the mistakes and problems of the past, as well as those that still exist in the county, even though he's supposed to be representing all of these constituents. He spoke about particularly the Chicken Little naysayers that go around spewing misinformation about what goes on the Marcellus. Well I'm proud to be one of those Chicken Little naysayers he is referring to.

Marcellus gas has been good for Bradford County to some and to others. It has come as a cheap cost, such as losing the quality and quantity of their water, being exposed to chemical contamination and having our air and soil compromised. The area that I want to focus on was the protection of all the water supplies. I commend the Department for making changes to include not only construction of the well, but all the activities involved around it because we are finding, through document review and personal interviews, that pollution or diminution of a water supply can occur at any time, not just when they're drilling.

I have a comment of the amount of time it would take to investigate the claim and make a determination. How you expect a person to live in their home either with polluted water or no water for 45 days. There needs to be a revision to this change that takes into consideration what the homeowners' needs are.

Another comment is regarding Department's definition about pollution and diminution in the current proposed regulations because if you do not define things, people misinterpret them. With regards to quality clause of the proposed regulations, I would like a clarification of the way in which this is drafted. (1228)

Response: While the Department strives to resolve complaints as quickly as possible, in many cases, 45 days or more is required to complete the investigation and make an accurate determination regarding a water supply complaint. Sections 78.51 and 78a.51 provide sufficient guidance regarding what is meant by 'pollution' and 'diminution'.

2520. Comment: There is a well about 1,000 feet from my house and although science can't prove that there's anything wrong with my water, my family is not very well. It's been happening for two years now. When I called DEP, I got no answers, nobody called me back. I know you don't like to hear this, and I wouldn't like to hear it either.

So please when you look at the regulations, please consider the people that are involved around these wells. You know what's right; you know what is wrong. Test our water, air and land. If it were in your backyard, you would be just as nervous as I am. (1230)

Response: The Department strives and will continue to strive to resolve water supply

complaints as quickly as possible.

2521. Comment: I was thinking about the people who are coming and drilling in our land here in PA. If they have children and grandchildren, do they ever think about the future? Because I'm hearing over and over about how many people's water is being polluted, being destroyed. This is a tiny world where there's a drought. We're lucky in PA because we have a lot of water, but California is suffering great droughts. There are droughts all over the world and we're using so much of precious water and we're polluting it.

I wish that we were like NY and we would have a moratorium. Because we're jumping into this, we are talking all kinds of risks. We don't know what the long-term effects are. We don't know if cancer will be a harm for any of us because of the air pollution, water pollution, but we're doing it anyway simply for profit. (1231)

Response: The Department acknowledges the comment. See response to comment 2508.

2522. Comment: Once upon a time, before the asteroid hit back when all the continents were all like mixed up together and there weren't any national borders or anything like that or nations or presidents, there was just like dinosaurs tromping around, this was a shallow tropical sea. It was swimming with trilobites and all those cool fish you see at a natural history museum. So gradually all that changed because things changed. That's the way geology works. The earth changes. It is not static place. The mountains rose. They got to be higher than the Himalayas. And then they shrank again because that's what happens. The wind just like ground them down and down over the eons. The continents shifted and what was once part of the Appalachians Mountain actually became the Atlas Mountains in Morocco. So we have a sister mountain range in Morocco. All of the living things that lived in that shallow inland sea lived before the asteroid got buried under the ground and they gradually became fossils and liquefied. They become fossil fuels.

We are sitting on the dead. We are extracting the dead to fuel our cars and our industries. This mountain range is older than any of us can even begin to imagine. It's older than the Himalayas and it was once higher than them. Even if we strip every last tree and we drain every last drop of natural gas and whatever, the mountains will still be here when we are gone. Just to give a little sense of perspective. Let the dead rest and let the mountains live. What is buried is buried. (1222)

Response: The Department acknowledges the comment.

2523. Comment: Fossil Fuel extraction is incompatible with health and climate stability. I want gas drilling to stop by 2015. I want to live in a world without the oil and gas industry. I ask the DEP to work to eliminate this industry as quickly as possible and facilitate a transition to a just and renewable energy-based economy. (1225)

Response: The Department acknowledges the comment. See response to comment 2501.

2524. Comment: I know that anything I have to say doesn't affect your decision, but a group of us that drove up here, I want you all to know, those of you who are standing against oil and gas and fracking, that I feel like a lot of you may think that your voices aren't heard, but we hear you. I hear you. We drove over nine hours to hear you and we are going to continue to listen to you. And I want you to know that we want to stand with you and we want you to keep talking to us, because we are afraid of the same things happening. (1226)

Response: The Department acknowledges the comment.

2525. Comment: Pennsylvanians have a constitutional right to clean air, water and a healthy environment. It is the purpose and role of government to protect our health and environment. Pennsylvania must invest in alternative, non-carbon, energy sources. This will generate jobs now and into the future. (102)

Response: The Department acknowledges the comment.

2526. Comment: Please keep our parks, forests and lands safe from Fracking...just ask Oklahoma how the earthquake was....Fracking at its finest! (652)

Response: The Department acknowledges the comment. See response to comment 2501.

2527. Comment: Fracking hurts our residents, water, soil, and parks and natural places. (753)

Response: The Department acknowledges the comment. See response to comment 2501.

2528. Comment: Increasing evidence is coming in that fracking has serious negative impacts on our environment. I realize that we want to become energy independent, and that our need for energy continues to increase, but what good does that energy do if we are poisoned by contamination and uprooted by earthquakes? The tax money needed to recoup may well be more than any gained. Surely there is enough private land available for fracking that the EPA can afford to move slowly and verify the risks and benefits before committing themselves to this potentially dangerous practice. (661)

Response: Recent-studies, including a recent draft report issued by the EPA, have not found that fracking results in widespread impacts on drinking water resources within the United States. This does not mean there have not been some impacts, just that there have not been widespread impacts.

2529. Comment: Please reconsider the decision you are making will last many lifetimes. Always consider the effects on the environment there are already differences I can see in Westmoreland County from drilling, the wildlife has decreased and the beauty has been compromised. National Parks are precious lands that should be preserved not recklessly drilled and fracked. (676)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2530. Comment: Stop fracking now. It's too destructive. Just stop it. OR, if it is to be done, it must be done with the strictest oversight. The companies that do it certainly don't give a damn. And that's why I'm against it. It's not just the fracking itself; it's the total disregard for any consequences that may result. As long as they can make an extra dollar, they'd destroy anything. That's not business, that's criminal plunder. Business and enterprise are good. I support that 100%. Mindless destruction is not. There's a world of difference, though you'd never know it from these companies' actions. What good is economic gain if you destroy the place we all live?? You can't enjoy money living in a wasteland.(743)

Response: The Department acknowledges the comment. See response to comment 2501.

2531. Comment: There should be a moratorium on hydraulic fracturing until the health and environmental impacts are studied and better understood.

I am also concerned about the existing and potential impacts to Pennsylvania's state and national parks and to private lands as well from increased hydraulic fracturing. (756)

Response: The Department acknowledges the comment. See response to comment 2501.

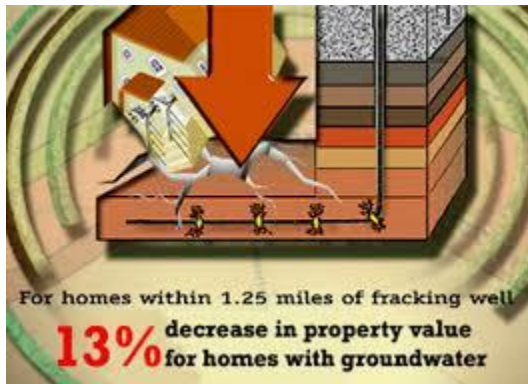
2532. Comment: Fracking should be banned everywhere, it violates my civil rights. I have the right to live in a clean healthy environment not subjected to dangerous conditions. Fracking is the rape of my planet; it impregnates the ground water with cancer causing chemicals. Make fracking illegal NOW! (777)

Response: The Department acknowledges the comment. See response to comment 2501.

2533. Comment: Fracking must be controlled. It will ruin our water and air if the job is not done properly. There doesn't seem to be any rules or restrictions with fracking. The companies just drill and leave. What happens to the abandoned wells? If the company ruins the town water as in Texas, does the drilling company have to pay for the towns water forever? And what is the benefit to Pennsylvania? Ours gas rates are going up not down. Where is the gas going? To Frackin' NORWAY!!! So we risk our air and water so some company that does not live here can have gas in that Whale Killing country Norway?! How much are they contributing to Corbett's reelection campaign? We are being sold out so that A Hole can get reelected! Show some courage and put some rules and regulations in place as if it was 100 ft. away from your property! Please look at my attachment. Thank you.

(From the attachment) What PA will become:





(802)

Response: The Department acknowledges the comment.

2534. Comment: FRACKING DOES NOT PROTECT THE ENVIRONMENT. (809)

Response: The Department acknowledges the comment. See response to comment 2501.

2535. Comment: NO MORE FRACKING!!!!!!!!!!!!!!!!!! Keep our water and environments clean!!!
 (819)

Response: The Department acknowledges the comment. See response to comment 2501.

2536. Comment: I represent no agency or organization but I represent the voice of many a solitary citizen. In this current environment where it seems only corporations or SuperPACs have constitutional rights, I would like to speak for the millions of people that we have a right to clean air and water, whether Dick Cheney gave those rights away or not. The rights to breathe freely and drink clean water are so basic that it is absurd for us to petition our government for these rights. The oil and gas companies should be the ones begging for permission to impose upon our rights, not the other way around. Pay attention to the recent water disaster in West Virginia where pollution has ruined the water supply of close to half million people. This is a situation so bad where boiling the water is useless. Is this what citizens of Pennsylvania have to look forward to, extreme cases that prompt immediate public response but for which there is no remedy? Our laws for pollution should be so tight that the industries who would harm us would scream for relief. But this is not the case. These commercial interests have controlled, lobbied and otherwise usurped all of our natural resources.

They are not to be trusted and in spite of what the Supreme Court has ruled, corporations should have no rights. They are not voters. (78)

Response: The Department acknowledges the comment.

2537. Comment: I just want to add that protect our children. I have two grandchildren that are affected by this. They have nosebleeds and rashes and stomachaches. And it's time. YOU know, you used to put industrialized operations in parks, not next to their school. So you need to think about that. (1148)

Response: The Department acknowledges the comment.

2538. Comment: One of the main reasons I'm here is because Lawrence County is giving away water. The state DEP is giving away. They will give away and they keep passing permits for water withdrawal. And we're giving it away for free.

I'm a thousand generation mother. Every mother before me has protected their children, has breastfed them, has nourished them, has cherished them, and protected them from everything. And this I've got to protect my children from. This is Butler County. This is the school, with the well. They cleared this well on Monday after school started, while kids were playing in the playground.

There's something wrong. We don't want these in schools. The mother bears are getting angry. We're waking up. We're showing up. We gathering for meetings, and we're meeting with people all around the world to push back this industry to bring natural resources and other things that could be produced from oil or other options, where our scientists and our geologists --- where our scientists can develop other energy sources.

And a few questions I do have, is why is flow-back waste considered residual waste and not hazardous waste? Make sure you write that down, because I want that answered, why it's not hazardous waste. I'd also like to know how many families in Pennsylvania are living with water buffalos and the proximity of those water wells to fracking wells. I'd also like to know where all these water trucks are going, because I can't seem to find that out online. They just seem to be going up and down the highways over and over.

And the beneficial use that was written into some kind of stuff, where fracking waste is beneficial use? I'd like to see that totally revoked. I do not feel that there's any beneficial use for fracking waste. And the charade of this 'industry, of an industry that hasn't caused harm, an industry that's created all these jobs and energy independence, the number one big thing? Then why is the cracker plant being put in? Why is the pipeline going to Louisiana?

Why is all this trying to get out on the L&G line? Why, if it's such energy independence at the expense of our rivers? And nobody's mentioned West Virginia. Why don't you ask them if they'd like to see this 12 million gallons of water that's pulled a day out of their rivers, see if they go flowing down the river?

I also spoke with Vanessa Kline who's an English fractivist of mine, who sent word over from the island. Because they're fighting. They're fighting hard. She volunteered to reinstatement for her. It's a gross human arrogance to even begin to think that we can legislate for the fair use of subterranean geology. The problems and havoc that have been already been brought by the inherently un-regulatable insanity of 'high volume sick water hydraulic fraction should already have been called for an absolute halt anywhere.

This is not happening, and it causing exponentially growing numbers of people worldwide to ask very serious questions about whose interests the government is acting on, both sanctioning and pretending to be able to regulate it. Vanessa Kline, BIFFS, Britain Island Fracturing and Fracturing Substance. We stand in solidarity with people around the world, who are putting this off in California and in Indiana. I keep educated every day. I educate myself. And I'm a guardian of water. And, someday, you're going to have to fight for water before you have to fight for water. (1104)

Response: The Department acknowledges the comment. See response to comment 1525 regarding hazardous waste.

2539. Comment: (e) Health/Administrative/Political issues. It does not help the situation that 4 of the last 4 Governors and at least 5 out of the last 6 DEP Secretaries have had ties to the oil and gas industry before, during, or after their terms of office. This is like the farmer asking the fox to guard the chicken coop! We in Pa. have to take steps to reverse the revolving door, and to appoint knowledgeable non-gas and oil administrators. Of course, much of this falls on the voting public. We are becoming a state like the 1880's Pennsylvania, in which Standard Oil Company and JD Rockefeller did everything to the State and the Pa. Legislature, but refine it! A couple of examples of our poor politics and administration:

1) The Health Dept. gets no new staff to follow up on health complaints near fracking sites - don't we want to learn what health problems might be arising, and thus help PREVENT them?

2) The \$160,000 maximum fee for each well site over its lifetime is way below average when compared to other states - we are practically giving away our natural resources when you consider the costs in roads, bridges, and health that the fracking industry causes. \$160,000 over the \$3-\$5 million profit from each well over its lifetime is 5% to 3%, or an average of 4% that returns to the state and local bodies. That might sound good, BUT West Virginia gets 6.5%, Texas gets 7.5%, and Oklahoma gets 7%. We are giving away our gas - we can do better! (We can't be that bad in negotiating!)

3) Pa. was cited in a 2011 study (League of Women Voters) as one of two states (the other was Alaska) which has totally ineffective gas line regulation and inspection, mainly because the laws are weak or non-existent. We can do better than this!

4) Oil and Natural Gas should be regulated like any other industry, and not be given special exemptions under the law, which of course the industry takes advantage of. We got suckered by the economic threat that the oil and gas industry will go elsewhere. Why would they need to go elsewhere, when they only pay about 4% of profits, and have a friendly Governor and Legislature?

5) Not checking health effects in Pa. will come back to haunt us, and could cause huge liability problems for a Legislature and Governor(s) that were too quick to buy the line that "fracking has been proven to have no health effects". All of these companies know about their toxics, and their impacts, and that is why their list of chemical additives is kept as a "trade" secret. (25)

Response: The Department acknowledges the comment. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. Statutory changes including changes to impact fees are beyond the scope of this rulemaking.

2540. Comment: I am writing for the protection of our streams and waterways from oil and gas drilling

operations. Act 13 is unconstitutional as a “Special Law”. My right to live in a residential area free of industrial sites has been violated. My Township Supervisors were forced to change our Township Ordinances to comply with Act 13 and the demands of Chesapeake Energy to frack and run oil and gas pipelines here. I am quoting from my Brighton Township Newsletter in December, 2011: “However, to a large extent, the Pennsylvania Oil and Gas Act preempts local regulation and puts regulatory authority into the hands of the PA Department of Environmental Protection. The Act preempts local regulations of any kind where it regulates the same features of oil and gas well operations regulated by the Oil and Gas Act. This includes most of what are the technical and environmental aspects of the operations.”

I am opposed to Hydraulic Fracturing for oil and natural gas and have requested that the DEP send me a complete list of the toxic chemicals being poured into the earth near my home at the Chesapeake Energy Jenkins Well Pad in Brighton Township, PA, and also all of the chemicals coming from the well including radiation levels! I have not received this information and want to know why! (429a)

Response: The Department acknowledges the comment. Statutory changes including changes to the 2012 Oil and Gas Act may only be made by the Legislature, not the Department.

2541. Comment: The first thing I would like to do is to call a bluff of the API that claims that they are assisting organizations to find the best practices in their industry. Indeed if they are, there should be absolutely no reason for injecting into the earth and into other places substances about which we do not know hiding behind the masquerade of something that is company confidential or that is a trade secret. If they want to use that, they can, fine, do it, maybe on another planet, but certainly not here on this earth.

So I would like to let most of you know that I’m probably the oldest person in the room. And I have walked, and lived, and grew up in Uniontown, Pennsylvania, the heart of the coal mine industry. And I have played tennis and swam next to open, hot coal ovens and walked on the acid runoff of coal mine and been in a coal, mine. We don’t need to repeat that here again in the chemistry industry that we’re doing. And so I urge us to learn from the lessons that we had.

I went to Penn State and I could see on the maps on one of the walls in the building there all the coal mines in Pennsylvania; where are the same location for the wells that we have in our earth today in Pennsylvania. So I will leave just one thought. Johnny’s father is a chemist, but Johnny is no more. What he thought was H₂O was H₂SO₄. (915)

Response: The Department acknowledges the comment.

2542. Comment: One of the important points is the relative low price of natural gas and how it is helping people. It is right for now, but when the facilities that are exporting liquefied natural gas is depleted, a lot of the gas in Pennsylvania is going out to foreign countries where it gets three or four times the price and our price will go up also.

People talk about jobs, a lot of people work in the energy industry. If we were more heavily invested in alternative energy that actually produces more jobs. The other things that we haven’t talked about are the future. Carbon based fuels area time bomb. We need to look at some alternatives. (486)

Response: The Department acknowledges the comment.

2543. Comment: Former Prime Minister Margaret Thatcher surprised many people in 1988 when in a

lecture to the Royal Society she said, “For generations we have assumed that the efforts of mankind would leave the fundamental equilibrium of the world’s systems and atmosphere stable. Unwittingly, we have begun a massive experiment with the system of the planet itself.” I believe if Margaret Thatcher were alive today in 2014 she would change the word unwittingly to knowingly.

I’d like to read a few excerpts from the guest-voice opinion of Matt Walker in the July 18 edition of the Erie Times News.

Fracking and all of shale gas equipment and facilities that come along with it release a significant amount of harmful pollution into the air, water and land and can have serious health impacts on residents who live nearby.

Shale gas is also touted by the gas industry and elected officials as a solution to climate change. Methane or natural gas is 105 times more potent at warming our planet than carbon dioxide from coal. The Gas industry leaks anywhere from 3 % % to 9 percent of the gas it produces. End of excerpt from Matt Walker (Source- <http://www.goerie.com/article/Opinion08/308129992/Guest-Voice%3A-Erie-should-focus-on-clean-energy>)

In this week’s Erie Times News, we read that since 2008, Pennsylvania has signed several major new sale gas leases of almost 139,000 acres of public land. So far these leases have generated \$413,000 thousand dollars for the state. How many times in recent conversations have you said or heard someone say, “It’s all about money.” I would like to say a lot more about jobs and the economy. But, just let me say that I believe that if we stopped putting our money on fossil fuels and started seriously spending it on renewable energy we would have jobs a plenty and we would be healthier, happier and yes, holier people, because we would be seriously taking care of our planet earth and all of God’s creation for future generations. (868)

Response: The Department acknowledges the comment. The revisions to Chapters 78 and 78a are consistent with applicable regulations and statutes and provide appropriate protections for public health and safety and the environment. The comment related to air pollution is beyond the scope of this rulemaking. However, air emissions from the oil and gas sector are regulated through a series of measures including the best available technology or BAT which includes equipment, devices, methods and techniques that will prevent, reduce or control emissions of air contaminants, including hazardous air pollutants, to the maximum degree possible. Also, note that the Department encourages the development of alternate energy sources.

2544. Comment: First off there are too many fracking permits issued in PA. Secondly, they can pump anything they want into the ground to frack the shale and there is no environmental oversight. They should stop all fracking until we are sure that it is safe and severely limit the number of fracking sites/permits. (699)

Response: The Department acknowledges the comment.

2545. Comment: I am a professor at Edinboro University of PA, and a member APSCUF, the professional organization representing over 6,000 faculty and coaches at the state’s fourteen publicly owned universities. On Friday, of September 20, 2013, at the legislative assembly in Harrisburg, a resolution coaches at the states fourteen publicly owned universities. On Friday that I initiated was voted on and approved against drilling on all of the fourteen state university campuses throughout the state of PA. We took this action because we believed that unconventional drilling is dangerous and harmful to people and the environment. We felt it had no place on university campuses. (792)

Response: The Department acknowledges the comment.

2546. Comment: Given the comments already made by the first as well as many subsequent speakers, we know that we have no federal protection for PA's citizens, for our land, air, and water from the exploitation of our oil and natural gas.

With that fact, you and other PA public employees are our, PA's Citizen's, only protection from the harmful effects of the hydraulic fracturing industry. PA constitution guarantees all citizens the right to both clean water and clean air. Yet we have an industry doing energy exploitation except from all laws and regulation. If someone doubts this, just look at the Halliburton Corporation driven through a republican congressman by Vice President Cheney, under the Bush presidency.

Yet every frack industry speaking here tonight gave repeated up service to their company's commitment to the environment. Their records prove otherwise. As officials bound by and operating under, the PA constitution, I ask that you mandate No further Oil/Gas exploration/Exploitation unless and until the hydraulic fracturing industry is put back under the clean air and clean water acts.

I will also quote from a statement adopted unanimously on behalf of Quakers in Delaware, Eastern PA and Maryland & southern NJ. The statement calls for a moratorium on continuous exploitation by hydraulic fracturing until it is re-regulated under the federal Clean air and clean water act and until adequate/trained staff are available to the DEP.

I will use rest of my time to remind you of known "Harms" already suffers from hydraulic fracturing:

1. The massive water consumption by fracking converts the clean water we have been sending numerous towns and cities downstream into polluted and even toxic waste water.
2. The use of deep well injection to "get rid of" return water has been shown to cause earthquake in both neighboring Ohio as well as Oklahoma.
3. The industry wide use of subcontractors distance the "Big names" (Shell, Exxon-Mobil, Chesapeake etc..) from the frequent intentional/criminal/toxic actions of them. These actions have been caught and prosecuted from ANF to Bradford County and the Williamsport area- with far more never detected.
4. The history of old oil wells and mine shaft in Tioga county has already led to a huge methane/water geyser in the Southern corner of our county, which necessitates 5 separate gas wells to be flared for two months to reduce the methane pressure caused by fracking and released by the known but ignored 80 years old oil well.
5. Johnson family beef cattle were under PA Dept of Agriculture quarantine for their cattle for 18 months since the cattle drank water from return water pond near Wellsboro. Last year the 18 month quarantine was lifted, and as Mrs. Johnson asked, "do you want to eat their meat? Do you think I should just sell them?" (847)

Response: The Department acknowledges the comment. See response to comment 2501. With regard to induced seismicity, the Department has evaluated its own datasets, as well as USGS and EPA datasets, for evidence of occurrences in association with both high-volume hydraulic fracturing and underground injection control (UIC) activities and have concluded, based on

the present datasets, that induced seismicity has not taken place in association with either activity. Additionally, the Department has funded further study of this matter in concert with the Pennsylvania Geologic Survey and the Pennsylvania State University. Part of this study involved the establishment of a fixed, high-resolution seismic monitoring network with options for portable seismometers to complete focused studies at additional locations. The current state of the science indicates that the UIC network in the state and high-volume hydraulic fracturing do not pose elevated risks with regard to seismic activity.

Additionally, the Area of Review (AOR) regulation requires operators to document due diligence either prior to drilling, stimulation, or with the permit application, dependent upon the anticipated timing of stimulation activities, and offers a procedure for doing so. Additionally, specified monitoring of the highest-risk well sites (potential conduits) will allow identification of communication incidents and greatly curtail the potential for environmental degradation. Addressing this particular issue has been supported by STRONGER, and comports with the Act, which intends that oil and gas wells be constructed in such a way to prevent gas and other fluids from entering sources of fresh groundwater.

2547. Comment: As opposed to commenting on each of the stipulated changes proposed for Ch. 78, I'd like to address the very idea that hydraulic fracturing from well-head to compressor, to pipeline, to export depot, to LNG transport tanker, can be regulated sufficiently to guarantee the ecological integrity, species diversity, human health, property value, or the constitutional right to clean air and water. While perhaps no regulation can offer guarantee against accident, the now well- documented hazards posed by fracking have clearly been shown to be substantial whether or not accidents occur. Hence it is equally clear that no regulation can be adequate to make this process of industrialized extraction safe.

We know that the intent of the industry is not to make fracking safe, but to make it as inexpensive, expeditious, and profitable as possible. Today's hearing on Senate Bill 411, legislation that would render immune to liability the use of acid mine drainage as frack water, SB 1047 that would gut and politicize the process by which species are listed as endangered, or SB 259 that would allow old leases to be treated as newly negotiated, even if the leaseholder declines to permit fracking on her property or didn't know there was an old lease, make plain that regulation in Pennsylvania is written by and crafted for oil and gas. Because fracking is inherently unsafe, the proposed changes to Ch. 78 are inconsistent with Article 1, section 27 of the Pennsylvania Constitution. Given, moreover, the clear legislative pattern we must assume that the intent of the changes is consistent with SB 411, SB 1047, and SB 259-to act to facilitate the interests of the oil and gas industries. What the "proposed changes" really encapsulate, therefore, are the negotiated terms of our surrender to these industries. We at Shale justice have no interest in acceding to this forfeiture of our autonomy as citizens or our recently reaffirmed right to clean air and water. We'd like to thank Chief Justice Castille for his role in the over-turning of Act 13. To accede to any of these "proposed changes" runs directly contrary to that 4-2 Supreme Court decision.

Here's why:

To wrestle over the details of changes to Ch. 78 presumes that fracking will continue. Many are resigned to this grim possibility. Otherwise, we'd not be haggling over who's responsible for pre-drill water testing, the use of open pits for frack waste water, the definition of fresh water, the disposal of brine, or the status of orphaned wells. Make no mistake: the industry will cry foul that such regulatory changes will cost them too much money, that they are somehow the injured party. But the facts are that these proposed changes are nothing but crumbs offered to appease us, to convince us that the agencies charged with protecting our air and water actually act to do so. The

language here follows the pattern of SB 411 that aims to convert acid mine drainage into “beneficial use” even though its primary effect is to relieve the industry from liability for contaminated water. It follows SB 1047’s absurd argument that “endangered” is best determined via economic matrices. It follows SB 259 that empowers the industry to access more land for drilling under the guise of making royalties more transparent. We cannot afford to accede one more inch to oil and gas drilling. Can you imagine what our country-sides, forests, rivers and trout runs will look like if the proposed Dominion export depot at Cove Point Maryland is completed? 7000 wells will become 100,000, and with it we will become a fossil fuel extraction colony owned and operated by multinational corporations.

I urge you say no to more “regulation.” Why on earth should we surrender our autonomy, our communities, and our health to a rate of harm? Just as there’s no such thing as a little pregnant, there’s no such thing as a little cancer, a little asthma, a little brain damage. Many things are negotiable. Some are not. Just as there could be no compromise on apartheid or slavery, there can be none when the stakes are climate change. Whether we like it or not, our responsibilities are global. Hence there’s also no such thing as a “special place” unless what we mean is the planet. My yard’s a special place. So is yours. (858)

Response: The Department acknowledges the comment. See response to comment 2508.

2548. Comment: It also cannot be stressed too much regarding Pennsylvania’s dubious legacy of promoting resource extraction over the well being of current and future generations. It took a century for forests to re-establish after the clear cutting by the timber industry. And we are still dealing with the aftermath of coal mining with acid mine drainage polluting our waters. (1089, 1229)

Response: The Department acknowledges the comment.

2549. Comment: Does it make sense to let these companies make lots of money while the general public is exposed to toxins? Do we want our kids to develop diseases like cancer because these companies don’t have to act safely and appropriately? (1083)

Response: The Department acknowledges the comment. Well drilling can be done in a safe and environmentally sound way, provided applicable laws are adhered to. The regulatory changes included in Chapters 78 and 78a are intended to further strengthen these standards to ensure the Commonwealth’s environment and the health of its citizens is properly protected. The Department will continue to study the efficacy of its regulatory programs and make improvements to the rules as necessary.

2550. Comment: The immense damage in Texas should be a warning: the collapse of land due to a destroyed water table-not just a drought, is something we do not need to have happen in Pennsylvania! (1081)

Response: The Department acknowledges the comment. Aquifer and geological conditions in Texas are significantly different from those in Pennsylvania.

2551. Comment: Stop all fracking until research indicates it is safe. (1041)

Response: The Department acknowledges the comment. See response to comment 2501.

2552. Comment: I am against fracking in all its aspects and tired after problems it is causing for the environment. (1043)

Response: The Department acknowledges the comment.

2553. Comment: Fracking threatens environmental health. Please create strict protection policies and monitor the fracking industry with all diligence to ensure we preserve and protect our state. (1034)

Response: The Department acknowledges the comment.

2554. Comment: The Impact that drilling has on a community should never be up to just one or a few individuals or those making a profit from it. It should be brought up for discussion and only excepted if all agree there would be no harm done to the property or those in the vicinity of the property. We all know the impact that drilling does have - even if not immediately shown will have long term effects.

Our environment including air, water and structures can never be replaced if lost. I know the quality of water has changed for many neighbors of those that elected to have drilling done. Also I know of water wells that have been lost.

Why blow up Mother Nature's perfect way of taking care of us. The benefits are short lived here and there are so many other ways of getting power that we as a nation will not except because of those making a profit on our natural resources. Natural resources keep Mother Nature alive! Drilling means our quality of life will disappear! I should not have to be writing this letter! Just another reason to say our politicians are being paid off one way or the other. They are not watching out for the people, only themselves. (1011)

Response: The Department acknowledges the comment. See response to comment 2501.

2555. Comment: I strongly oppose the unregulated and wide-spread gas drilling that is destroying our state forest and threatening our fresh water and air quality. I urge you to reign in this industry before it is too late. Most importantly we need a moratorium on drilling on state lands and a ban on open fracking pits. We also need testing of drinking water to maintain its quality.

Our state forests provide vital habitat for wildlife, an essential watershed, and protection from climate change. There is no way to fully restore these forest once they have been opened to drilling so we must ban fracking on them all together. Open fracking pits leach chemicals into ground water and poison animals that drink from them. We need to ban them as well.

Dear EQB members, unless there is a complete moratorium on drilling in our state, we will suffer inevitable long term consequences. As long as drilling is allowed the DEP must protect us from these. The only way to do so is to require full testing of streams and wells before drilling and restoration of contaminated water after as a state agency with the mandate to protect our environment for the long term good of its residents, it is important the DEP establish these bare minimum requirements. (1008)

Response: The Department acknowledges the comment. Chapter 78, Chapter 78a and other Department regulations apply to gas drilling. See response to comment 2508 regarding moratorium. See response to comment 823 regarding the use of open pits for temporary storage.

2556. Comment: No regulation can prevent the extraordinary squandering of fresh water, five-and-a-half million gallons average per well, 100 percent of which is contaminated, permanently, and

removed from the natural water cycle. Multiply that with the tens of thousands that are proposed. No regulations can prevent the salts, heavy metals and radioactive substances loosened by the fracking process from coming out with the fracking fluids.

No regulation can stop up to 65 percent to 90 percent of the toxic fracking chemicals from remaining on the ground. No regulation can prevent these chemicals, salts, heavy metals and radioactive substances now loosened and mixed by the fracking process from becoming a toxic underground fluid that can wangle its way into existing fissures as well as into new fractures, created by the drilling.

No regulation can predict or control the underground migration of these toxic plumes. No regulation can predict or control the time frame, years, decades, millenniums, over which such plumes can migrate. No regulation can prevent the deterioration of the steel and cement casings intended to protect drinking water over the decades and centuries ahead. No regulation can create safe manner or safe location for permanent storage of waste. Even toxic waste still must be put somewhere.

No regulation can provide the risk from a high-pressure disposal in injection wells for potential leakage and aquifer contamination or earthquakes. No regulation can guarantee enforcement, without 24/7 oversight. Drillers will not obey the grossly inadequate rules now in place to safeguard the safety and health of people or other living beings or the environment.

Only a national policy, enthusiastic support for efficiency, conservation and renewable will set this country on the path to a sustainable, post-coven society. Regulations might make hydrofracking less unsafe, but it can never make it safe. Is it rational to accept any form of highly destructive drilling in agricultural areas and watersheds that produce the food and drinking water of millions?

There's only one way to render this practice safe. Ban it. Unequivocally forever. This is not extreme. It is extremely rational. Anything less dooms us. (986)

Response: The Department acknowledges the comment. See response to comment 2501.

2557. Comment: Louis Allstadt, former executive vice president of Mobile Oil ran the company's exploration and production operations in the western hemisphere before he retired in 2000. Both horizontal drilling and fracturing have been around for a long time. The industry will tell us this over and over. It's been around over 60 years, things like that, and is correct. What is different is the volume of fracking fluid and volume of flowback that occurs in these wells. It's 50 to 100 times more than it was used in conventional wells. The other difference is that the rock of the target zone is not necessarily impervious the way it was in conventional wells.

To me, the last point is at least as big as volume. The industry will tell you that the liner in between the zone that's been fracked is not going to let anything come up. But there are already cases where methane has made it up into the atmosphere. Sometimes through old wear, well bores, sometimes through natural fissures, we don't really know how much gas is going to come up over time. It's a point most people haven't gotten. It's not just what's happening today. We are opening up channel for gas to creep into the surface and into the atmosphere, and methane is much more potent greenhouse gas in a short-term, less than 100 years than carbon dioxide. Because of the harms done to people, environmental groups have risen up across the world.

I think the main question is how fast these movements can educate enough people about the dangers of fracking and its impact on global warming. It will take masses of people to mandate action from politicians to offset the huge amount of money that the industry is using to influence lawmakers, a

world scale version of those standing room only town hall meetings. Something has to wake up the general public. It will either be education from environmental movements or some kind of eliminate disaster that no one else can ignore.

We've all been privy to the accident that happened recently in West Virginia. The train cars that are carrying the toxic chemicals are taking them through downtown Pittsburgh on a daily basis. I am asking the DEP for regulations that we have put in writing, to me, they don't make any sense. And it is part of your job to protect the citizens. If they were and not protecting the industry and their multi-million dollar corporations, I don't think any of us would be here tonight. So I would ask that each of you to read our shale field stories starting to be released in 50 states on January 30th. (984)

Response: The Department acknowledges the comment, although in unconventional shale systems the target zone rock is both reservoir, source rock, and seal; and permeabilities are exceedingly low in such systems.

2558. Comment: What do the citizens gain from fracking? Recent articles in newspaper and magazines tell of the Propane being shipped oversea, in order to get a higher price. The only thing I see fracking causes is wells are contaminated, as well as rivers and streams. Governor Corbett has allowed these contractors to ruin water supplies throughout the state. Yet the citizens of PA do not receive any benefits. No tax is collected for extracting the gas. Why? Our water supply is being contaminated and will be if this practice is allowed to continue. Please put a stop to fracking. Safeguard the water for my grandchildren. (949)

Response: The Department acknowledges the comment. The Department does not have the statutory authority to ban hydraulic fracking within the Commonwealth. Banning hydraulic fracturing would require an act of the Legislature.

Well drilling can be done in a safe and environmentally sound way, provided applicable laws are adhered to. The regulatory changes included in Chapters 78 and 78a are intended to further strengthen these standards to ensure the Commonwealth's environment and the health of its citizens is properly protected. The Department will continue to study the efficacy of its regulatory programs and make improvements to the rules as necessary.

If the commentator has experienced water pollution as the result of oil and gas operations, or other regulated activities, they should contact the Department and file a formal complaint to initiate an investigation to pursue appropriate action. Additionally, if a water supply's quality was better than Pennsylvania Safe Drinking Water Act standards prior to oil and gas operations, then it needs to be returned to its previous state, i.e., its state prior to being impacted by oil and gas operations. Otherwise, the Department will be allowing operators to degrade a natural resource relied upon as a water supply resource. In regards to water supplies that did not meet Pennsylvania Safe Drinking Water Act standards prior to being impacted by oil and gas operations, the Department would be derelict in its duties if it allowed operators to provide replacement drinking water that by its own standards is not fit to drink simply because the pre-existing water supply was poor.

Development of an impact fee or extraction tax is a matter for the Pennsylvania Legislature.

See response to comment 2501.

2559. Comment: As I understand the difference between 'conventional' and 'unconventional' is not in what methods are used but in what formation is being drilled into and, in fracking's case, blasted

apart. Someone please correct me if I'm wrong, but I didn't see any mention of maximum amounts of fracking pressure allowable let alone in what formation. I saw no regulation of pressure at all. In the documentary I submitted at my last testimony, Jim Harkins' well water turned brown two days after fracking. The company provided water until it cleared up. The cause was pressure moving through ground. Hydrogeologist Bob Haag explains the Pressure Bulb effect from fracking in the film, and I'm also submitting Haag's report which I urge you to take into consideration when you revise these proposed regulations.

We cannot stop oil and gas production cold turkey, but we can put on the brakes. Conventional drilling is not without its own legacy of pollution, some of it simply unmanageable. But it is nothing like the high volume, slickwater horizontal hydraulic fracturing or "modern fracking" going on today. The industry wants to drill an estimated 100,000 fracked worm holes underneath 3/4ths of Pennsylvania. Does anyone know what the net effect of this extraction will do to the bed rock foundation of this state? 100,000 new holes, and there's an estimated 250,000 lost and abandoned wells already. Does anyone have a figure on the cumulative impact that will have on our water, climate, soil and public resources. I mentioned at the last hearing that Pennsylvania has more fresh water resources than any other state except Alaska. Meanwhile, the state hasn't denied a single stream setback - 87,000 miles of streams and there's never been an opportunity to enforce a setback? Seriously? Here we all are nitpicking at these "new regulations" and the department isn't even enforcing the old ones.

So where does that leave us, everyone else whom the department is supposed to be looking out for? It leaves us right where we should be - paying attention. And all over the state, people are waking up and saying "Hell no." And what do our great protectors say in return? The DEP, PUC and Corbett administration are trying to trump the state Constitution by that taking away the rights of local governments to control their own destiny. Shame on DEP. This is America, land of the free and home of the brave. I want to leave you with two quotes both by Pennsylvanians I greatly admire. The first is Dr. Stephen Cleghorn. I promise I'm not giving anything away when I say that Dr. Cleghorn has the last lines of the documentary Triple Divide I submitted at my last testimony. He says, "You do not scare me. You ought to be scared of me, and what I'm capable of, nonviolently, to resist you."

The second quote is by Ralph Abele, who served many state conservation posts, including head of the Pennsylvania Fish and Boat Commissioner for fifteen years until 1987. He pretty famously said, does anyone know? "Do your duty and fear no one."



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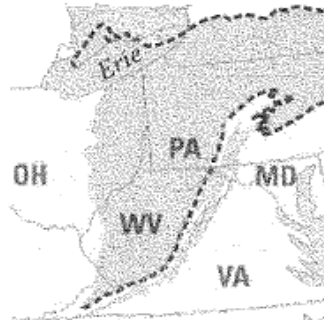
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How a Pressure Bulb Can Bring Frack Fluid to Groundwater

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An environment vs. energy debate has been heating up over the extraction of natural gas from the Marcellus shale in Western Pennsylvania. Eventually, we expect the debate to arrive in eastern Ohio. The debate is mostly about a practice called "hydrofracking," or just "fracking." Fracking involves injecting water ("hydro") into the shale to cause it to fracture ("frac"). This opens up pores that were previously tightly closed, and allows natural gas to migrate into wells.



Distribution of the Marcellus shale

Source: USGS Fact Sheet 2009-3032

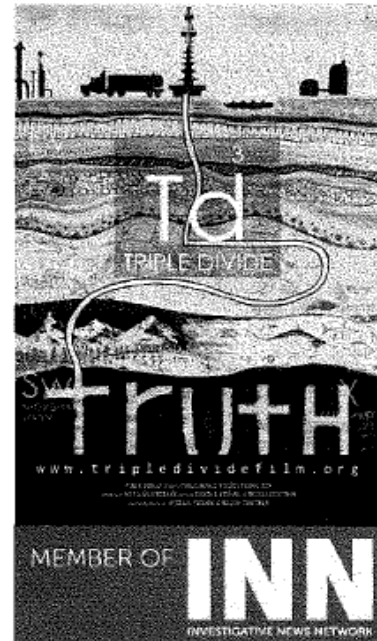
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Flowback Water

Many have a concern about petroleum additives in the fracking water, along with natural radionuclides that enter the water at depth. Typically, as much as 4 million gallons of water may be injected to frack a well, and about 15-20% (up to 600,000 gallons) of that water comes back to the surface. Different fracking-water disposal methods have been tried, but the most prevalent at this time is to truck the water to deepwell injection sites (<http://www.epa.state.oh.us/shale.aspx>). So, whatever doesn't stay in the ground where it is injected, gets injected somewhere else.

Concerns over fracking fluids reaching shallow groundwater

The 600,000 gallons of flowback water has been the main focus lately, but some wise person also asked, "Where does the rest of the 4 million gallons go, once it gets down there?" The big concern is that the fracking



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water will get into groundwater wells. When questions about this used fracking water are asked, the response is to point out that the shale is 1-2 miles deep, and groundwater supplies come from less than 300 feet deep, so what could be the problem? The same debate has occurred many times, with regard to (1) EPA permitted deep hazardous waste injection wells, (2) injection/solution mining, and (3) deep burial of nuclear wastes. When we look at problem scenarios from those three past issues, we find that the argument that the fracking fluids won't reach drinking water wells can be a case of "telling the truth in such a way that lying is unnecessary."

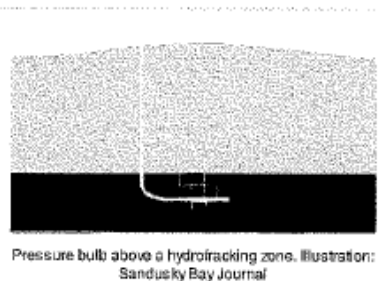
What to really worry about: secondary effects of pressure

Pressure bulb above a hydrofracking zone. Illustration: Sandusky Bay Journal

While it is true that the fracking fluid will most likely not reach the groundwater, what we need to examine are the secondary effects on drinking water wells, caused by a fracking induced "pressure bulb". When you apply pressure to soil or rock, the pressure doesn't just stop at the surface you are pushing on; the pressure spreads and dissipates through the surrounding soil or rock. In hydrofracking, the pressure applied is enormous. In order to crack the rock down deep, the injected pressure has to be in the same ballpark as the weight of the soil and rock overhead. For a rough rule of thumb, we can estimate that the pressure due to the weight of overlying strata is about 1 pound per square inch (psi), for every foot of depth. By this estimate, the pressure a mile down (5,280 feet down) would be about 5,280 psi. Due to internal friction within soil or rock, the sideways pressure is only about 1/3 of the vertical pressure, so one might only have to push outward at 1500 to 2000 psi in order to get shale to fracture a mile down.

That 1500 to 2000 psi will dissipate through the rock and soil above the shale. Pressure is also called "stress," and the movement that occurs in response to stress is called "strain." So, imagine throughout the stress bulb above the hydrofracking zone, there is a corresponding strain bulb. Imagine that all of the rock and soil above the frack moves, just a little bit. This little bit of movement can be measured at the ground surface, by a sensitive device called an inclinometer.

Let's consider an example from salt mining. In 1993, the Ohio Department of Natural Resources (ODNR) issued a report entitled "Investigation of Active and Abandoned Class III Salt Solution Mining Projects in Ohio." ODNR documented a solution-mining operation near Barborton, Ohio, that began in 1899 and continued until the 1980s. At this facility, 36 solution mining wells were drilled into the salt-bearing Salina formation, which was tapped at depths ranging from 2721-3208 feet below the land surface (BLS). Pressure was induced into the subsurface, both to bring brine to the surface, and in some low-pressure attempts at hydrofracking. ODNR made two observations that are key to understanding the effects of



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1. "...faults are conduits for migration, and the migration of petroleum, gas, or water in a fault plane can take place, up or down ...
2. Numerous oil and gas wells surrounding the Barberton solution salt mines had fluid flowback at the surface.

Now, let's put the entire picture together for hydrofracking. High pressure is injected at a depth of a mile or more. This creates a pressure bulb above the injection location, which slightly lifts all of the strata above the injection location. In the immediate vicinity of the injection, cracks open in the shale layer, and a sand "proppant" is injected to keep the cracks open and allow the gas to flow. Further up in the profile, there are tiny shifts along existing fractures, and permeability of the overlying rocks is increased. The existing fluids in the overlying rocks are pushed up by the injected fracking fluids. We never expect the fracking fluids themselves to enter shallow groundwater aquifers, nearly a mile above the shale. However, the fracking fluids may be expected to push naturally salty water up into the freshwater zone near the surface.

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(977)

Response: The Department acknowledges the comment. The definitions of "conventional well" and "unconventional well" are included in Chapters 78 and 78a, respectively and the 2012 Oil and Gas Act. Well construction and stimulation techniques are proper subjects for regulation but are beyond the scope of this rulemaking. Statutory changes are beyond the scope of this rulemaking.

2560. Comment: Hydraulic fracturing is harmful to most organisms, and should be halted immediately to protect human and animal health. Hydraulic fracturing, or fracking, is the process of drilling a well in

the ground, and then turning ninety degrees and drilling a straight tunnel. A chemical mixture involving chemicals, water, and sand is then jetted into the ground, forcing natural gas upwards, where nearly all of the gas is collected to be used as fuel. This process is hazardous and risky, and has the potential to effect human and animal life in a negative way.

First and foremost, hydraulic fracturing contaminates water quality and supply. Flammable methane, a natural gas harvested in hydraulic fracturing, sometimes leaks into drinking water, therefore causing the water to become combustible. Drilling fluids containing dangerous chemicals occasionally escape into streams and rivers, where they have been known to poison livestock and fish. In addition, several million gallons of water are needed, which rapidly depletes the water supply, as only contaminated water remains after the fracturing. To make the above evidence all the more disconcerting, PA researchers have drilled two wells in Pavilion, Wyoming, and found much higher levels of benzene, a chemical known to cause cancer, than determined to be safe to drink. However, hydraulic fracturing is not just contaminating the water we drink, but the air we breathe, as well.

Hydraulic fracturing increases the amount of smog and toxic ground-level ozone. As a result of increased smog and ozone, more air-related health risks occur. In the process of fracturing, unconventional natural gas is extracted, which leads to air quality deficiencies. Methane, a greenhouse gas that intensifies global warming is emitted during hydraulic fracturing. Not only methane is emitted, but other volatile organic compounds, all of which add to poisonous ground-level ozone. Unfortunately, the flora and fauna are also at risk from the horrid practice of fracturing.

Destroying and fragmenting wildlife habitats is another drastic effect of hydraulic fracturing. Roads, drilling pads, and pipelines needed for the fracturing procedure sever rural and forested lands. When forests are demolished, many species of wild animals are threatened by loss of their homes. In a horrifying act of pure malice, the University of Tennessee is planning to lease hundreds of acres of public forested land in Cumberland, TN to a tracking company, who would destroy the forest. Key habitats for mule deer and pronghorn in Wyoming have been fragmented by hydraulic fracturing, which has caused a large disruption in the state's \$340 million hunting and wildlife watching organization. Hydraulic fracturing is a source of great concern in our nation and the world.

Ultimately, hydraulic fracturing causes multiple disastrous complications and should be put to an end immediately. The fracturing process is causing the air we breathe and the water we drink to become contaminated and untrustworthy. We are cutting through animal habitats, just to deliver the needed supplies to fracturing sites! You have the power to stop this horrifying practice, and for the sake of the world, you must! So, one question remains, will you stand for our protection, or will you neglect our health and well-being? (957)

Response: The Department acknowledges the comment.

The Department does not have the statutory authority to ban hydraulic fracking within the Commonwealth. Banning hydraulic fracturing would require an act of the Legislature.

Well drilling can be done in a safe and environmentally sound way, provided applicable laws are adhered to. The regulatory changes included in Chapters 78 and 78a are intended to further strengthen these standards to ensure the Commonwealth's environment and the health of its citizens is properly protected. The Department will continue to study the efficacy of its regulatory programs and make improvements to the rules as necessary.

See response to comment 111.

2561. Comment: I STRONGLY OPPOSE ANY FRACKING IN PA. We have a governor who has already sold off so much of our lovely state - AND EXEMPTS THE FRACKERS FROM TAXES TO HELP THE STATE - TAXES EVERY OTHER “FRACKING” STATE COLLECTS.

No wonder they all want to frack up PA! I believe it is the moral imperative of anyone in office to PROTECT PA from any form of pollution and company filth. (942)

Response: The Department acknowledges the comment. Well drilling can be done in a safe and environmentally sound way, provided applicable laws are adhered to. The regulatory changes included in Chapters 78 and 78a are intended to further strengthen these standards to ensure the Commonwealth’s environment and the health of its citizens is properly protected. The Department will continue to study the efficacy of its regulatory programs and make improvements to the rules as necessary.

2562. Comment: It must be the fracking industry’s nightmare come true, that the timing of hearing is in the middle of an ongoing crisis where 300,000 West Virginians are struggling with a chemical spill polluting the water. I cannot imagine the horror to find out that my family and myself would have been drinking that toxic water for a week before it was announced to not touch it. I reiterate, Not Touch It. Use it only to flush the toilets. Stop for a second, and imagine looking at your child, knowing they drank that polluted water for a week, and you didn’t know it. Now what? No one is really sure what that chemical in question will do to the human body. This brings to me the fact that no one knows what chemicals are used by Frackers as they pump millions of gallons of toxic brew, under pressure, into our Earth, in order to extract natural gas that is then sold and shipped abroad. Frackers will not divulge the poisons they are using, citing proprietary formulas. This is why it is paramount to protect our streams, (whether or not they flow continuously year round), creeks, rivers, natural depressions that include (1) “vernal ponds which are a seasonal wetland used for spring spawning”, lakes, wells, ponds, and any other naturally or manmade body of water. The toxic brew used by fackers is lethal to human consumption. When contamination occurs to wells, waterways, or any other water source, Fracker response always leaves the likely possibility that humans have consumed that water before the water ban is announced, or toxin laden water is discovered. It is no secret that trucks dump their waste water loads in creeks in the cloak of night. It is documented. This is human nature, to take the easy road vs following the law. But the law is flawed in any case. Holding ponds are breaking the law of our state, in my and many people’s opinions.

Another notable timing event is the release of Rich Fitzgerald’s *Live Well Allegheny* Campaign. He states, “This is a new day and a new Allegheny County. Our residents are seeking an active, healthy lifestyle and are taking proactive steps to improve their health.

Not only are they focused on physical health, but also on their general well-being. We want to do everything that we can to encourage that interest. Under the leadership of Dr. Hacker and the Board of Health, the *Live Well Allegheny* campaign will stimulate our community to make better decisions for the health and well-being of all of our residents.”

None of this is possible without clean, reliably safe water. It is our job as citizens to demand it, and the job of our government to enforce it vigilantly and strictly. There is no room for Fracking in this right. Fracking is and always be, an inherently dangerous and destructive practice, in an industry that is outdated, and toxic. The day of the fossil fuel is over, and the dawn of renewable energy is here. Let’s protect our one and only spaceship as if our lives depended on it...because they do. (937)

Response: Section 3218(a) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(a)) establishes a well

operator who affects a public or private water supply by pollution or diminution shall restore or replace the affected supply. The Department is obligated to investigate pollution to the waters of the Commonwealth under the Clean Streams Law (35 P.S. §§641.1-691.1001).

If a water supply's quality was better than Pennsylvania Safe Drinking Water Act standards prior to oil and gas operations, then it needs to be returned to its previous state, i.e., its state prior to being impacted by oil and gas operations. Otherwise, the Department will be allowing operators to degrade a natural resource relied upon as a water supply resource. In regard to water supplies that did not meet Pennsylvania Safe Drinking Water Act standards prior to being impacted by oil and gas operations, the Department would be derelict in its duties if it allowed operators to provide replacement drinking water that by its own standards is not fit to drink simply because the pre-existing water supply was poor. Given the need to provide replacement water based on the positive impact determination, the additional cost borne by operators is limited to the incremental cost of providing Pennsylvania Safe Drinking Water Act standards water as compared to the previous poor quality, not the difference between providing no water at all and meeting the previous poor quality.

2563. Comment: Our DEP oversees what we call brown fields and those are contaminated grounds from past industrial abuses. And what we're basically talking here today is the continued industrial abuse on natural resources. It is the unconventional fields that I'm interested discussing, an abuse that is depleting our water supply at a great deal unimaginable and an abuse that may not be repairable. Most of our plants and natural aquifers are already gone. But in Pennsylvania, we are blessed with freshwater assets. However every day millions of gallons of fresh Pennsylvania water: are laced with deadly chemicals forced into the ground where our drinking water resides.

The industry we're discussing gives lip service to protecting our water as the assault on our resources continues unabated and unregulated. A family that once lived in Mount Pleasant, Pennsylvania, only 45 minutes southeast of Pittsburgh, is a case in point. In 2011, the industry paid the Hallowich family three-quarters of a million dollars for ruining their ten-acre family farm, its land, its water and their health. How much damage was done that an amount of that magnitude was required to compensate? Was the environment of that farm ever restored to its natural state?

Added to the killing of a family farm and causing extreme illness to its owners, the industry supported settlement included a gag order on the family's seven- and ten-year-old children. They are never to discuss fracking for the rest of their lives. Imagine that? Through our courts, the corporation was granted free rein to as the original Patriots define it, to tread on us, as long as they hand out some cash and as long as we stay silent about the abuse.

Our DEP has sworn to regulate this industry for the people. But what happened in the Hallowich case? Where was the protection of the Commonwealth's natural resources and its environment? That was two years ago. How many other families and interests have been destroyed since? What. Complaints about water, air and land quality continue to be answered with fabulous and monetary handouts? And will our DEP take heed of these capacities with open palms, whether they be filled with corporate funds, taking them or radioactive and deadly chemicals that have been flowed into the natural, world killing it.

There should be no open pits of toxic waste anywhere, ever. And any debris through these operations must be stored with the same seriousness we store other nuclear waste. Every step of this process should be tightened and regulated. The DEP alone, with the people's government of the State, are charged with that duty.

The Creator made us a lush, green, reusable and renewable world and we are killing it as we allow dangerous and deadly events to occur in our search for energy. Energy the Creator gave us at the beginning of time in the forms of soil, wind and water. Our limited supply of fresh water should not be used at millions of gallons at a time, so that private industry can gain unchecked power over our very existence.

Look at pictures of that tar sands in Canada and you'll see how well we have been stewards of this great planet, how we are simply killing the very world that sustains us. The DEP by its own mission statements must not let the industry police itself or allow the industry to determine what is satisfactory to the people's Commonwealth.

Water must be drinkable. The water supply on this plant is a closed system. There is no new water. So what we do to our water table today is forever. It is up to our DEP to carry forward, complete its mission statement to the letter. To do otherwise is to allow corporations to commit treason upon people's environment and their continuity of life, liberty and the pursuit of happiness.

Canada's current government has begun to destroy all of the water data ever collected there, Centuries of data. They are shutting down our facilities. People need to be aware, our planet is under assault. (928)

Response: Section 3218(a) of the 2012 Oil and Gas Act (58 Pa.C.S. § 3218(a)) establishes a well operator who affects a public or private water supply by pollution or diminution shall restore or replace the affected supply. The Department is obligated to investigate pollution to the waters of the Commonwealth under the Clean Streams Law (35 P.S. §§641.1-691.1001).

If a water supply's quality was better than Pennsylvania Safe Drinking Water Act standards prior to oil and gas operations, then it needs to be returned to its previous state, i.e., its state prior to being impacted by oil and gas operations. Otherwise, the Department will be allowing operators to degrade a natural resource relied upon as a water supply resource. In regard to water supplies that did not meet Pennsylvania Safe Drinking Water Act standards prior to being impacted by oil and gas operations, the Department would be derelict in its duties if it allowed operators to provide replacement drinking water that by its own standards is not fit to drink simply because the pre-existing water supply was poor. Given the need to provide replacement water based on the positive impact determination, the additional cost borne by operators is limited to the incremental cost of providing Pennsylvania Safe Drinking Water Act standards water as compared to the previous poor quality, not the difference between providing no water at all and meeting the previous poor quality.

2564. Comment: I would like to begin by reminding everyone that the corporations fracking for natural gas are motivated by profit only. The welfare of our state and its citizens are not their concern. Despite the industries spending millions of dollars to claim otherwise, there is nothing clean about natural gas from the beginning of the extractive process to its combustion. It may be cleaner than coal in some respects, but it isn't clean.

The citizens of this state should not have their quality of life negatively affected by this industry now or in the future. It is very clear that for many Pennsylvanians that is not the case. It is your responsibility to protect the environment and all our citizens. Your responsibility is not the promotion of this profit driven industry. Article One, Section 27 of the State's Constitution demands that you protect our citizens and the environment.

Climate change and attendant climate disruption present a great risk to our country. A conclusion to

which the Pentagon has come. While carbon dioxide is the primary concern in climate change, methane is a powerful greenhouse gas and a major constituent of natural gas. While natural gas has been promoted because it creates lower levels of carbon dioxide at combustion than some fuels, it still produces carbon dioxide. Any advantage it may have over coal in this regard may be more than offset by fugitive methane leaks at the well site, pumping stations, or pipelines. Some studies show that this may be up to 8% of the produced gas. The industry must control these fugitive emissions. We must reduce our combustion of all fossil fuels if we are to give our grandchildren a climate similar to what we have known. (891)

Response: The Department acknowledges the comment. The comment related to air emissions is beyond the scope of this rulemaking. However, air emissions from the oil and gas sector are regulated through a series of measures including the best available technology or BAT which includes equipment, devices, methods and techniques that will prevent, reduce or control emissions of air contaminants, including hazardous air pollutants, to the maximum degree possible. The Department believes the revisions to Chapters 78 and 78a are consistent with the constitution and applicable statutes and provide appropriate protections for public health and safety and the environment.

2565. Comment: The mission of DEP is to protect Pennsylvania's land, water and air from pollution and to provide health and safety to the citizens of Commonwealth through cleaner environment. DEP can't protect the environment and frack at the same time. Fracking needs to be banned and it will be. Not today, maybe not tomorrow, but it will be. But at that time, there will be no State of PA. The work of revising the regulations is the most important work that you do in its lifetime. You are saving our country, our land, and our planet.

The state of PA is not belonging to the oil and gas industry, or to the politicians who owe their electoral offices to the oil and gas industry or to the frackers who want to make a quick buck. This state belongs to the people who live here, work here and raise their children here.

The oil and gas industry is not like any other industry. What you have learned here in relation to the regulations is really just the tip of the iceberg. It is very complex and I have been studying it through years. I think the scientists who are studying this would say the same thing. There are so many unknowns. We have to find out those unknowns. We cannot do any studies or experiments in PA since people are living here.

Fracking is a cancer spreading all over the state. It is more harmful than any other industry to everything around it, to everything that comes in contact with it. This is harmful to air, soil, water and health of the people, animals and plants. We are talking about the health of the entire planet. What other industry has a broad negative impact? Fracking is morally wrong, it is terribly dangerous and the residents of PA are suffering the consequences. It has been regulated less than any other industry with huge loopholes. How is that possible? How many other industries do not have to comply with the Clean Water Act?

PA constitution says that the people have the right to clean air, water and the natural, scenic, historic and esthetic values of the environment. PA's natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people. (879)

Response: The Department acknowledges the comment. See responses to comments 2501 and 2508. The Department disagrees with the commentator's view that fracking is more harmful than any other industry. The commentator failed to provide any supporting evidence that

claims the oil and gas industry causes more pollution than any other industry in the state. The Department believes the regulatory language, properly implemented and enforced is protective of the public health, the environment and public natural resources of the Commonwealth.

2566. Comment: I know and have met many people in PA that have been affected by hydraulic fracking. Some of which are family members and close friends with children. I have personally seen adverse health effects from these people just innocently living in their homes, drinking water and breathing air.

I have also witnessed homes lose well water after the fracking industry came to their land or farm. I know this better; I once lived on one such farm over 20 years ago. That being said, my concerns are many, so very many!

The bottom line here is that safety is not being practiced by the Industry. Not only that, but the citizens of this state does not know the truth of this industry, and therefore, know not the danger they and their loved ones are in. If it's the cleanest fossil fuel, then why not expose the extraction process? Or better yet, the 7500 Gallons of chemicals that are used per well!? And the effects of said chemicals on the human body.

First and most important is our precious resource: water!! It's being contaminated, at alarming rates from the chemical used, to the methane, radiation and other natural compounds that come up during the drilling process itself. How many citizens know to get their water tested prior to drilling? Then once a land owner become ill or their animals become sick, it's too late! The burden of proof is on the land owner. This need to be changed.

New regulations need to be imposed on these companies to ensure our rights for clean water! And shut down a well pad if contamination does happen to water source!

Also what and where are these companies going to do with this chemical, radiation laden water? Now you're proposing to dump it on our roads?! In our cities, towns, and rural area! Are you kidding me? We are going to have this poison on and in our cars, breathing it in on the highways! Breathing it in our yards. Our children getting doses of poison every day of chemicals and radiation!!

This is what I propose you to do. Tell the public what exactly is in this brine water. That the chemicals can cause –confusion, anemia, rapid pulse, nervous system damage, leukemia, cancer, damage to the reproductive system, birth defects and more. Eventually this dumping process will end up in all our waterways. Why not let the public vote on whether or not they want this poison cocktail dumped on their road? They must and should be informed!!! This is our state and our country. We all live here; the gas and oil industry will not be here forever. What will be left with in its wake? It's up to us!!! (872)

Response: The Department acknowledges the comment. Protection of water supplies and reporting and remediating of spills are addressed in Chapters 78.51, 78.52, 78.66, 78a.51, 78a.52 and 78a.66. Sections 78.70, 78.70a, 78a.70, and 78a.70a address road spreading of brine for dust suppression and de-icing purposes. Flowback and produced water from unconventional wells is prohibited for these purposes.

2567. Comment: Here at the Concerned Citizens of the Southern Tier of New York, we would stand with the Clean Air Council in favor of Green Completion Technology used for any existing and future Gas Drilling Exploration to include well pads, compressor stations, pipelines and gathering

lines and any simulators, ventilators and dehydrators, LNG processing facilities and fertilizer manufacturing facilities.

While we stand with the Clean Air Council on the issue of Green Completion, we think the best course of action is to enact a state-wide 2-year moratorium on any current and future gas drilling exploration in order to sit down at a table for intelligent discussion with members of the DEP, the Gas Drilling Industry and Concerned Citizen Groups from across the State of Pennsylvania. (862)

Response: The Department acknowledges the comment. See response to comment 2508.

2568. Comment: I live and my occupation is on the Susquehanna River. I own a canoe kayak livery business and we are in our 15th year of business. The Susquehanna River is a National Recreational Water Trail and is a National Historic Water Trail as a Connector to the Capt. John Smith Historic Water Trail. Has natural recognition but not scenic designation.

The water quality of the River is also the quality the life of the Chesapeake Bay.

On January 23, 2014 our water quit flowing into our house from our well. Our water lines had frozen, but it was a short time without water that it makes one realizes how important our water really is. The contamination of a river in West Virginia is a large wakeup call when thousands of people lose their water to a chemical spill. How long after an event like that does it take before one can allow their children to drink and bathe in once contaminated water?

A methane leak from a gas well being drilled almost two-miles from my home contaminated the water wells of nearby residents and my neighbors. I have two residential wells that were contaminated that Chesapeake Energy had to install expensive water treatment systems on. I want to sell both these properties and having had water problems reduces the value and number of possible buyers. The methane problem seems to be going away; the methane bubbles in the river have diminished. But the threat lingers. A neighbor, Ed Bidlack, who owns a business, Ed's Heating is not as fortunate. His well water is polluted so bad he does not have any water that is safe to use. He has water bottles brought in his residence. He spoke to me about this problem. I am sure those of you sitting on this panel are aware of this. Here is a home and business with no water. How does that diminish the value of his investment property? Who makes up the difference in money? There are others that have buyouts because of improper drilling activities that had totally polluted their water supply. If chemicals are in the aquifers of our drinking water, it is only a matter of time before it is in the Susquehanna River.

DEP was proud to release a short documentary last week about the research they are doing on the lower Susquehanna, to maybe find out what is causing the smallmouth bass to be scared with sores and black marks.

You should be ashamed to even show this. It is the biggest piece of crap I have seen about the Susquehanna River. If it is anti-bacterial soaps and personal hygiene cleansers that are polluting the river, then ban them from use in the watershed. Little mention of sewage released in the River every day. Now, on top of that, drilling chemicals are being left in underground areas all throughout northern Pennsylvania. It will surface someday and may go undetected in our drinking water and in the River until it is detected by sickness or death.

Our forefathers who burned and destroyed the Indian villages along our beautiful Susquehanna River, did, when the dust settled, guarantee the residents of this state clean air and clean water.

You, Pennsylvania Department of Environmental Protection are not doing your job. Whether you are under staffed, re-regulated, or somewhere along the line bought out, the citizens can only throw their hands up in the air. Environmental Protection Do your job. When the big gas corporations have drilled and gone away, who pays the Pennsylvania citizens for their loss of clean water?

With that being said, do not weaken proposed regulations and our standards of living by pressures from the gas and oil industry. (859)

Response: The Department acknowledges the comment. Protection of water supplies are addressed in Chapters 78.51, 78.52, 78a.51, and 78a.52.

2569. Comment: Human and environmental health are sacred. High volume slick water unconventional hydraulic fracturing of natural gas was brought to Pennsylvania with employees of state government and Penn State University declaring it safe without any scientific data gathered in Pennsylvania to support such claim. This betrayal of trust has been ignored as government figures act as the industry's pimps. The only right thing to do is to call for a moratorium on fracking period.

The EQB must now do what should have been done when exemptions were given to gas drillers through the Halliburton Loophole of 2005 by questioning Dick Cheney and reopening all complaints of damaging harm done to people, animals, land, water and air by the Marcellus Shale Industrial Complex. Stop the removal of natural gas resources from this country because of corruption in the free market system of the United States. Freedom for whom and what when gas industries export untaxed gas to other states and countries leaving land water and air tainted without accountability or responsibility. Cap all wells and let the investigations begin. (833)

Response: The Department acknowledges the comment. See response to comment 2508.

2570. Comment: Our state constitution says "The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment." While these new DEP proposed regulations we're discussing today are a step forward in protecting that constitutional provision, there still need to be improvements to those regulations.

The DEP needs to bypass the so-called Halliburton loophole and force industry to adhere to both state and federal environmental and endangered species laws. I hate to say this, but it is the impression of many of us, including me, that DEP is not carrying out its stated mission. We believe that instead of doing the job assigned to it, DEP is protecting the industry it is charged with regulating. One has only to look at incidents described in the film "Triple Divide" such as the At gas blowout, the Birch Run Exceptional Watershed and Big Nelson Run incidents among so many others to know why I and many others have lost our trust in DEP. Because of this, these new regulations are absolutely meaningless unless DEP changes the way it does business. Is it any wonder why we citizens no longer trust the DEP to protect us and the environment?

Having said that, I offer this advice to the DEP. Put your feet on the ground and use state and federal laws along with your own rules and regulations to properly regulate this industry in order to carry out your mission and protect the provisions of our state's constitution. Perhaps then, and only then, you might regain our trust. (823)

Response: The Department acknowledges the comment. See responses to comments 2508 and 224.

2571. Comment: NO! to fracking! NO! to fracking on our PUBLIC lands! UNACCEPTABLE! These are our PUBLIC lands NOT “private” corporate lands, they have NO right to ruin these lands. NO right to ruin our air, water, soil! NO! to corporate-fascism in our so-called democracy. (264a)

Response: The Department acknowledges the comment.

2572. Comment: I will be returning to Aliquippa, PA in April. I was born there. I am dismayed that they want to Frack in our national parks including Brady’s Run Park in Beaver County. The last thing we want in our parks is flaring and huge Methane emissions that stay in the atmosphere longer causing more damage than coal CO₂. I also am opposed to fracking anywhere in Beaver County PA. I want renewable energy. Not fracking that poisons the water table, streams, and rivers and the air with caustic chemicals. (774)

Response: The Department acknowledges the comment. It is up to the federal government to decide what may or may not be prohibited in a National Park.

2573. Comment: During the Warren public hearing it was repeatedly stated that

1. People who make their living in the oilfield tend to lead longer lives;
2. DEP currently over-regulates oil and gas operators as it is; the revised regulations would cause harm to the oil and gas business;
3. All oil and gas drilling and hydro-fracking and waste disposal is always done in a safe and responsible manner, therefore these operations are harmless; and
4. Oilfield operators always employ best practices resulting in safe workplaces and responsible handling of their operations.

It has been my experience living in the “Oil Patch” that these assertions are entirely false. See Appendix 5 for attachments. (1168)

Response: The Department acknowledges the comment.

2574. Comment: The affected families with oil and gas industry activities believes that DEP is unable to do the job that they should be doing, which is protecting the public health and safety. It is great importance to you to provide independent air and water testing to families who are in harm’s way. But the victims no longer trust DEP. It is very sad that we are sitting here and discussing the new regulations, but the facts on the ground here in southwestern PA is that there aren’t enough boots on the ground. DEP only have two people in the whole county to come and check on 30, 40, 50 different complaints. So families won’t get help when the emergency really exists.

So when I started seeing these situations, although I know this is not the norm of the industry and anyone or the DEP is willing to admit. And so what we did to raise money to offset these various expenses, air and water testing, because, you know they’re not cheap, is that we had to compile a storybook, because the people can’t get their stories told. Now many people are in litigation and their stories can’t be told. But those brave souls that have given us permission to share their stories did so with the knowledge that the money that we raised from selling these at five bucks a piece here and there all goes towards providing for basic water and air filters for homes for providing air and water testing when they don’t know what’s going on.

So I want to share with you the story of the person who brought me into this in the first place. I challenge you to pull this file on this home and then you will understand why so many of us are here tonight with the concerns that we have. Since the homeowner couldn't come to this event, I am going to share their story. We've been residents of Fayette County for 28 years. We had owned our current residents for seven years. Our rural community in Springfield township was a serene, safe small town situated along the Monongahela and Cheat rivers, nestled in the Allegheny Mountains. Life here was quiet. This was a beautiful place to live and raise our family far from the bustle of the city. This was before the drilling.

First we noticed the gas activities when bulldozers invaded our main roads to build access roads for the well pads. It began only about six week after we signed on the land, having bought the mineral rights, but without the oil and gas rights. They didn't know what was coming down the pike, like many of us.

Since the coal mining was the issue around here and there has been very little to no activity in the gas field. We were made not to worry about potential for development and moved ahead with the plans to build our dream home. This was before anyone knows the name Marcellus. Yet, in 7 years time, the man who owns the rights has put four shallow wells and one Marcellus well a pipeline across the property. We had no idea they could do this to the land or to us.

The truck traffic is constant. The land damages were immediate. Trucks, noise, dust and nomadic workers followed. Then came the pollution of our air and water, then deforestation, destruction of our fruit trees. They even managed to burn 10 acres of ground with a brush fire set by used motor oil from bulldozers oil change. Every hour, once an hour it sounds like a landing jet visits our once quiet farm as the well sells.

We have even had multiple leaking wells for over a year, ignored by operators, and now we have a spring 200 feet from our house which is now so rich with gas it can be set on fire. Doctor visits have become commonplace. (1097)

Response: The Department acknowledges the comment regarding staffing and inspections and continues to strive to provide adequate and appropriate oversight of the oil and gas industry. The Department believes that the revisions to Chapters 78 and 78a provide appropriate protections for public health and safety and the environment.

2575. Comment: Several provisions of the rule exceed their statutory authority.

The Department's Policy for the development of regulations acknowledges that regulations should "explain but not enlarge the scope of statutory provisions." TGD No. 012- 0820-001, at 2. The Department is not following the law or its own policy because the following revisions to Chapter 78 plainly are beyond the Department's authority under Act 13. Rulemaking should be allowed to proceed to a proposed rule stage when parts of it are not authorized by law.

A. Abandoned and orphaned wells; public sources

The revisions to the Chapter 78 provisions dealing with abandoned and orphaned wells and with public resources exceed the Department's Act 13, as discussed above. We believe the regulatory package should be withheld from publication until these deficiencies are corrected.

B. Site Restoration Section 78.65

Section 3216(e) of Act 13 requires sites to be restored in accordance with the Clean Streams Law, for which the applicable regulations are found in Chapter 102. Section 102.8(n) of these regulations, as amended in 2010, exempts oil and gas activities from extensive post-construction stormwater design criteria that apply to other earth disturbance activities such as commercial construction projects. This was done in recognition of the fact that post-construction footprint of a producing oil or gas well is much different from a stormwater management perspective than the impact of a commercial development.

However, section 78.65(d)(1)(i) as proposed ignores this exemption and purports to subject oil and gas site restoration to the much more extensive Chapter 102 criteria. This will impose significant costs on the industry and hamper development, contrary to Act 13's command to "permit optimal development of oil and gas resources" (section 3202(1)). It will also burden landowners by requiring more extensive stormwater control features (such as oversized sedimentation ponds and drainage ways) on their property than are necessary under current law.

C. Pipelines and horizontal direction drilling - Sections 78.68a, 78.68b

Act 13 does not give the Department authority to regulate pipelines or horizontal direction drilling. Yet, the Chapter 78 revisions would heavily regulate each.

These provisions would treat oil and gas operations differently from other industries that use pipelines. The Pennsylvania Clean Streams Law and its implementing regulations in Chapter 102 already address the environmental impacts of pipeline placement for all industries. Pipeline safety is largely preempted by federal law and comprehensively governed by the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration. There is no statutory requirement or need for the Department to further regulate oil and gas pipelines. Doing so only adds cumulative regulatory burden with no appreciable environmental or safety benefit.

Contrary to the Department's apparent belief, industry is not asking the Bureau of Oil and Gas Management to add safety or environmental protection requirements to pipelines in addition to Chapter 102 and federal law. We believe that sections 78.68a and 78.68b should be deleted from the Chapter 78 revisions.

D. Tanks and Containers – Sections 78.56 and 78.57

Section 78.57(e) would require operators to remove existing underground or partially buried brine or produced fluid storage tanks within three years of adoption of the Chapter 78 revisions. This contradicts the Act 13 grandfathering provision. Act 13 states that all activities initiated under the Oil and Gas Act:

"Shall continue and remain in full force and effect and may be completed under 58 Pa.C.S. Chs. 32 and 33. Orders, regulations, rules and decisions which were made under the Oil and Gas Act and which are in effect on the effective date of Section 3(2) of this act shall remain in full force and effect until revoked, vacated or modified under 58 Pa.C.S. Ch. 32 or 33."

58 Pa.C.S. § 4. The Department has no authority to impose retroactive requirements on existing sites and operations unless clearly authorized under Act 13, which authority is lacking with respect to underground storage tanks. Apart from the lack of legal authority, the Department is attempting to treat brine, especially brine from conventional operations, more stringently than hazardous waste, which may be stored in underground tanks. We believe that is unreasonable. (1172)

Response: In response to the commentator's comments on §§ 78.52a and 78a.52a, the Department disagrees that it lacks statutory authority for the requirements in §§ 78.52a and 78a.52a (relating to area of review). Please generally see the responses to comments on §§ 78.52a and 78a.52a. Importantly, Chapters 78 and 78a are promulgated under the authority of both the 2012 Oil and Gas Act and the Clean Streams Law as well as other statutes.

Sections 78.52a and 78a.52a address potential communication between existing wells and hydraulic fracturing activities and the potential this has to pollute waters of the Commonwealth posing a risk to public health and safety and the environment.

Under section 401 of the Clean Streams Law, it is considered unlawful for any person or municipality to put or place into any of the waters of the Commonwealth, or allow or permit to be discharged from property owned or occupied by such person or municipality into any of the waters of the Commonwealth, any substance of any kind or character resulting in pollution. Any such discharge is declared to be a nuisance. Section 402 of the Clean Streams Law authorizes the promulgation of regulations that are necessary to avoid such pollution.

Under the 2012 Oil and Gas Act, section 3202 of the 2012 Oil and Gas Act expresses the General Assembly's intent to permit development of oil and gas resources "consistent with protection of the health, safety, environment, and property of Pennsylvania citizens." Under section 3217 (relating to protection of fresh groundwater and casing requirements), a well operator must control brines produced from drilling to aid in protection of fresh groundwater. This section is also concerned with preventing the migration of gas or fluids into sources of fresh groundwater. Section 3259 (relating to unlawful conduct) states that it shall be unlawful for any person to conduct an activity related to drilling for, or production of, oil and gas in any manner as to adversely affect public health, safety, welfare, or the environment. Finally, section 3274 provides the authority for the EQB to promulgate regulations to implement this chapter.

Accordingly, both the Clean Streams Law and the 2012 Oil and Gas Act provide the Department the statutory authority for these provisions to minimize the impacts of hydraulic fracturing activities communicating with existing wells.

In response to the commentator's comments on well site restoration, please see response to comments on §§ 78.65 and 78a.65. The Department does not interpret the provisions of § 102.8(n) as an extensive exemption from post construction stormwater management requirements, and further, does not agree with the commentator regarding the basis of the 2010 Chapter 102.8(n) provisions. The inclusion of the reference in § 102.8(n) to restoration requirements in other Chapters of Title 25 expressly incorporates the performance requirement of post construction stormwater management as required in Chapter 102: "the portion of a site reclamation or restoration plan that *identifies PCSM BMPs to manage stormwater* from oil and gas activities . . . permitted in accordance with Chapters 78 and 86-90..." 25 § 102.8(n).

The Department disagrees with the proposition that the 2010 Chapter 102 rulemaking recognizes a distinction in oil and gas development related stormwater runoff and that of commercial construction projects. There is no support in the record for the Chapter 102 rulemaking for that proposition. All stormwater runoff associated with earth disturbance activities triggering a permit under § 102.5 must be managed with BMPs that satisfy the requirements of Chapter 102. Section 102.8(n) recognizes that restoration undertaken in

accordance with other Chapters of Title 25 may be functionally equivalent to a Chapter 102 PCSM BMP, and when that is the case and can be demonstrated may be relied on to meet Chapter 102 PCSM requirements.

The restoration provisions in §§ 78.65 and 78a.65 provide clarity related to satisfaction of existing post construction stormwater management requirements under the Pennsylvania Clean Streams Law and Chapter 102 when restoration activities are undertaken at oil and gas development sites and the Chapter 102 permittee proceeds under 25 § 102.8(n). The Department does not agree that these provisions subject more activities to stormwater management. The existing Chapter 102 requirements for stormwater management are not modified by this rulemaking.

The restoration provisions in §§ 78.65 and 78a.65 will not impose new costs on the industry nor will these provisions hamper development because they relate to existing requirements for stormwater management required under Chapter 102. Rather, these provisions provide clarity and facilitate coordination among related regulatory chapters. These provisions do not modify existing stormwater management requirements and therefore will not burden landowners by requiring more extensive stormwater control features on their property, because current law under the Pennsylvania Clean Streams Law and the Chapter 102 regulations contain applicable stormwater management requirements to ensure protection of waters of the Commonwealth. The commentator's reference to "oversized sedimentation ponds and drainage ways" is neither credible nor borne out by the experience to date with the post construction requirements.

In response to the commentator's comments on pipelines, it is important to remember, as noted above, Chapters 78 and 78a are promulgated under the authority of several environmental statutes, not just the 2012 Oil and Gas Act. The construction, operation, maintenance, repair, and removal of oil and gas gathering and well development pipelines can impact the health, safety, and welfare of the public and the environment. Pennsylvania environmental statutes that provide authority for §§ 78a.68, 78a.68a and 78a.68b include the Clean Streams Law, the Dam Safety and Encroachments Act, and the Solid Waste Management Act.

In response to the commentator's comments on tanks and containers, the Department disagrees with the applicability to § 4 to this rulemaking. Moreover, please refer to the responses to comments on §§ 78.57, below. Specifically, continued use of underground storage tanks at oil and gas well sites will be allowed under the final-form rulemaking.

In response to the commentator's comment on public resources, please see response to comment 265.

2576. Comment: EQB has stated that this rulemaking is being made under the authority of the following laws: Act 13, the Clean Streams Law, the Solid Waste Management Act (SWMA), the Dam Safety and Encroachments Act, the Land Recycling and Environmental Remediation and Standards Act (Act 2), and the Administrative Code of 1929. Section 13 of the Regulatory Analysis Form (RAF) lists nine other chapters of the Department of Environmental Protection (Department) regulations that language was derived from or cross-referenced in this proposal. Commentators have expressed concern that certain provisions of the regulation adopt concepts or requirements from all of these laws, and the regulations promulgated thereunder, and impose those requirements upon the oil and gas industry, even though those laws may not be applicable to the oil and gas industry. In the

Preamble to the final-form regulation, EQB should explain the applicability of the referenced laws and regulations. (1099)

Response: The Preamble to the final-form regulation explains the applicability of all referenced laws and regulations. The Department disagrees that it is necessary to identify the authority for each provision of the rule within the regulation as the commentator suggests. The Department also disagrees that these regulations impose requirements that are exempt under state law. While federal law exempts several aspects of oil and gas development, those exemptions do not apply to state law unless explicitly incorporated by reference. In particular, there are no exemptions from the Clean Streams Law for the oil and gas industry. This statute, in combination with the 2012 Oil and Gas Act, form the basis for much of the rule. To the extent that the Solid Waste Management Act, the Storage Tank Act and the Noncoal Surface Mining Conservation and Reclamation Act, and the 2012 Oil and Gas Act provide limited exemptions to the oil and gas industry, those exemptions have been recognized in the rule.

To the extent that this rulemaking creates new requirements for the oil and gas industry that do not apply to other industries, it is because of the unique nature of oil and gas operations. One example is the requirements for well development impoundments. No other industry uses and stores water in the same way that oil and gas operators do. Accordingly, it is appropriate and reasonable for the Department to develop application regulations to address when these operations pose a threat to public health, safety and the environment.

2577. Comment: At one of the TAB meetings, members expressed their concerns that all or parts of Chapter 78 revisions dealing with abandoned and orphan wells, public resources, site restoration, pipelines, horizontal direction drilling, and tanks and containers go beyond the department's authority and should be revised or deleted from the proposed rules. Some of these concerns were justified with the PA Supreme Court ruling. (636a)

Response: Please see the responses to comments for §§ 78.15, 78a.15, 78.52a, 78a.52a, 78.56, 78a.56, 78.57, 78a.57, 78.65, 78a.65, 78.69-78.68b and 78a.68-78.68b.

To the extent the commentator suggests a statutory authority issue related to the implementation of certain provisions in the 2012 Oil and Gas Act as a result of the Pennsylvania Supreme Court decision in *Robinson Twp. v. Commonwealth*, 83 A.3d 901 (Pa. 2013) (*Robinson Twp.*), please see the responses to comments on §§ 78.15 and 78a.15. Specifically, please see the response to comment 265. Please also see the response to comment 2580.

Additionally, please note that Chapters 78 and 78a are promulgated under the authority of several environmental laws including The 2012 Oil and Gas Act; Article I, Section 27 of the Pennsylvania Constitution; the Clean Streams Law; the Dam Safety and Encroachments Act; the Solid Waste Management Act; the Pennsylvania Law Recycling and Environmental Remediation Standards Act; the Radiation Protection Act; the Administrative Code of 1929; the act of July 10, 2014 (P.L. 1053, No. 126); and the Unconventional Well Report Act, the act of October 22, 2014 (P.L. 2853, No. 173). Accordingly, the Department's authority for the provisions in this rulemaking is not limited to the 2012 Oil and Gas Act.

2578. Comment: The proposed amendments to Chapter 78 would exceed statutory authority by expanding regulatory provisions beyond the terms of Act 13, impose standards on oil and gas operations that are more stringent than those currently imposed by the Federal Energy Regulatory

Commission with respect to storage operations of interstate pipeline and introduce operational complexity or obligations that have no meaningful environmental benefit. (1154, 1155)

Response: The final rulemaking is consistent with the state environmental laws, including the 2012 Oil and Gas Act, cited as statutory authority for the rulemaking. Additionally, Chapters 78 and 78a are promulgated under the authority of several environmental laws including The 2012 Oil and Gas Act; Article I, Section 27 of the Pennsylvania Constitution; the Clean Streams Law; the Dam Safety and Encroachments Act; the Solid Waste Management Act; the Pennsylvania Law Recycling and Environmental Remediation Standards Act; the Radiation Protection Act; the Administrative Code of 1929; the act of July 10, 2014 (P.L. 1053, No. 126); and the Unconventional Well Report Act, the act of October 22, 2014 (P.L. 2853, No. 173). Accordingly, the Department's authority for the provisions in this rulemaking is not limited to the 2012 Oil and Gas Act.

The Federal Energy Regulatory Commission (FERC) cannot authorize the construction of an interstate pipeline project unless the pipeline will comply with state environmental law requirements necessary to protect Pennsylvania's water quality. In addition, the final rulemaking provides necessary environmental protections for intrastate gathering lines not regulated by FERC.

2579. Comment: The EQB, in interpreting and implementing Act 13 or any other existing statute, must interpret and give effect to the legislative intent of the statute. See, 1 Pa.C.S. § 1921. That is, when promulgating regulations based on a statute, the EQB must do so in a manner that is not contrary to the clear and plain meaning of that statute. See, *Bethenergy Mines, Inc. v. Commw. Dept. of Environ. Protection*, 676 A.2d 711 (Pa. Commw. 1996).

The proposed revisions/additions to Chapter 78 are not wholly consistent with the legislative intent of Act 13. In fact many of the proposed changes go well beyond the requirements of Act 13 and impose additional requirements on oil and gas development that provide no meaningful environmental benefits and increase costs to the industry by imposing additional administrative and operational burdens. Many of the proposed changes appear to derive from the EQB's or DEP's own opinions/initiatives rather than being based on statutory guidance from the General Assembly. (1140)

Response: Chapters 78 and 78a are promulgated under the authority of several environmental laws including The 2012 Oil and Gas Act; Article I, Section 27 of the Pennsylvania Constitution; the Clean Streams Law; the Dam Safety and Encroachments Act; the Solid Waste Management Act; the Pennsylvania Law Recycling and Environmental Remediation Standards Act; the Radiation Protection Act; the Administrative Code of 1929; the act of July 10, 2014 (P.L. 1053, No. 126); and the Unconventional Well Report Act, the act of October 22, 2014 (P.L. 2853, No. 173). Accordingly, the Department's authority for the provisions in this rulemaking is not limited to the 2012 Oil and Gas Act. Please see responses to comments on the Department's authority in the relevant substantive provisions.

2580. Comment: In light of the *Robinson Twp.* case, we ask EQB to explain its authority to regulate well location restrictions, particularly as they relate to setbacks, waivers, and impact analyses for well permits. (1099)

Response: The Pennsylvania Supreme Court's decision in *Robinson Twp. v. Commonwealth*, 83 A.3d 901 (Pa. 2013) (*Robinson Twp.*) invalidated Sections 3215(b)(4), 3215(d), 3303 and 3304 of

the 2012 Oil and Gas Act.

The Court enjoined the entirety of Section 3215(b) because it found that the remaining parts of this section were not severable from 3215(b)(4). Sections 3215(b)(1)-(3) established the setbacks from streams, springs, wetlands and other bodies of water as well. Section 3215(b)(4) granted the Department the discretion to waive those setbacks. Accordingly, the provisions in the 2012 Oil and Gas Act that provided setbacks to these waters are no longer applicable to locating of a well. Notwithstanding this holding, the Department has authority to promulgate regulations necessary to prevent threats of pollution to waters of the Commonwealth under the Clean Streams Law. Under this authority, the Department established § 78.15(b.1) and § 78a.15(b.1). In these provisions, if the well site is within 100 feet of certain bodies of water, the well permit applicant must demonstrate that the well site location will protect those waters. These provisions are similar to other requirements in Title 25 of the Pennsylvania Code and are consistent with the riparian buffer requirements in 25 Pa. Code Chapter 102.

As documented in the 2010 Chapter 102 rulemaking “Erosion and Sediment Control and Stormwater Management”, 40 Pa.B. 4861, there is substantial scientific support for a 100 foot buffer from streams. One such study is Streamside Forest Buffer Width Needed To Protect Stream Water Quality, Habitat and Organisms: A Literature Review, Bernard W. Sweeney and J. Denis Newbold, Journal of the American Water Resources Association, June 2014, which cites over 251 scientific articles and papers as sources for the paper which states that “overall, buffers ≥ 30 m wide [approximately 100 feet] are needed to protect the physical, chemical, and biological integrity of small streams.” For these reasons, the Department determined that 100 feet was a reasonable and appropriate area for additional review to ensure protection of waters of the Commonwealth.

As for impact analyses for well permits, the public resource impact screening process in Sections 78.15(f)-(g) and 78a.15(f)-(g) is needed because the Department has an obligation to protect public resources under Article I, Section 27 of the Pennsylvania Constitution, the Administrative Code of 1929, the 2012 Oil and Gas Act, the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act and other statutes. Moreover, the Department shares responsibility for the protection of natural resources with other Commonwealth agencies and municipalities that also have trustee duties under Article I, Section 27 of the Pennsylvania Constitution, as well as federal agencies. To meet these constitutional and statutory obligations, Sections 78.15 and 78a.15 establish a process for the Department to identify, consider and protect public resources from the potential impacts of a proposed well and to coordinate with applicable public resource agencies.

Public resource consideration has been a required component of the well permit application process since the Oil and Gas Act was first enacted in 1984. The provisions in this final-form rulemaking are needed to provide a clear process for identifying potentially impacted public resources, notifying applicable public resource agencies, soliciting any recommended mitigation measures and supplying the Department with sufficient information to determine whether permit conditions are necessary to avoid a potentially harmful impact to public resources.

If the limit of disturbance associated with a proposed oil or gas well site is located within a certain distance of a listed public resource as provided in Sections 78.15(f)(1) and 78a.15(f)(1), the well permit operator must provide additional information in the well permit application and notify applicable public resource agencies thirty days prior to submitting the well permit application. Under Sections 78.15(f)(2) and 78a.15(f)(2), the public resource agencies have

thirty days to provide written comments to the Department and the applicant on the functions and uses of the public resource and any recommended mitigation measures. The applicant is then afforded an opportunity to provide a response to those comments. The Department then evaluates the potential impacts and assesses the need for conditions in the well permit using the criteria in Sections 78.15(g) and 78a.15(g). Section 78.15(g) and 78a.15(g) are added to this rulemaking to provide needed clarity regarding implementation of these obligations and to comply with Section 3215(e) of the 2012 Oil and Gas Act, which specifically directs the Environmental Quality Board to develop such criteria by regulation.

The right of the people of Pennsylvania to clean air, pure water, and the preservation of the natural, scenic, historic and esthetic values of the environment as expressly provided by Article I, Section 27 of the Pennsylvania Constitution are fundamental to the quality of life of the people of Pennsylvania. Additionally, public natural resources held in trust by the Commonwealth for the benefit of the people are a major economic contributor to Pennsylvania through tourism, outdoor fish and game sports, and recreation. The public resource impact screening provisions in this rulemaking provide needed clarity and clear standards for the Department to carry out its trustee obligations in administering the 2012 Oil and Gas Act program and will ensure the continued availability and benefits of these public resources throughout the Commonwealth.

Despite the Department's duties and obligations as described above, industry commentators argued that the Department does not have the statutory authority to promulgate regulations regarding public resources under Sections 78.15(f)-(g) and 78a.15(f)-(g) because the Pennsylvania Supreme Court enjoined Sections 3215(c) and (e) in *Robinson Twp. v. Commonwealth*, 83 A.3d 901 (Pa. 2013) (*Robinson Twp.*). The Department asserts that Sections 3215(c) and (e) were not enjoined or otherwise invalidated by *Robinson Twp.* and that neither the plurality nor the concurring opinions in *Robinson Twp.* read in their totality overturn the public resource protection requirements as part of the well permitting process. Additionally, as of the date of the finalization of this document, this issue is being litigated in Commonwealth Court. See *Pennsylvania Independent Oil & Gas Association v. Commonwealth* (321 M.D. 2015). The Department's Answer reflecting its interpretation of *Robinson Twp.* will be filed before Commonwealth Court by January 30, 2016."

The Pennsylvania Supreme Court's decision in *Robinson Twp.* invalidated Sections 3215(b)(4), 3215(d), 3303 and 3304 of the 2012 Oil and Gas Act as unconstitutional. As for Sections 3215(c) and 3215(e), the Court held: "Sections 3215(c) and (e) . . . are not severable to the extent that these provisions implement or enforce those Sections of [the 2012 Oil and Gas Act] which we have found invalid and in this respect, their application or enforcement is also enjoined." *Id.* at 1000 (emphasis added).

Sections 3215(b), 3215(d), 3303 and 3304 of the 2012 Oil and Gas Act address protection of surface water quality; comment and appeal rights of municipalities and storage operators; preemption of local ordinances; and uniformity of local ordinances, respectively. Section 3215(c) is a separate, independent, free-standing provision that does not implement or enforce these invalidated provisions. Rather, Section 3215(c) requires the Department to consider the impacts of a proposed well on "public resources" including, but not limited to, publicly owned parks, forests, game lands and wildlife areas; national and state scenic rivers; national natural landmarks; habitats of threatened and endangered species and other critical communities; historical and archeological sites; and sources used for public drinking supplies.

Section 3215(e) of the 2012 Oil and Gas Act operates in tandem with Section 3215(c). Under Section 3215(e), the Environmental Quality Board is directed to develop regulations to establish criteria for the Department to consider when conditioning well permits based on impacts to public resources identified under Section 3215(c).

The Department believes that Sections 3215(c) and 3215(e) do not implement or enforce Sections 3215(b), 3215(d), 3303 or 3304 of the 2012 Oil and Gas Act and, therefore, remain valid and enforceable.

For these reasons, in addition to the authority discussed above, the Department retains a specific statutory obligation to protect public resources under Sections 3215(c) and (e) of the 2012 Oil and Gas Act.

However, even if those paragraphs were invalidated as some commentators assert the provision under the prior law enacted in 1984 mandating protection of public resources would then remain in effect. *See* 58 P.S. § 601.205(c). Thus, the Environmental Quality Board has authority under either the 2012 revisions to the law or the prior provision enacted in 1984 to promulgate regulations for the consideration of impacts to protect public resources when issuing an oil or gas well permit.

Additionally, other provisions of the 2012 Oil and Gas Act also support the requirements in Sections 78.15 and 78a.15 of this final-form rulemaking. The General Assembly recognized the constitutional obligation to protect public resources in Section 3202 of the 2012 Oil and Gas Act, which provides that the purpose of the act is to “[p]rotect the natural resources, environmental rights and values secured by the Constitution of Pennsylvania.” 58 Pa.C.S. § 3203. Under Section 3274 of the 2012 Oil and Gas Act, the Environmental Quality Board has the authority to promulgate regulations necessary to implement the statute. The public resource protection provisions in Sections 78.15 and 78a.15 provide a reasonable and appropriate process for the Department to implement the constitutional and statutory requirements discussed above.

Further, the General Assembly has enacted several other statutes that provide the Department with the broad power and duty to protect public natural resources consistent with the mandates of Article I, Section 27 of the Pennsylvania Constitution, including the Clean Streams Law, the Solid Waste Management Act, the Dam Safety and Encroachment Act, the Pennsylvania Land Recycling and Environmental Remediation Standards Act and the Administrative Code of 1929. These statutes also provide authority for this rulemaking.

Additionally, the General Assembly has enacted statutes that provide authority for other Commonwealth agencies to protect public natural resources, and the Department must coordinate with those agencies to fulfill its constitutional and statutory duties to protect public natural resources. The public resource protection provisions included in the Chapter 78 and Chapter 78a rulemaking facilitate the Department’s compliance with this obligation.

Finally, the public screening requirements provided in this rulemaking establish a standardized and transparent process for the Department to identify, consider and to protect public resources from the impacts of a proposed well and to coordinate with other public resource agencies with constitutional and statutory duties to conserve and maintain these resources, in a manner that demonstrates compliance with Article I, Section 27 under the most recent court decisions interpreting the 1973 *Payne v. Kassab*, 312 A.2d 86 (Pa. Cmwlth. 1973) three-part test.

2581. Comment: We will review EQB's responses to all of the issues raised by legislators in our determination of whether the final-form regulation is consistent with the intent of the General Assembly and in the public interest. (1099)

Response: The Department acknowledges the comment and believes that the final-form rulemaking is consistent with the intent of the General Assembly as expressed in the many environmental laws that form that basis for this rulemaking. Additionally, as described in the responses to comments for each individual section and in the final-form rulemaking Regulatory Analysis Form, the Department believes that the final-form regulations unequivocally serve the public's interest.

2582. Comment: Public Participation Opportunity. Commentators appreciated the opportunity to participate in meetings with the Technical Advisory Board prior to the EQB's publication of this first draft of the proposed regulations. We also thank the EQB for the 90-day comment period provided on the large and significant regulatory revision package, as well as the additional public hearings scheduled in locations affected by shale gas development. (1143)

Response: The Department acknowledges this comment.

2583. Comment: I am pleased that you have provided additional hearings and have extended the comment period. This process will give you an appreciation, I hope, for the serious concerns of citizens who have been personally and even adversely affected by oil and gas activity in our state. (182)

Response: The Department acknowledges this comment.

2584. Comment: In order to ensure meaningful and informed public participation, the Department must clearly articulate the rationale for the decisions it made in developing the Proposed Rulemaking and make the evidence on which they are based publically accessible. (1152)

Response: The Department acknowledges this comment. The Department believes it has articulated its rationale for the rulemaking in the Preamble to *Pennsylvania Bulletin* notices relating to this rulemaking as well as in the Comment and Response documents.

2585. Comment: We applaud DEP for extending the public comment period and adding additional public hearings, which will provide an important aspect of the regulatory process which is public input. (886)

Response: The Department acknowledges this comment.

2586. Comment: I commend the Department and the EQB's commitment to public involvement on the proposed regulation on oil and gas surface activities, particularly; the department held an unprecedented nine public hearings throughout PA and extended the comment period by more than a month. This has provided all interested parties across the state an opportunity to comment on the proposed regulation. (1119)

Response: The Department acknowledges this comment.

2587. Comment: More hearings should be scheduled throughout the state, especially in areas impacted by fracking the most. I live in Chester county, where there is no fracking and there is a hearing here. The top 6 counties with the most gas drilling violations are Bradford, Susquehanna, Lycoming,

Tioga, Potter, and Washington. Of the six hearings, only two are in the counties with the highest violations - the people who are being impacted need to have their voices heard! Overall, these companies need to be forced to act responsibly - that is the DEP's job! (24)

Response: The Department extended the original 60-day comment period an additional 30 days and added two additional hearings in oil and gas drilling regions. There were a total of nine hearings across the state and seven were held in counties with drilling activity.

2588. Comment: The Public Comment period regarding the proposed changes to regulations should be extended to at least 120 days. The issues at hand are far too important to rush through. More hearings need to be set in the counties affected by Fracking activity so the voices of those living under the industrialization of their land can be heard. The DEPs proposed changes to Chapter 78 do not consider public risk posed by hazardous waste and do not ensure proper disposal. DEP stands for Department of Environmental Protection, do your job. (16, 17, 18, 19a, 24, 67, 102, 114, 115, 118, 140, 160, 161, 162, 475, 488, 843, 848, 930, 945, 956, 972, 492a, 992, 1003, 1040, 1044, 1046)

Response: See the response to comment 2587.

2589. Comment: I'm sure, as an 82 year old lifetime resident of PA, I have more experience with the environmental needs of our citizens than you do. It is clear to me that you have forgotten your main job which is to protect us and not the gas and oil companies. You must extend the period for comments before any rule changes are made. You must commit to protect us with all the power you have. Any rule changes should be to toughen the regulations for fracking! (50)

Response: See the response to comment 2587. The Department believes the revisions to Chapters 78 and 78a are consistent with applicable statutes and provide appropriate protections for public health and safety.

2590. Comment: I am very concerned regarding the extremely disturbing results of gas drilling in our state. We seem to be the poster child for greed and disregard for the wellbeing of residents and our natural resources, upon which we depend. I hope you will extend the comment period for this important concern.(72, 73)

Response: See the response to comment 2587.

2591. Comment: Given the far-reaching consequences of natural gas development for future generations of Pennsylvanians, the comment period should be extended to 120 days. (148)

Response: See the response to comment 2587.

2592. Comment: The public comment period should be expanded to 120 days minimum and more hearings set in affected counties. 59 organizations and thousands of people signed the petition calling for more time. (632)

Response: See the response to comment 2587.

2593. Comment: I would like you to please extend the comments period so my fellow citizens might be afforded the chance for their voice to be heard. I would like a hearing held in my county - Bradford County - in addition to the ones you have planned now.(79, 845)

Response: The Department extended the original 60-day comment period an additional 30

days and added two additional hearings in oil and gas drilling regions. There were a total of nine hearings across the state and seven were held in counties with drilling activity. One of the additional two hearings was held in Bradford County.

2594. Comment: It is also quite interesting to know that possibly only two of the seven public hearing in January 2014 will be held in counties that have conventional wells. How can there be fair representation. (593)

Response: The Department extended the original 60-day comment period an additional 30 days and added two additional hearings in oil and gas drilling regions. There were a total of nine hearings across the state and seven were held in counties with drilling activity including Crawford, Warren, Indiana, and Washington Counties. The Department exceeded the minimum requirements by extending the original comment period and holding public hearings. These additional opportunities for public input, while not required, provided all concerned the opportunity for fair participation in the regulatory development process.

2595. Comment: I would like to urge the DEP to hold more public hearing comment sessions in other counties. I live in Luzerne County and had to drive an hour today to this hearing since this was the closest for me. I believe a public hearing comment session should have been held in each county across Pennsylvania. I also find it extremely inconvenient for the public comment period to begin during the holiday season and these public hearing sessions be held during the dead of winter when weather and travel is so difficult. This meeting had to be rescheduled due to weather and it is not fair to those citizens who now cannot make the meeting. I also feel 5 minutes is not a sufficient amount of time for each citizen to speak on a matter that greatly affects their health and everyday life. (848)

Response: See the responses to comments 2587 and 240. Commentators were free to submit significant written comments in addition to their public testimony, and many individuals and entities took advantage of that opportunity, as is evidenced by this Comment and Response Document.

2596. Comment: I want to thank the EQB and Secretary Abruzzo for extending the comment period on these regulations for 30 days to March 14th. This will only improve the end-product of this process. (852)

Response: The Department acknowledges the comment.

2597. Comment: My name is Wendy Lynne Lee, Shale Justice Coalition. I'd like to begin by reiterating that the public comment period must be expanded to 120 days minimum with more hearings in frack-affected counties. This expansion is crucial not only to insuring that affected people and communities get to be heard, but because being heard is a bulwark of a democracy, however much this state and its agencies routinely ignore it just as they ignore the science relevant to the hazards posed by fracking and its associated infrastructure. (858)

Response: See the response to comment 2587. The Department disagrees with the commentator's view that the state and its agencies ignore the science related to fracking.

2598. My final recommendation relates to the comment deadline and the current schedule of hearings. Fortunately, I own a car and live within an hour's drive of this hearing location. Thus it was convenient for me to speak this evening. However many people in many communities that will be affected by your significant, wide-reaching, decisions will not have this same opportunity. Your

current deadline of Feb 12 and just a few locations for hearings are inadequate. All those wish to have their voices heard may not own a car or a computer or live in sufficiently close proximity to a hearing site. I strongly urge you to extend the public comment period for at least another 3months and hold many more hearings in other regions especially those immediately impacted by your decisions. In order for you to be fully informed by the public, those residents must be given the opportunity to have their voices heard. . These additional hearings need to be widely advertised via media, US mail and many other venues to assure the widest possible range of public input. As you well know, the decisions you make regarding changes to Pennsylvania's oil and gas- regulations are an extremely serious responsibility. You must be as fully informed as possible. (865)

Response: The Department extended the original 60-day comment period an additional 30 days and added two additional hearings in oil and gas drilling regions. There were a total of nine hearings across the state and seven were held in counties with drilling activity. In addition, the Department accepted written, mailed, and emailed comments from the public. Written comments received the same consideration as verbal comments.

2599. Comment: The DEP hearings scheduled for the proposed revisions of the Oil and Gas regulations should be expanded to many additional locations and the time period for comments should be increased. This is a topic that concerns and threatens all of us. DEP must be forced to understand their chief role is to protect the citizens of PA. (95, 649, 1107)

Response: See the response to comment 2587.

2600. Comment: Please extend the comment period. This rulemaking is unheard of in Philadelphia! We can lose our excellent water supply if fracking turns out to be the monster that it has been in many areas. Also look into the financials. Most wells are only in service for a few years until they run out of gas. (100)

Response: See the response to comments 2587 and 566.

2601. Comment: Please extend the public comment period to at least 120 days and hold more hearings in affected counties. We need public participation, especially since Gov Corbett has given preferential treatment to the gas and oil industries at the expense of Pennsylvanians. All chemicals used in the drilling process must have predetermined safe and toxic levels approved by the appropriate government agency for human and environmental health standards. (102, 125, 477)

Response: See the response to comments 2587 and 566.

2602. Comment: I would have preferred testifying in person, but the hearings within driving distance for me, Washington and Meadville, were all held at night. I am retired and have difficulty driving at night.

I live in Butler County, which has experienced a dramatic increase in drilling activity in the last 2 years. I would like to request that you consider holding more hearings, some in daylight hours and locate them in areas where drilling activity is occurring like Butler County. These areas are where the people are being most impacted and are more likely to have an interest in testifying. I am commenting on the areas I feel most concerned about. (129)

Response: See the response to comment 2587.

2603. Comment: We would appreciate you extending the comment period and also making these hearings a little more accessible for larger areas than just down around Pittsburgh or Philadelphia and larger cities. (984)

Response: See the response to comment 2587.

2604. Comment: I urge the EQB to expand the public comment period to at least 120 days to allow the Amish communities, who are such a vital part of Pennsylvania's agriculture where much of the oil and gas drilling is occurring. The Amish represent a huge part of our landscape and they do not have access to many of the media outlets and publications that most of us in this room have access too. They have not been provided adequate notification. You should also host more public hearings in the most heavily impacted counties like Bradford, Susquehanna, Tioga, Greene, Armstrong and Butler Counties. Why would our government agencies host two of the seven hearings in counties where the highly controversial unconventional gas drilling is not occurring? It makes absolutely no sense to me, and I am sure landowners in areas most familiar with the short comings of the current regulations, would have a lot to say about your proposed regulations. (1094)

Response: See the response to comment 2587.

2605. Comment: I want: to say that we inhale the environment, exhale, too. We drink the environment and we eat the environment. It can never really be restored. Once it's dirty, it's dirty.

There are not enough of us here tonight. Most people aren't aware of the danger we're all in. In Philadelphia, the old Sunoco Refinery now is taking Bakken shale. Two trainloads a day come right through the train station, right through Center City, where lots and lots of people are every day. I don't think people are aware of that. The gas company is contaminating the water that we drink and the air. Who knows what's in the air.

A five minutes testimony obviously didn't work for almost everyone here. So maybe a few more minutes would be a better idea, too. We don't trust our government, or we don't trust anyone in this field right now. We don't think that anything that has been done to date has been done properly. We don't think anyone understands how crucial these issues are to us. And so we ask you to be careful as you go forward. And we're going to try to get more people here to help you be careful. (1141)

Response: Commentators were limited to five minutes, consistent with the Department's Policy on Public Participation. Commentators were encouraged to submit written comments, either through mail or email. Written comments received the same consideration as verbal testimony.

2606. Comment: Extend the public comment period to 120 days and hold a public meeting in every county like Bradford and Butler County in which oil and gas drilling occurs in Pennsylvania. (649, 907, 1141, 1158)

Response: See the response to comment 2593.

2607. Comment: I want to suggest that we should have hearing in every county in the state of PA. That's how important it is. And that we set it back for 120 days and may be 240 days. (879)

Response: See the response to comment 2587.

2608. Comment: Additional hearings should be held so that there is at least one hearing in each county that has been or will be impacted. It is unconscionable to us that there are no hearings in several of the most heavily impacted counties such as Bradford, Butler and Susquehanna. The best way for this Board to learn what negative impacts may occur is to hear directly from those most heavily impacted to date.

As it considers these proposed regulations this Board should apply a standard for its review and a policy for decision that is fully faithful to its trust responsibilities under the Environmental Rights Amendment of the Pennsylvania Constitution. As the Supreme Court recently stated in striking down parts of Act 13 as unconstitutional; “The benchmark for decision is the express purpose of the Environmental Rights Amendment to be a bulwark against actual or likely degradation of our air and water quality. As trustee, the Commonwealth has a duty to refrain from permitting or encouraging the degradation, diminution, or depletion of public natural resources, whether such would occur through direct state action or indirectly, because of the state’s failure to restrain the actions of private parties.” (930)

Response: See the response to comment 2593.

2609. Comment: We believe additional comment opportunities are necessary in order to spur significant public discourse regarding the topic of oil and gas regulations. Notices could and should be sent to every township official in areas where drilling activities are occurring in order to heighten local awareness of the opportunity to comment. The Department has an obligation to ensure meaningful public participation in a way that is inclusive of those who may be most affected. Additional hearings in areas with heavy drilling activity should be scheduled. (943)

Response: See the response to comment 2587.

2610. Comment: DEP had tasked the TAB to evaluate four key issues during the rulemaking process, yet elected to propose regulations before these workgroups finished their evaluations. This again says the rulemaking is rushed and should be suspended. (404)

Response: It is appropriate for the Department to consult the Technical Advisory Board during the entire pendency of the rulemaking.

2611. Comment: This February 12th date line, really it should be 60 days beyond the, final public hearing, which should be in Bradford or Butler Counties. We need time to read all of the comments given verbally or in writing. But you’re giving us less than a month after the final public hearing. It’s not sufficient. (1175)

Response: See the response to comment 2587. Moreover, the Department believes it is impractical to extend the comment period to allow commenters to provide comments on comments received during the comment period.

2612. Comment: The comment period as well as the number of public hearings must be extended because this new industry affects every citizen and all residents need an opportunity to speak. People have health concerns. People have property value concerns. People have land ownership concerns. People have climate concerns. The many risks associated with unconventional tracking make this a subject that warrants more public education, greater transparency and as much public response as possible. (909)

Response: See the response to comment 2587.

2613. Comment: The EQB must consider how the proposed regulations fulfill Article 1, Section 27 of the PA Constitution. The proposed changes do not serve the rights afforded by this article of the constitution. The regulations must be revised to include consideration of how to meet this mandate. (1168)

Response: The environmental amendment to the Pennsylvania Constitution has been considered in the development of this rulemaking and is implemented by this rulemaking, together with the broader framework of Pennsylvania environmental laws and regulations, as administered by the Department and other Commonwealth trustees.

2614. Comment: In concert with the Pennsylvania Constitution, Article 1, Section 27, we believe: The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people. (15, 138a, 632, 649, 659, 787, 806, 856, 867, 925, 947, 1030a, 1073, 1074, 1075, 1076, 1077, 1079, 1080, 1081, 1082, 1084, 4584 – 4650, 1156, 1223, 1227)

Response: The Department acknowledges and agrees with the comment. This rulemaking demonstrates the Department's commitment to its duty to uphold and implement Article 1, § 27 of the Pennsylvania Constitution.

2615. Comment: Chapter 78 proposed changes do not serve the inalienable right described as in Article I, Section 27. I ask that you revise the proposed rulemaking to include consideration of how to meet this mandate. (1158)

Response: See response to comment 2613.

2616. Comment: As a preliminary matter, I'd just like to ask you to consider the long-term impacts of the decisions you make as you consider the comments you hear at tonight's meeting and others like it. As a plurality of Pennsylvania Supreme Court justices recognized in their recent decision in *Robinson Township v. Commonwealth of Pennsylvania*, our commonwealth has a history of prioritizing resource extraction over the health of its citizens and the long-term preservation of its environment. By adding the Environmental Rights Amendment to the Pennsylvania Constitution (Article I, Section 27), the people of Pennsylvania determined that their well-being and the well-being of future generations should never again be subordinate to the short-term economic benefits that bring with them short-sighted resource extraction practices like the ones that left us for years with "thousands of devastated treeless acres" and with mine fires that burn to this day. I would like to thank the Board for the work that it has done in proposing regulations in Chapter 78 to help to improve environmental protection. Thank you for your time this evening, and thank you for your work to ensure that all Pennsylvanians are able to realize the benefits of "clean air, pure water, and the preservation of the natural, scenic, historic and esthetic values of the environment." PA. CONST. Art. I, § 27.(113)

Response: The Department acknowledges the comment. See also the responses to comments 2613 and 2614.

2617. Comment: Responsibility to consider environmental rights of those potentially affected by this rulemaking, including present and future generations

We bring to the attention of the Environmental Quality Board the recent decision of the

Pennsylvania Supreme Court regarding Article 1, Section 27 of the Pennsylvania Constitution and the connection with the Board's decisions regarding this rulemaking. The Pennsylvania Supreme Court's recent decision in *Robinson Township, Delaware Riverkeeper Network, et al. v. Commonwealth* made it clear that every agency and level of government in the Commonwealth – including the Environmental Quality Board (“EQB”) and the Department of Environmental Protection (“DEP”) – has obligations under Article I, Section 27 (“Section 27”) of the Pennsylvania Constitution. The Court made clear that Section 27 requires Pennsylvania government entities to respect and protect the constitutionally-protected environmental rights of each individual citizen, and to conserve and maintain Pennsylvania's public natural resources as a trustee for the benefit of present and future Pennsylvanians.

As explained in the Court's analysis, Section 27 restrains the EQB from enacting regulations that will: 1) cause unreasonable “actual or likely degradation” of air or water quality, or other protected constitutional features, such as natural and scenic values of the environment; and/or 2) allow the “degradation, diminution, or depletion of public natural resources, whether such degradation, diminution, or depletion would occur through direct state action or indirectly, e.g., because of the state's failure to restrain the actions of private parties.” Just like the General Assembly, Section 27 restrains the EQB from unduly infringing upon individual environmental rights protected by Section 27, and from breaching its duties as a trustee of public natural resources under Section 27. The EQB must consider, in advance of enacting the proposed regulations, whether it will violate these Section 27 duties and restrictions.

For instance, the EQB must consider and address whether its regulations place higher environmental burdens on some Pennsylvania citizens than others, or whether the regulations will have “significant of irreversible effects in the short or long term.” If the EQB fails to consider and address these issues, and enacts the proposed regulations anyway, the EQB would breach the duty of impartiality that it must abide by under Section 27. This duty mandates that the EQB, as a trustee, treat the beneficiaries of the Section 27 public trust – present and future Pennsylvanians – equitably in light of the trust's purposes.

Also, as a trustee under Section 27, the EQB is bound by the duty of loyalty to act *solely* in the interest of the beneficiaries of the public trust. Thus, the EQB may not elevate private interests over the interests of present and future Pennsylvanians to an environment of quality, and of the enjoyment of their public natural resources.

Section 27 equally limits the EQB's authority to permit development unless it is sustainable. Section 27 specifically establishes a preference for protecting the natural quality of the environment and its benefits over development and disturbance, requiring that the EQB take the same focus and care in its own regulations. Thus, Section 27 prevents the EQB from taking a narrow view in its regulations to focus only on technical requirements for segmented parts of the oil and gas process development process. As a trustee, and as a government agency whose actions could unreasonably infringe upon individual environmental rights, the EQB cannot be blind to a holistic view of the public natural resources and people being impacted. It equally cannot rely on the regulation of individual segments of oil and gas development process to substitute for examining and addressing the impact of the component parts of the process as a whole. The EQB cannot allow its focus on technical regulations to obscure broader considerations of whether the particular regulated action will damage the environment and human health.

Section 27, in effect, restrains the EQB from ignoring the environmental and human health context in which the regulated industry operates, and likewise prevents it from doing so solely to benefit the interests of the private regulated industry.

We request that the Board consider this obligation fully before moving ahead with regulatory changes that have the potential to harm the environment and human health. (1156)

Response: The environmental amendment to the Pennsylvania Constitution has been considered in the development of this rulemaking and is implemented by this rulemaking, together with the broader framework of Pennsylvania environmental laws and regulations, as administered by the Department and other Commonwealth trustees. See also the response to comment 2618.

2618. Comment: It is important to point out to the PA Environmental Hearing Board (EHB) that consideration of any new regulations is inappropriate at this point in time. Since shale gas exploration and exploitation by means of hydraulic extraction process (commonly referred to as fracking which describes the entire process- from leasing to seismic mapping, pad construction, fracturing, extraction and including related mid-stream operations, ie., pipelines, compressors, distillation facilities and the like) has never been appropriately vetted for implementation. The Commonwealth did not perform any due diligence by way of environmental impact studies (impacts to the as built and natural environment), public health impact studies or any due diligence designed to answer this question: How are the people of the Commonwealth of Pennsylvania impacted by virtue of the fact that Pennsylvania sits atop the second largest shale play in the world? Without answering that question, any regulations promulgated by our institutions of government cannot legitimately be responsive to the health, welfare and safety of the people. The health, welfare and public safety of the people is primary function of our government- a government whose ultimate authority rests with we, the people.

On December 19, 2014, the PA Supreme Court rendered a landmark decision declaring key portions of PA Act 13 the state law which governing shale gas extraction operations, unconstitutional. The Court also remanded other crucial matters at law back to the Commonwealth Court for hearings on the merits of the cause of actions filed by a physician and an environmental advocacy organization.

It is notable that the opinion of the PA Supreme Court states:

“By any responsible account, the exploitation of the Marcellus Shale Formation will produce a detrimental effect on the environment, on the people, their children and future generations, and potentially on the public purse, perhaps rivaling the environmental effects of coal extraction.”

Aside from that, the court also comprehensively defined the meaning of the PA Constitution’s Article I, Section 27.

“Natural Resources and the Public Estate Section 27. The people have a right to clean air, water and to the preservation of the natural, scenic, historic and esthetic values of the environment. PA’s public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.”

Article I - Section 27, adopted by the People, forty-three years ago, sat dormant until December 19, 2014. The Courts decision now clearly defines the import and application of Section 27. It is far reaching and touches upon every aspect of the development of mineral, coal, gas, timber and any other natural resource within the state. It fundamentally changes the premise for consideration of any regulations now before you and for the Peoples consideration. These regulations were promulgated prior to the Court’s ruling in Act 13. The constitutional provision at Section 27 was not considered

in their construction.

The proposed regulations you now ask the People to comment on were developed under the premise of Act 13. That Act has been significantly crippled by the Court's decision and any premise it provided for development a regulatory scheme applied to shale gas extraction is now moot.

The proposed regulations you seek my consideration on have not been developed with the provisions of Article I Section 27 in mind. You are required, by law and right, to reject them. The PA DEP must go back to the drawing board and apply the provisions of a Constitutional commandment to any proposed regulation.

That should be enough to stop this process and begin anew. However there is more. The institutions of my government have never fully consulted with the people on the fundamental aspects of fracking operations in PA. During the development of Act 13, the State Assembly do not seek public comment, provide any comprehensive information to the People about fracking operations, or held any substantive public informational hearings throughout the state. The Assembly failed miserably to inform the People as to the hazards and risks we are to assume in perpetuity.

Members of the Assembly promoted the benefit and disclosed nothing as to adverse impacts. They looked away from their Constitutional obligations. It is also well documented that leadership in the Governor's office and Assembly received approximately \$28 Million in campaign contributions from the Oil & Gas industry. (See: <http://marcellusmoney.org/>) Money cannot be the arbiter of public policy or regulation.

Act 13, largely written by industry interests, was fatally flawed, did not look to the health welfare and safety of the people and was not compliant with Article I, Section 27 of the Constitution. It was done to maximize profits and minimize costs for one particular, select industry in PA. In developing Act 13, the Governor formed an Advisory Committee that was heavily weighted with industry interests, significant political campaign contributors of the Governor and, notably, not one person with a medical practitioner or public health professional. Perspective was not part of the makeup of this group. The recommendations made by this task force were a foregone conclusion. It was given a charge; handpicked and produced what was expected in order to give some illusion of legitimacy to legislative action that resulted in the enactment of Act 13.

The regulations you now seek the People's comment on are derived from a place that was contaminated with private political and business interests. That makes these proposed regulations illegitimate in of themselves. Now, look at this flawed regulatory comment process. The regulatory process is a very detailed and technical one. Few citizens fully understand or appreciate its complexities. As a former environmental law paralegal I am well acquainted with the regulatory process.

I ask this question of all of you: How is the public - the People from whom you must obtain consent - to offer any comment on such matters if we were not fully apprised of these proposed regulations by our institutions and government? I, and my fellow Pennsylvanians, received no detailed information from our elected representatives or the PA DEP. There were no public informational meetings sponsored by the Commonwealth to inform us of what is at stake or why. There was no community dialogue organized so that we may participate in our own processes of government. We did not hear fairly from proponents and/or critics of these regulations.

If that is so, how do you honestly expect to hear thoughtful, educated comment for your consideration? This is not a public process in any sense of the word - it is an insider's game and a

fraud upon the People. I ask you, why is it that there is such a short comment period on such a weighty matter with no information widely disseminated before the comment period began?

Why is it that your public hearings are only conducted in small population centers? It is notable that PA's two largest cities, Pittsburgh and Philadelphia were excluded from this process.

Why is it that the only information to be gotten is at a web site that offers little as to why these regulations are being proposed?

PA DEP Secretary Abbruzzo stated: "Public participation is a key part to forging the best regulations possible" I take from the deliberate design to mute public participation that the Secretary is not looking for the best regulations possible. As the former President of Pittsburgh's City Council, I am well acquainted with the tactics employed by special interests to game the public process while creating an illusion of legitimacy. As such this process, like Act 13 itself, is fatally flawed and it is not designed to obtain serious public comment at all but rather to give some legitimacy to the illegitimate.

At the end of the day these regulations were based upon Act 13. Act 13 is now in legal shambles and Article I, Section 27's commandments are nowhere to be seen in the fabric of these proposed regulations. Furthermore, none of these regulations distinguish any difference between drilling operations in a remote area or say, an elementary school. Children and other sensitized populations are far and away impacted by toxic exposures that adults. Airborne toxics and prolonged exposures to them are not taken into account.

The EAB has not consulted with any public health or medical practitioner in the development of these regulations. None of these regulations are responsive to property devaluation or loss and enjoyment of its use by the owner. (946)

Response: The Department disagrees with a number of points made by this commentator.

First, comments on the legislative process are beyond the scope of this rulemaking. Nonetheless, the process associated with this rulemaking cannot be compared to the legislative process, as environmental rulemakings in Pennsylvania are subject to strict requirements related to public participation, review and approval by the Environmental Quality Board, review and approval by the Independent Regulatory Review Commission; review and approval by the Attorney General and review by the legislative committees. With regard to the adequacy of the public participation process, this rulemaking has involved a robust and significant public review process. The Department extended the original 60-day comment period an additional 30 days and added two additional hearings in oil and gas drilling regions. There were a total of nine hearings across the state and seven were held in counties with drilling activity.

Additionally, the Department provided a second public notice opportunity through the Advanced Notice of Final Rulemaking (ANFR) process. The ANFR represented the Department's draft changes to the proposed rulemaking language based on the significant public input on the proposed rulemaking. There was a 45-day public comment period on the ANFR and the Department held public hearings on the draft final rulemaking in Warren, Washington and Williamsport, PA. The Department also discussed the draft final rulemaking with the Oil and Gas Technical Advisory Board on March 20, April 23, September 2, September 18, and October 27, and the Conventional Oil and Gas Advisory Committee on March 26, August 27, September 18, and October 29. As can be seen by comparing the

proposed rulemaking and the various drafts of the final rulemaking released to the public throughout 2015, the Department has considered the comments thoughtfully and thoroughly and made sometimes-significant changes to the final-form rulemaking language as a result.

It is noteworthy that this proposed rulemaking has received an unprecedented number of public comments, all of which have been individually considered by the Department. It is simply inaccurate to state that the Department has not performed adequate due diligence or that this rulemaking has not been properly vetted. This rulemaking amends existing regulations to provide greater environmental protection, and was developed in consultation with industry experts, academia, resource agencies, fellow Commonwealth trustees, sister Department program staff, environmental advocates, and the public.

See the response to comment 2587. The Department believes the revisions to Chapters 78 and 78a are consistent with the constitution and applicable statutes and provide appropriate protections for public health and safety.

The Department has carefully evaluated the Pennsylvania Supreme Court decision in *Robinson Twp. v. Commonwealth*, 83 A.3d 901 (Pa. 2013) (*Robinson Twp.*), considering the environmental amendment to the Pennsylvania Constitution in the development of this rulemaking. Article I, Section 27 is implemented by this rulemaking, together with the broader framework of Pennsylvania's environmental laws and regulations, as administered by the Department and other Commonwealth trustees. This rulemaking provides important improvements in environmental protection, of which the public and regulated community have been provided opportunities to provide input above and beyond the requirements. The revisions to Chapters 78 and 78a are consistent with the constitution and applicable statutes and provide appropriate protections for public health and safety and the environment.

2619. Comment: In developing performance standards for oil and gas well sites the Department of Environmental Protection's Environmental Quality Board should begin with Pennsylvanians' constitutional rights to a clean environment as their primary concern. All drilling activities must be conducted with a clear understanding of the critical and irreplaceable nature of fresh water, wetlands, and other resources that are vital to our way of life.

To that end, EQB activities for oil and gas drilling must protect natural resources, and provide means for monitoring and enforcing compliance with all relevant regulations. (153)

Response: The Department acknowledges the comment. See responses to comments 2613, 2614 and 2618.

2620. Comment: I would like to say that the recent Supreme Court Decision on Act 13 upheld Article 1, Section 27 of the Constitution of the Commonwealth of PA. As trustee of the resources of PA, the Commonwealth shall conserve and maintain them for the benefit of all the people. All people, not just the people with gas lease or gas industry people. (1223)

Response: The Department acknowledges the comment. See responses to comments 2613, 2614 and 2618.

2621. Comment: Much of the impetus and much of the proposed language stems from the passage of Act 13 in 2012. However, with the Commonwealth Court ruling and subsequent PA Supreme Court ruling that found several sections of the Act unconstitutional, and questioned the entire Act pending a severability ruling, the regulatory process should be suspended. (404)

Response: The Department disagrees that the regulatory process should be suspended. See responses to comments 2613, 2614, 2618 and 265.

2622. Comment: I am taking advantage of your comment period to add my input regarding Act 13 of Pa. and its fracking consequences. I want to talk about the Act's shortcomings. My comments will fall under (a) water, (b) air, (c) waste disposal, (d) pipelines which I understand fall under the PUC, and (e) health/administration/political aspects.

(a) Water -- guaranteed pure water by section 27, Pa Const. The components of frack water that return to the surface (about 20-40% of what goes down the well) include about 150 toxic chemicals. The average well returns a number of these 150 chemicals to settling pits, and hence also to the air. Four of the chemicals, among many others, have a terrible impact on humans (benzene, toluene, xylene, and various versions of formaldehyde). Benzene is a known carcinogen, as proven by the rubber workers of Ohio over an 80-year period, and more recently proven by a study of the rubber workers of China. There is no safe limit for benzene - a little in the air causes a small cancer spike, while a lot in the air causes a big cancer spike over time. It should never be allowed to be sent down the fracking well site. Toluene is the base for tri-nitro-toluene, or TNT, the explosive. It is a toxin and shouldn't be allowed. Ditto for xylene. There are non-toxic substitute chemicals that can be used, such as Clean-Stim and others. Formaldehyde is toxic (I got a bloody nose in biology lab in high school when we dissected frogs preserved in formaldehyde). If we truly care about what is in the frack waste water, we would be pushing the industry to adopt prevention of toxics at the source - not putting them in the frack well and thus not having to deal with their health impacts. (25)

Response: Act 13 may only be amended by the Legislature, not the Department. Comments regarding Act 13 of 2012 are beyond the scope of this rulemaking. Air emissions are regulated under other Chapters of the Pennsylvania Code and are not the subject of this rulemaking. Operators are required to comply with these other environmental regulations in Title 25 of the Pennsylvania Code.

2623. Comment: On December 19, 2013, not a month ago, the PA Supreme Court struck down key provisions of the 2012 Oil and Gas Act, also known as Act 13. In addition to key portions of the Act being declared unconstitutional, Commonwealth Court was directed to address whether remaining provisions of Act 13, to the extent they are valid, are severable. This Act is the primary basis for these proposed regulations. I submit to you that in light of the Supreme Court's determination of the unconstitutionality of Act 13, the ongoing review by Commonwealth Court, and the prospect of many months of legal wrangling that there is no current legal basis for the adoption of regulations pursuant to Act 13. I urge the Environmental Quality Board to return the proposed regulations to the DEP until such time as a legal basis exists for such promulgation. I continue with specific comments on the regulations. (851)

Response: The Department disagrees with the commentators characterization of the pending litigation related Act 13 of 2012. On July 17, 2014, the Commonwealth Court issued an opinion on the agreed upon remanded issues from *Robinson Twp. v. Commonwealth*, 83 A.3d 901 (Pa. 2013) (*Robinson Twp.*) upholding Sections 3218.1 (relating to notification to public drinking water systems), 3222.1(b)(10)-(11) (relating to hydraulic fracturing chemical disclosure), 3241 (relating to appropriation of interest in real property) and invalidating 3305-3309 (relating to local ordinances). See *Robinson Twp. v. Commonwealth*, 96 A.3d 1104 (Pa. Cmwlth. 2014). In cross-appeals, the constitutionality of just these provisions is currently pending before the Pennsylvania Supreme Court. Issues related to these challenged provisions are outside the scope of this rulemaking. In other words, the provisions in this final-form

rulemaking do not seek to implement the sections that are currently at issue before the Supreme Court. For that reason, the Department disagrees that this rulemaking should be returned as lacking a statutory basis.

Further, the Department disagrees that Act 13 forms the primary basis for this rulemaking. Rather, Chapters 78 and 78a are promulgated under the authority of several environmental laws including The 2012 Oil and Gas Act; Article I, Section 27 of the Pennsylvania Constitution; the Clean Streams Law; the Dam Safety and Encroachments Act; the Solid Waste Management Act; the Pennsylvania Law Recycling and Environmental Remediation Standards Act; the Radiation Protection Act; the Administrative Code of 1929; the act of July 10, 2014 (P.L. 1053, No. 126); and the Unconventional Well Report Act, the act of October 22, 2014 (P.L. 2853, No. 173).

See response to comment 265.

Additionally, please see responses to comments 2613, 2614 and 2618.

2624. Comment: Impact of Robinson Township, et al v. Commonwealth of Pennsylvania (December 19, 2013). The decision of the Pennsylvania Supreme Court in *Robinson Township, et al v. Commonwealth of Pennsylvania* has invalidated and enjoined select provisions of the controlling statute (Act 13 of 2012) driving this Proposed Rulemaking. Nonetheless, our organizations believe it is imperative that the Department proceed conscientiously with the Proposed Rulemaking. Based on our analysis of the Supreme Court decision, the substance of this Rulemaking, with alterations as discussed herein, conforms with the spirit, and letter, of the ruling. The timing for these protective new rules is ripe -- we are more than two years removed from passage of Act 13 -- and the Oil & Gas Technical Advisory Board workgroup sessions and nine public hearings suggest a thorough vetting process.

In contemplating the impact of the Supreme Court decision on the Proposed Rulemaking, we urge the Department to take into account the following considerations:

- Protection of Aquatic Resources

Application or enforcement of § 3215(b) of Act 13 has been enjoined by the Supreme Court, based on the unconstitutionality of § 3215(b)(4).² Protection of aquatic resources from the impacts of well pad and related infrastructure development is of significant concern for the Commonwealth, and should not be abandoned from the Proposed Rulemaking. The Department has sufficient authority pursuant to the Clean Streams Law (P.L. 1987, No. 394) to require that operators proactively avoid or mitigate impacts to aquatic resources. Coupled with the tenor of the Supreme Court's decision, the Clean Streams Law arguably grants the Department independent authority to require pre-drilling analysis, siting restrictions, practices to minimize surface disturbance, and the ability to condition or deny a permit based on potential impacts.

- Protection of Public Resources

Application or enforcement of § 3215(c) of Act 13 has similarly been enjoined by the Supreme Court because it was found to be unseverable from other provisions invalidated by the Court. As with aquatic resources, at issue is not the appropriateness of additional protection standards for Public Resources, but rather the sufficiency of authority and deference granted to the Department to condition or deny permits based on analysis of potential impacts. Nevertheless, we note that the purpose of this Chapter in Act 13 is in part to "[p]rotect the natural resources, environmental rights and values secured by the Constitution of Pennsylvania, and that Act 13

further allows that “[t]he department may impose permit terms and conditions necessary to assure compliance with this chapter *or other laws administered by the department* [emphasis added].” As these provisions of Act 13 withstood judicial scrutiny, the Department should feel secure in retaining and expanding upon the list of identified Public Resources, and should enhance the required analysis and assurance threshold for permit review. These comments address Section 78.15(f) of the Proposed Rulemaking in detail below.

EDF, PEC, and TNC recognize the challenge set before the Department in fulfilling new protections afforded by Act 13 while also heeding the Court’s decision. Nonetheless, we hold that the state is far better off with promulgation of the expanded protections contained in this Proposed Rulemaking than to further delay action. We urge the Department, after carefully considering public input, and with due regard to the Supreme Court’s decision with respect to the import of Article I, Section 27 (the “Environmental Rights Amendment”) of the Pennsylvania Constitution, to finalize this proposal. We also encourage the Department to fully explore opportunities created by the Court’s decision to enhance and strengthen the Proposed Rulemaking, as appropriate. (997a)

Response: The Department acknowledges the comment and agrees that the rulemaking is authorized by law and provides necessary environmental protections. See response to comments 2580 and 2618. Please also see the responses to comments on 78.15 and 78a.15.

2625. Comment: The Proposed Regulations should be rescinded and the proposed rulemaking process should be reinitiated at the conceptual summary stage. Days after the Proposed Regulations were published in the Pennsylvania Bulletin, the Pennsylvania Supreme Court decided *Robinson Township v. Commonwealth of Pennsylvania*, 2013 WL 6687290 (Pa. Dec. 19, 2013) [hereinafter *Robinson Township*]. For the following reasons, I believe that this intervening decision calls into question the validity of the Proposed Regulations.

- a. The legislative intent of Act 13, and in-turn the administrative purpose of the Proposed Regulations are invalid or substantially compromised. By overruling lower court precedent concerning the ERA, which had “weakened the [ERA’s] clear import,” the decision in *Robinson Township* invalidated and altered the standards under which the act of February 14, 2012 (P. L. 87, No. 13) (Act 13), codified at 58 Pa.C.S. §§ 2301— 3504 [hereinafter “Act 13”], and the Proposed Regulations were passed and promulgated, respectively. For example, Act 13’s primary purpose is to “permit the optimal development of oil and gas resources,” See 58 Pa.C.S. § 3302; *Robinson Township* at 54, but this fundamental subordination of Pennsylvania’s public natural resources to economic prosperity is inconsistent with and repugnant to the standard set forth by the court in *Robinson Township*, whereby “the Commonwealth’s obligations as trustee [are] to conserve and maintain the public natural resources for the benefit of the people, including generations yet to come...” *Id.* at 53. The Proposed Regulations provide a framework for the enforcement of Act 13, See Vol. 43, Pa. Bull. 7377, Dec. 14, 2013, and therefore assume the same inadequate standard that was invalidated by *Robinson Township*. The DEP Regulatory Analysis Form further supports the proposition that the proposed regulations were promulgated prematurely, because the form failed to identify *Robinson Township* as a “relevant state or federal court [decision].”
- b. Act 13 may be entirely invalidated when *Robinson Township* is finally resolved. *Robinson Township* invalidated and enjoined the application and enforcement of key provisions of Act 13. See *Robinson Township* at 76 (invalidating and enjoining the application and enforcement of 58 Pa.C.S. §§ 3215(b)(4), 3215(d), 3303, and 3304, and

enjoining the application and enforcement of 58 Pa.C.S. §§ 3215(c), 3215(e), and 3305-3309). Commentators have noted that this calls into question the validity of key sections of the Proposed Regulations. For example, on January 9, 2014, Pennsylvania General Energy Company submitted comments (the “PGE comments”) stating that as a result of the decision in *Robinson Township*, “[t]he continued rulemaking activity to include any potential promulgation of rules within or associated with Sections 78.15 (d) through (g) must be discontinued and all proposed revisions... that would apply or implement those regulations sections should be removed from the rulemaking proposal.” Furthermore, the *Robinson Township* court’s decision implied that additional provisions of Act 13 are likely to be either invalidated or severed, where it remanded the case to the Commonwealth Court concerning the question of “whether any remaining provisions of Act 13, to the extent that they are valid, are severable,” *Robinson Township* at 77.

For the above reasons, the Proposed Regulations should go back to the figurative “drawing board. Alternatively, the proposed rulemaking process should be stayed pending the disposition of *Robinson Township*. (1070)

Response: The Department disagrees with the commentators characterization of the decision in *Robinson Twp. v. Commonwealth*, 83 A.3d 901 (Pa. 2013) (*Robinson Twp.*). See responses to comments 2580, 2613, 2614, 2618, 2623 and 265.

- 2626.** Comment: The Board Should Further Consider Landowner Rights and Contractual Constraints on Operators in Promulgating Certain Provisions Throughout the Rule. In general, the Rule should be amended to consider the ongoing relationship between the operator and landowner and the contractual agreements to perform or not perform certain activities on a landowner’s property. The relationships between operators and landowners are governed by the terms of lease, easement, and right-of-way agreements that are negotiated between the private parties. Some of the proposed requirements do not appear to accommodate such contractual constraints. For example, without the right to enter a landowner’s property, an operator cannot carry out the requirements to visually monitor an abandoned or orphaned well as required by the proposed § 78.73(c).

Thus, operators cannot always accommodate contractual rights and one-size-fits-all requirements. Act 13, § 3215(e) requires that the Board balance the potential impact to a public resource and ensuring optimal development of oil and gas resources while respecting property rights of landowners when developing regulatory criteria for the Department to condition a well permit upon under Section 3215(e). Consider landowner rights in its requirements outside the scope of the well permitting to assure private landowner’s rights are accommodated and accounted for. (1085)

Response: The Department has considered this comment and declines to make the suggested amendments to this rulemaking. The Department acknowledges that there may be times when the operator has difficulty complying with a specific provision due to limitations placed on the operator through their lease with the landowner or lack of an access agreement. In most instances, there is an alternative available that maintains environmental protection while still allowing the operator to comply with the regulation. For example, a lease might forbid the land application or pit disposal of oil and gas wastes on a property, but the operator still has the option of proper disposal at an off-site facility. Property agreements, or lack thereof, do not eliminate an operator’s responsibility to comply with the regulations of the Department or eliminate liability for an operator’s actions.

The Department also notes that section 3215(e)(1) of the 2012 Oil and Gas Act only applies to the public resource impact screening process and requires the Department to consider

“optimal development of oil and gas resources and respecting property rights of oil and gas owners.”

As for the specific concern raised about the stimulation monitoring requirements, the Department is developing clarifying guidance related to site access prior to promulgation of the final rule. Specifically, this issue will be addressed in a guidance document discussing the area of review requirements and the components of a suitable monitoring plan. The provision in the final-form rulemaking that addresses this matter is related to treatment pressure and volume monitoring. The Department believes that even in situations where identified wells cannot be visually monitored, monitoring at the well being hydraulically fractured will allow the operator to determine if anomalous frac growth is taking place that is indicative of a possible communication event.

2627. Comment: Intermittent Distinctions Referencing Unconventional Wells -Throughout the proposed changes are references of applicability to a particular well- type known as unconventional [including, but not limited to 78.19, 78.52(g), 78.55, 78.56(a)(5,7,11,16), 78.57(c), 78.59a, 78.59c,78.63(1), 78.64a, 78.69(a),78.121]. Since the regulations are written to encompass all oil and gas operations, these references blur the lines of applicability and leave other passages within the same sections open to interpretation of relevancy. It is our opinion that there are enough operational and regulatory distinctions between the conventional and unconventional well types that there should be a separate set of regulations directing the operations of each. These proposed revisions should be tabled in favor of further consideration. (12, 623)

Response: As part of this rulemaking, in response to comments and recent legislation (the Act of July 10, 2014 (P.L. 1053, No. 126)), the Department split Chapter 78 into two separate Chapters – one for conventional oil and gas wells (Chapter 78) and the other for unconventional wells (Chapter 78a). The purpose of this amendment to the final rulemaking was to clarify the different requirements for conventional and unconventional wells. The Department believes that having two completely separate regulatory Chapters should serve to eliminate any confusion about what requirements apply to conventional and unconventional wells. In addition, having separate Chapters allows the Department to craft regulations to match the environmental risks posed by each segment of the industry (compare, for example, section 78.56 and section 78a.56, which contain significantly different requirements for temporary storage at conventional and unconventional well sites, respectively).

2628. Comment: Commentator strongly urges this Board to reorganize Chapter 78 to provide a set of rules for the oil and gas industry generally and to place rules that are necessary or required for unconventional operations in a new Subchapter F, which is a reserved subchapter in the current rule. Following the adoption of Act 13 in 2012, this rulemaking effort presents the perfect opportunity to create a new subchapter for unconventional operations. Commentator included a model for such a new subchapter, which reorganizes several provisions that are exclusively directed to unconventional operations, while leaving rules of general applicability in the current subchapters of Chapter 78. (1135)

Response: See response to comment 2627.

2629. Comment: US energy has drilled nearly 1000 oil wells within Bradford area over the past 6 years, spending over \$125,000,000 in the process. There were no tax concessions provided the development and the entire community benefitted. To this day, our crude oil still flows to the ARG refinery and we maintain an office in Bradford staffed with over 25 full time employees.

Due to extreme enforcement and new regulations related to oil and gas operations in this area, US Energy has been forced to drill in states that actually encourage the oil industry such as Oklahoma and Texas. Their Gain has been at the expense of Northwest Pennsylvania.

The proposed Chapter 78 rules surrounding oil and gas production will result in regulatory burdens that will be both expensive and unreasonable for conventional producers. Please segregate the regulations between conventional and non-conventional production. Please consider that these unreasonable rules could essentially cause additional unemployment in this state! (82, 139, 139a)

Response: To the extent that the commentator suggests separate regulations for conventional operators, see response to comment 2627.

The Department disagrees with the commenter's view that the regulations are unreasonable. There is a significant need to update the regulations that apply to conventional well operations, which were last updated in 2001. Statutory changes resulting from the passage of Act 13 of 2012 as well as other program developments (such as the passage of final Chapter 102 regulations in 2010) and environmental protection gaps in the Department's current regulatory requirements necessitate modest, common sense revisions. These revisions include specifying spill reporting and remediation requirements as well as the identification of abandoned and active wells prior to hydraulic fracturing. Cleaning up spills in a timely manner to standards that apply to all industries in the Commonwealth is necessary to ensure that ground and surface water are protected. Similarly, identifying wells that could be impacted during the hydraulic fracturing process is also necessary to protect these important resources. The Department believes that these modest regulatory revisions are necessary and appropriately tailored to the purposes served.

In response to the commentator's comments about the cost of new regulations, please see the RAF.

2630. Comment: Please reconsider the proposed Chapter 78 rules. This one-size-fits-all approach is unfair and costly to conventional producers. Conventional production is very different from the deep well production. Separate regulations need to be implemented. Please do not negatively impact the conventional oil and gas production by enforcing these rules across the board. (97, 612, 613, 618, 623, 624, 1002)

Response: See responses to comments 2627 and Error! Reference source not found..

2631. Comment: To help our local independent oil producers continue to stay afloat I am asking that you allow current Chapter 78 regulations to govern shallow wells with new regulations to cover nonconventional wells. (103)

Response: See responses to comments 2627 and Error! Reference source not found..

2632. Comment: I am writing to the EQB board to object to the proposed regulations in the new Oil and Gas Act. Conventional well operators in Pa. cannot survive using the same rules and regulations as the unconventional operators. Our company has 2 owners and 2 employees. We would not be able financially to hire a compliance officer and environmental engineer to comply with all of these regulations. It would make more sense to leave the regulations already in place for small operators and require the horizontal shale play people to have their own DEP regulations. Many of us small well operators will be forced (regulated) out of business. This will have a greater than you realize economic effect on the entire area. People will lose jobs. Please repeat this phrase over and over---

People will lose jobs. I implore the board to use their expertise in these matters and also to use common sense to modify the proposed oil gas act by making changes we can all live with.(109)

Response: See responses to comments 2627 and Error! Reference source not found..

- 2633.** Comment: These rules are written to regulate production from both shallow (or conventional) wells and the new shale-gas (unconventional) wells found across the state. The proposed rules outlined in Chapter 78 take a one-size-fits-all approach to DEP regulations that would result in regulatory burdens that are both expensive and unreasonable for conventional producers.

Examples of the new regulations that will have a negative and burdensome impact on conventional oil and gas production are production-water disposal, small quantities of oil discharges, installation of monitoring wells, soil removal, design requirements for well pads and pits. The list is long, and when the new requirements are added to the recently enacted changes in casing and well-reporting requirements, the cost associated with complying to mandates more aligned with the shale-gas industry threatens the sustainability of current conventional oil and gas production. (85, 127, 417, 465, 611, 614, 615)

Response: See responses to comments 2627 and Error! Reference source not found..

- 2634.** Comment: I want to take a moment to share with you my thoughts on the PA DEP proposed Chapter 78 Rules, regarding oil and gas production. I urge you and the Regulatory Committees to take and/or maintain the position that there should be segregation in how the conventional (shallow well) and unconventional (Marcellus) methods of oil and gas production are regulated. (91)

Response: See response to comment 2627.

- 2635.** Comment: Please consider separating conventional and non-conventional regulations. The shallow well industry has been around for over 100 years and supplies the local area with much needed resources and jobs. They are 2 completely different operations and provide 2 completely different products. (93)

Response: See response to comment 2627.

- 2636.** Comment: I object to all the proposed revisions to Chapter 78 and recommend that a separate oil and gas regulations be drafted for conventional wells and unconventional well operations. Catalyst Energy well sites are typically 50' by 100'. This holds true for all other conventional oil and gas producers. (396, 449, 472, 4703 – 4743, 5918 – 5924)

Response: See response to comment 2627.

- 2637.** Comment: As a youth, I worked in conventional oil drilling and production operations in McKean County, Pennsylvania and in Cattaraugus County, New York. After college, I taught high school math and science in Bradford, McKean County, before returning to school to obtain a graduate degree in petroleum engineering. Since then, I have been employed for 33 years in the petroleum industry with Getty Oil Company, Texaco, Equitable Resources (now EQT), and DTE Energy, prior to my current employment. With EQT, based in Pittsburgh, I served as an engineering manager and then as vice president - production.

Over the past 10 years as a consultant, I have provided services to oil and gas companies, landowners, accounting and legal firms, and financial institutions. I am extremely knowledgeable

about all aspects of the petroleum industry, including its risks. Environmental services comprise a significant percentage of my employer's business and, in fact, Cardno was the principal environmental contractor for the BP oil spill cleanup in the Gulf of Mexico. In the environmental area, I have reviewed properties for The Nature Conservancy, prepared and certified Spill Prevention plans for produced oil and water facilities, and determined and certified carbon credits under protocols of the Chicago Climate Exchange.

I have worked on numerous conventional oil and gas, Marcellus Shale, and Utica Shale projects in Pennsylvania and in adjacent areas in Ohio and West Virginia, including in Warren County where this meeting is being held. Last year alone, I worked on oil and gas reserve and valuation projects in the Commonwealth, developed a degasification plan for an underground coal mine in Indiana County, and testified as an expert at trial in energy-related cases in both Greene and Indiana counties.

Based on knowledge and experience, I believe that bringing Pennsylvania's conventional oil and gas industry under the same regulatory requirements as the unconventional shale industry is both illogical and counter to the economic best interests of the Commonwealth. The conventional oil and gas and unconventional shale industries are totally different in both scale and accompanying risks.

Response: See responses to comments 2627 and Error! Reference source not found..

2638. Comment: The proposed regulations don't recognize the difference of conventional and unconventional wells. In some cases the new regulations may appear as just oversight but to small business conventional well operators these regulations may be a very unnecessary burden. Before you invoke these new regulations please be sure you are achieving the appropriate outcome, protecting our environment, not putting good job creating small businesses out of business. The regulatory requirements whether they be Federal or State for the construction industry get more extensive each year. I am afraid of the effect that this will have on the small businesses that need to stay in compliance while trying to manage overhead. There is a fine line between necessary oversight and burdensome regulation. (1092)

Response: See responses to comments 2456 and 2627.

2639. Comment: Certain provisions of the proposed rulemaking and existing regulations should be moved into a separate Subchapter applicable only to unconventional operators and wells. These include water management plans, emergency response, containment systems and practices, pits, impoundments, and identification of abandoned, orphaned and active wells. (1135)

Response: See response to comment 2627.

2640. Comment: I believe the DEP analysis is flawed due in great part to the attempt to combine regulations for both the conventional and unconventional industries. They are very different industries with different needs and economics. I encourage that the regulations for the two industries be separated. (900a)

Response: See response to comment 2627.

2641. Comment: Commentators suggest that the clarity of the proposal could be improved by segregating the regulation into separate chapters for conventional operators and unconventional operators. We believe this suggestion has merit and would help to dispel existing misunderstandings related to effective dates for, applicability of and costs associated with various provisions. The final-

form regulation should clearly identify the effective date for each provision, what provisions, if any, will be subject to grandfather clauses and which sections or provisions will apply to conventional wells, unconventional wells, or both. (1099)

Response: See response to comment 2627.

2642. Comment: Differing Protection Standards – “Conventional” versus “Unconventional” As part of a broader examination of environmental protection standards after the decision of the Supreme Court with respect to Act 13 and Article I, Section 27 of the Pennsylvania Constitution, we question basing the distinction between “conventional” and “unconventional” wells and operations – and the application of differing protection standards – solely on depth of extraction. The fundamental risks associated with the process of hydraulic fracturing are arguably greater in shallow formations; the arbitrary distinction between protection standards in the Oil & Gas Act seem at odds with current scientific understanding and the ruling of the Supreme Court. While the Department may not have liberty at the moment to revisit this distinction in its Proposed Rulemaking, we believe it should stand ready to reassess its protection standards pending resolution – whether legislative or judicial – of the law. (997a)

Response: The Department acknowledges the comment. See response to comment 2627.

2643. Comment: I advocate these changes to the proposed rulemaking, focusing on just a few key areas: There is no difference in the processes and contaminates produced by conventional and unconventional oil and gas drilling or in the extraction and use of water except in terms of scale. All contaminated brine/poisoned water must be hauled to an appropriate closed loop, treatment facility. No contaminates will be discharged to the environment. (1158)

Response: There are differences between conventional and unconventional operations. This rulemaking reflects those differences. Please see responses to comments on the sections of the rulemaking that address waste management and water management plans.

2644. Comment: An exception should be put in place so the proposed regulations do not affect operators of conventional oil and gas wells that are less than 3000 feet in depth. The proposed regulations for pits should have an exemption for pits less than 1000 barrels. A typical conventional oil and gas well is 200 barrels. (396, 449, 472, 4703 – 4743, 5918 – 5924)

Response: The Department has revised § 78.56(a) to remove minimum slope requirements for a pit with a footprint less than 3,000 ft² or volume less than 125,000 gallons of capacity. For pits with greater aerial extent or capacity, operators must obtain authorization from the Department prior to construction.

2645. Comment: Every day, DEP personnel are present to ensure that our jobs are being conducted within the current regulations, which is perfectly acceptable. Adding more requirements, as seen in the proposed revisions to Chapter 78, will give DEP more unnecessary leverage to cite and fine us for items that do not clearly benefit the environment. We are already hypersensitive to the regulations because DEP inspectors’ interpretations of current regulation changes daily with no explanation. More vague regulations will give DEP more room to interpret them. (396, 449, 472, 4703 – 4743, 5918 – 5924)

Response: The Department believes the proposed revisions to Chapters 78 and 78a are consistent with applicable statutes and provide appropriate protections for public health, safety, and the environment.

2646. Comment: Current regulations already provide for safe and environmentally sound operations by the conventional oil and gas industry, including protection of valuable water resources. Imposition of pointless additional regulations and their high compliance costs on conventional oil and gas operators would only serve to close businesses and eliminate many jobs in already economically-depressed northeast Pennsylvania.

Although unconventional shale development has greatly benefitted Pennsylvania and our nation by providing abundant supplies of low-cost, clean-burning natural gas, it does entail greater risk than conventional oil and gas development and requires more regulatory control. However, no additional regulations are needed for conventional oil and gas development. Consider the following:

- A typical conventional well is 500 to 4,000 feet deep. Typical shale well is drilled 5,000 to 8,500 feet deep and then another 4,000 to 8,000 feet horizontally.
- A new conventional well typically produces between 1 and 20 barrels of oil per day and/or between 10 thousand and 100 thousand cubic feet of gas (Mcf) per day. Compare that to new horizontal shale wells, which initially produce between 5 and 15 million cubic feet of gas (MMcf) per day and, in liquids-productive areas, can produce from hundreds to thousands of barrels per day of oil, condensate and/or natural gas liquids.
- The typical pressure in a conventional well is between 50 and 500 pounds per square inch (psi), compared to pressures from 3,000 to 5,000 pounds per square inch in Marcellus and Utica Shale wells.
- A conventional well costs between \$60,000 and \$250,000. Horizontal shale well typically costs \$6,500,000.
- Up to 60,000 gallons of water are typically used to hydraulically fracture a conventional well, compared to between 5 and 10 million gallons of water in horizontal shale well.
- Companies drilling conventional wells in Pennsylvania are mostly locally owned and operated, are frequently family-run businesses, and commonly have assets from a few thousand to several million dollars. Horizontal shale development is mostly conducted by out-of-state companies like Exxon Mobil, Chesapeake, Shell, Talisman, Range, Chevron and Cabot, each with market caps from many billions to trillions of dollars.

Need I say more? The comparisons are stark. Both the conventional and unconventional industries provide and can continue to provide tremendous benefits to the Commonwealth. However, they conduct vastly different types of operations and should be regulated accordingly.

Do we really want to drive locally owned and operated companies out of business and eliminate hundreds or thousands of jobs while not providing any discernible benefits to the Commonwealth? And this would occur while the large foreign and out-of state companies continue to operate unfettered due to their much greater financial resources.

Consider this analogy. Would it make sense to regulate and monitor construction of single- family homes in the same manner as construction of 30-story commercial office buildings? Of course not! It would drive the cost of new homes beyond the reach of most potential home buyers and cost many jobs in the home construction industry. This is analogous to what would be accomplished in the Pennsylvania oil and gas industry by the proposed regulatory changes. (905)

Response: See responses to comments 2627 and Error! Reference source not found.. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and

safety and the environment.

2647. Comment: The PIPP organization, Pennsylvania Independent Petroleum Producers, was founded in 1985 (29 years ago) in response, at that time to the state's legislative Act 223. Our type of well has been continuously produced since 1859 in the western counties of the state.

Beginning several years ago, a new energy formation was discovered deep below the surface in Pennsylvania, extending across the state from the Northeast to the Southwest. An exploration frenzy began and after several years of development, the state legislature realized they needed to develop "new regulations" to cover development, and production of this new found source of energy, from the Marcellus, & Utica shales. The drilling, stimulation, and production is much more involved than that of the (conventional) vertical stripper wells already existing across central and western Pennsylvania. Consequently, new procedures and regulations were generated to cover these new non-conventional wells and that effort became law, Act 13, in February of 2012.

This legacy class of conventional shallow wells is an entirely different animal than the deep unconventional well this ACT 13 set out to regulate. Here are some major differences:

- a. Shallow wells can be drilled and stimulated in a matter of days,
- b. require a fraction of the surface area disturbance,
- c. requires less than 0.6% of the frack water,
- d. uses minimal truck traffic to the well site of that required by the Marcellus type well,
- e. Doesn't require stoned and topped access roads due to excessive truck traffic,
- f. and well sites can be restored in a matter of days.

Let's comment more specifically to a couple of these points:

Item 2: Surface area disturbance. A typical well pad for a shallow well pad is 50 ft. x 50 ft or 2500 sq. ft. Typical Marcellus well sites are 5 acres or about 200,000 sq. ft., or greater than eight times as much area. And that area doesn't include the space required for storing frack water.

Item 3. A typical water requirement for fracking a shallow well is around 25,000 gallons. The minimum water requirement for a Marcellus well is at least 4,000,000 gallons, more than 160 times than the shallow well. And the shallow well can be tracked in less than a day where the unconventional well might take weeks or even months.

Item 4. Truck traffic to a shallow conventional well might be the drilling rig, drill pipe tender and a maximum of 5 - 6 trucks hauling water and transporting the tracking equipment. And of course a couple pickup visits by the local DEP inspector. For the Marcellus well, the truck traffic is exponentially higher, probably 10 times the trucks to move in the drilling equipment, over 300 trucks to haul in water for the tracking, and the drilling crew traffic compounds this by another magnitude over a time period of months.

One of the most onerous threats to the shallow stripper well industry today is the "proposed change of Chapter 78 Regulations" under the new Act 13. These regulations are now out for comment and being considered in these series of hearings across the state. This is a case where one size doesn't fit all.

We recommend separate regulations for these two very different types of wells. The new Chapter 78 Regulations can apply to the unconventional deep Gas & Oil wells; and the previous Chapter 78 Regulations can apply to the conventional Oil & Gas wells as they have for years.

If this doesn't happen, it could sign the death warrant to our conventional shallow Oil & Gas industry, and have a far reaching impact on other related industries. This would affect:

- a. Our refineries,
- b. tracking companies,
- c. seismic logging companies,
- d. well service companies,
- e. water trucking companies,
- f. water treatment facilities,
- g. oil field supply companies,
- h. and many secondary and tertiary companies like restaurants, hotels, insurance companies, banks, freight companies, hardware stores, and the list goes on and on. (624c)

Response: See responses to comments 2627 and Error! Reference source not found..

2648. Comment: These Chapter 78 regulations if enacted as written will be the end of the shallow oil and gas industry in PA. They were written to regulate the Marcellus and Utica drilling boom that has taken place in PA in the last 4 ½ years. The cost of an average shallow well in northwestern PA is 1% of the cost of a Marcellus or Utica well.

The truck traffic for an unconventional well is terrific for instance a frack job for an unconventional well will be hundreds of trucks for water, sand and so on. On a frack job there will be 20 pump trucks alone. On our shallow wells one cement truck once and on our frack job 3 trucks for 4 or 5 hours and that is all.

I understand the need for these adjourning townships or municipalities to be notified of this kind of traffic on their roads but we the shallow operators certainly don't need held up on our permits with our small amount of traffic.

An issue we recently dealt with is silly. A year ago when we started excavation of our drill sites, which are approximately 100 ft by 100 ft and the unconventional is 5 acres. We were required to post our E & S plan before we moved dirt now they want the E & S plan, the drilling permit, and the casing cement plan posted at the first earth moving. In the past we did not post the last 2 till we began to drill the well, from location building to drilling can vary from days to months. We just got a fine for not having the cement plan on location when I know it was there in the mailbox. It is complete chaos.

The unconventional companies have full time people to do all the paper work but we don't. We would like to be legal but all this goes beyond reason. If we don't see change there will be no small operators left within 2 years. (987)

Response: The requirement to post the well permit number at the site prior to construction of the access road and well site comes from Section 3211(g) of the 2012 Oil and Gas Act. The requirement to provide notice to local municipalities comes from Section 3211(b)(2) of the 2012 Oil and Gas Act. To the extent that the commentator suggests changes to statutory requirements, these suggestions should be made to the General Assembly. See responses to comments 2627 and Error! Reference source not found..

2649. Comment: DEP hasn't given the new requirements and regulations they want to impose - the proper investigation about the problems they will create. In the end only a few banks and the DEP

will be left standing. DEP please think about how your new regulations will affect employment in PA. It is necessary to separate shallow wells from unconventional wells. (995)

Response: See response to comment 2627. The Department believes that the regulations are clear and unambiguous. The revisions to Chapters 78 and 78a are consistent with applicable statutes and provide reasonable protections for public health and safety, and the environment.

2650. Comment: The 153 year old Pennsylvania shallow-well oil production industry is located in some of the most beautiful country in the world. This includes the historic Oil Creek Valley where there was once a forest of derricks in the infancy of the industry. This is fact. If you don't believe me, go visit Oil Creek State Park and see for yourself.

The oil produced by this industry, Penn Grade Crude, found only in PA, NY, WV and Ohio, is the most environmentally-friendly crude oil in the world, being the source for many specialties including personal care products and even food additives.

Besides being the direct employment for thousands in western Pennsylvania, the industry is a very significant economic driver for the whole region. It is responsible for the employment of thousands more who work in other businesses that are providers of services and supplies. This is in addition to the tax base provided by the industry. The elimination of the oil industry would devastate the entire region but the effects would be felt all over the state and into other states as well.

Why should this industry be made extinct by inclusion in a new set of rules designed for a brand new industry (shale gas) that has very little in common with the shallow well industry other than the fact that it produces a resource from the earth? The need for many of these rules, even for the shale industry is suspect.

Many of the rules are actually environmentally counterproductive. For, example, why is it necessary to carve a highway into a well location when not much more than a cow path is needed? The enforcers appear to be driven more by the desire to issue citations and show who is boss than anything to do with actual environmental benefit. They will say they are just "doing their job" which is just what the Nazi soldiers said as they marched good people into the concentration camps.

The purpose of the DEP should be to help the industry to operate in an environmentally sound, efficient and productive manner, not to harass it to death.

I understand that this is all being driven by so-called "environmentalists" who get their technical advice from celebrities and media bias and scoff at those who have devoted their entire lives to acquiring genuine expertise. One has to really question the actual motives behind these people. Why should state government give them more credibility than the hard working people who are doing their best to make a living and provide necessary and valuable resources that have made life better for all?

When the big corporations who are no longer in the picture, had large secondary recovery projects in operation they had single point discharges of thousands of barrels a day of produced water. Some of them actually kept the streams flowing in dry weather and some of the streams are renowned for their trout fishing. The government didn't have a problem with that but now a hard-working little guy trying to make a living is a felon for discharging gallons of produced water which is often beneficial to the vegetation by providing traces of nutrients.

In spite of this it is deemed right and proper for the State, itself, by the State itself, to annually dump

hundreds of thousands of tons of pure salt on the highways. You don't see or hear the so-called environmental groups up in arms about this but it doesn't bother them to constantly cite untruths, half-truths, misrepresentations and non-disasters to further their goal. Isn't there something wrong with this picture?

If the Penn Grade Crude production industry is destroyed not only will it mean the loss of employment and prosperity to many but a tremendous source of a valuable resource will be lost that may never be regained.

To the members of the Environmental Quality Board I ask that you base your decisions on truth and justice and not on narrow-minded opinion. (812)

Response: The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The Department is not aware of any regulations requiring construction of a specific type of access road. Additionally, a permit is required to discharge waste to the ground or to waters of the Commonwealth. Finally, brine and salt applications to roadways during winter weather is appropriate to ensure protection of public health and safety. Chapter 78 allows brine from production activity that meets specific requirements for pre-wetting, anti-icing and de-icing. Chapter 78a prohibits the use of brines from unconventional wells for road-spreading or de-icing purposes.

2651. Comment: At the end of the pledge of allegiance we say "with liberty and justice for all." As Americans we have a strong sense of what is fair and what is not fair. It is that sense of fairness that compels us to say that today; we are faced with a situation where the environmental laws are not being applied fairly. Many people who consume petroleum products, have no idea how we get them, or how they are made into the products these people are using. Most people have no idea how drilling for oil and natural gas in Marcellus and Utica shale layers differs from drilling for oil in the more shallow layers like the Bradford Third Sand. This shallow well production is what keeps in steady supply Pennsylvania Grade Crude Oil to the ARG refinery in Bradford. A unique product, Penn Grade Crude is different from the other petroleum in the world, since it is based on paraffin rather than tar or asphalt. This paraffin based Pennsylvania Grade Crude is very desirable in making high grade lubricants.

It has been a record breaking cold winter in the United States. The news reports many southern states are using brine (salt) water to spray on roads to reduce ice and snow. The Pennsylvania Department of Transportation uses salt to deice Pennsylvania highways. The use of salt has increased in rapid proportions in the last few years. Over 12 million tons of salt are dumped on the nation's highways each year and eventually deposited into our earth and streams. When an oil well is pumped, salt water from pre-historic seas, far beneath the surface is recovered with the oil. This water was discharged into the earth or streams for many years. Today, it is a felony to discharge well water onto the ground and yet our highways can deposit millions of tons of mined salt directly into the environment. It just doesn't seem fair.

A typical site to produce Marcellus or Utica shall gas or oil is about five acres. For some of us this is hard to visualize so I will say it in terms we understand. A football field is about 100 yards. Five acres is more than eight football fields. The size of a shallow well site is about 50 X 50 feet square. You could fit 335 shallow well sites into one Marcellus or Utica drilling site.

The regulations, we are considering tonight, are set to be the same for both the Marcellus / Utica drilling sites and the conventional oil well sites unless we make people understand how different

these two industries are. Things such as traffic to the well site, site and approach forest clearing, production waste products, the time needed for completion are exponentially greater for the Marcellus/Utica sites. This new Marcellus/Utica industry needs to have their own regulations and not be lumped in with the shallow well industries, who have been good stewards of our Pennsylvania forests and streams for over 150 years. The pristine streams and beautiful forests of Venango County, perhaps the most drilled area of Pennsylvania, stand in testimony of the oil producers' vigilance in caring for the environment. Our Earth has the wonderful property of healing. It was recently noted in a news story that an erupting volcano can negate all the efforts we have made so far in reducing global warming emissions in one single eruption. Volcanos have been erupting for eons and the Earth continues to heal itself.

I would ask that in fairness to this struggling industry of shallow well oil producers that you would reexamine the regulations that link them with the new Marcellus/Utica industry and make separate and appropriate regulations for the conventional well industry. Since so much of our lives depend on oil, we need to have laws that not only protect our environment but also protect the stability of our local economy, the security of our oil field workers and producers and the continued supply of products that come from Pennsylvania Grade Crude 011. (914)

Response: See responses to comments 2627 and 2650.

2652. Comment: While the ability to access the Marcellus Shale gas reserves is a recent development across much of Pennsylvania. My senatorial district has a long history with the process of exploring and producing natural gas. In fact, the very first commercial gas well in the nation was developed in my district back in 1878 in Murrys ville.

Here we are 136 years later, discussing ways to continue to improve the production of this very precious natural resource which is not only vital to our local economy, but our national security. Over time we've learned to constantly review the manner in which we regulate such an important industry to ensure the right balance between appropriately protecting our environment and allowing all of us to use this vast God-given natural resource to provide our communities with affordable energy, our families with good paying jobs, our landowners with lifestyle-altering royalties and our nation with energy independence.

To be clear, I recognize all types of development can impact our environment in ways that must be considered. In fact, as a member of the PENN VEST Board I've been very committed to securing hundreds of millions in grant and loan funds for communities throughout my district to curtail the discharge of raw sewage into streams and extend public water access to homes and businesses. Having secured these investments in an effort to clean up our waterways, the last thing I would ever want is to have those efforts washed away by irresponsible production of natural gas. However, as DEP continues to evolve its regulatory process, it must be sensitive to the differences between 'conventional' and 'unconventional' natural gas production. As I stated before, this region has experienced natural gas production on a much smaller scale long before the advent of the Marcellus driven technology of horizontal drilling. As such, I believe any new regulations must account for the scale of that production and the resulting overall impact.

Much of the local production that still occurs in my district is what is universally considered 'conventional' in nature. The well sites are smaller the water usage is less, while the development costs and overall return on investment margin is diminished. Overbearing fees and regulations can quickly make the production of "conventional" wells much less economical and cause the smaller. Pennsylvania owned and operated employers to cease operation.

While some areas are experiencing a large amount of production in a short timeframe, it should not result in new regulations that preclude smaller - mainly Pennsylvania owned operations - from being able to continue to produce economic opportunities in the district I represent.

As DEP's proposed regulations continue to evolve. I respectfully urge consideration of fees and rules that provide flexibility and take into account the magnitude of the production and impact of the gas wells to be permitted. The regulation of natural gas exploration should not be conducted in a 'one size fits all' manner. (1111)

Response: See response to comment 2627. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The regulatory split of Chapters 78 and 78a takes into consideration the manner in which the conventional and unconventional industries are different in scope, size, and function.

2653. Comment: As a historical point, I would like to note that my district (and region) has had a long history of producing natural gas through conventional drilling. These are small businesses and often family owned and operated through several generations. These businesses impact a wide range of other businesses with positive economic forces, including agriculture, with minimal environmental impact.

As noted in the letter from Senator Scott Hutchinson, the relatively recent technological advances that have allowed for production of previously inaccessible formations have also necessitated updates and revisions to Pennsylvania's laws and regulations governing the new industry. Unfortunately, many of these regulatory and legislative changes - including parts of this proposed rulemaking related to surface activities - do not adequately allow for the significant differences between conventional and unconventional development.

Unlike the well-known multinational corporations - most of whom are developing unconventional shale formations in a safe and responsible manner - conventional operators are mainly multigenerational small businesses. The Regulatory Review Act requires the consideration of alternatives for small businesses. At a minimum, the proposed regulations should be revised in a way that establishes alternative technical requirements for conventional producers.

The obvious differences within the industry cannot be ignored and should be reflected in a separate regulatory framework for conventional oil and gas operations. The Department should educate its staff and inspectors on these differences - or better yet, delineate a separate inspection team altogether.

If advanced as proposed, the impact of these regulations will be felt far beyond the small business producers. In Pennsylvania there are two refineries designed specifically to process the Pennsylvania grade crude oil that is unique to our region. Both facilities employ hundreds of local residents and have made significant capital investments in recent years. Unfortunately, due in part to increased regulatory burdens on the producers, their supplies of Pennsylvania grade crude have reached alarmingly low levels. If this trend continues, the overall impact to the local economy will be devastating.

The environmental resources that are the pride of our Commonwealth have flourished side-by-side with conventional oil and gas development for over a century and these proposed regulations will not materially benefit those resources. We acknowledge that the conventional oil and gas industry is unfamiliar to most Pennsylvanians and is often assumed to be similar to the unconventional industry.

In reality, the processes of conventional oil and gas drilling and production are vastly different and its surface impacts are far less. In many cases, the proposed regulations as they are currently written inadequately account for these differences and would place an inordinate burden on conventional operators, most of whom are small businesses, functioning much like family farms and only reaping small margins over the life of each well.

Again, I appreciate this opportunity to comment on a proposed regulation that will so significantly impact an industry that has defined the region I represent and continues to provide considerable economic benefit. At a minimum, I urge revisions (see Appendix) of the proposed rulemaking to reflect the considerable differences between conventional and unconventional oil and gas development and reject future efforts at one-size-fits-all regulation of the oil and gas industry. However, a more responsible and appropriate course of action would be for the Department to promulgate separate regulations for the very different conventional oil and gas industry. (1113, 1118, 1120, 1115a, 1176-1188)

Response: See response to comment 2627. The revisions to Chapters 78 and 78a are consistent with applicable law and provide appropriate protections for public health and safety and the environment.

2654. Comment: Act 13 of 2012 was the first legislative upgrades on Oil and Gas activities since 1984 and positions PA as a national leader in environmental safety. I applaud the Department's continued commitment to protecting our environment through the current proposed regulation.

However, I believe the department should re-examine the regulations to make it clearer which aspects are related to the unconventional industry and what pertains to the conventional industry that has been an important part of our economy for over a century. The conventional oil and gas industry has a smaller impact and produces much smaller quantities of oil and gas, which makes the economics of the regulations extremely burdensome.

I ask the at the Department continue to work with the industry, particularly the conventional oil and gas industry, regarding any potential changes to the regulation package as the Department reviews public comments. (1119)

Response: See response to comment 2627. The Department has met with the advisory boards and organizations representing the conventional and unconventional industries numerous times during the development of the regulation. The Department established the Conventional Oil and Gas Advisory Committee in March 2015 in order to have an advisory group that is specifically focused on conventional oil and gas development issues.

2655. Comment: I am the president of Allegheny Enterprises, Inc. which operates approximately 200 shallow conventional oil and gas wells in PA and have been made aware of the regulations currently being considered for approval by your board. We oppose any additional regulations on an already overburdened regulatory climate.

Shallow oil and gas wells have operated in this state over 150 years. Current oversight governing , existing and future wells is more than needed, to protect the environmental concerns while still enabling producers like us to operate with some margin of profit.

Legacy wells that produce less than a barrel of oil per day and /or minimal amounts of gas, will not support the cost of additional regulations. This will result in more unemployment, loss of production vital to our local economy, by reduction of our local tax base. The trickledown effect will cause

harm to all the local businesses that depend on the millions of dollars companies like ours puts into the local economy. Small producers going out of business will add thousands of wells to the abandoned well list the state will be burdened with plugging costs in addition to the large number of abandoned wells that funds should have already been used to plug.

Drilling and producing conventional wells must not be regulated by the same rules as deep shale unconventional wells. The proposed regulation package, as it now stands is overly broad, burdensome and time consuming without adding meaningful protection to the environment.

Please vote “NO” to these proposed regulations; we need existing and future conventional wells to be able to operate under the existing regulations in place before the passage of Act 13 of 2012. Let’s bring common sense back to government oversight. (1121)

Response: See response to comment 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2656. Comment: I own and operate 20 shallow oil and gas wells in warren county, PA. I am considering if I can drill more wells. I am aware of new regulations being considered by your board. I oppose passage of these regulations.

Shallow gas and oil wells have operated in our state for more than 140 years. The regulations currently governing these wells are more than adequate to protect the environment.

My existing old wells produce only a few gallons of oil per day. These wells will not be able to cover the cost of these additional regulations. The proposed new regulations will force me to terminate these old wells and reconsider drilling any additional wells.

Drilling and operating conventional wells must not be regulated by the same rules as deep wells. The regulation package as it stands is overly board and burdensome without adding meaningful protection to the environment.

Please vote “No” to the proposed new regulations. Please allow conventional wells to operate under the same regulations in place before passage of Act 13 of 2012. (1122)

Response: See response to comment 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2657. Comment: We understand the primary motive behind the rulemaking’s proposed changes is the establishment of regulatory standards that effectively respond to environmental risks posed by “unconventional” gas wells. But with some exceptions, the standards and requirements to be imposed under the proposed rulemaking would apply equally to deep wells that utilize more “conventional” drilling and operational activities. The manner and scale of these activities – even fracturing and related activities to stimulate gas production – are not the same degree or concentration as activities performed in operation of unconventional gas wells, and in our opinion, do not pose the level of threat to natural resources as posed by unconventional gas wells.

It is our understanding that when compared to successful production of natural gas from unconventional wells, extraction of natural gas from conventional wells regularly provide a substantially lower level of profit margin. Numerous members of our organization who have leased

subsurface interests only have and only receive royalties from conventional wells that operate on their properties. We are concerned that the regulatory standards as proposed will cause operators of conventional wells to incur additional costs of operation, further eroding the relatively modest profit margins they are already experiencing. We fear that the proposed regulations will have unintended consequences of causing to natural gas companies to forsake continued operation of productive conventional wells in favor of more intensive development of unconventional gas wells. (1144)

Response: See response to comment 2627.

2658. Comment: The proposed revisions of the Chapter 78 regulations of oil and gas production that the Board is considering are radically burdensome, unrealistic, and would be destructive to continued operation of Pennsylvania's conventional oil and gas producers. I urge you to reject these proposed rules. It is said that the rules were written for the Marcellus Shale deep well production, which is so different from the oil and gas production from the historic shallow conventional wells of the Pennsylvania Crude field that such an explanation requires that the a full exception to the new rules should be applied to the production in the historic Pennsylvania Crude field.

This is not to say that the proposed rules are justified for the Marcellus Shale production, but this requires technical analysis beyond the scope of this letter. The rules appear to be frivolously drafted by individuals with no expertise in the production of oil in the historic oil fields and no idea that the historic production, where the oil industry began well over 150 years ago.

In fact, the logical explanation for the rules as applied to all sectors of oil and gas production in Pennsylvania is that they are deliberately created to drive a large sector, namely the small producers, out of business. But this would be an extreme Machiavellian motivation, as could be attributed to environmental extremists who are hostile to the oil producers and would like to force them out of business so as to restore the land to "nature."

I cannot accept that the Members of the Environmental Quality Board would condone this, or that the Department of Environmental Protection would have such radicals in its employ. Therefore, as a civil engineer, I prefer an explanation that those who wrote the rules were incompetent: ignorant about the field for which they were drafting the rules. The solution is simple. Reject entirely the application of new rules to the conventional oil producers.

The facts:

The regulations may be feasible to apply to the large producers in the Marcellus Shale. However, the regulations are unsuited for the operation of shallow wells in the areas where the oil industry developed.

The latest figures available (2012 and 2011, according to fourth generation oil producer Mark Cline) show that there are 100,000 existing conventional wells and supporting infrastructure, such as tanks, pumps, and pipe lines. These 7,280 operators produce 2,270,500 BBls of oil and 249,323,980 mcf of natural gas yearly.

A 2008 study cited by Mr. Cline, found that Pennsylvania's conventional oil and gas industry supported more than 26,000 jobs and generated over \$7 billion annually, with an additional \$200 million in annual royalty payments to landowners.

These are often very low production wells; most of these wells produce less than a barrel per day. The proposed regulations would make it unfeasible to dispose of the production water. In fact, from

a sanitary engineering point of view, it is obvious to the eye, knowing the low salt content of the water, that for such low production wells, the waste water is innocuous and not in need of regulation.

In addition, the specifications for the level of construction of the access roads would make production unfeasible. The small paths through the woods in locations where such clearing is all that is needed are perfectly satisfactory. Why the environmental impact and the waste of money to build specification roads? These small operations do not even need access roads and erosion controls comparable to those necessary for logging operations.

There appears to be no engineering input into the drafting of the rules, whether from an environmental/sanitary, production, economic, or construction analysis. It is hard to image that a Pennsylvania licensed engineer signed off on the rules.

A few comparisons:

The potential risks from conventional oil and gas production are so much less than the potential risks from deep shale production, that the conclusion should be that the risks from conventional production are negligible.

For instance, the pressures for conventional oil and gas production range from 50 to 300 psi; whereas the pressures for a Marcellus shale well range from 4,000 to 5,000 psi.

The volumes of water to hydro-frack are incomparable: Hydro-fracking a conventional well may use 50 thousand gals of water over several hours; whereas the volumes for hydro-fracking a deep shale well could range from 5 to 10 million gallons over several days.

The volumes of oil or gas produced are also incomparable: A new conventional well produced between 1 and 20 barrels per day; whereas new Marcellus shale well can produce from hundreds to thousands of barrels of oil and other liquids per day. A new conventional well can produce from 10 thousand to 100 thousand cubic feet of gas; whereas Marcellus shale well can initially produce from 5 to 15 million cubic feet of gas per day.

Pennsylvania Crude:

In spite of the low volume of oil produced by individual wells, the conventional oil producers who are threatened by the proposed regulations combine to produce large amounts of oil. In fact, 100 percent of the raw material feeding the American Refining Group, Inc., in Bradford, Pennsylvania, is the unique local Pennsylvania Grade Crude. The refinery, founded in 1881, is the oldest continuously operating lube oil refinery in the world and employs 364 people. (In addition, the Ergon refinery in West Virginia buys Pennsylvania Crude and employs over 400 people, processing 7 million barrels of Penn Grade Crude from 1,800 producers.)

If the petroleum producers in the Pennsylvania Oil Field are forced out of business, the unique Pennsylvania Grade Crude would be no longer available. The ARG refinery would have no source for the raw material for its many fine products from lubricants to waxes and resins. If the proposed new regulations and the stepped up frivolous enforcement policies are not rejected, these jobs will be lost and the valuable production will come to a stop. The locality would be severely impacted, with the major historic employer forced out of business.

Populations that are forced to leave a region because of environmental measures such as land acquisition and regulations are referred to as “sacrifice populations,” by anthropologists who write

about the world-wide environmental movement. (See Conservation Refugees, by Mark Dowie, MIT Press, 2011)

The public face of the new rules is that they are composed in response to the Marcellus Shale production, where wells cost millions of dollars each to drill and are orders of magnitude larger in scope in every way than the small, shallow, conventional oil wells. Just because the rules are written doesn't make it logical that they should apply across the board to wells that are tiny in comparison and cannot possibly have an environmental impact that would even be measurable on the same scale as that possible with a large deep well thousands of times more barrels daily, along with very large volumes of production water, a large production site, heavy duty access roads, and so on.

In summary, there is no logical or decent reason to impose harsh new rules or enforcement on the conventional oil and gas producers. Therefore, the conventional oil and gas producers should be exempted from new rules. (1129)

Response: See response to comment 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2659. Comment: I am opposed to the new chapter 78 regulations being adopted into law. They were written to regulate the Marcellus wells, but they also include the conventional well operators. The Marcellus shale wells and the conventional wells are two completely different industries. They should not have the same regulations. (1132, 2176 – 2377)

Response: See response to comment 2627.

2660. Comment: The conventional wells have been here for over 150 years and have left a very small foot print on the environment. They should have their own inspectors and revert back to the regulations of the Oil and Gas Act of 1984, as nothing has changed in that Industry.

The regulations in both industries should be enforced with reasonable and knowledgeable enforcement.

Please vote no to these regulations until they exclude the conventional wells. Thank you. (1132, 2176 – 2377)

Response: See response to comment 2627.

2661. Comment: I'm the owner of a conventional oil and gas well drilling company located in Venango County. We drill wells in most of Western Pennsylvania. And I'm very proud to have a good staff and good employees. And most of the work that we do I hire out as a contract. And I'll use anywhere between 30 to 40 different companies in the drilling of a conventional oil well, that hires as many 100 different men all doing very specialized and very serious at what they do. Like myself, most of them have had many generations before them. And I'm the third generation oil producer and I'm very proud to do so.

On one hand, I'm a geologist who drills wells, but on the other hand, I'm also a farmer who's a hunter, who's very proud of being an environmentalist.

With the proper balance and the proper regulations, we can all come to a point where we have achievement without to the detriment of others. In that case, the work that you want to do right now

as well as all the input from everybody here. And I'd like to say that I believe you're acting very respectful to everybody's opinion and everybody's opinion is very important to this.

I would wager that the DEP is doing a good job and an adequate job of regulating my industry, which is conventional. And I would emphasize that the most important thing of that is safety, that you understand the difference between the new arrivals of the unconventional drilling, which you've heard is a much larger and potentially a more dangerous industry, which needs to follow regulation, but not at the detriment to overregulate an industry that has been here for 150 years, that employs many, many people, and one that's also been in a somewhat depressed area of Western Pennsylvania.

To illustrate what I mean, DEP is doing a pretty adequate job as far as regulating this, and brought with me a two-page document from the 1980s that was required to permit and drilling the conventional oil wells, two pages. And it worked back then. It is been replaced now. And, of course, we have to update as technology becomes better to do a better job. But now a single well permit is 32-pages long. It has soil maps, it has water maps, it has slopes, it has GPS coordinates, it has casing points. It has all the engineering that we're going to be doing, so we're just not out there running wildly in the woods drilling wells.

We have water quality specialists who come on a daily or a weekly basis to see what we doing. We also have engineer specialists in the department, and I'm one who fully believes that when I need help with a problem, the DEP is there to help me and they do it on very much of a daily basis. In fact, I spent about two hours this morning with a DEP water quality specialist that was able to give me good advice to do a proper job.

In addition to a 32-page document that we did for just the permit, I'm also obligated to prepare, and these don't come cheap, environmentally competent erosion sedimentation beforehand, which exceeds all indications. It also soil maps, slopes, every culvert that we're going to replace in, every blade of grass that we're going to replace when we drill. And in addition to that, this particular lease required a 60-page document that is known as a remediation report, so that we do not burden any environmentally sensitive plants or wildlife, in addition to also having to watch out that we don't have any endangered species.

So I'd like to thank the Board for having me tonight and I'd please like you to remember that our industry has been here for a long time. A spec on your skin and a tumor in your lung can both be cancer, but they require much different treatments. And I'd like you not to involve one with the other. (1163)

Response: See response to comment 2627.

2662. Comment: I am writing in opposition to the Environmental Quality Board (EQB) adopting the revisions proposed by the Pennsylvania Department of Environmental Protection (PADEP) to 25 Pa Code Chapter 78 "Oil and Gas Wells". As the Production Manager for a conventional producer, myself, our company and its 26 Pennsylvania employees, have firsthand experience with the extraordinary efforts made by Pennsylvania's oil and gas industry to be good stewards to the environment and good neighbors to the communities where we live and work. Based upon those experiences and my 28 years of experience, I find the proposed revisions to lack sufficient justification, to have costs far in excess of any benefits and to provide very little in actual, real-world environmental protections. In fact, I believe the proposed rule will diminish the recent prosperity created by Pennsylvania's oil and gas industry and will cost our communities and employees

revenue while increasing their social burdens. We urge you to stand with me by voting against finalization of this rulemaking in its current form.

Among my many concerns with this proposal, I would like to highlight several which pose a particular burden on our business.

First and foremost, my main concern is that these revisions were written strictly for the unconventional industry as mentioned in the very first paragraph your own preamble. As a conventional producer with a smaller operating budget than many unconventional operators, I feel strongly that these revisions will directly impact all facets of our business. Escalating operating expenses will lead to reduced drilling, reduced investing, reduced production which in turn will affect royalty owners, landowners, employees and spin off businesses.

As you can clearly read in my letter, I am solid in my resolve that these revisions (as written) should be scrapped and rewritten to separate out the conventional operator from the unconventional. In closing, I urge the Environmental Quality Board to reject this rulemaking as proposed. Unless the proposal is substantially revised based on full consideration of the costs and benefits, it will cause harm to the prosperity of our communities, and will cause harm to the people who will lose their jobs. To the extent that portions of this rulemaking are mandated by state law, the EQB should insist that DEP propose revisions only to fulfill those obligations, with simple rules written in plain language. (145)

Response: See response to comment 2627.

2663. Comment: Thank you for this opportunity to share my concerns and recommendations regarding the proposed changes to Chapter 78 of the Pennsylvania Code. I write as a concerned citizen who has been following the issues surrounding unconventional gas drilling since 2008. I'm particularly concerned about our state's water resources and have been monitoring streams as a member of Potter County's Water Dog group for several years. In 2012, I attended two of the meetings of the Technical Advisory Board (TAB) with DEP in Harrisburg and observed part of the process by which these new regulations have been developed.

Most of the following recommendations have been previously submitted and explained by the coalition of Berks Gas Truth and other environmental organizations. I would like to fully endorse all their recommendations, as well as those given by Penn Future. I would also like to endorse the letter submitted to the EQB by the Potter County Board of Commissioners (dated January 13, 2014). Protecting public water supplies is, of course, essential, as the recent catastrophe in Charleston, West Virginia, has clearly demonstrated. But I am just as concerned about our ground water, our private water sources, and Pennsylvania's beautiful streams and rivers. Your responsibility for protecting the Commonwealth's natural resources (and thereby its citizens) is tantamount in this process of revising Chapter 78. I understand that your final recommendations will be subject to further review by TAB and the legislature—a process that will surely lead to compromise. But as advocates for the environment, you must lead with dedication to the mission of DEP.

At the hearing in Williamsport on January 13, I listened to the broad range of comments. Strong convictions were on display, and I'm sure the subsequent hearings have been similar. But you are also hearing from citizens who understand that it is not just our right but our responsibility to speak out in defense of public health and safety, as well as the environment. Although the power of special interests and the play of politics in our state may constrain your efforts, I hope that these hearings have given you a renewed sense of responsibility to uphold Pennsylvania's Environmental Rights

Amendment, which, thankfully, the Pennsylvania Supreme Court has recently and unequivocally endorsed in its decision on Act 13.

The final Chapter 78 rules should apply to companies drilling both conventional and unconventional oil and gas wells in Pennsylvania. If conventional wells create fewer impacts, as operators claim, the regulations should not be so difficult for them to follow. Oil and gas wells are so numerous and widespread, all operators must be held accountable for safe development and maintenance. More importantly, to quote John Walliser of the Pennsylvania Environmental Council in his previous comments to your board (January 22, 2014), “The risks of hydraulic fracturing are arguably greater in shallow formations.” (182)

Response: See response to comment 2627. The Department believes the revisions to Chapters 78 and 78a will provide appropriate protections for public health and safety and the environment.

2664. Comment: The regulations do not clearly distinguish provisions applicable only to unconventional oil and gas, creating unintentional consequences to conventional oil and gas operations. (404)

Response: See response to comment 2627.

2665. Comment: I am very enthusiastic about the opportunity to address you on the issue of separating shallow oil and gas regulation from the Gigantic Marcellus drilling operations. I do realize this hearing is about adopting or not adopting chapter 78 changes but, the separation is critical to the economy of western Pennsylvania. PIPP newsletter gives some figures as to the amount of jobs and dollars involved. Their figures are way too conservative. If you have ever studied “the physical economy”, which is doubtful, the numbers are way more far reaching. While this letter may seem to go off subject, it is meant to contrast the difference between shallow oil frac water and production water and that of Marcellus use. I think this knowledge is critical in your decision to adopt or reject chapter 78 changes.

The letter inviting public comment requests for the most amount of comment it can receive. I would like to remind everyone the truth does not come from numbers pro or con. The truth is the truth. The beauty of this Environmental Quality Board is the scientific facts (the truth) lies right in the hands of two board members. The Executive Director of the Pa. Fish and Boat Commission has in his archives the test results of a two or three year monitoring of Browns Run and Morrison Run in Warren County - The results that were used in the elevation of the water quality from “cold water fishery” to “exceptional value water”. Now the truth; in the three years prior to and during these monitoring, 500 to 1000 wells were drilled in this watershed. This number can be pinpointed by the Secretary of the Department of Environmental Protection. This represents between 42 million gallons and 84 million gallons of “frac” water discharged directly onto the ground. No ill effects to the quality of water. During the same time period production water was released into pits adjacent to the oil tanks, diluted with surface and rain water and discharged. The only noticeable effect was the three or four dead trees directly below the pit. The water quality, no effect I might add these pits were always full of frogs and amphibians. A fishing pole and about an hour you could have enough frog legs for a meal. With the 1984 regulations came the saltwater tanks and the hauling of brine. The pits are gone, the frogs are gone, and the lizards are gone. I’ll bet the snakes are hungrier than they used to be.

In closing, in your decision making process I would like to remind you we live in a heat powered universe. Everything is burning. It might be the slow oxidation of paint color fading or a daffodil

coming to bloom or the (2000 calorie, 5000btu/day) fire inside each of us. Or it could be a volcano or nuclear power plant. Nature is doing most of it 97% and all of mankind's 7 billion people and their activity represent 3%. (407)

Response: The Department acknowledges the comment.

2666. Comment: Snyder Brothers is a local, family owned independent producer of oil and natural gas and has operated in Pennsylvania for more than 30 years. While Snyder Brothers recognizes that the Department must make a continued effort to adjust the regulations as our industry evolves, we continue to become concerned that the scope of these proposed rulemakings are overly broad and go beyond what is necessitated by Act or actual environmental impacts. The oil and gas industry has had a long, successful history in Pennsylvania under the current regulatory framework from federal, state, and local programs and does provide substantial environmental protection at every stage of development. It should especially be noted that the Department keep in mind the impact to conventional operators that have conducted business here in the state without issue for over 150 years. (411)

Response: See response to comment 2627. The commentator did not explain how the rulemaking is "overly broad and [goes] beyond the Act. . . ." and so the Department cannot respond to this comment.

2667. Comment: I am writing to ask you to vote against the proposed amendments to the Chapter 78 PADEP regulations on oil and gas development and production in Pennsylvania. These proposed amendments were written specifically for the Marcellus and Utica shale wells along with other unconventional oil and gas wells. However, the regulations as written will impose the same requirements on shallow conventional wells which have been in Pennsylvania for over 100 years.

Our business has been in existence for 44 years as an oil field service company providing well drilling, well completion and crude oil trucking in Northwest Pennsylvania. We have grown from two part-time employees in 1970 to our current level of 35 employees. We support 35 local families with good paying jobs and pay 100% of their health insurance premiums. These jobs will definitely be at risk if the proposed regulations are passed.

I attended a meeting of local oil and gas business owners last week who, like me, are going to be faced with very difficult choices if these regulations are passed in their present form. A quick count of employees of the business owners at that meeting was in excess of 2000 jobs that are directly involved in the conventional oil and gas industry. Plants and Goodwin, Inc.'s payroll by itself was over 1.5 million dollars in 2013. These may not seem like big numbers in Harrisburg but they are critical to the economy of McKean County and Northwest PA.

I am asking you to vote "NO" on the regulations until the PADEP removes shallow conventional oil and gas wells from the proposed changes. The conventional oil and gas industry in PA has existed for decades with minimal environmental impact to the Commonwealth. The vast majority of the companies operating shallow conventional wells in PA are local companies: Our kids go to school here, we live in the communities where we work and we certainly don't want to harm the environment that we live in.

There is no doubt that the unconventional shale wells in PA have posed many new challenges for the public and regulators. I agree that these wells should be under heightened scrutiny until that industry can prove it has a track record of being environmentally sound in the way it conducts business in PA. However, the shallow conventional oil and gas industry has proven that we can be

environmentally conscious without having the burden of excessive regulations imposed as a “one size fits all” approach.

Please vote “NO” on the proposed regulations until they exclude conventional wells. Our industry, our region, our towns, and my family’s future hang in the balance. Thank you. (412)

Response: See response to comment 2627.

2668. Comment: I am writing on behalf of Zippo Manufacturing Company and W.R. Case & Sons Cutlery Company located in Bradford Pennsylvania. We have a long heritage in Bradford and we now have serious concerns regarding the proposed regulations for oil and gas in the Commonwealth. I have learned that new rules are being considered to regulate production from both conventional wells and unconventional wells located across the entire state of Pennsylvania.

The list of new regulations is very extensive and will be extremely burdensome on conventional oil and gas production. It is apparent the new requirements are aligned for the shale-gas industry. While these requirements may be vital for the new shale-gas industry, these mandates will have a severe negative impact on our conventional oil and gas production companies and McKean County to include Bradford Pennsylvania.

I would urge the Environmental Quality Board and the PA DEP to work with our energy sector being especially respectful of our established conventional oil and gas producers. Please work to define a fair and equitable approach to protect the Commonwealth’s natural resources by maintaining the existing regulations already in place for conventional oil and gas wells. Do not deny these devoted producers and their surrounding communities, their ability to remain an important contributor to the economy of our Commonwealth. (417)

Response: See response to comment 2627.

2669. Comment: I am writing as an employee/family representative of Devonian Resources, Inc.; a small, family-owned and operated Oil and Gas production company located near Pleasantville, PA. We have been drilling, completing and operating conventional, shallow oil and gas wells in Forest, Venango, Clarion, Jefferson, and Clearfield Counties beginning as early as 1967. This company grew out of the hard work and bold entrepreneurship of my grandfather in post WWII Texas in 1947. When operations moved north to our beautiful Commonwealth, it was through the efforts of my grandfather side-by-side with his son, my father, and other members of our family that this company grew, blossomed and thrived. We have always been, and remain to this day, a business steeped in the values of family and community.

The purpose of my letter to you today, members of the board, is to shed some light on the proposed changes to 25 Pa. Code Chapter 78, Subchapter C (which the Environmental Quality Board accepted on August 27, 2013 for publication as a proposed rule.) These regulations impose burdens on conventional operators and small business owners that are appropriate (and seem to be designed) for the large scale operations performed in the unconventional oil and gas plays of the Commonwealth. I believe it is imperative that meaningful language be adopted in Chapter 78 that differentiates the regulations that apply to conventional operations versus those which are unconventional.

To paint both the conventional and unconventional oil and gas operations currently taking place in the Commonwealth of Pennsylvania with the same brush is a mistake. While the end results are fossil fuels in both liquid and gaseous states, the yields, profits and processes are dramatically

different in both scale and methodology.

Some basic contrasts between conventional and unconventional operations:

- Conventional oil and gas wells are drilled to depths much shallower than unconventional shale wells.
- The formations are under far less pressure in conventional wells.
- The pressures needed for stimulation are far lower as are the quantities of water needed in conventional wells.
- A conventional well pad is typically 35 times smaller than that of an unconventional well.
- Inconventional well drilling and completion activities it takes approximately 5 days of work with just a few diesel engines until all heavy equipment operations are finished. Unconventional well activities last months with constant truck traffic and can use over one hundred diesel engines during completion and stimulation.
- The brine produced from a conventional well is less brackish than sea water. Unconventional production water is many times as saline as sea water.
- Conventional wells have lower profitability than unconventional and are strongly influenced by oil and natural gas commodity prices.

These are the tip of the iceberg, and are very general, but they begin to point out the very stark differences in operating needs and practices for both industries. (420)

Response: See response to comment 2627.

2670. Comment: Without going into very specific detail on the proposed regulation changes, I have tried to point out that the main area of concern with the operators of conventional oil and gas wells is to not be lumped into a one-size-fits-all regulation with the unconventional operators. Just as a Ma and Pa Hometown Hardware store would not be expected to meet the same demands as The Home Depot, it is unrealistic and unfair to expect Devonian Resources to live up to the same expectations as a Shell or Chevron. We have a right to continue to earn our living based on the regulations in place (which are burdensome already!)

Conventional, shallow oil and gas operations have been taking place in Pennsylvania since 1859. Take a walk in the lush wooded hills and valleys of Venango, Forest, Warren and McKean Counties and one can see the traces of 150 years of oil and gas operations; thick, moss-covered wooden barrels once used for oil storage, vine-wrapped shackle-rod lines, pump jacks and well-heads that have been pushed aside by massive oak, cherry and maple trees. No other state, with the exception of Alaska, has more pristine fresh water resources. The conventional oil and gas industry lives in harmony with the countryside. We not only work here, but we live here. We raise our families here and nourish their needs with the waters of this Commonwealth. We work hard to keep those same waters pristine while plying our craft.

As it currently stands, I cannot help but believe it is the implicit desire of the PA DEP to see conventional oil and gas operations cease in the Commonwealth. Am I therefore to believe that the Department is acting on behalf of the state? Does the Commonwealth of Pennsylvania wish to see this rich part of its' industrial history disappear? Why this would be troubles and puzzles me to no end. The majority of the players in the conventional oil and gas patches are small, family-owned businesses not unlike Devonian Resources. We employ members of our communities. We energize our local economies through patronage of supply stores, restaurants, auto parts stores, garages and other local small businesses. We are members of our Chambers of Commerce. We donate money

to our municipal outreach organizations. We donate our voices, our votes and our dollars to the politicians who fight on our behalf. The crude oil we produce is essential in the refining of Penn Grade Crude products that range from lubricants to plastics to cosmetics. Am I to believe the above are no longer valued by our great Commonwealth? Am I to believe Pennsylvania would hang its' own community-minded business owners out to dry while the profits go out of state to massive publicly traded corporations? Since 2007 the number of conventional oil and gas wells permitted and drilled in the Commonwealth has been in steady decline from 4,836 in 2007 to less than 800 in 2013. I would say seeing is believing, members of the board. Numbers don't lie. I thank you for your time but leave you with one last question; do you truly believe the PA DEP has the citizens of this Commonwealth's best interest at heart? (420)

Response: See response to comment 2627.

2671. Comment: I am writing to provide feedback regarding the proposed Chapter 78 regulations on the production of oil and gas in the Commonwealth. There are already appropriate and adequate regulations for conventional oil and gas wells that provide effective protection for the environment. As the leader of two institutions of higher education and community member in McKean County, I urge the Environmental Quality Board and the PA DEP to work with the industry to achieve a reasonable and common sense approach to protecting the Commonwealth's natural resources by maintaining the existing regulations in place for conventional oil and gas wells. (127)

Response: See response to comment 2627.

2672. Comment: In general, I recommend PADEP separate Chapter 78 into two different entities: Conventional Oil & Gas Chapter 78 and Unconventional Oil & Gas Chapter 78. The proposed changes to the current Chapter 78 are clearly being written to enforce stricter standards on the new unconventional industry. The conventional oil & gas industry has operated with little environmental impact in Pennsylvania for the last 150 years. As an engineer who oversees day-to-day operations in the field, I can honestly say that the vast majority of the proposed changes are unnecessary and that stricter regulations will suffocate an industry that operates on thin margins for little environmental benefit. (450)

Response: See response to comment 2627.

2673. Comment: This correspondence is to provide comment on the proposed regulations for oil and gas surface activities. We understand the importance of protecting the environment and water resources in the State. However, in northwestern Pennsylvania, McKean County, we have had extensive experience with conventional oil and gas drilling for over 150 years. The industry operates successfully under the current regulations, provides many full time jobs to the region, and strives to maintain a balance between the environment and economic gain. Many of our companies are locally owned and family operated; classified as a small business by State definition (having less than 500 employees); and maintain a modest profit margin.

Imposing new, more stringent regulations on the conventional drilling industry will have an adverse economic impact on not only the company owners, but their employees and the communities where they live. Conventional wells do not produce the volume of product that the unconventional wells do. So the small companies are not seeing the economic gain experienced by the Marcellus and Utica shale drilling companies. If more regulation means an increase in the cost of drilling and production for the conventional well owners, they will not be able to remain in business. According to the DEP Regulatory Analysis Form - Environmental Protection Performance Standards at Oil & Gas Sites, the estimated annual cost of this regulation on conventional operators is between

\$5,389,360 and \$12,006,000.

In McKean County, the conventional well drillers/owners supply the local refinery, American Refinery Group, with the product they need. The refinery supplies the market for the oil and gas drillers. It is a positive and profitable relationship that could be jeopardized if the local companies are forced to close up their drilling operations. We urge you to re-examine the proposed regulations carefully to assure that they apply to the unconventional drilling industry and will not impose a further hardship on the conventional oil and gas drilling industry. (422)

Response: The Department acknowledges the comment. See response to comment 2627.

2674. Comment: As a very small family run conventional oil and natural gas producer in Pennsylvania, we are asking that you keep the regulations separate from non-conventional wells. The differences between the two types of wells are night and day.

Our depths are nowhere as deep as non-conventional wells. The amount of water we have is a drop in comparison to Marcellus return water. Our shallow production water is lower in specific gravity and has less concentration of heavy metals in comparison to Marcellus return water making it easier to treat and having less of an environmental impact as opposed to Marcellus.

A blanket approach to oil and gas regulations will hurt conventional drilling. Ask any of the suppliers to conventional drillers, they will tell you how Marcellus has already hurt them. If we make it harder to drill conventional we will lose suppliers, conventional drillers, and conventional oil and gas producers. Our pockets are limited in comparison to the large companies that have very little connection to Pennsylvania.

Do not forget that we are the birth place of oil and natural gas. For 150 years we have drilled conventional wells safely. If a blanket approach of regulations goes into effect the conventional producers started by Edwin Drake will come to an end. In comparison, does the state put blanket regulations on small motor vehicles as they do for large? (427)

Response: See response to comment 2627.

2675. Comment: The Rules as drafted do not adequately distinguish between conventional and unconventional producers. The way originally drafted the additional administrative and operational changes would apply across the board regardless of the nature or type of wells being developed or the scope or size of the business in operation. I feel that this aspect is a blind, one size fits all, overly simplistic and without a doubt a very economically damaging approach to regulating an industry. If the State does nothing else to improve its approach at this endeavor I urge that the agency modify the rules to make them graduated based upon the factors stated here. Just like no two States are exactly the same neither are the business' that operate within them. I am very concerned that in its zeal to protect the State, its residents and the environment we overlook the fine technical and practical nuances that are at play here and as a result destroy the small producers viability and competitiveness and in turn eliminate jobs and harm our economy. (433)

Response: See response to comment 2627.

2676. Comment: I am a concerned citizen (not affected with the Oil and Gas industry). I am disgusted with the government regulation that comes "thick" and include EVERYTHING. I am opposed to the changes (Chapter 78 regulations) being considered by you. Vote "NO" on proposed changes to regulations as they apply to conventional gas wells. Instruct DEP to apply changes to deep wells

only-stop all this crap! (482)

Response: See response to comment 2627.

2677. Comment: The proposed regulations will affect both conventional and unconventional drilling. The current proposed regulation won't fit for both, it is meant for unconventional. If it extends to conventional, shallow folks will get hurt. Number of new conventional wells are considerably reduced due to more stringent regulations. This in effect affects the small businesses which support this industry. So kindly separate the regulations for two industries. (1205)

Response: See response to comment 2627.

2678. Comment: I'm the fifth generation of my family to be involved in the oil and gas business. I've worked in Clarion, Jefferson, Forest, and Venango County, the county that I live. I hunt there. I fish there. I take my drinking water from a well there and raise my children in proximity to where I have my well.

I have had many employees and used dozens of contractors and their employees in my 38 years in the conventional well operations. I'd like to show you some of the differences in the well. In an unconventional well, you can that as much as five million gallons of water are used. In a conventional well, if you can see it over here, this represents 50,000 gallons of water, which is typically used. So quite a difference.

A typical unconventional location pad is five acres represented by the yellow. A typical conventional pad is only a half an acre, and a lot of times even less when the topography allows for it. One of another difference in the unconventional well sites, as many as 500 to 600 truckloads may come and go on the location of various things being brought in and out. A conventional well site will only use 15 to 20 truckloads.

These are just a few of the differences between conventional and unconventional wells. It is clear that they are very different, and the same set of regulations are passed into law, conventional well drilling will suffer severely if not put completely out of business. It will result in the loss of employment, the loss of tax revenue and the loss of royalties of landowners, who many depend on the income as a supplement.

In conclusion, I have heard very environmental and sportsmen group alike tote the fact that in western PA, we have some of the most pristine waterways and high-quality streams and that they need to be protected. I believe that this is true, but one food for thought. Conventional well operators have been on going in these areas for 150 years plus with tens of thousands of wells drilled right in around these waterways and amongst them. I think that is an environmental record that speaks for itself. (1233)

Response: See response to comment 2627.

2679. Comment: Any new regulations are pertaining to unconventional drilling and hydraulic fracturing in the state of Pennsylvania should be stringently differentiated from the current regulations governing already established shallow and marginally producing wells.

Marginally producing (i.e., stripper) wells are the most affected by increased regulatory pressure on the fossil fuel industry as a whole, caused by the recent boom in shale oil and natural gas development. Stripper well owners and operators are feeling indirect effects from being forced to

comply with increased regulations. Unfortunately, these indirect effects hit us small producers on our bottom line.

Consider these statistics:

- Marginally producing wells comprise about 72% of the nation's currently operating wells, and are the most vulnerable economically to fluctuations in oil prices and market downturns. Once a stripper well is shut-in and abandoned, it is difficult – if not impossible – for it to be reopened again.
- Every \$1 million directly generated by stripper well production generates more than \$2 million of activity elsewhere in the economy.
- Close to 160,000 American jobs are dependent on stripper well production activities - approximately 10 jobs per \$1 million of production. Currently, stripper wells operate in 44 states, including Pennsylvania.
- If the United States had to import all the oil and natural gas currently produced by stripper wells, it would cost the economy approximately \$45 million every day.

We support responsible regulation of the industry, and we know we have to do what is right to maintain the continued integrity of our resources. However, irrational, punitive and overreaching state regulations will be vigorously opposed.

Therefore, we ask that you reevaluate the changes to the oil and gas regulations currently before your committee. Excluding marginally producing oil and natural gas well owners and operators from the proposed changes to Chapter 78 regulations will ensure that thousands of Pennsylvania jobs remain intact, and that America's oil and gas industry remains a bright spot on the road to our nation's continued economic recovery. (466, 469)

Response: See response to comment 2627.

2680. Comment: The PA Department of Environmental Protection (DEP) has proposed new rules to regulate the production of oil and gas. The new rules will regulate both the shallow “conventional” wells, and the new shale “unconventional” wells that are now being drilled across the state. The new rules take a one size-fits-all approach that will result in new and expensive burdens on our conventional wells.

Our disagreement is not with the unconventional industry. These new unconventional shale wells are a marvel of technology; the oil and gas the unconventional shale wells bring to market are helping our country produce the energy we need. But the unconventional wells are very different. The one-size-fits-all approach of the new regulations will have a chilling effect on our conventional oil and gas production. For example, the proposed regulations impose very expensive industrial-like burdens when even a small amount of production water or oil is discharged (monitoring wells, soil removal, etc.). The proposed regulations impose technical requirements, such as slopes for pits, that make no sense in our industry, and that have an extraordinary cost. The list is long, and when the new requirements are added to recently enacted changes in casing and well reporting requirements, the cumulative burden becomes so expensive that the conventional oil and gas industry is in grave trouble. The impact on our company will ultimately have a significant impact on your company as well.

These are the reasons that we formed the Pennsylvania Grade Crude Oil Coalition. PGCC's members are refineries, suppliers and oil and gas producers from all across the conventional oil

and gas footprint in PA. We are opposed to the one-size-fits-all regulations. The Mission of the Pennsylvania Grade Crude Oil Coalition is to advance local economies and energy independence by promoting shallow oil and gas production in a safe and environmentally sound manner.

The founding members believe that PGCC fills a unique niche, namely, a laser focus on the issues associated with the development of new conventional oil and gas wells in Pennsylvania. PGCC's focus is different than other organizations. Many of the PGCC founding members are also members of PIPP, and PIPP continues its valuable work in the "patch"-especially with regard to legacy wells. The majority of PIPP's membership is not involved in new well development. PIOGA's work in the patch is also valuable and many PGCC members are also members of PIOGA. However, much of PIOGA's effort is devoted to unconventional oil and gas issues. With greater well pressures, much larger site and resource needs, different development and production techniques, etc., unconventional wells are very different than conventional, and should be thought about and regulated differently. (478)

Response: See response to comment 2627.

2681. Comment: Thank you for the opportunity to address you this evening. I am the President of Generations Forestry, Inc. Generations Forestry, Inc. is a forest consulting company located in Kane, McKean County, Pennsylvania. Generations Forestry, Inc. is involved in the forest management of approximately 250,000 acres of forestland, mostly located in Northern Pennsylvania.

I was born and raised in Kane, Pennsylvania and chose to move back to Kane shortly after graduating from Penn State. The area I live and work in has been providing natural resources since the time of settlement.

In practicing forestry in this resource-rich region for over 30 years I have worked with many conventional oil and gas producers. Though I have not gotten along with all of them all of the time, I can honestly state that I never felt that one of them got out of bed in the morning with the intention of harming the environment. They all want to produce a resource desired by society.

I have worked diligently with oil and gas producers throughout my career in reducing the impact of resource extraction on the environment through smaller, better placed well locations and access roads. I am concerned that if the proposed rules are implemented the landscape will experience more disturbance. I believe the rule implementation will require a larger footprint on the landscape, causing a larger and longer overall impact that has been historically experienced.

I urge you to reconsider implementing the proposed rules. I also urge you to separate the regulations on conventional drilling from the regulations of unconventional drilling. Unfortunately time does not allow for more detail. However, I will make myself available at the committee's request for a more detailed discussion. (804)

Response: The Department acknowledges the comments. The Department disagrees that the requirements in Chapter 78 and Chapter 78a will result in an increase impact on the environment. The Department believes that the revisions to Chapters 78 and 78a provide appropriate protections for public health and safety and the environment. See response to comment 2627.

2682. Comment: You have already received a letter dated February 4, 2014 from Senator Hutchinson and signed by 14 other legislators. We represent the area of western Pennsylvania, known to us as the Pennsylvania Oil Patch.

This is due to the indisputable fact that this area, particularly Titusville, Crawford County, where Colonel Edwin Drake drilled the world's first successful oil well, is the area where modern oil and gas exploration production began more than a century and a half ago. It is the well that saved the whale!

Before I begin my testimony, I want to particularly thank my neighboring legislative colleague, State Representative Marty Causer, for all his efforts to make sure that the Board scheduled a hearing in the middle of Pennsylvania's Oil Patch, the home of our conventional producers, and not only in the areas of the Marcellus Shale..

Again, as most of our expert testifiers will no doubt repeatedly emphasize, today, the conventional oil and gas industry is not just part of our heritage, but also continues to have significant direct and indirect impacts on our local and regional economies.

When Act 13 was being considered for passage in the General Assembly, I and other legislators were given assurances from the Governor's Office, and the leaders in the Republican House that the regulations following the legislation would not affect our conventional wells. As a legislator, my intent was never to see legislation pass that treated both conventional and unconventional wells alike in the regulations.

Unfortunately, many of these proposed regulatory and legislative changes do not adequately account for the significant differences between conventional and unconventional development- and are thus threatening the future survival of this 150-year-old homegrown industry that fueled a worldwide industrial revolution and yielded the Pennsylvania Crude that allowed America to triumph in two World Wars.

Unlike well-funded and established multinational corporations – most of which are developing unconventional Marcellus Shale formations in a safe and responsible manner – smaller conventional operators, many of which are still operating within our surrounding Allegheny National Forest, and western Pennsylvania are primarily multigenerational, mom-and-pop, family-owned small businesses.

Since Pennsylvania's Regulatory Review Act now requires the consideration of alternatives for small businesses, at minimum, the Department of Environmental Protection's proposed Act 78 regulations impacting oil and gas activities should be revised in a manner that establishes alternative technical requirements for smaller conventional operations that produce a few gallons of crude oil or natural gas on a daily basis, as opposed to Texas-sized barrels destined to fill a Super Tanker. Unnecessary for conventional shallow well drillers, but could very well represent a death sentence for this near-exclusive mom-and-pop industry.

While I appreciate the opportunity to testify against these proposed regulations that will so significantly impact an industry that has blessed the regions we represent with considerable economic benefits, I am even more proud to stand 110 percent behind our independent oil and gas producers in the battle to get government out of the way so that our rich industrial heritage can continue to grow and thrive throughout the 21st century and beyond. (1180a)

Response: The Department acknowledges the comment. As part of this rulemaking, in response to comments and recent legislation (the Act of July 10, 2014 (P.L. 1053, No. 126)), the Department split Chapter 78 into two separate Chapters – one for conventional oil and gas wells (Chapter 78) and the other for unconventional wells (Chapter 78a). The purpose of this

amendment to the final rulemaking was to clarify the different requirements for conventional and unconventional wells. The Department believes that having two completely separate regulatory Chapters should serve to eliminate any confusion about what requirements apply to conventional and unconventional wells. In addition, having separate Chapters allows the Department to craft regulations to match the environmental risks posed by each segment of the industry (compare, for example, section 78.56 and section 78a.56, which contain significantly different requirements for temporary storage at conventional and unconventional well sites, respectively).

2683. Comment: I am a 5th generation oil producer. I have worked my entire life in the oil fields of Pennsylvania. I have pumped conventional oil wells with rod lines and powers and I have pumped unconventional Marcellus wells with electronics, automated valves, and monitoring equipment. Other than the fact that both are a hole in the ground, there is much not else in common between the two types of wells. From the drilling to the production they are totally different.

I respectfully ask this board to recommend that either a separate set of regulations or a sub section within the new regulations be established to separate conventional from unconventional wells. There are thousands of conventional wells already drilled here. Some of the wells I produce are over 100 years old. They're here, drilled, fracked, or shot. In many cases they have produced countless barrels of oil and mcfs of gas. It makes no sense to crush the operators of these wells with added costs associated with regulations that are unnecessary and in many cases complete overkill. If anything by making these existing wells unprofitable the department would in all actuality be doing more harm than good to the environment as many of these wells fall into disrepair or potentially be abandoned. The citizens of Pennsylvania have an interest in keeping our existing wells profitable and operating.

Second, we all know that the elephant in the room is the responsible disposal of production water. It is my belief that this issue along with many others facing operators and the Department can only be resolved by both parties working to come up with responsible solutions that both parties can live with. Furthermore, I would request that the board recommend that a Pennsylvania Grade Crude Development and Advisory Council be established. This group should be comprised of conventional well operators and Department people who will be charged with developing plans to increase Pa crude production in order to more adequately supply our refineries and to explore and develop responsible, economically viable production water disposal options.

Third, it is my belief that the board should advocate allowing on site disposal of drill cuttings for conventional wells in the drilling and particularly the reworking of existing wells. By sand pumping and reworking existing wells we are able to extend the life of the well with minimal impact to the environment. The pit size and slope also need to be specified as smaller for conventional wells. There is no reason for the changes that are being proposed.

In conclusion I believe it is critical for Pennsylvanians to protect their own. The people working on conventional wells in this state live here. Our industry is 150 years old and the area in which it started was drilled without any regulation, more crude was spilled than shipped to market yet today it is a magnificent state park enjoyed by many. No one is suggesting that no regulation is needed, however the people of this industry only request that we have a set of regulations that allows us to stay in business and produce Pennsylvania crude for another 150 years. (1002)

Response: See response to comment 2627. The Department established the Conventional Oil and Gas Advisory Committee in March 2015 in order to have an advisory group that is specifically focused on conventional oil and gas development issues. Chapter 78 allows for onsite disposal of drill cuttings when certain criteria are met (see § 78.61).

2684. Comment: My name is Samuel Taylor and I am impacted more than most over all of the EPA and DER Regulations.

First off I lost my job and livelihood due to lies told by the EPA which they later admitted that they falsified the reports. That didn't give us back our jobs did it? Being a driller I have worked out in the field for years. The regulations are to the point of being a dictatorship of government. The safety regulations are very tough and that is not the problem. The purpose of new laws is wasting taxpayer money! If you would use common sense you would see that the laws that are in place are enough.

As far as drilling goes the only danger to anything is a fuel spill, a flash over, or a fire which we as experienced hands are trained to handle. There is more danger to the men working. If people would go see what is going on, they would see it is safe for the environment. If everyone is out of work why are we having a meeting? Make up a committee from the workers that are out of work that has experience on a drilling rig and let them help. They will be able to give input and raise any questions or point out any problems instead of the government stepping in with someone who was never out on the locations being in danger of the rig being hit by lightning during a storm, which has happened or tripping in or out of a hole when you hit big gas and taking the chance of causing a spark and the rig explodes, as this has happened to my family and I lost my cousin, not to mention working in subzero temperatures and getting frost bite. See there are other things we need to worry about. I don't understand why we are having meetings like this when all the area gas and oil companies are out of work.

We need no more regulations. We need to get back to work. Someone needs to review the rules and regulations and they will see that they are very strict. Everything we put down in the hole is environmentally safe as put forth by the government already. I have firsthand knowledge of this, which is more than people who sit behind a desk and say this is how it should be. They need to understand how the things are in the real world. Please read the laws and you will see that there are enough laws on the books. LET US get back to work and LET US make a living for our families. That is the real world. (1004)

Response: The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2685. Comment: Currently the Pennsylvania government is in the process of changing many of the regulations which dictate our operations. Many of these regulations are seen by the oil and gas industry as unfounded and would have a negative lasting effect on all oil and gas operations within the commonwealth. As an independent producer of oil and gas, BLX Inc. and Redmill Drilling are deeply concerned what type of impact these new regulations would have on the landowner and their families.

Many Blx Inc./Redmill Drilling employees live and work in the communities in which we operate. The oil and gas industry has been a vital part of the development and success of the surrounding communities for decades. We have always placed compliance with regulations at the utmost importance when conducting our operations. Placing such a high priority on the environment as well as working with landowners and regulating agencies has allowed us to

build a lasting relationship with the communities and its members. The financial pressure that these new proposed regulations impose has the potential to diminish the success that has been established over many years. By applying new and costly regulations, the cost effectiveness of operating in the commonwealth would come in question.

Overregulation has become a serious issue within the industry, and has already compromised many operations throughout the commonwealth. Many of the proposed regulations have not taken the landowners futures into account. As a landowner, your opinion has, and always will be an important voice that needs to be heard throughout the independent oil and gas community.

BLX Inc./Redmill Drilling has prepared letters for landowners, business associates, employees, and stake holders to sign and mail to the board currently reviewing these regulatory proposals. If you feel that the oil and gas industry is a vital part of the economic growth of your family, commonwealth and nation, and over regulation will hamper the progress of this growth, please read and sign attached letter. BLX Inc. respectfully requests that you mail this letter to the reviewing board expressing our/your concerns. (1007)

Response: The Department acknowledges the comment. The commentator has provided no information supporting its assertion that the oil and gas industry is “overregulated.”

2686. Comment: DEP should review and revise its regulatory proposals and must provide clear direction from the central office to the regional offices where discretion should be exercised to avoid the unnecessary imposition of costs and burdens to conventional operations, which have been a core Pennsylvania industry for over a century. Regulations developed for unconventional oil and gas operations are often inappropriate for conventional operations and impose a disproportionate regulatory burden on small businesses oil and gas regulations, one size does not fit all.

In the long history of oil and gas production in Pennsylvania, the overall environmental impact of conventional wells, from construction through production to plugging, is minimal. Conventional operations, however, have been caught in the crossfire of increasing unconventional drilling activity in Pennsylvania. Public anxiety about the potential impacts of hydraulic fracturing has caused the rush or impulse to regulate - indeed hyper-regulate – this development activity.

Here are some recommendations to ensure the viability of the conventional oil and gas industry in Pennsylvania.

DEP should restructure Chapter 78 to separate those regulations that apply exclusively to unconventional operations.

Given the stark differences in the nature of conventional shallow oil and gas activities and operations compared to unconventional oil and gas development, DEP should structure Chapter 78 in a manner that clearly identifies and separates the provisions that apply only to unconventional operations and activities. Many of the new provisions in Act 13 focus on the operations and impacts of unconventional well development. For example, Act 13 provides for specific requirements for unconventional wells related to: permit application notification requirements and comment opportunities, notifications to DEP, water management plans, site location setbacks, presumptions of impacts to groundwater, containment requirements for unconventional well sites, record keeping requirements for flow back, air emissions, inspections and penalties. These provisions do not apply to conventional operations and any Chapter 78 rules to implement these new provisions could easily be placed into a new separate subsection for unconventional wells.

This would assist the industry in understanding its compliance obligations, and would be helpful to both DEP staff and the public as well.

The current effort to revise Chapter 78 for the implementation of these provisions creates the ideal opportunity to segregate the rules that apply only to unconventional operations. If not done in the current rule revision, this task will be much more difficult in the future.

Conventional production should be allowed to comply with Section 78.88 as it is written, and categorically excluded from the new MIA program, for all the reasons stated above.

In summary, now is the appropriate time to restructure Chapter 78 to separate regulations and policy for conventional and unconventional oil and gas wells. It is vitally important to not impose undue financial and regulatory burdens on the conventional operators. This will allow these small independent companies to prosper and in turn will allow companies like Drake to grow and prosper. (413a)

Response: The Department acknowledges the comment. See response to comment 2627. Changes to section 78.88 to remove conventional production from the Mechanical Integrity Assessment program is beyond the scope of this rulemaking.

2687. Comment: I represent the 3rd generation of a Pennsylvania Family owned and operated Conventional gas producer. We were established in 1972, but have been in the energy business for 60+ years. We operate in over 10 counties in the Commonwealth of Pennsylvania. I've spent the last 15 years with the Family business (all my life around the natural resource industry).

I have had the privilege to attend two of the DEP hearings over the past few Months and I've listened intently to what was said. It is simply clear, that the DEP doesn't need to re-invent the wheel. The current regulations for conventional wells are very comprehensive. I can say with confidence that our company has always prided ourselves on 1. Safety of our workers, 2. Conservationism, and 3. Abiding by the rules and regulations, utilizing best practices. I believe I can speak for all Conventional producers by simply saying that this is our lifeblood. We do not produce natural gas and oil because we have to, but because we choose to.

In recent past, the Commonwealth has been introduced to the Marcellus Shale, which has brought significant job and economic growth to the area. The Marcellus Shale operates on a different economy of scale compared to the Conventional wells that have existed in Pennsylvania for over 150 years. An analogy that is used to compare regulations is similar to building a house vs. building a Super Walmart. The Home builder/Contractor (Conventional Wells) has a significantly smaller environmental impact compared to the Super Walmart (Unconventional Well) during construction and operation. The regulations in place for each are different. I agree that there needs to be prudent regulations for both Conventional and Unconventional wells, but they are not the same nor should they be treated the same.

There is no evidence of a systemic regulatory failure, requiring regulatory change.

The Gas and Oil Act of 1984 was developed to provide sound regulation to the Conventional Well industry, which also demonstrates a clear benefit to both the Conventional Industry and the Environment. There is nothing wrong with the current regulations as they pertain to Conventional wells and further regulation is unnecessary. For example, 78.57 ("Unless the tank is surrounded by a fence, tank valves and access lids shall utilize locks....."). Folks, vandalism will occur if a

person(s) chooses to do so. I simply do not follow the logic behind this proposed regulation; if someone wants into the tank, they can easily cut the lock. They can also hook a chain up to the tank valve itself and pull it off with a motor vehicle. Maintaining costs on Conventional wells is vital for continued growth and sustainability for a small business, and added nonsensical regulation creates economic burdens that cause significant strain.

The current regulations are prudent and are working efficiently. Please consider removing Conventional Wells from the proposed Chapter 78 regulations. (714)

Response: The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. See response to comment 2627.

2688. Comment: There have been numerous comments submitted by conventional drillers both during the TAB subcommittee meetings this summer and more recently at every EQB hearing statewide. The rulemaking information that I reviewed stated specifically that there are only 6 sections of the regulation specifically pertaining to conventional operations. Upon further review of these sections, it is apparent that these are needful due to situations experienced in our Commonwealth. While it may be true that these regulations pertaining to conventional drillers are on the coat tails of unconventional drillers, that by no means indicates they are not needful. A review of conventional drillers indicates a spirit of complacency towards the environment in general, and a certain laissez faire attitude whose time is now appropriately at an end. Thirty years' experience with The Oil & Gas Act of 1984 indicates where regulations need tweaking for the conventional drillers. We urge that no alterations be made to lessen the effectiveness of these specific provisions. (660)

Response: The Department acknowledges the comment.

2689. Comment: Section D of the Preamble to this rulemaking relates to background and purpose. It notes the following: 'The 2012 Oil and Gas Act contains new environmental protections for unconventional wells and directs the Board to promulgate specific regulations. For these reasons, the [EQB] initiated this proposed rulemaking.' (Emphasis added.) Commentators representing the conventional oil and gas industry believe this rulemaking will have a serious negative impact on their businesses. While we understand that EQB has the authority to amend its regulations relating to conventional wells, we ask for a detailed explanation of why more stringent regulations for the conventional oil and gas industry are needed at this time. Has EQB witnessed an increase in environmental mishaps or violations from conventional well operators? What problem is EQB attempting to correct through this proposal with respect to conventional wells? (1099)

Response: See response to comment 2627.

2690. Comment: There seems to be a ground swell growing to separate the conventional gas and oil regulations from the unconventional operations. I want to add my vote to encourage this possibility. The proposed new regulations impose requirements on the conventional operations that are excessive and inappropriate and do little to add to the protection of the environment. Shortly you will see proposed new regulatory language to this end and I am proud to have played a part in the drafting of that language. (606, 606a)

Response: See response to comment 2627.

2691. Comment: I am here today to testify on behalf of myself and as a member of the PA Grade Crude

Oil Association or PGCC regarding the proposed rulemaking of Chapter 78 under the Oil and Gas.

I have a one person public and government relations firm that also provides business development services to a natural gas wastewater treatment provider. Through that client I am a member of PGCC and the PA Independent Oil and Gas Association (PIOGA). As a member of PIOGA, I serve as the Subcommittee Chair on Water, Waste Management and Recycling as part of the Environmental Committee and have had the honor of attending the Oil and Gas Technical Advisory Board (TAB) Workgroup public hearings on Chapter 78 on behalf of PIOGA.

I have great respect for both DEP and the industry and commend them both on the thousands of man hours that have gone into this proposed regulation to get it to this point.

PGCC was formed last summer in 2013 by ~20 producers and refiners of conventional oil and gas to advance local economies and energy independence by promoting shallow oil and gas production in a safe and environmentally sound manner. Why form a new coalition, especially when there already other associations? The founding members were concerned about burdensome regulations being proposed and implemented by the DEP. The regulations make no sense in the context of conventional oil and gas development; the cumulative financial burden of the regulations will drive most conventional operators out of business.

Most folks know that oil was first discovered in PA, but what they don't know is what all PA Grade Crude Oil can be used for.

According to Wikipedia, "Pennsylvania Grade Crude Oil is a type of sweet crude oil. It is found primarily in the Appalachian basin in the states of New York, Pennsylvania, Ohio, and West Virginia, and takes its name for the state of Pennsylvania, where it was first extracted.

Pennsylvania grade crude oil can be broken down into gasoline, kerosene, fuel oil, gas oil, wax distillate, cylinder stock (or bottoms) and other refined products such as white oil and paraffin. Pennsylvania grade crude oil when seen in reflected sunlight has a green color and under ultraviolet light looks fluorescent.

Pennsylvania grade crude oil is thermally stable and has a high viscosity index. It is generally free of asphalt and has only trace amounts of sulfur and nitrogen. It is also high in paraffin and other waxes making it highly desirable for refinement into petroleum lubricants such as motor oil. Its products are also valuable for use in certain hydraulic applications. By-products are commonly found in consumer goods such as cosmetics, and topical ointments.

Products refined from this type of oil are particularly prized as lubricants and many oil companies prominently display the fact that they use Pennsylvania Grade crude oil in their products.

Bradford, Pennsylvania is major center for the refining of Pennsylvania grade crude oil." (Emphasis added)

How many folks know that paraffin can be used in chocolate candy and is the coating on M&Ms so they don't melt in your mouth.

When Act 13 of 2012 was being adopted by the legislature, most of the conventional operators were under the impression that very little of Act 13 would affect them. However, these regulations will have a major impact on these small, family companies.

Here are a few of the impacts:

- 1) Cost. The Independent Regulatory Review Commission (IRRC) released Regulatory Analysis Form that outlined some of cost associated to both conventional and unconventional operators. The industry feels that this report and DEP's cost analysis are very low and in some cases state that there are no costs. For example,
 - a. The IRRC RAF states that the identification of abandoned and orphan wells would be zero. The industry feels that it not true due to having to compile reports and possibly gain access to landowners to conduct surveys which all cost something, including man hours.
 - b. The report also allocates approximately \$2,000 to replace old buried tanks; whereas industry estimates cost could reach possibly \$75,000 depending on the situation.
- 2) Size and scope: The size of a conventional operation is much smaller than unconventional operations; such as a few water trucks instead of thousands, small pits versus large pits; well sites that are a fraction of the size of large 5 acre well sits.

PGCC Plans on submitting more formal comments. In summary, I want to thank the EQB and DEP for holding these hearings and the opportunity to present testimony. (636)

Response: See response to comment 2627. The Department has updated the regulatory analysis form to reflect the final form rule. Costs for the items listed have been revised for greater accuracy.

2692. Comment: Before the Marcellus, Chapter 78 there was only conventional operators. Now parts of the regulation apply to both and other parts only apply to one or the other. It is important to note that conventional drilling is on much smaller scale. I once heard a legislator at a press conference state that the same regulations should not be applied when building a single dwelling house as you would to a large retirement home. There are many sections which there is no distinction thus resulting in further confusion and unfairness, such as Sec. 78.57 Control, storage and disposal of production fluids. This section requires specific slope pitches to impoundments that do not make sense for a conventional operator as the well pads are much smaller than unconventional operators. (636a)

Response: The Department acknowledges the comment. See response to comment 2627.

2693. Comment: The "conventional" oil and gas industry should be subject to the proposed regulations. There are currently more than 129,000 conventional wells classified as "active" by the PADEP. This industry is also responsible for tens of thousands of orphaned and abandoned wells throughout the Commonwealth. Many of these wells are leaking gas and contaminated water. The proposed regulations would, in most cases, exclude application of best technology advances for conventional wells. Like unconventional wells, conventional wells use chemicals, water resources, disturb land, produce polluting waste, and require reservoir stimulation (including use of hydraulic fracturing in some cases). Conventional wells have also been involved in spills, accidents, and contamination (e.g., from methane migration). (1068)

Response: The Department acknowledges the comment. See response to comment 2627.

2694. Comment: I have approximately 33 years' experience in the oil and gas industry. However, despite that background, I comment here as a concerned citizen, rather than as a representative of the oil and gas industry. This is because I own no interests in conventional oil and gas properties or wells, I have no direct investments in the conventional oil and gas industry, none of my children or near relatives are employed in the industry, and please note that I am near retirement age, so my

personal financial situation does not depend on the health of the conventional industry. (In the interest of full disclosure, I do own a fractional OGM interest in a small, unleased recreational property in Crawford County, PA, that is marginally prospective for Utica Shale development, not likely to occur in my lifetime.)

It is my hope that the proposed regulations that are the topic of this comment will be withdrawn with respect to the conventional industry for two simple, yet vital reasons:

1. In order protect the economic interests of the hard-working owners, management, and employees of the industry.
2. To uphold the rule of law that is under assault in this country by progressive elements that are hostile to the concept of individual freedom and self-determination.

With respect to the economic interests: Raising the costs of developing and operating conventional oil and gas wells will cause many wells to not be drilled and will lead to the premature plugging and abandonment of many existing wells, this at a time when it is ever more apparent that every barrel of oil and cubic foot of natural gas is vital to our national security and to our economic prosperity. The seismic-scale ripple effect of crippling this industry will be felt in the homes, shops, offices and other businesses throughout the small communities of the conventional industry.

A case could be made that this would, nevertheless, be necessary if there was abundant evidence that the modern conventional industry was wreaking environmental havoc on these very communities. But there is no such evidence; indeed, many operators voluntarily plug the abandoned wells of previous generations at their own cost (and liability, I suspect) in order to re-develop an area.

The DEP has the resources, the data, and the man-power to determine that there is no need for the proposed regulatory over-kill, but apparently has not brought these resource to bear to arrive at an efficacious solution to avoid applying a one-size-fits-all solution, to a problem that does not exist.

With respect to the rule of law: The vast majority of the businesses operating in the conventional industry are by definition small businesses. It is enough to simply state that the Regulatory Reform Act, requiring such regulations to be reviewed in the light of their effect on small business, has been ignored. This is not acceptable to a populace whose elected officials have passed that Regulatory Reform Act into law, with the expectation that it will protect our vital economic interests from the regulatory excess evident in these regulations before us. To ignore the Regulatory Reform Act is to dis-enfranchise those who provide the resources to fund state agencies and other state government entities. (1051)

Response: The Department acknowledges the comment. See response to comment 2627 regarding bifurcation of the final rule. See response to comment 2800 regarding the Regulatory Review Act and Regulatory Analysis Form.

2695. Comment: The small producers of our association have been subject to an avalanche of changing regulations over the past several years such as pending revision to Chapter 78 in 2010, passing of Act 13, impact fees, raising bonding amounts, raising permitting fees, expansion of permit application requirements for ESCGP 1 and 2 and road construction, no land disturbance until a permit is issued, mechanical integrity assessment, spill policies and now Chapter 78 regulations for Oil and Gas wells.

The ability to drill new conventional wells will be reduced due to increased costs resulting from

these regulations. Existing wells will be less profitable to operate and abandoned early. The result will be a loss in crude supply to the refineries which currently operate at less than capacity. Jobs will be eliminated and affiliated business, free gas consumers, and royalty owners will be impacted.

The conventional wells need separate regulations that are considerate of a 150 year old industry with a wide spectrum of well construction techniques, a limited margin of profit yet a significant economic benefit to the Commonwealth.

We operators have operated these legacy wells in a respectful manner considering the environment. This environment is our work place and where we live our lives.

I urge you to vote NO to these proposed regulations and allow conventional wells to operate under the effective regulations in place before the passage of Act 13 of 2012. (998)

Response: See response to comment 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2696. Comment: PA crude has health benefits. PA crude is used to make many petroleum based ointments. Strict regulations will make reduced production of PA crude which in turn affects jobs of many people. I am asking today to please take the time to realize the impacts that these regulations put on the conventional wells will have on our family as well as many others. I encourage you to work with PIPP members to find solutions that enable the PA petroleum based crude producers to thrive for future generations. The decisions that you make from what you hear today, will directly affect thousands of people, and what their future holds for them. I hope that your recommendations will have positive outcomes for all involved. (994)

Response: See responses to comments 2456 and 2627.

2697. Comment: Like the farmer's son who had to work on the farm when he was growing up, I had to work in the oil field. I said I will never work at this greasy, heavy tight work. But here I am 55 years later and I love it. But I would like it better with less ridiculous regulations. Such as act 13 and these regulations that we are here to discuss tonight.

One of today's shallow oil operator's greatest challenge and greatest operating expense the proper management and disposal of produced water. Regulations, like the TDS rule and the regulations we are here tonight to discuss, continue to change making operations in the shallow oil patch more and more difficult and more and more expensive. As a governmental body it is unreasonable and inappropriate to continue telling our industry what they cannot do without offering input to what we can do to meet the environmental objectives of the Department. As an example we have a low flow lease sized NPDES permit pending with the DEP that meets all of the existing rules and regulations and after 159 days the Department has offered no response and no action. We are trying and trying hard to adjust to new requirements, but the Department has to do their part and assist this industry. This is just one simple example of the State creating obstacles with no attempt to assist a struggling industry and the proposed changes to the Chapter 78 regulations will significantly worsen this situation. We have \$5000. In advertising and engineering fees to this date and going nowhere it seems.

Please, give some serious thought to what you are doing to the shallow oil industry in Pennsylvania and seriously consider the written comments I will send to the EQB today.

It seems the DEP no longer uses the slogan to develop the resources of the Commonwealth with reasonable environmental protection. (996)

Response: See responses to comments 2456 and 2627.

2698. Comment: Small businesses like ours have drilled and operated conventional wells without incident under the current regulations that have been in effect for the past thirty years. This is why it is so difficult to understand why the DEP proposed revisions to Chapter 78 C to include the conventional oil wells. (445a)

Response: See responses to comments 2456 and 2627.

2699. Comment: My name is Alex Grubbs and I operate a service rig for Cameron Energy where I have been an employee for 5 years. On behalf of my family, the other Cameron employees, and for the benefit of our town, I ask that any new regulations that affect my industry be thought out carefully before they are proposed. I don't think that careful process has happened here.

I have taken the time to read the DEP's cost estimates. They are far off. I have been on hundreds of new well locations and I can tell you that we take pains to squeeze our work on to a small site so that we only make a small disturbance. The new regulations would require us to have huge pits. The DEP doesn't give any reason for this and I can't think of any good reason myself. What we have now works well although what the DEP proposes will cost a huge amount of money and will tear up land that doesn't need to be disturbed.

In another section the new regulations would make us give 3 days' notice before closing our pits. We take pride in rigging down and reclaiming the location the next day after a frac job. Usually by noon the pit is closed and by the end of the day the rig is on the next location and the prior location is ready to be seeded. If you make us wait 3 days what will we do while we wait for the inspector? The equipment will sit idle. It will cost thousands of dollars in lost labor and idle equipment. But the DEP report doesn't include any cost estimate for this.

What the DEP has proposed will cost much more than what they say. But apart from the cost what I really have to ask is WHY? Why are they proposing changes to our regulations? What I do out in the woods every day isn't broken. A lot of our wells are in the Allegheny National Forest or right by streams or in the middle of nice stands of timber. The streams run clean and the trees are healthy. Our natural resources have to come from somewhere. We are successfully harvesting those resources right here in a county that is still a beautiful and healthy place to live.

The truth is that there are not problems that need fixed. What has happened is that everyone has seen the big well pads and all the trucks running the roads for the unconventional wells, and there has been a panic reaction. The proposed regulations are being applied to both conventional and unconventional wells without stopping to think about the differences between the two industries. And there are big differences.

But I have to think about myself and how I am going to support my wife and me. So I'm here asking you to think about me and the other 22 employees at my company. We're in the conventional oil and gas business and I'm asking you to think about how much these new regulations will cost the conventional oil and gas business and whether any of these new regulations are necessary. It will be the most important decision you make in my life. (985)

Response: See responses to comments 2456 and 2627. Pits must be removed or filled in and

stabilized within 9 months from completion of drilling. Pits used during servicing, plugging, and recompleting a well must be removed or filled within 90 calendar days of construction. The Department needs to be notified three days prior to construction of a pit with a footprint of 250 square feet or greater. This requirement does not appear to affect the concerns of the commentator because the concerns raised were that three-day notification requirement would be to close out a pit that is not the case in the revised final-form rulemaking language.

2700. Comment: Company Clarify the fact these is only (1) Penn-Grade Refinery operating in the Commonwealth. Tonight represents the last scheduled EQB Public hearing held in the Commonwealth concerning the proposed changes to DEP Chapter 78 regulations. To date, hundreds of individuals representing both sides of the issue have testified. I have confidence, the EQB; during its final review of the documented testimony will separate the emotional testimony from the factual testimony. For the record, I would like to review and call to your attention some of key issues that have been presented in earlier testimony.

How many times during the testimony have the industries (Conventional and Unconventional) been identified as a single industry? How many specific references have been directed at Penn-Grade Oil Shallow well production? How many directed their remarks specifically toward the Shale Gas Production Industry?

A great deal of testimony has been presented about the economics of Conventional Oil & Gas Production. The cost of well drilling, the production technology, maintenance of oil gas production and the return on investment for the Conventional Industry has been presented over and over. How much testimony has been submitted that defines the same parameters for the Unconventional Industry?

There has been a great deal of testimony directed toward environmental impact or environmental consequences. Does that testimony reflect an adequate understanding of the (2) industries? Are the obvious differences from an “environmental footprint” and “risk assessment” clearly understood?

Much has been said during the testimony about the economic well-being of the Conventional Industry and what it means to Commonwealth’s Producers and the Commonwealth’s last remaining Penn-Grade Refiner. Is it clearly understood that those that represent the Penn-Grade industries ...the individuals that have already addressed the EQB and those that are here tonight, Pennsylvanian’s. Take a good look at the Producer’s that are here tonight. They provide family sustains jobs, they invest in our Communities, They provide Leadership to many Boards and Charitable Organizations in our Communities and they support our Schools and on and on. Call on the Producers to stand up.....These individual’s “DO NOT” represent “Big Oil” They are simply hard working Pennsylvanians.

It is extremely important that the EQB acknowledge and consider these important issues in the final review process of the testimony. To those that have presented testimony (on both sides of the issue), it should be clear, to all involved, the proposed changes to Chapter 78 Regulations cannot be enacted or administered to regulate the “Conventional Oil and Gas Industry” and the “Unconventional Gas Industry” alike.

In closing, I would like to quickly identify an area of Economic Impact that has not been presented to date. We have talked about the Economic Impact of over- regulation will have on our Penn-Grade Producer’s, on our Refinery and our Communities, but we have not identified the economic impact a reduction in Penn-Grade Crude will have on the market’s that our Refinery supplies. We produce 60 million gallons commodity fuels (Gasoline, Diesel and Home Heating Oil) annually. We produce 25

million gallons annually of finished lubricants (Engine Oil, Hydraulic Oil, Gear Oils and other General Lubricants). We produce 80 million gallons annually of Specialty Products (Solvents, Naphtha's, Waxes and Process Oils) that are used in various manufacturing processes or upgrade by other manufacturers to consumer products. The decline in market availability of these products will certainly have a negative impact on the markets we supply.

Finally our focus going forward (those on both sides of the issues) must be directed toward identifying and implementing reasonable solutions, not over regulation and not the indifference that currently exist. (614a)

Response: See response to comment 2627.

2701. Comment: In the northwest section of PA shallow oil and gas wells are drilled. The oil and gas companies and other associated businesses employ well over 100,000 people. They are all working together helping PA go and grow!!

Now the PA DEP has a mission to destroy the shallow oil and gas companies along with associated businesses by enacting rules and regulations that are impossible for local oil and gas companies to abide by. Four out of seven selected hearing locations are not near shallow oil or gas fields. You would think the PA DEP was controlled by Far East Oil Countries. (971)

Response: See responses to comments 2456 and 2627. The Department extended the original 60-day comment period an additional 30 days and added two additional hearings in oil and gas drilling regions. There were a total of nine hearings across the state and seven were held in counties with drilling activity including Crawford, Warren, Indiana, and Washington Counties.

2702. Comment: I am here today to lend support to the Conventional Oil Producers. My connection to this industry began with my maternal great-grandfather who was an employee of South Penn Oil in West Virginia at the turn of the 20th century. My paternal grandfather worked for Struthers Wells not long after immigrating to the United States. In 1906 he married my grandmother and moved to Bradford to raise a family. He first made his living as a butcher, but most of his working life was spent recycling bull rope, collecting it with horse and wagon, and then selling it to Gold Medal Flour where it was used to make flour sacks. His sons, my father and uncle, evolved the business into an oil field rigging and hauling business. My father and uncle were joined by my brother after he completed high school. This oil-affiliated business supported our families comfortably for 55 years, all fourteen of us.

My personal affiliation spans a nearly 30-year period working for the Kendall brand name as a secretary, lab technician, and purchaser of laboratory supplies. For the past ten years I've been an employee and volunteer for the Bradford Landmark Society, a non-profit historical organization, becoming more aware of the importance of Pennsylvania-grade crude oil and the role of the conventional oil producers. Newspaper articles, books, and files, as well as face-to-face contact with conventional producers confirm this.

It's been my honor to become acquainted with these producers, witness the respect they have for the area in which they work and live, and to know first-hand the good they do for the community. They work long hours to supply local refineries with high-quality crude. They shop local stores. They support non-profit organizations. They attend local churches. They are family, friends, and neighbors.

Their production is on a much smaller scale than non-conventional producers. We're talking gallons vs. barrels. That's a significant difference. Conventional well sites have a smaller footprint and far less impact on the environment than non-conventional well sites, several hundred square feet vs. 5-acre tracts. Imposing one-size-fits-all regulations on small producers would hinder them at best, but drive them out of business at worst. These proposed regulations are akin to being punished for a crime not committed.

Don't fool yourself. The loss of these conventional producers will affect you. Where will the refineries obtain the high-quality crude they need? The refineries pay good wages, but if there's no crude, there's no refinery throughput, and there go the jobs. Stores, restaurants, local businesses will all suffer. Our local economy already has enough challenges. Please do not impose these regulations on conventional producers. (982)

Response: See response to comment 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2703. Comment: I want to talk about schools because our school district has already been forced to make unprecedented cuts to our educational and extra-curricular budgets. In the last 3 years the school district cut its extracurricular funding by % and the community now has to raise half the money. Who in my community is currently paying to field my football, basketball and track teams? I personally invite the members of this board to come and see for yourselves whose names are on the banners in my gym, and on the fence around my football field. It is the banner that my family's business paid for. It along with the other banners all around it were paid for by the other small businesses in our communities; businesses that are interwoven with our families business and represents the independent "can-do" spirit that has made our country the best place in the world. No business should have to deal with unreasonable regulations, but unreasonable regulations are particularly hard for a small business.

I call the regulations unreasonable because they are fixing a problem that doesn't exist. Our towns in the oil region are surrounded by thousands of conventional wells and at the same time we are also surrounded by the highest percentage of high- value trout streams in the state. The majority of the wells around this community were drilled in the last 30 years under Act 223. The most remarkable change during the last 30 years is that the water quality in the streams surrounding our communities has increased in and around our part of the state. This is just one way the conventional oil and gas industry has already demonstrated we are adequately regulated. If the unconventional oil and gas industry had not moved to Pennsylvania, we would not be here tonight. Act 13 would have never been created or adopted and my future would not be in peril. Please refuse to be a part of these misdirected, unneeded, and very damaging regulatory controls. The regulations that were in effect before the unconventional industry came to Pennsylvania already contained some of the strictest environmental standards in the United States. These new regulations are not needed to protect my family, neighbors, and friends. What is needed is to have you vote "no" so our communities can be protected from these devastating regulations. They were drafted for the unconventional oil and gas industry, but they are not needed for shallow conventional operators who have already provided the environmental stewardship necessary for the sustained beauty you see all around you.

Take a look for yourself at the job my family and the other shallow operators have done. Where is this horrible list of irreparable damages that Pennsylvanians will pay for, for generations? You must possess such a list to be willing to unleash such life-changing and damaging regulations on my family, community, and me. The Regulatory Review Act requires the DEP to protect my future and our small family business by providing alternatives or even exemptions to new regulations that they

propose. This was not done and I am asking YOU, the leaders whom we kids depend on to rule fairly and impartially, to be a good example and comply with the existing laws of Pennsylvania. If you would do this, it would allow my family to continue to operate safely and profitably. Why can't you allow small conventional operators to operate under the proven regulations provided by Act 223 until separate appropriate regulations can be legally drafted and approved, if needed?

I learned in school that this shallow conventional oil and gas industry provided oil that saved the whales in 1859. The natural gas it has provided saved our trees as we used it as the fuel source to heat our homes. We need our shallow conventional industry to be strong, now, more than ever; it is helping to save our schools in my community. (981)

Response: See response to comment 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2704.

Comment: I grew up 1

mile south of the world's first oil well, Drake Well. As I grew up I spent a lot of quality time in the beautiful Oil Creek valley that flows from Titusville, Oil City and then into the Allegheny River. The Oil Creek and Allegheny River valleys became the beginning and home of most of the nationally known oil companies and refineries. The discovery of oil at Drake's well changed the world and fueled the industrial revolution. It enabled us to become the most powerful nation in the world!

The Oil Creek valley oil rush was so intense that the hillsides were covered with oil derricks, dead trees and no vegetation, just oil soaked ground.

As I was growing up 85 years later, nature has healed this valley. It is a lush, beautiful valley with abundant wildlife and great fisheries. It healed with no assistance from a DEP or EPA. It healed because Penn Grade crude is not tar based like most oils, but paraffin based. The same materials we use to make creams, lotions and basic candles. Western and Mideast oils are tar based and their residue is used to make tar products and black top coating for our roads.

As a young boy, fishing for brook trout was an exciting adventure. When you find brookies the environment is good. The forest, land where we spent our days was filled with rod lines and oil tanks.

When oil prices were very low, the industry would diminish and then return again when oil prices increased. This industry has been here for 153 years and our wildlife and fisheries are healthy! As world oil prices have risen and the oil industry has grown, the Marcellus shale gas fields have sprung up across much of PA. As this has become the world's largest gas field, PA was forced to pass legislation to regulate the Marcellus production and establish rules to protect the environment.

The original Penn Grade Crude producers tried to be exempted and should have been totally exempt. The regulations that are moving forward and in many cases being imposed on the traditional oil & gas industry will eliminate them is not pulled back. It is vital to develop separate rules and enforcement for the Penn Grade Crude industry. We have 2 refineries that depend on them for crude. The refinery in Bradford needs more crude not less to run wide open as refineries are designed to run.

It is time for PA government to develop a comprehensive energy policy to expand and produce the

abundant energy resources we are blessed with. We need policies and regulations that will allow us to grow the volume of Penn Grade crude to allow our refinery to grow and flourish. We need a strong partnership between industry and the state to develop affordable solutions for the production fluids that are generated.

If PA is smart and fair with all energy producers, rural PA can rebuild its weak economy and produce jobs for our unemployed. Everyone can benefit from sound and wise use of our natural resources. (973)

Response: See response to comment 2627.

2705. Comment: I am a fifth generation descendent in a Penn Grade Crude producing family and have lived among the oil wells all my life. My paternal grandfather came to Bradford in 1880 from Butler County and worked ten years for an oil company before beginning to purchase oil property for himself. He and his three sons, my father including, loved nature. To them, part of the joy of the oil business was working outside in the woods, enjoying the lush forests and the wildlife. They produced oil responsibly and always with the goal of keeping the woods clean and safe. Now, over 120 years later the lease is still being operated, in the same clean, responsible way that was the tradition of my family and like the independent producers of today, many of whom are right here in this very room. We are not big oil nor millionaires, but people trying to make a living and a legacy for their families by working in an industry that has given so much to the community, the state and the world and including the following areas:

- a. **Jobs:** We have a refinery here that has operated for over 140 years. ARG buys our oil, refines it, and in the process provides jobs to between 400 and 500 people. They are also involved in much philanthropy in the area, doing good for others and helping to make the community a better place. The oil producers provide many more jobs to individuals with all kinds of skills in addition to purchasing products from local businesses. If the independent producers would be forced to shut down, then the refinery will not have oil to refine, many people would be unemployed and the area would die.
- b. **Products:** You can't get up in the morning without using something made possible by a petroleum product - I have here a list of such things - products used in all areas of life: clothing, textiles, medical, household, kitchen, health and beauty, transportation (did you drive to this meeting??) home furnishings, sports, hobbies and games, and on and on. I invite you to look carefully at this list.
- c. **Patents:** At the museum several years ago, we did a study of patents that came out of the Bradford Oil Field - we have five, three-inch binders containing such patents. Many more gifts to the world.

Tonight we are here because of regulations - regulations that some think should be applied to all oil and gas producers equally. The Marcellus and Utica shale industry is a totally different type of operation and should not be equated with the shallow oil producing industry. Marcellus drilling goes 5,000+ feet below the earth's surface and is done by large oil companies with budgets in the millions. Their well sites take up large areas. The independent, conventional oil producers, on the other hand, have budgets in the thousands and very small well sites and cannot afford, nor do they need, the same regulations. To force the conventional producer into the same category as the Marcellus would destroy them and the area we live in.

You who worry about damage to the environment - think about this. Oil was discovered, not by a well, but by a seep. The first so called oil producers found oil on top of Oil Creek, sopped it up with blankets and wrung them out into a bucket. It was found in the creek and you can't blame oil

producers for that one! Oil is a fossil fuel, it comes from the earth.

If you want to worry about a drop of salt water, maybe you should worry about all the salt they put on the roads in winter, then the plow comes and pushes snow and salt into the ditches and the streams. That is more than a drop of salt water that is salt!

I live on a piece of property that one time had oil wells, but you wouldn't know it. I'm very healthy, the ground is clean, and the flowers and trees flourish.

In closing, I would like to say that I am proud of this industry and what it has done to make life better for all of us. I am proud of the people in this room who continue to produce oil in a clean, responsible way and I am proud to support them. I respectfully urge you to separate the conventional oil producers from the regulations applied to the Marcellus Shale industry. (920)

Response: See response to comment 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. Finally, brine and salt applications to roadways during winter weather is appropriate to ensure protection of public health and safety.

2706. Comment: If the Chapter 78 Regulations are applied to the conventional well operators, our survival will be in jeopardy. Since we rely 100% on these companies for our existence. Many of the conventional companies are family owned business and not multimillion corporations. And that will be forced out of business due to the added costs of complying with the new regulations. The economy of many northwestern communities would also be severely impacted by these regulations. Conventional operators have been complying with the Oil and Gas Act of 1984 for last 30 years and in that time not much has changed in the way these types of wells are drilled and produced. Shale wells are totally different animals and need different set of regulations. (917)

Response: See response to comment 2627.

2707. Comment: I am 57 years old. My brother is 59. We have worked with this awful oil and gas since we were 7 years old. My father is 88 years old. He has worked with it for about 80 years except for the time he spent overseas fighting for our country. He still goes to work every day. A friend of ours is 82 years old and still working. He has fracked over 8,000 wells in his life time. Between all the oil field workers in this room there has been another 5,000 to 10,000 wells fracked. We are all still healthy except for life's normal little problems that come with age.

I keep hearing at these meetings that we only do this for the money. May I ask why you environmentalist go to work every day? I am pretty sure without doing a study that you go to work for money to support your families. Yes we do it for the money to support our families, but we also take great pride in doing our jobs and protecting the environment. Remember we live here and also have children.

Almost everyone in the conventional oil and gas industry were born and lived most of their lives in Pa. We work in and around the towns where we were born and raised. We have a vested interest in the environment in Pa. Most of the people in our industry also love to hunt and fish. We don't have to travel to another state to do that, as we have the best hunting and fishing right where we are working.

Oil and gas are not found everywhere in the world. There are 19 states in the US that have no oil.

We must take advantage of these resources whenever we find them. We are extremely lucky to have these resources in our state.

Some of you are probably wondering what this thick book is I have been holding. It is a copy of the Pa. Department of Environmental Protection's Oil and Gas Operating Manual. I would say that we have had a lot of regulations written for us already!

The conventional industry should not be included in these regulations. Before I finish I would like to read the first sentence of the DEP handout for these hearings.

In 2012, Governor Corbett signed the 2012 Oil and Gas Act (chapter 32, act 13 of 2012), which significantly revised Pennsylvania's oil and gas laws to address unconventional well development in the Commonwealth. We should not be in these regulations! (863c)

Response: See response to comment 2627.

2708. Comment: I present this on behalf of Gas and Oil Management, of Warren, Pennsylvania. I want to address just a few of the issues surrounding the DEP's proposed Chapter 78 regulations. Upon review, it is apparent that one simply cannot fit needed regulations for both conventional and unconventional drilling into the same box.

I have spent most of my life working around our shallow oil and gas wells. Through high school, I worked summers, as much as possible, doing whatever tasks I could. I now work full time in areas of drilling, stimulation and maintenance. Our small family business, and dozens of others just like it have maintained a tract record of environmental stewardship, proving our dedication to protecting our environment, communities and homes.

Regarding the idea of separating regulations of the conventional from the unconventional, one has to ask why it is necessary, and how they differ. The two industries have striking differences, such as, the amount of ground disturbed, the vast difference in production pressures and volumes, even the drilling and stimulation techniques are very different. There are also significant differences in the area of controlling any integrity problems that could possibly arise. We all remember BP's Macondo well that blew out in the Gulf of Mexico in 2010, as I read these proposals; it appears that a catastrophe of this nature is trying to be avoided. Everyone involved must know that if the Macondo well was like the World Trade Center of oil wells, than the unconventional wells being drilled in our state would be like our capitol building, and the shallow conventional wells something like an Amish shed. Obviously, the same building codes are not needed or applicable for each. Economically, the proposed regulations would be nothing less than crippling to our industry. (897)

Response: See response to comment 2627.

2709. Comment: I have been employed directly and indirectly in the Oil and Gas Industry since I graduated high school in 1978. Out of those last 35 years, I have been employed by some of the most highly respected oil producers in the Warren area, L. Geer and Sons and Mead Oil for example. I have had the privilege of providing services for local operators and producers in the Warren area as well.

I also have been privileged to live on the pristine Allegheny River for the last 28 years, and I would like to emphasize the phrase pristine. In the 1990's, 90 miles of the Allegheny River was designated as a Wild and Scenic River, and I presume that is due to its pristine nature.

We have had Cabella's hold National Walleye Tournaments, National Canoe and Kayak Tournaments, and the Tidioute Fishing Tournament that have been very successful for many years. The Allegheny River also happens to run right through the heart of a region that has been known for the most productive area of fossil fuel extraction in US history with its extensive deposits of coal, petroleum, and natural gas.

Many people feel that the conception of the Oil and Gas Act 223 of 1984 is the reason our environment is in the condition it is today. I disagree, it may have played a role, however I believe this is an industry of self-regulating. This industry is geared by highly educated, hardworking Individuals. This industry has been here for many years and has always given thorough consideration to our environment and to their surrounding communities.

With the vast amount of testimony given on the technical aspect of how the chapter 78 proposed regulations will have devastating effects on our Industry, the future impacts it will place on our economy and sustainable jobs in our community, and the incredible loss of tax base depended upon by our municipalities, I will show how this effect has already began.

Waste Treatments Corporation's annual revenue increased an average of 30% between 2000 and 2010. During this same period wells permitted in the Northwest Region increased 67%. This average has taken into consideration and reflects the decrease of wells permitted due to the ANF conflict of interest with the Oil and Gas industry between 2007 and 2010. During 2000 and 2010 Waste Treatment invested an average of 9.4% of gross revenue annually in our facility.

During the period of 2010 to 2013 WTC average annual revenue decreased by 13%. During this same period average wells permitted decreased to a negative 18%. Waste Treatment employed 27 people during 2010 and, in 2013, WTC unfortunately now employs only 23 with the potential to layoff some truck drivers and possibly plant operators. WTC now has 23 employees mainly due to the hiring of office personnel to handle the additional administration concerns that these regulations have established. We have reduced our plant operations from 3 shifts 5 days per week to two shifts combined to cover 12 hour processing time. WTC now has by appointment only weekend deliveries. Under our NPDES permit we are required to add additional equipment at a great expense in order to continue processing waste waters from the oil and gas industry. WTC has committed to doing this upgrade in order to maintain employment and serve our customers as they have served us.

The impact of the new regulation has already begun in the North West region of Pennsylvania. These regulations will not improve this situation and I have yet to see how it will improve environmental concerns when there have been very insignificant impacts on the environment. I don't believe in the proposed regulations and they do violate the small business act which hasn't even been taken into consideration by the State. There are answers to these problems and they can be solved. It will not be simple but it can be accomplished. PGCC is committed to make change as well as PIPP and PIOGA. As I have quoted in the past, for the future of the oil and gas Industry to survive, FAILURE IS NOT AN OPTION. (896)

Response: See responses to comments 2456 and 2627. The revisions to Chapters 78 and 78a are consistent with applicable regulations and statutes and provide appropriate protections for public health and safety and the environment. Chapters 78 and 78a do not address NDPES discharge requirements.

- 2710.** Comment: We employ about 30 people who provide complete oil and gas field excavation. Our services include water hauling, well hookups and moving and setting up frack and drill rigs. We also provide support crews for frack and drilling operations.

Over 98% of our work involves the oil and gas industry. We service new wells or existing wells; we cut trees, build roads, lay gravel, install culvert pipes, install E and S control systems, hydroseed and mulch all disturbed areas, dig ditches, lay and fuse pipes together, hook up all risers, set jacks, plumb wells and build tank batteries.

It is obvious that the proposed regulations are going to hurt the conventional oil and gas business. I operate excavation equipment for a living and I can tell you that the requirement to slope pits 2 to 1 will cost thousands of dollars at each new well site because we will have to clear more land and move more dirt. This doesn't make any sense because the current pits are very small and work just fine. It would seem like the additional excavation would be good thing for my business, but when the additional costs lead to fewer new wells being drilled, then everybody loses.

We also have a Sister Company that makes Water and Oil Tanks. The proposed regulations talk about changing tank lids so they lock. This would mean drilling or welding on existing tanks. You can't safely weld or drill on an existing tank that has oil in it because it could explode. For each tank it will cost thousands of dollars to clean out the tank so it can be welded or drilled. And why do the regulations require this? If you're worried about safety, the openings on the top of the tank are purposely made small so that people can't fall in. And if you're worried about trespassers, then a lock or a fence isn't going to keep out somebody who wants to do harm. The biggest risk to a tank is somebody shooting it.

These new regulations will add hundreds of millions of dollars of costs to the conventional oil and gas industry. I read the DEP's estimate of costs. There's no mention of the cost of the pits. The DEP's estimate for tanks talks about new tanks but forgets to include the costs of changing all the existing tanks. And tonight I only talked about tanks and pits. There are lots of other costs in these new regulations that I don't have time to talk about.

It is obvious that these costs are going to mean fewer new wells and the retirement of some of the existing wells. That means less work for my company. How many employees are going to lay off? How many pieces of equipment am I going to have to sell to financially survive? And when I lay off these employees then how do they buy groceries, support their children, pay their mortgage and put fuel in their vehicles? How will the lack of work effect local businesses?

None of these serious impacts are discussed in the DEP estimate. Before new regulations are passed the costs need to be understood. The DEP has missed many of these costs. This process has to go back to the drawing board because the documents you have in front of you aren't adequate for you to balance the costs with the benefits. (895)

Response: See responses to comments 2456 and 2627.

2711. Comment: By conventional I refer to shallow vertical oil and gas wells of the type first drilled by Colonel Drake in Titusville, some 150 years ago.

Conventional wells are different, in many respects, from the unconventional shale wells. It is fair to say that Act 13 and the proposed regulations is a direct product of the advent of unconventional wells. In that discussion, however, there has been little note taken of the differences between unconventional and conventional wells. As a result, the proposed regulations contain consequences that, at best, are inappropriate for conventional wells, and, at worst, will put many small businesses out of business.

Conventional well sites are 35 times smaller and require far fewer truck trips than unconventional operations. A conventional well is drilled through a few feet of oil and gas bearing strata; a horizontal unconventional well is drilled through thousands of feet. An unconventional well, in one day of production, can produce more natural gas than 100 conventional wells can produce in a year.

I am not pointing out these differences to say that conventional wells are safe and that unconventional wells are not. To the contrary it is the PGCC's position that both industries can operate safely and responsibly. But I point out the differences to underscore that the regulations that govern the two industries must be thought about differently.

Nevertheless, the proposed regulations overlook many costly impacts to the conventional industry. For example, in discussing the cost of installing locking valves and lids on tanks the DEP's regulatory analysis fails to consider the cost of converting the tens of thousands of tanks already existing in the conventional industry. One cannot weld or drill on these existing tanks without the risk of explosion. Thus each of the tanks will have to be emptied and filled with water or inert gas in order to make the required conversions. The cost of this overlooked conversion exceeds \$300 million.

The cost of the regulations must be balanced with the benefits to be gained. The conventional industry stores small amounts of fluids; these fluids are different in composition than fluids used in the unconventional industry. The 150 year history of conventional oil and gas does not support the need for this sweeping new regulation-especially at such extraordinarily crushing cost.

Another requirement of the proposed regulations is that all pits be constructed with a 2: 1 horizontal to vertical slope. Again, the use of pits is very different between conventional and unconventional wells. A conventional pit is used to store only a small amount of fluid-usually 50 to 100 barrels-and is in use for just one or two days. Conventional pits are constructed with vertical walls thus helping maintain a small site of operations.

The new requirement would expand the pit size by 10 times on a level area and up to 100 times where the slope is 40%. There is no environmental benefit to be gained-in fact the increased pit size increases the area which must be covered by a plastic liner-thus increasing the chances of puncture and failure.

There are many more examples that demonstrate the proposed regulations are out of balance with the environmental requirements and the economic realities of the conventional oil and gas industry. Those economics are significant. The conventional industry directly contributes \$3/4 billion to Pennsylvania's economy.

I work in that conventional industry as a roustabout, and my job and the jobs of the 21 other people I work with in my company are all put in jeopardy by the extraordinary cost of the proposed regulations. Working in that industry every day I can testify to you that conventional operations have a small impact on the environment. Every day we work beside high quality trout streams and some of the finest timber and hunting areas in the state. What we are doing is working.

The proposed regulations are far out of context with what is necessary. The DEP's analysis of those regulations does not properly describe or analyze the harmful impact to our conventional industry. And even though required to by law, the new regulations do not consider alternatives for small businesses.

To address this PGCC submitted a white paper during the TAB hearings held in the summer of 2013

which white paper outlined numerous problem areas not properly analyzed. PGCC and its members will also submit additional written comments and economic analyses, in this process, concerning the impact to the conventional oil and gas industry. (892)

Response: See responses to comments 2456 and 2627.

2712. Comment: I am a senior at the Smethport Area High School and the Daughter of one of the owners of Howard Drilling. My father's business has been drilling, fracking, and producing conventional oil and gas wells in the heart of the Allegheny Mountains for last 50 years. He is the 4th generation to work in the industry and I am hoping my brothers will be 5th generation.

Many of my fellow classmate's parents are dependent on the Oil and Gas business. The small communities where my dad and his family live depend on the jobs that Howard Drilling provides. Good jobs with benefits. Howard's have always been supportive of the community whether it may be for fund raising activities or monetary contributions for our local Fire Department, schools, boy scouts, food pantry, etc. Our employees in turn support the local supermarket, coffee shop, restaurants, bank, hair dressers, auto supply store, hardware store, and gas station.

Let's talk about this country and its dependency on energy. What is Energy? Gasoline, what gets me to school, you to work, produce to grocery stores, deliveries inventory and parts to shops and businesses for repairs and maintenance, powers our lawn mowers and snow blowers, deliveries our internet orders, enables our emergency personnel to respond, etc. Natural Gas, we depend on this highly efficient source of energy in order to heat our homes, run generators to provide electric to our homes, schools, hospitals, nursing homes, and public buildings. Crude oil, provides numerous by-products to make our tires, asphalt, motor oil, makeup, plastics for packaging everything from milk to medicine, helmets, sports equipment, and toys, I could spend the good part of today just listing by-products of crude oil, many of which we take for granted My point being, none of us would be in this building now, if we weren't dependent on energy. This very building and its contents would not be here without energy. If the water freezes, we had no heat right now, or there was a fire, who would you call? How would they respond? Horse and buggy? I don't think so.

We need to preserve the conventional oil and gas industry, not add more regulations. To include the conventional wells with the proposed changes to Chapter 78 is just not fair. Even I, still being a student, can clearly see that there is difference between the conventional and unconventional wells. Not only are the size of the location for a conventional well considerably smaller, but the equipment and manpower necessary to build and perform the drilling and completion operations, are a whole lot smaller scale compared to size of a unconventional wells locations. Needless to say, the production of our conventional wells is a fraction of what unconventional wells have produced. How can an operator of a conventional well pay for these new mandates? They clearly can't, these mandates will cripple my families' business and further harm our struggling community.

Being that I will soon graduate, I am looking forward to continuing my education, I am a firm believer that education is our key to energy independency. It's hard for me to believe that the liberal environmentalist in the south east part of Pennsylvania are so brain washed by their society, that they actually think by cutting a tree or seeing a pump jack or a tank in the woods is a threat to our environment. We need to be taught to think independently, not what some celebrity has been publicly preaching. I'd like to know what degree or what constitutes some of these celebrities to be experts on the environment.

Our for-fathers were all entrepreneurs; they built this country with blood, sweat, and tears. There were no rules or regulations. With all of the regulations we are faced with now, there's no incentive

to young adults to be adventures and try to make in their own. If the Environmental Quality Board continues to treat the conventional wells the same as the unconventional wells, we will move backwards. I strongly urge that the proposed regulations be rewritten and separate these clearly two different types of wells, not just for the sake of my family's business, but for the families that depend on companies like ours to supply them with steady, good paying jobs, for my friends who plan to join the Oil and Gas industry, and most of all for the blue collar men, who work long hard days to provide us with the energy that our lives run on. (882)

Response: See response to comment 2627.

- 2713.** Comment: I would like to commend the Pennsylvania Department of Environmental Protection (PA DEP) and the industry representatives for all of the hard work and long hours expended to get these draft proposed regulations to this point. However, it is apparent that there are significant improvements and modifications that need to be made to various portions of the proposed rulemaking. I will be submitting a detailed comment letter prior to the end of the 60 day comment period.

There is a significant difference between conventional and unconventional well drilling and stimulation operations. The land disturbance footprint, waste management activities and water usage on conventional well sites is significantly different and entails a small percentage of activity in comparison to unconventional operations. Industry representatives met with PA DEP officials on numerous occasions to discuss the fundamental differences in these operations and the impact the proposed regulations would have on the conventional oil/gas operator, yet the Department has not adequately addressed this issue.

The proposed Chapter 78 revisions pose a significant financial impact to conventional and unconventional well operators without a justified environmental benefit. The initial cost benefit analysis regarding these draft revisions indicates that the cost calculations are very much understated and would create far reaching impacts, especially to the traditional, small conventional operator with limited available staff.

The Department references forms for completion within the proposed regulations. These forms should be provided for review as part of this comment period. During the TAB workgroup meetings in 2013, there were four significant issues of concern that were discussed - public resource protection, protection of water supplies, abandoned and orphaned well identification and waste management on well sites. Although there were significant discussions between the work groups, there were no changes made to the draft regulations as a result of those meetings. (880)

Response: See responses to comments 2456 and 2627. The Department plans to have all necessary forms, guidance documents, and procedures available at the effective date of the rule making.

- 2714.** Comment: The founding members of Pennsylvania Grade Crude Oil Coalition were concerned about the burdensome new regulations that were being proposed by the DEP and the effect it was going to have on their business. The vast majority of conventional operating wells in this state are drilled and operated by small, local, young companies just like ours. In many cases they are also family owned businesses.

Prior to and after Act 13 was passed, the conventional operators like myself were told that the Act would have little or no effect on us. In an effort to regulate a new and quite different unconventional industry, we are being forced to comply with regulations that were crafted to

deal with unique, challenging issues associated with the drilling and development of unconventional wells.

These proposed regulations will impose a disproportionate regulatory and economic burden on small businesses such as my own and other conventional operators. In oil and gas regulations, one size does not fit all. If the DEP does not provide for separate, appropriate regulations for conventional wells, the majority of conventional operators here in PA will be forced to shutter their businesses, to sell or plug and abandon their wells. If that occurs, it will not only affect the owners of those businesses, but their employees, suppliers and subcontractors will also suffer unnecessary negative economic impact.

We can say with great certainty that tens of thousands of lessors will no longer receive monthly royalty checks or be provided with free gas for their homes. It may be \$100 check but it's a grocery bill.

When the proposed revisions of Chapter 78 sub part C, came out last summer, it was readily apparent the regulations did not take into consideration the stark differences between conventional and unconventional wells. A typical conventional well pad is 20 to 30 times smaller than that of an unconventional well. This is why conventional well pads are usually less than half of an acre and unconventional well pads are five acres or more.

The wellbore of conventional well stimulation extends a few hundred feet into the oil and gas bearing strata that is stimulated rather than thousands of feet involved in unconventional well stimulation. This accounts for the quantitatively different equipment and water requirements of the unconventional industry.

Lower commodity prices coupled with ever-increasing regulatory costs and uncertainty of regulations has already resulted in a dramatic decrease in conventional well development. The number of conventional wells in PA has declined steadily over the years.

Please bear in mind that most of these conventional wells in PA were drilled by Small PA businesses that don't have the option to pack up and move to the Permian basin or the Gulf coast where economics may be better. In the long history of oil and gas production in PA, the overall environmental impact of conventional wells, construction through production and plugging have been minimal. You can see wells around everywhere, school yards to hospital compounds. Conventional operations get caught in the crossfire of increasing unconventional drilling activity, public anxiety about the potential impacts of hydraulic fracking and the rush or the impulse to regulate this new, unconventional development activity. (1203)

Response: See response to comment 2627. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2715. Comment: These new chapter 78 regulations the way they are now written will destroy the conventional oil and gas business.

I would like to read to you the first sentence of the DEP handout given at these hearings. In 2012, Governor Corbett signed the 2012 Oil and Gas Act (chapter 32, Act 13 of 2012), which significantly revised Pennsylvania's oil and gas laws to address unconventional well development in the Commonwealth. I believe that sentence alone says it all. The conventional operators were not meant to be in these regulations. But here we are, fighting to save our industry because we were included in

regulations that were not written for are industry!

The conventional industry should never have been included as we are not a new industry. We have been here for over 150 years. Our two industries both drill wells but we are completely different. The conventional industry drills shallow vertical wells, the unconventional industry drills deep horizontal wells. Their drill cuttings have contaminates in them, ours don't. They have very high pressures in their wells, ours don't. The unconventional frac job sometimes uses 100,000 bbls of water. The conventional frac job uses about 1,000 bbls. The amount of traffic going to and from a Marcellus drill site and frac job is about 50 to 1 compared to a conventional well that is being drilled and fraced.

The well site for an Unconventional well is around 5 acres. A conventional wells site averages 100 feet long by 50 feet wide. We leave a very small environmental foot print. I would like to tell you that we support the Marcellus industry but we should not be regulated the same way.

In 2010 the conventional industry had 7,280 operators of oil and gas wells in Pa. There are over 100,000 oil and gas wells in Pa. Most of these wells produce less than a bbl of oil a day. But when you take the sum of them all, they produce quite a bit of oil.

The year 2011 is the most current year that I could find for production records for conventional wells in Pa. We produced 2,270,500 bbls of oil and 249,323,980 (mcf) of natural gas. A study done in 2008 said the Pa. conventional Oil and Gas industry supported more than 26,000 jobs and generated over \$7 billion each year, with an additional \$200 million in annual royalty payments to land owners.

These conventional wells produce Penn Grade Crude oil, which is the best lubricating oil in the world. There are two refineries that refine Penn Grade Crude oil. One is in Bradford Pa. and the other is in West Virginia. American Refining Group in Bradford is the oldest continually running refinery in the world. They now are operating at 2,000 bbls a day less than they would like because of a shortage of oil. Fewer wells are being drilled because of Act 13 and now these chapter 78 regulations are going to make things impossible for conventional operators to drill new wells and operate the older wells.

Most of the 7,280 conventional operators will also be put out of work. The jobs lost from companies that deal indirectly with the conventional industry will be many times that in people out of work. What the conventional industry is asking for is to revert back to the regulations of the 1984 Oil and Gas Act and have our own inspectors. The Marcellus industry should have their own regulations and inspectors. The reason we are asking for separate inspectors is there are too many regulations to learn and enforcing the right regulations to the right industry would be complicated. On behalf of the conventional operator I am asking the Environmental Quality Board to not pass these regulations as they are now written. (863)

Response: See response to comment 2627.

2716. Comment: We are nearly two years removed from passage of Act 13; a law that has since been partially invalidated by the Pennsylvania Supreme Court, directly affecting elements of this regulatory proposal. PEC recognizes the extensive challenge set before the Department in fulfilling new protections afforded by the law while also meditating on the Court's decision.

Nonetheless, we are far better off with promulgation of the expanded protections contained in this rulemaking than to further delay action. We urge the Department, after carefully considering public

input, and with due regard to the Supreme Court's decision with respect to the import of the Environmental Rights Amendment, to finalize this proposal.

Without question, the Department will need to promptly revisit its regulations when the Courts conclude their adjudication of the law. But we should not sacrifice critical improvements that have been under review now for almost two years.

As part of a broader examination of Act 13 and its implementation after the decision of the Supreme Court, we again question basing the distinction between conventional and unconventional operations – and the application of differing protection standards – solely on a depth of extraction. The risks of hydraulic fracturing are arguably greater in shallow formations. While the Department may not have liberty at the moment to revisit this distinction in protection standards, we should be prepared for such reassessment pending resolution – whether legislative or judicial – of the law. (997)

Response: See responses to comments 2580, 2627 and 265.

2717. Comment: Applying Best Technology to All Oil and Gas Wells. In several cases, the proposed regulations require industry to use standard best technology and operating practices only for unconventional wells. This means, the more stringent best technology advances would apply only to natural gas wells drilled and hydraulically fractured into geologic shale formations below the base of the Elk Sandstone. (See § 78.1 for the definition of “unconventional formations.”) The proposed regulations would, in most cases, exclude application of best technology advances for “conventional wells” (oil wells and gas wells that are drilled into shale formations above the base of the Elk Sandstone and oil and gas wells that are drilled into all other geologic formations).

There are currently more than 129,000 conventional wells classified as “active” by the PADEP. Like unconventional wells, conventional wells use chemicals, water resources, disturb land, produce polluting waste, and require reservoir stimulation (including use of hydraulic fracturing in some cases). Conventional wells have also been involved in spills, accidents, and contamination (e.g., from methane migration). Due to the inherent risks involved in all stages of oil and gas development, these requirements should apply to all wells, or the EQB should explain why they do not and provide data and analysis to demonstrate that conventional wells do not carry environmental risks that warrant implementation of an updated, best-practice-based regulatory structure. (1143)

Response: See responses to comments 2456 and 2627.

2718. Comment: The Department must conduct its required small business review before submitting a comprehensive regulatory proposal to EQB.

All of the concerns noted above, including the cumulative economic impact of rules for which the costs exceed the benefits, are of particular concern to small businesses in Pennsylvania, including hundreds of conventional well owners and operators.

In June 2012, the Pennsylvania General Assembly amended the Regulatory Review Act to expressly recognize that small businesses are critical to Pennsylvania's economy and that uniform regulatory and reporting requirements can impose unnecessary and disproportionately burdensome demands-including legal, accounting, and consulting costs-upon small businesses with limited resources. Act 76 of 2012, Act of Jun. 29, 2012, P.L. 657, No. 76.

Accordingly, in any new rule proposed, the Department must consider:

- i. the establishment of less stringent compliance requirements for small businesses,
- ii. the establishment of less stringent schedules or deadlines for compliance or reporting requirements,
- iii. the consolidation of compliance or reporting obligations,
- iv. performance standards to replace design or operational standards, AND
- v. the exemption of small business from all or any part of the requirements contained in the proposed regulation.

There is no indication, express or implied, of the incorporation of any of these considerations in the proposed rule. It makes little sense to propose a rule that has not yet considered or adequately provided flexible regulatory approaches for small businesses in accordance with the law. This analysis must be a part of the proposed rule so that small businesses and the public at large have the opportunity to review and comment on all proposed accommodations. (1172)

Response: See responses to comments 2456, 2627 and 441.

2719. Comment: Our average cost to drill a conventional well is \$67,000 and our annual operating costs are \$40,000 per year. We have drilled an average of two wells per year for the last three years and expect to drill 6 wells in 2014. It has come to my attention that the Department of Environmental Protection (DEP) has proposed changes in regulations affecting the oil and gas business. We are very concerned that there is not enough distinction made in the new regulations between conventional and non-conventional wells. (84)

Response: See responses to comments 2456 and 2627.

2720. Comment: New conventional-well completions are down from more than 4,500 in 2007 to fewer than 1,000 this year. This decline has resulted in less investment in our industry, fewer job opportunities and significant declines in revenues. These declines have impacted the overall economy at state and local levels, and certainly have had a negative impact on the generations of dedicated employees that have supported this industry for more than 150 years.

There are already appropriate and adequate regulations for conventional wells that provide effective protection for the environment. (85, 127, 417, 465, 611, 614, 615)

Response: The Department acknowledges the comment. See response to comment 2456.

2721. Comment: The new Chapter 78 regulations should not be passed into law until the conventional producers are excluded. Small producers cannot afford to comply and will be forced out of business which will affect many other business in our community including ours. Please take the time to consider the impact on our community. (86)

Response: See responses to comments 2456 and 2627.

2722. Comment: The regulations as proposed will have a drastic effect on the conventional well industry operators, as well as landowners. The implementation of said regulations will further lead to a vast negative economic impact state wide from the extinction of revenues, jobs, and opportunities generated by and associated with said industry. It is my belief that the current regulations are more than enough to adequately address any environmental impact concerns. In fact, I challenge you to review environmental impact data pertaining to conventional well drilling and dispute the fact that conventional wells have been and remain environmentally safe under former and current regulations.

I understand the need for further regulations for the shale gas plays, but you must understand and consider the ramifications of “cookie cutter” regulations that will render conventional drilling a thing of the past.

I believe it is your responsibility to embrace and regulate the future development of the shale plays while preserving and affording the conventional well operators and all ancillary businesses the opportunity to remain viable, responsible, contributors to the State of Pennsylvania as well as to the surrounding regions, as they have been for well over a century. In closing, I ask that you vote “No” to the proposed regulations as to conventional well operations. (83)

Response: See responses to comments 2456 and 2627.

2723. Comment: As a daughter of an oil-field contractor and a citizen with nearly 30 years’ experience as a petroleum laboratory technician, I oppose the proposed changes to the oil and gas regulations now being considered by your board.

My support of the local oil and gas producers has always been strong and, now, as a historical researcher with the Bradford Landmark Society, I am more keenly aware of the importance of these conventional producers to this region. These individuals operate in our communities, live in our communities, support local causes, and are good environmental neighbors.

Shallow wells have existed in this area for well over 150 years. Their environmental impact is minimal, yet the proposed regulations would treat their operations the same as the non-conventional wells which have 5-acre sites, many times larger than conventional well sites. The proposed regulations would be harmful and too expensive for the shallow well operators to comply with.

Our local economy is already suffering; we can’t afford to lose millions more. Without our local oil and gas producers, we lose jobs and lose production needed for our refinery to operate.

Please vote “NO” on the proposed changes to regulations as they apply to conventional oil and gas wells and allow shallow wells to operate under the regulations in place prior to the passage of Act 13 of 2012, and instruct the DEP to apply changes to non-conventional, deep wells ONLY. (390, 993)

Response: See responses to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2724. Comment: In my earlier years I worked in the shallow oil fields of Pennsylvania and since retiring from the Presidency of the University of Pittsburgh at Bradford, I have had the occasion to visit two new shale-gas wells (unconventional). Since there is virtually no comparison in activity and scope, it is illogical to have one set of regulation. In addition, the current set of regulations for conventional oil and gas, work effectively to protect our environment. In my experience, the best policy is “If it is working do not change it”, which certainly applies to the conventional environmental rules. Maintaining these and not adding additional rules will enable our oil and gas industry to survive and provide necessary energy and good paying jobs for the region.

Please do not apply unnecessary rules and cause more economic decline to an already struggling region of the Commonwealth. (395)

Response: See responses to comments 2456 and 2627.

2725. Comment: I lease my land for oil and gas development; I receive royalty payments for production from conventional oil and gas well. It has come to my attention that the Department of Environmental Protection (DEP) has proposed changes in regulations affecting the oil and gas business.

I understand that these new and modified regulations will unnecessarily increase costs for oil and gas companies, and will be particularly costly for companies operating conventional oil and gas wells. While the regulations will significantly increase costs, the regulations will not result in significant environmental benefits in the conventional oil and gas industry.

The oil and gas industry is vital as an economic engine as well as a job supplier. As a taxpayer, I rely on the money I receive from the oil and gas development on my property, especially during these difficult economic times. The increase in costs for the oil and gas industry directly affects my financial situation and will ultimately lessen my income. Ironically, under existing regulation the conventional oil and gas industry has had a minimal impact on our environmental resources. Why do the new regulations make such significant changes to the conventional oil and gas industry?

I strongly oppose these new regulations. In addition to causing severe economic harm to the oil and gas industry, they will have detrimental effects to the community as a whole. More regulations, at a time when the economy is so unstable, is reckless and will only damage our economy further. And, all of these negative consequences will result from new regulations that will bring insignificant environmental benefits.

For these reasons it is important that these new regulations not be passed in their current form. Please vote "NO" to the current regulations until they are altered to account for the economic well-being of the Commonwealth of Pennsylvania. (84, 88, 144, 131, 132, 171, 452, 481, 493, 495, 576, 598, 642, 1131, 2378 - 2469, 4559 - 4581)

Response: See response to comment 2456.

2726. Comment: I believe the burdensome and negative requirements these proposed regulations would have on conventional oil and gas (shallow well) production in our wonderful Commonwealth, would have a detrimental impact on the many responsible individuals who are involved in the Commonwealth's conventional oil and gas production/refining businesses. I believe these negative impacts will severely hurt individuals from the supply chain, oil and gas producer's, refiner's, all the way down to the local communities that rely on these businesses for their very survival. Shallow well producers have emerged from over 100 years of production activities to be exceptionally responsible and respected stalwart protectors of the natural resources that the great Commonwealth of Pennsylvania enjoys. (91)

Response: See responses to comments 2456 and 2627.

2727. Comment: The new Chapter 78 regulations should not be passed in to law until the conventional oil producers are excluded from them. The intent of Chapter 78 regulations was for the Marcellus Gas industry and would cause great harm to the conventional oil producers of PA. The regulations would in fact, in all probability, put the small conventional producers out of business. These small producers are the backbone of our rural economy and supply our one refinery with the oil it needs to stay open. Please take a look at the Chapter 78 regulations from a logical point of view and you will see that they are inadvertently harmful to our small oil producers of our region. (94, 455, 561, 593)

Response: See responses to comments 2456 and 2627.

2728. Comment: I would like to voice my opposition to proposed changes to the oil and gas regulations. The proposed changes would be very detrimental and too costly for local producers that have been taking care of local wells for years. We can afford to lose any more jobs and loss of production vital to our local refineries, and the millions they put into our communities. Please vote no on the proposed changes to the regulations for grandfathered shallow wells. (141, 4672 – 4680)

Response: See response to comment 2456.

2729. Comment: I am a concerned citizen and am writing to voice my opposition to the proposed changes to the Chapter 78 regulations. For over 150 years shallow oil and gas wells have operated and their footprint on the environment has been minimal. As I understand the proposed regulatory changes, they would be very detrimental and too costly for the operators of shallow wells to comply with.

If we lose our local oil and gas producers, it would cause an increase in unemployment, loss of production vital to our local refinery, and take millions of dollars out of our already suffering local economy.

Please vote NO on the proposed changes to regulations as they apply to conventional oil and gas wells. Allow the shallow wells to operate under the regulations in place before passage of Act 13 of 2012 and instruct the DEP to apply changes to nonconventional, deep wells only. (172, 563, 568, 575, 577-580, 592, 601, 786, 2470 – 3208, 3346 – 3761, 4672 – 4680)

Response: See responses to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2730. Comment: I am a concerned citizen that believes that the enforcement of regulation of production water from PRE-1985 wells is emphatically wrong from a historical standpoint. Wells drilled after Act 223 were drilled knowing the regulations and knowing water had to be collected and disposed of in some manner. Pre-1985 stripper wells have had production water disposed of on the ground for more than 25 years and this has never presented a major problem.

A DEP official on a PBS special stated that brine water from stripper wells was not a problem. On the other hand, many Marcellus gas wells are drilled near housing developments very close to water wells.

The fact that many of these historical wells are still being drilled is a miracle unto itself- whether it's Mother Nature or human initiative or both, it's impressive. Does Pennsylvania want to protect historical pre-1985 stripper wells or let them get shuffled under the pretense of modern life? Please vote "NO" on the proposed changes to regulations, as they apply to conventional oil and gas wells. Allow the shallow wells to operate under the regulations in place before passage of Act 13 of 2012, and instruct the DEP to apply changes to nonconventional, deep wells ONLY. (431)

Response: See responses to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2731. Comment: My late father's family has been in the oil business in northwestern Pennsylvania

since the late eighteen hundreds. My daughter, 11, and son, 9, are the 5th generation to be involved in the family business. Both of them have been to our properties several times over the years and enjoy learning about the family business and its history. We no longer drill our own wells but lease our properties to local operators who love the oil business, appreciate the beauty of the forest, and adhere to environmental regulations.

These operators have made me aware of the negative impact of the regulations being considered by the Board. All of our wells are drilled to a depth no deeper than 3,000 feet, averaging around 2,000 feet, and should not be regulated by standards set for deep drilling. Strict regulations are already in place and monitored by the U. S. Forest Service

Please vote AGAINST the proposed regulations and allow shallow wells to operate under the regulations that are currently in place. The regulations before the Board are too broad, overly burdensome, and time consuming without adding meaningful protection to the environment. Additionally, I ask that the Board vote AGAINST the proposed legislation so that future generations can grow up and enjoy the oil business as much as I do. (432)

Response: See responses to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2732. Comment: The conventional shallow oil and gas drilling industry has been an important part of McKean County's history and economy for 150 years. McKean County continues to lead Pennsylvania in the number of shallow wells drilled annually.

We, the McKean County Commissioners, are pleased that a number of new wells are being drilled into the Marcellus and Utica shales in our county. We believe that deep well drilling and shallow well drilling are separate industries with their own benefits and challenges. We believe that the shallow well industry is adequately regulated by the regulations in place before the passage of Act 13 of 2012.

We estimate that there are about 1,000 family sustaining jobs related to the shallow well industry in McKean County. We need to keep this industry competitive to supply our local refineries that use Pennsylvania crude oil.

Our small producers cannot afford to live by the regulations designed for the deep well industry. The deep well industry operates on a much larger scale with heavier equipment and greater use of natural resources. Please allow the shallow well industry to continue operating under the current rules. (441, 619)

Response: See responses to comments 2456 and 2627.

2733. Comment: On behalf of the Bradford oil and gas producers, I am writing to voice my concerns about the proposed changes to the Chapter 78 regulation that are currently being considered by your board.

I am a native of the Bradford area, and the daughter of an oil pumper. That may not mean anything to you, but here in Bradford, being associated with the oil industry in any fashion means something. I am also the town historian and I am not exaggerating when I say that our entire economy, history, employment, and way of life is and always has been, affected in some way by the oil industry.

The proposed change to Chapter 78 regulations would be a death blow to the local oil and gas producers, as well as American Refining Group, our town's refinery, which, incidentally is the world's oldest continuing oil refinery. We are a rural area. Our economy depends on the land and the oil that flows from it; but not just the oil and gas producers. Each integral part of our region: the banks, grocery stores, schools, hospitals, stores, industries, housing, and even the government would be affected in the most detrimental way possible by the change in regulations to conventional oil and gas wells.

As a very concerned citizen, I urge you to please vote NO on the proposed changes, and to continue to allow shallow wells to operate under regulations currently in place before passage of Act 13 of 2012, and instruct the DEP to apply changes to nonconventional deep wells only. Please. It's just a change in regulations for you, but it's our way of life. (467)

Response: See responses to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2734. Comment: Although I am not oil or gas producer, my job is one that is dependent on the oil and gas industry. I am writing to urge you to vote "NO" on the changes to the oil and gas regulations currently before your committee.

Shallow oil and gas have been produced in our area for over 150 years and has had no lasting detrimental effect on our environment. Putting these people out of business by imposing costly, unnecessary new regulations on them would also jeopardize my job and hurt our local economy.

If you think it is necessary to impose new regulations on drillers and operators of deep, nonconventional wells, why weren't the new regulations written for just that purpose? Why were the shallow well drillers and producers included? Why can't they continue to operate under the current regulations, which have done an effective job?

Please vote "NO" to the proposed changes to Chapter 78 regulations so my job, and thousands of other jobs that depend on these producers of shallow oil and gas, is not lost. (139, 456, 439, 440, 442, 443, 487, 616, 3209 - 3345, 3762 – 4015, 5911 - 5917, 4651 – 4671, 5736 – 5740)

Response: See responses to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2735. Comment: The regulations you are considering will further hamstring the shallow gas industry, which has operated safely and has been responsible to environmental concerns. The shallow gas industry is providing the fuel to dry the majority of the grain that is produced in Pennsylvania. Agriculture is the number one economic force in Pennsylvania. It depends heavily on the shallow gas industry to provide energy for the production of many commodities. The focus of new regulations should be limited to the deep gas industry. Their footprint on the environment is much larger and much of their technology is new. Close scrutiny is warranted. However, the industry that has served this state for over one hundred years, should not be further punished for the amusement of fear mongering environmentalists. The many decades of safe clean energy production should not be compromised. Thank You for your time and consideration. (154, 458)

Response: See responses to comments 2456 and 2627.

2736. Comment: I am writing because I am worried about the harmful effect that the DEP's proposed oil and gas regulations will have on the oil and gas industry and, in turn, on our local economy.

I understand the proposed regulations will increase costs for oil and gas companies. This will be particularly hard for the conventional oil and gas companies that are in my area. These companies are small businesses and the conventional wells they produce do not make large volumes of oil and gas. I am worried about how they will be able to pay for compliance with these new regulations.

The increase in costs to the conventional oil and gas companies will tighten an already tight situation for those companies and their employees. This will cause a decrease in business for companies in our community. Many businesses rely heavily on donations and /or patronage of the owners and employees of the conventional oil and gas industry. Given the recession and our shrinking population such decreases can have a devastating ripple effect?

I am also worried about the lack of balance between the need for change and the cost. The conventional oil and gas industry has been in our community for over a century and the environmental impact is small. We live and work in the presence of the industry without incident. In making regulatory changes that include large unconventional wells with small conventional operations the DEP did not properly analyze the costs to the small conventional oil and gas businesses. I believe that other alternatives should have been considered.

The conventional oil and gas industry is vital to our community as a job supplier and as a patron of many businesses. It is important that these new regulations not be passed in their current form. Please vote "NO" to the current policies until they are altered to support the economic well-being of the Commonwealth of Pennsylvania .(154, 445, 465, 493, 590, 4429 – 4453, 4555 – 4556, 5700 – 5706)

Response: See responses to comments 2456 and 2627.

2737. Comment: I am writing to express my concern about the proposed changes in regulations affecting the oil and gas business. Much of my business comes from the conventional oil and gas industry. The proposed regulations will result in increased costs for oil and gas companies. The conventional oil and gas companies will suffer significantly from these added costs. The profit margins in conventional oil and gas wells are low. The difficult economics are reflected in shrinking conventional oil and gas production; new conventional well completions have dropped from nearly 5000 wells six years ago to less than 1000 this past year. The conventional oil and gas industry is already in difficulty.

My company name is Richgas, Inc., a propane marketer in Kane, McKean County, PA. Our predecessor company was Sloan & Zook Co. of Bradford, PA. Sloan & Zook was an oil and gas producer who started business in 1914 by building the liquids extraction plant in Kane which evolved into our Propane & Butane business.

I witnessed Sloan & Zook's care of drilling, producing and water flooding practices from the early 1940's until they sold their properties in 1948 and they were always conscientious producers. I'm aware of the old time lazy pumper who didn't care if he drained produced water down a hill and didn't clean up around a well head but I'm certain these practices stopped many years ago.

Shallow well producers have known for years how to operate their leases and have kept up with the ever changing DEP rules. Present day practices have evolved using common sense and care for a

fragile environment. A very large segment of the oil & gas industry depends on this proper treatment of conventional practices.

The new unconventional wells area a totally different industry and should be regulated by a different set of rules. The cost of adhering to these rules represent only a tiny fraction of total expense of a well. Expecting a small producer with conventional wells to follow the same rules will lead to the abandonment of countless leases, a large segment of the industry becoming unemployed and a huge volume of recoverable oil still remaining in reservoirs.

A large number of old, marginal oil and gas leases have been abandoned in the last forty years. Many of these have been redrilled and returned to production using modern procedures. DEP, who governs this activity, has to be aware that the current regulations are adequate to protect the environment and still be affordable to the producer.

Furnishing propane to these drilling and producing operations, since the 1950's, has always been a welcome part of our business. To think that rigid regulations could jeopardize this is very hard to take, especially when it is not necessary.

Please vote "NO" to the current regulations until their harmful economic impact is properly analyzed and until the regulations are altered to support the economic well-being of the Commonwealth of Pennsylvania. (157)

Response: See responses to comments 2456 and 2627.

2738. Comment: The proposed regulations will result in increased costs for oil and gas companies. The conventional oil and gas companies will suffer significantly from these added costs. The profit margins in conventional oil and gas wells are low. The difficult economics are reflected in shrinking conventional oil and gas production; new conventional well completions have dropped from nearly 5000 wells six years ago to less than 1000 this past year. The conventional oil and gas industry is already in difficulty.

As conventional oil and gas activity shrinks, many small business and communities get hurt. In turn, the cost of the proposed regulations will further hurt the economy. The state has not done an adequate job of analyzing this harmful economic impact. Sadly, this harmful impact is being proposed even though the conventional oil and gas industry has had a very small impact on the environment. The proposed regulations do not take into account the small footprint, the minimal truck traffic and small volumes of fluids involved in the conventional oil and gas industry. The cost of the proposed regulations is not justified.

Every day I see how important the oil and gas business is to our local economy. The proposed regulations are going to unnecessarily hurt our local economy. It is important that these new regulations not be passed in their current form. Please vote "NO" to the current regulations until their harmful economic impact is properly analyzed and until the regulations are altered to support the economic well-being of the Commonwealth of Pennsylvania. (170, 173, 174,177, 392, 397, 413, 426, 444, 474, 608, 628, 807, 4454 – 4540, 5669 – 5688, 5692 – 5695, 5710 - 5717, 1162)

Response: See responses to comments 2456 and 2627.

2739. Comment: My family has been involved in the production of crude oil for four generations and I am very concerned about the over-regulation of shallow conventional oil wells. Although I live in New York State, I am still in the Pennsylvania oil field. I run a small trucking company by myself

and I do oilfield hauling and work for oil and gas producers. If the local oil industry is destroyed by these regulations, I lose my livelihood.

I am also concerned as a royalty owner. As a land and minerals owner, I receive a royalty from oil production on my 250 acres. The royalty I receive helps to pay my property taxes and maintain my property as forestland. If oil production in the region is ended or significantly hurt because of draconian regulations, operation of the refineries will cease to be viable and I would lose my royalty because of the lack of an oil market.

I, along with my late brother, operated an oil producing operation for 40 years ending in 2000. We ceased operation because we could not contend with the ever increasing regulations. Because of this experience, I am very familiar with the tight economics of oil production in the Pennsylvania oil region.

I grew up in the oilfield and always enjoyed the unique culture and history of the oil patch. This is an industry that is over 150 years old and has affected thousands of lives directly, and many more indirectly in a positive way. (179)

Response: See responses to comments 2456 and 2627.

2740. Comment: We are a small producer in northwestern Pennsylvania that drills 8 to 10 conventional vertical wells per year. We have approximately 15 employees. We contribute to the Pennsylvania economy via payroll, royalties to landowners, taxes, and purchase supplies, materials, etc. We are not a multi-national company with unlimited funds drilling high-volume shale wells.

Over the last five years we have seen the rules, laws, requirements, and regulations in Pennsylvania grow exponentially. This has driven up our costs of doing business. For instance, a recent quote we received to perform the recently enacted Mechanical Integrity Assessment on our wells would cost approximately \$63,000.00, covering the first year only. When you add this to other previously enacted laws, rules, and regulations, the cost is substantial.

We now hear a new bill is in the works that will impose further costs and regulations on us. Many of these new requirements initially appeared to be directly related to the Shale drilling; however, we have also been caught up in the dragnet.

We are attempting to supply the State of Pennsylvania and the country with a valuable and necessary commodity, not different than a farmer. However, it sometimes feels like we are a target for elimination by the uninformed public and some legislators.

We are requesting you take a common sense approach, not a one-size-fits-all, in balancing public safety concerns with ours and other companies' attempt to provide jobs and helping to feed, cloth, and support our families and those of our employees in northwestern Pennsylvania. (178)

Response: See responses to comments 2456 and 2627.

2741. Comment: On behalf of the Crawford County Oil & Gas Task Force's Economic Development Committee, these comments are being submitted concerning the proposed changes to Chapter 78. Crawford County is not a county experiencing the benefits of Marcellus Shale gas. However, there are several ancillary businesses such as Universal Well Services, Moody & Associates, Fluid Delivery Solutions, and Steptoe & Johnson PLLC, to name a few that are either headquartered or have a branch office located in our County that are heavily involved in the Shale play. Crawford

County has several unconventional wells, has several permitted wells, and will see interest as it relates to the Utica Shale. However, the proposed changes to permitting, waste management, identification of abandoned wells, groundwater production and public health are not only unreasonable to smaller producers, these regulations will cause several of the 7,000 independent well drillers in Pennsylvania to go out of business. Pennsylvania is already recognized as having some of the strongest regulations on oil & gas development in the nation and our hydraulic fracturing regulations are among the most stringent in the United States. While many larger unconventional well drillers can absorb the cost of the proposed heightened regulations, these smaller producers cannot. As an example, expecting a smaller producer to restore a private water supply to better standards than existed prior to drilling and be administratively bogged down by filling out 23 separate notification requirements for the completion of a new well and 19 separate and new forms referenced in the regulation package are unfair, unrealistic, and merely not necessary.

Simply put, one size cannot fit all when it comes to regulating oil and gas wells. Pennsylvania's tax and regulatory climate are already a major deterrent when it comes to business attraction. Therefore, we strongly encourage the DEP to amend the regulations to separate conventional from unconventional operators. The benefits of more jobs, increased revenue, and cleaner air we have already experienced in Crawford County and Pennsylvania are all due in part to the increased use of natural gas. Going forward the benefits we will receive in lower manufacturing costs, power generation, heating costs and transportation are immeasurable. The Commonwealth cannot and must not miss this opportunity to become a leader in energy development while affording both large and small producers to be an integral part of this phenomenon moving forward. (386)

Response: See responses to comments 2456 and 2627.

2742. Comment: I am writing to you as an Attorney who has practiced law in Bradford, Pennsylvania for the last fifty (SO) years. During that time I have represented a goodly number of oil and gas producers whom I have seen persist, and survive, in spite of difficult work conditions and great price volatility (historically lower rather than higher). My clients have always been conventional (shallow) well operators most of whom were/are local businessmen. They have always contributed to the local economy and the Commonwealth, as employers, consumers, investors and taxpayers.

The prospect of additional State regulations being imposed on shallow well producers can only be detrimental to that industry, and to those who rely upon them, such as their employees, our refinery and local businesses. The existing regulations, which have already been greatly expanded, have served to adequately control the industry, as evidenced by the minimal environmental impact that has resulted from shallow well activity. More regulations cannot make what is already very good any better.

If the intention of the new regulations is to impose greater control over the unconventional shale gas industry, they should not be extended to the conventional shallow well industry which is already struggling to stay afloat. The dramatic drop in well permits issued speaks to the current state of the industry. (197)

Response: See responses to comments 2456 and 2627.

2743. Comment: I have been in public accounting since my graduation from The Pennsylvania State University, University Park campus in 1978. I was born and raised in Youngsville, PA, and made the decision after college to seek employment in my hometown Warren County area.

I started as an employee at a local CPA firm and in 1983 formed my own CPA firm. In all those

years, I have been fortunate enough to work for numerous family owned oil and gas clients. Many of my current clients have been involved in the oil and gas business for over 50 years, with many seeing 3 or 4 generations of ownership. These businesses have seen many challenges over the years, but with a strong work ethic and driving desire to pass the business on to the next generation, these family oil and gas businesses have always met the challenge.

My understanding of the proposed changes to the Chapter 78 regulations places an unfair burden upon the conventional oil and gas businesses. It seems as though common sense is being replaced by excess regulations.

I remember in the late 1980's someone within the EPA declared Northwest Pennsylvania to be a "major oil spill". The EPA sent out the Coast Guard to walk through oil and gas leases to mark those in violation. Once common sense prevailed and local oil and gas producers spoke with the EPA, it was determined it was "a lot to do about nothing". The majority of the oil and gas producers were in compliance. There was no "major oil spill" and all went back to normalcy.

I hope the Board will realize the conventional well producer should be regulated differently from the nonconventional producer and please vote "NO" to the proposed changes to Chapter 78 regulations.
(393)

Response: See responses to comments 2456 and 2627.

2744. Comment: My name is Charles G. Lang and I am a Professional Land Surveyor and owner of Lang Surveying. My company employs three surveyors and one office person. I have been in business for 26 years and during that time, 90% of our business has been surveying/consulting for the oil/gas industry. In addition to surveying required to stake well locations, we also do access road layouts; pipeline staking, prepare drilling permit applications, Erosion & Sedimentation Control Plans and prepare General Permit Applications. I have worked with dozens of small oil/gas Operators over the past 26 years. As a consultant, I must keep abreast of the ever changing regulatory climate that affects our business. I have a very good working relationship with the oil & gas management people in the Meadville office of the Pennsylvania Department -of Environmental Protection. I have seen a lot of changes in regulations in the last 10 to 15 years.

I am writing to you today out of concern, not only for my own small business, but for the businesses in the oil/gas industry that serve. Specifically, I am talking about the 'Conventional' oil drilling industry. There seems to be this perception in our state government that all oil and gas issues are the same. The conventional oil/gas operators have been doing business in Pennsylvania since 1859. By comparison, the unconventional gas drilling industry into the Marcellus Shale is less than a decade old. A typical Marcellus Shale drilling pad is 217,800 square feet while a typical conventional drilling pad is only 4000 square feet or 54 times, less than the Marcellus pad. The disparity, from a financial aspect, of the cost between Unconventional (Marcellus) and Conventional (oil) operations is absolutely staggering. The difference between conventional and unconventional drilling is like night and day yet the state agencies who regulate this drilling are treating them both the same, for the most part., The environmental footprint of conventional operations is much less than that of the unconventional operations. When the Marcellus Shale Gas rush came to Pennsylvania a few years ago, it was clear that the current regulations which covered oil and gas drilling were not sufficient for unconventional drilling.

The regulations for unconventional drilling needed to be more robust due to the larger size and complexity of the projects. However, in their rush to enact stricter regulations to cover the Marcellus drilling (as a result of the lawsuit filed by the Chesapeake Bay Foundation and others),

the DEP, and ultimately the Legislature, passed ACT 13 which is a one size fits all approach to regulation. Most of the Legislators who voted for ACT 13 did so thinking they were regulating the Marcellus Shale operations without knowing the effect on the small conventional operators. Granted, there were a few small distinctions between Conventional and Unconventional operations in ACT 13, but there should have been more thought into separate regulations for each. You won't hear any complaints from the Unconventional operators, they just spend the money required to comply with whatever regulations are enacted because the financial gain from these Marcellus wells is so enormous. A Conventional Operator's budget to drill a well is about 30 times less than a Marcellus well and the financial gain from the well is far, far less. The profit margin on these conventional Oil wells is small and it can sometimes take years to make a profit.

In my view, there were several reasons why ACT 13 was passed in the current form. Everyone, from the legislators down to the small operators, was under the impression that the ACT was to affect Unconventional operations only. Since the ACT was to be directed to Unconventional Operations, the conventional industry paid little attention. The stakeholder group for the oil/gas industry, PIOGA, was so intent on keeping the Marcellus exploration on, track that they overlooked the effect of the legislation on the conventional industry. All they (DEP, Legislature, Marcellus industry) wanted were regulations in place that would fulfill the stipulations in the decision of the lawsuit with the CBF so that Marcellus drilling could stay on track. The cost of the regulations on the Marcellus industry was inconsequential. The financial stakes were very high for the state and Marcellus industry and DEP just wanted to get out from under the lawsuit. The unintended consequences of ACT 13 are now coming to light. In Short, a great injustice has been done to the Conventional oil industry.

I am well aware that you will be receiving comments from people who see only the environmental side of the issue. I can tell you that most of the companies that I deal with are very environmentally conscious. Personally, I belong to several environmental groups. I love the outdoor and enjoy hunting and fishing. I also know that there must be a balance between the environment and industry. Both cannot have everything they want. There must be common sense regulation that will allow the oil/gas industry to develop energy resources while protecting the environment. The conventional oil industry is not asking for no regulation, just reasonable regulation that will allow them remain to in operation and provide energy and economic benefit to our state.

My point here is that the proposed changes to Chapter 78, which you are reviewing, should be sent back to the DEP for revision. 'Conventional' and 'Unconventional' operations need to have separate, distinct regulations which fit the particular industry and serve to protect the public and the environment. The current approach to regulating the Conventional drilling industry will likely result in an economic hardship for many of the operators who employ my services. If they are forced to close their businesses or cut back on the amount of drilling, I will in turn be forced to lay off three of my employees. That may not sound like much but the ripple effect throughout this region of North central Pennsylvania will be devastating to the local economy.

I respectfully urge you to vote 'NO' on the proposed changes to Chapter 78 and send them back to the DEP with instructions to make separate regulations for the Conventional operations. Another option would be to have the DEP do a re-write of the proposed regulations and make them apply to 'Unconventional' operations only, as they were intended under ACT13.

Thank you for your consideration I would appreciate a response, whether, by letter or email, so I can be assured that someone from the Board has read and understands this letter. .Please calls or emails me if you have any questions about my comments. (394)

Response: See responses to comments 2456 and 2627.

2745. Comment: My Company has brought nearly one quarter billion dollars in investment money into that region over the last 20 years, much of it from out of state. We put that money to work in PA, buying goods from PA companies and services from PA contractors. This money translates to real PA jobs. My company employs over 90 people and provides millions of dollars to those companies and contractors who in turn provide jobs to hundreds of other Pennsylvanians.

Over the past 10 years, DEP regulations have resulted in increasing costs to my company. Location costs have risen 400%, mainly due to imposition of stricter erosion and sedimentation controls. Permitting cost have increased dramatically even up to 100% due to imposition of erosion and sedimentation general control permit and additional engineering costs associated with that permit.

As a result of high cost increase, the rate of return to our investors has shrunk to the point where it is difficult to raise money to bring to PA to drill our wells. While we understands that changes in regulation is required for unconventional well development, but these regulations are not appropriate for the conventional oil and gas industry due to relatively small size of land disturbances and small profit margins.

While similar in some ways, the industries are vastly different in terms of impact on local infrastructure and in terms of impact on the land and other resources. Our well pads are 0.1 acres in size. Almost 50 of our well pads could easily fit on one unconventional well pad.

The new chapter 78 revisions further erode our economic viability as a company by imposing even higher costs to comply with added regulations. Department needs to adequately investigate the impacts of these regulations on the small conventional operators. The impacts to small business will result in direct loss of jobs to many Pennsylvanians. Something as simple as requiring a two to one slope on conventional well pits will increase costs by as much as \$5,000 per well or construction, raising pad and road construction costs imposed by the department over the past ten years to 560% of our 2004 costs.

I urge the EQB to vote no on approval of these regulations. I urge DEP to develop entirely separate regulations for the conventional oil and gas industry. (1204)

Response: See responses to comments 2456 and 2627.

2746. Comment: Shallow oil and gas wells have operated in this state for over 150 years and regulations currently governing those wells have been more than adequate to protect the environment while allowing producers to operate profitably through most of those years.

I can assure you that legacy wells that produce *gallons* of oil per day, or a small amount of MCF's of gas, will not be able to tolerate the cost of these additional regulations. This will result in more unemployment, loss of production vital to our local refinery, the reduction of our local tax base and cause harm to all the local businesses that depend on the millions of dollars our production puts into the local economy. Also, forcing small producers out of business may add thousands of wells to the abandoned well list the state will be burdened with plugging.

Drilling and producing conventional wells must not be regulated by the same set of rules as deep, shale unconventional wells. The regulation package as it now stands is overly broad, burdensome and time consuming without adding meaningful protection to the environment.

I urge you to vote “NO” to these proposed regulations and allow conventional wells to operate under the effective regulations in place before the passage of Act 13 of 2012. (409, 447, 453, 457, 462, 468, 438, 483, 487a, 490, 491, 497, 498, 499, 502, 503, 505, 507-556, 586, 597, 998, 5786 – 5910, 4551 – 4554, 5696 – 5699)

Response: See responses to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2747. Comment: Good evening, my name is Bonnie Elder. My husband Alex is a fourth generation shallow oil and gas producer. Our son, Len is fifth generation. We produce approximately 30 shallow wells in Clarion and Venango counties. These wells range in depth from 900 feet to 1400 feet. Most wells are measured in gallons of oil produced per day rather than BBL’s per day. Some of our gas wells presently produce as little as 1000 cubic feet per day. So, as you can see, these are just shallow wells, and noteworthy are the fact that three of these oil wells were drilled in the 1860’s and are still producing today.

My husband works from daylight till dark nearly every day seven days a week to maintain production of his wells because this is the way we make a living. Raising our two boys, I can remember making them wait on Christmas morning until dad returned from tending the wells before they could open their presents and this was every holiday. It actually took me a few years after we were married to realize that the oil heritage that was my husband’s ancestors was absolutely in his blood also.

We have one employee but, we will probably have to lay him off permanently if these regulations are forced upon us. There’s another lost job that we were responsible for. Farming is also a passion for Alex. At first, I wasn’t too keen on living on a farm, but, it has turned out to be a good life of hard work and was a good environment for raising our boys teaching them to be good workers. Alex has tilled several hundred acres of land each and every year watching the rewards of corn, oats, wheat, spelt, and hay grow so, that he can feed his livestock of beef cattle, hogs, and chickens. He loves to watch and smell that good old Pa. dirt as he plows. As he has always said, one of the reasons he does this is because God gave us this land and we do need to take care of it and will not do anything to do harm to our land or the environment. We live here!

For forty years, we have put the majority of the profits back into producing and expanding our production. This is our livelihood. My husband is 65 years old, he has no 401K or pension plan. I have recently retired after working for several years to help with our income. All we have now is our oil and gas production. I know that each one of these hard working small producers are proud to be able to produce and contribute a product our area is so richly blessed to have.

Please do not take this from us, the small independent producers, with rules and regulations that are implemented for larger industries. These regulations will surely shut us little guys down that depend of this for their living. (894)

Response: See responses to comments 2456 and 2627.

2748. Comment: Our shallow wells take 3 truckloads to move the rig in, one small load of pipe, then one to cement and 3 to frac for 4 or 5 hours and maybe 3 loads of water out for treatment. The sizes of our locations are 50’ by 100 ft or at most 100 by 100 and an unconventional site is 5 acres and twice as wide a road for regress.

The cost of an average shallow well in PA is 1% of the cost of the Marcellus or Utica well. An issue we recently dealt with is silly before act 13 when we broke ground on our well sites we were required to post on site our E & S plan. Now they want our E & S plan, the drilling permit, and casing cement plan. In the past we did not post the last 2 till we began to drill. From location building to drilling can vary from days to months. We just got a fine for not having the cement plan on location when I know it was right there in the mail box. It is complete Chaos.

The unconventional companies have lots of full time people to do all the paper work but we don't. We would like to be legal but all this goes beyond reason. If we do not see change there will not be small operators like myself within 2 years.

When I was a boy growing up my father had 5 refineries to sell his oil too. We now only have 2. How long will they be around when we lose the small operators to an overkill of regulation? At the price of oil, the oil patch should be booming but it is losing. (1091)

Response: See responses to comments 2456 and 2627.

2749. Comment: I understand that the Board Members are contemplating making changes to the current Act 13 Oil and Gas Regulations governing oil and gas productions of both shallow and deep drilling operations.

After hearing and reading about some of the changes that are to be made, I feel that they will be detrimental and of great financial harm to our local shallow well driller/producers. I feel that shallow well and deep well businesses should be dealt with separately.

You must know that the shallow well driller/producer has been in the business for over one hundred fifty (150) years in this area. Most of these owners operate wells that produce one (1) barrel or less of oil per day, so the operating profit margin is very small. If they are to be burdened with more regulations, then they will be forced to cease all production and lay off what few employees they may have.

With oil production very low in this area/to go along with high unemployment, it would be devastating to this area to have our driller/producer burdened with more regulations that increase their cost of production of American produced oil and gas.

As a retired person of this area I would like to see our local oil and gas producers stay in business. When I was still working, I spent all my working life (45 years) working either in the field or for a manufacturing company that produced oil and gas: production equipment. With that said, I would urge your board to vote NO on changes to Act 13 concerning shallow well drilling/production. (414, 416, 418)

Response: See responses to comments 2456 and 2627.

2750. Comment: P.I.P.P. is an organization which represents the interests of approximately 300 members, most of whom are small, family run businesses. Many of our members have only a hand full of wells on their properties, which they operate as a side line to their regular day jobs or to supplement retirement income. Other members may be companies who drill and operate shallow, conventional wells on a little larger scale. One thing that all P.I.P.P. members have in common, though, is the fact that they are all small businesses, struggling to remain viable in the face of the Marcellus and Utica industry juggernaut. Act 13 and its proposed regulations have caught up the traditional shallow well

operators in many of the same requirements that were implemented to regulate the shale gas operators.

My family and I operate a small well drilling and servicing company based in Venango County. We also operate a number of shallow stripper oil wells in Venango and Clarion counties. We produce crude oil from wells that date from the late 1890's to some that were drilled within the last few years. My son is actively involved with the business, as is my wife, who assumes business management duties. We currently employ six other workers on a full time basis. The daily output of our wells, and the wells of our well service customers, are by and large, measured in gallons of oil per day - not barrels per day. The two refiners of Pa. crude oil and all of their employees rely on the efforts of many small independent producers like us to supply them with a needed and valuable commodity - a commodity that touches each of us in our daily lives in more consumer products than we can count. It seems to me that the environmental health of Pennsylvania, and the good of its citizens, are best served by promoting and encouraging responsible development of our oil and gas resources, rather than regulating small businesses such as ours out of existence. I hope and pray that you will fully consider all of the ramifications of these proposed regulations before making a final decision. Thank You! (875)

Response: See responses to comments 2456 and 2627.

- 2751.** Comment: The current proposal to put the conventional shallow well oil industry under the same regulations imposed on the shale gas industry lacks sound judgment and common sense. Why should a 150 year old oil industry with lower profit margins, smaller well sites, smaller environmental impacts, and rich historic and cultural traditions, be subjected to the same regulations as a 10 year old industry?

Furthermore, will the additional costs imposed on the small producer by these burdensome regulations yield greater economic benefits than the additional economic costs of these regulations? No. The reverse would likely be true. I submit that a reverse economic multiplier would occur. Higher economic costs of compliance would result in declining production and drilling, plugged wells, abandoned leases, higher unemployment, decreased business activity, and reduced refinery operating capacity.

Our local and national economies already have enough problems caused in part by over regulation. Please do not adopt the "one size fits all" approach by imposing these regulations on the conventional producer. With all due respect, please think before you act. Thank you. (563a)

Response: See responses to comments 2456 and 2627.

- 2752.** Comment: I am Arthur Stewart, secretary of the PA Grade Crude Oil Coalition (PGCC). PGCC was formed, last year, by members of the conventional oil and gas industry.

Over the last 40 years our county's population has dropped from 50,000 to 41,000. I am president of our county's school board where a generation ago we educated over 11,000 pupils; today it is less than 5000. Our county is steadily losing jobs and our property tax and earned income tax revenues are not keeping up with increases in wages, health insurance and pension costs.

One of the solutions to these challenges is our natural resources. For over 150 years the harvesting of timber and oil and gas has anchored the economy of this and the many surrounding counties. In 1859 Colonel Drake drilled where the abundant crude oil was seeping naturally into Oil Creek.

Today our conventional oil wells still produce that Penn Grade Crude, putting over 1/3 of a billion dollars directly into our local economies. Our conventional gas wells generate another 1/3 billion. Beyond that direct revenue, our conventional oil and gas industry spurs thousands of support jobs in refining, trucking, restaurants and so forth.

But conventional oil and gas is under challenge. New casing and E&S regulations have increased our costs. These costs and the low price of natural gas have strained the viability of new well drilling. Ten years ago we were completing over 4500 new conventional wells per year. That number has been steadily dropping to about 1000 last year.

Into this context come the proposed regulations. Tonight, we are here to meet the legal obligation, to test whether there is a compelling need for regulatory change, whether the economic costs of the new regulatory requirements are understood, and whether alternatives were properly considered.

Having carefully studied the DEP's documents, and having examined the DEP's underlying research via Right to Know Requests, PGCC concludes that the regulations fail all three tests.

As to compelling need, the regulations combine conventional and unconventional oil and gas operations. These are two completely different industries. And while there has been incredible change in the unconventional industry, there has been literally no change in the development and production of conventional wells. Regulations governing the conventional industry have been in place for 30 years, and missing from the DEP documents is any description of when, where or how the existing regulations have proven inadequate. The new regulatory requirements impose significant changes on a conventional industry that is not broken.

The cost of the proposed changes is enormous. The DEP's Analysis fails in its fundamental purpose of advising you about those costs. For example, the new regulations require the removal of certain storage tanks. However, the DEP states that it does not know how many tanks will be involved ...and so it simply states no cost.

And even where it does state costs, the DEP grossly underestimates the amounts. For example, in considering changes to tanks, the DEP estimate includes 1300 new tanks per year but forgets that the new requirements also apply to the over 150,000 existing tanks.

As to the cost of all the regulatory changes, the DEP Analysis tells you that the total burden to the conventional industry will be 5 to 12 million dollars. When PGCC corrects for the many items overlooked by the DEP we inform you the actual cost of initial compliance exceeds 1 billion dollars. Thereafter, the annual cost is several hundred million dollars per year. As to cost analysis, the DEP's document fails the test.

The final test is the consideration of alternatives. The DEP Analysis fails to look at alternatives that are currently in use, as well as alternatives that are permissible under Federal standards. And even though the Regulatory Review Act requires that specific questions be addressed for small businesses, the DEP Analysis entirely ignores those questions. As to alternatives, the DEP's documents fail the test.

We have worked hard to assemble our data. And while PGCC stands prepared to defend its research in litigation, we would prefer resolution by discussion. Thus we have prepared a detailed response to the DEP's Analysis. In that document we point out what costs the DEP overlooked and the basis for our cost conclusions. PGCC has also developed a list of proposed alternatives and exemptions that the law requires for small businesses. We will share these documents as part of the comment

process.

The solution we seek is informed decision making. The DEP's blending of the conventional and unconventional industries prevents an informed analysis of the conventional industry. And in that confusion the DEP has overlooked the serious harmful impact that the proposed regulations will impose upon communities all across western Pennsylvania. We look for revised regulations which will separately oversee the conventional and unconventional oil and gas industries. We hope to accomplish this by informed discussion, and in that spirit we thank you for scheduling this extra hearing in our community. (900)

Response: See responses to comments 2456, 2627 and 441.

2753. Comment: I am against these regulations for many reasons. The main reason is the cost to comply with them. The Marcellus industry makes millions of dollars from their wells. The conventional industry operates with a very small profit margin. We are already spending money to comply with regulations that are unjust as having to haul our production water for treatment. Our production water doesn't hurt anything and was going into creeks and pits for well over a hundred years without doing any harm.

The new regulation for pits will make us have to build bigger locations. That means we will have to move more soil and cut many more trees, which is something that we try to avoid doing whenever possible.

The water usage between the unconventional and conventional wells is huge. The unconventional wells use about 4,200,000 gallons of water. The conventional wells only use about 42,000 gallons. The water used in both industries is only needed the one time in the life of the well. One golf course uses the same amount of water as a Marcellus track job every 25 days in the summer. There are 811 golf courses in Pennsylvania. That equals 3,649,500,000 gallons of water every 25 days. Chesapeake Energy says an average for a Marcellus well over its life time will produce between 2 to 6.5 billion cubic feet of gas. An oil well will produce a small amount of oil for nearly a hundred years. What useful thing does a golf course produce?

We produce Penn Grade crude oil which is the best lubricating oil in the world. It is a paraffin-based oil. There are over 6,000 products made from it. Medical products such as aspirin, band aids, Pepto-Bismol, antiseptics, Chap Stick, Vaseline and heart valve replacements. Health and beauty products such as cologne, perfume, deodorants, bubble baths, lipstick, mascara, moisturizing cream and mouth wash. Almost every product in this world is touched by oil. It can't be as harmful as studies say if it goes on our bodies and in our bodies every day.

There are over 7,000 conventional oil and gas operators in Pa. They employ 26,000 people directly. Most of them will be out of a job if these regulations pass the way they are now written. The impact on other businesses indirectly involved with our industry will be huge. Most are already suffering from a lack of business since act 13 was passed and the decline in new wells being drilled.

We have been doing our jobs for over 150 years and have perfected how to do it and protect the environment. We cannot take any more burdensome regulations. We have been regulated to the point where we are having a hard time surviving. Most people in this state don't even know what a conventional well is. It must be because we are doing things right if not it would be all over the internet the first time we did something wrong. Our industry is not causing problems so please just let us do our jobs. (978)

Response: See responses to comments 2456, 2627 and 2800. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2754. Comment: Pennsylvania's Environmental Quality Board (EQB) was directed via the 2012 Oil & Gas Act (Chapter 32, Act 13, 2012) to promulgate new regulation to protect the Commonwealth, its Citizens and Natural Resources from hazards associated with newly introduced practices associated with the nascent shale gas industry.

While the charge to EQB was clearly and unequivocally directed toward shale (or unconventional) wells, the proposed amendments do not appear to differentiate between conventional and unconventional production. If the scope of the proposed regulation includes conventional wells, conventional producers and their associated drilling, service & support contractors and suppliers, and their host communities will be placed in jeopardy. Regulatory Review Act directs EQB to consider the “hidden **COST** upon the economy of Pennsylvania”. EQB's **COST** analysis fails to recognize the economic and societal consequences that will result from this new regulation.

This report will:

Consider the role conventional producers, their associated support contractors and suppliers currently play in McKean County Pennsylvania.

Demonstrate how effect increased regulatory financial burden will affect McKean County conventional well operators' business behaviors

Quantify the economic impact of the proposed regulation to McKean County and its communities.

McKean County was selected for this analysis, but the relative impacts will be similar in the other conventional producing counties of Northwestern Pennsylvania, including, but not limited to Elk, Forest, Warren, Venango, Clearfield, Jefferson Clarion, Crawford and Mercer Counties.

Economic Impact of Conventional Production in McKean County

McKean County's relationship with conventional oil & natural gas production has existed for approximately 140 years. The refinery in Bradford, PA began operations in 1881.

This section uses cumulative non-Marcellus production reports as furnished by PA DEP for quantities of oil & natural gas produced within McKean County. Commodity prices are taken from United States Energy Administration data:

McKean County Oil & Natural Gas Production:

	2010	2011	2012
Oil (barrels)	980,162	849,148	855,260
Oil - \$/barrel	\$74.71	\$95.73	\$94.52
Oil (revenue)	\$73,227,957	\$81,288,938	\$80,839,175
Nat Gas (MMCF)	6,886,248	6,299,713	5,694,362
Nat Gas - \$/MMCF	\$4.48	\$3.95	\$2.66
Nat Gas (\$)	\$30,850,395	\$24,883,866	\$15,147,002
Total Wellhead	\$104,078,352	\$106,172,804	\$95,986,178

For the purposes of quantifying the personal income value to McKean County residents, refer to:
Economic Profile System-Human Dimension Toolkit January 20, 2014 McKean County Report

Personal Income: 2012 Mining - Including Fossil Fuels: \$217,249,000

This figure includes some limited personal income associated with gravel and stone quarrying, but the overwhelming majority comes directly from conventional production. The limited non-oil & gas mining is primarily quarrying to support conventional oil & gas construction activities. This figure includes many direct support contractors (such as drilling and well completions); it excludes excavation, site work contractors, equipment suppliers and an manner of ancillary business:

Lawyers & Accountants	Truck dealers
Land surveyors	Metal fabricators
Insurance agencies	Equipment dealers

As a stand-alone source of revenue, **Mining-Including Fossil Fuels** (excluding ancillary business) accounts for 20.9% of McKean County's economic output. If we consider *all* of McKean County's conventional production, McKean County personal incomes derived from **mining including fossil fuels** is greater than any source other than manufacturing (keep in mind that the Bradford Refinery is scored in *Manufacturing*).

Segment	Aggregate Personal Income
Health Care & Social Assistance	\$121,860,000
Government	\$169,965,000
Manufacturing (<i>includes Refinery > \$26,000,000</i>)	\$219,926,000
Mining - Including Fossil Fuels (<i>excludes Refinery</i>)	\$217,249,000

Economic Profile System-Human Dimension Toolkit January 20, 2014 McKean County Report

Economic Impact of Legacy Wells

This section is based on PA DEP January-December 2010 McKean County Oil & Gas excluding Marcellus Production Reports.

6,177 wells were in production in 2010. Of these, all but 16 wells would be defined as Marginal or "Stripper" wells (producing less than 10 barrels of oil per day OR less than 60MCF/day).

We assume a model of \$3.25/MCF natural gas and \$85/bbl oil. We then convert volumetric production numbers (furnished by the PA DEP McKean County Non-Marcellus report) to dollars per well. Net Revenue reflects revenue after paying 1/8th royalty to landowner.

	20th percentile Well	Median Well	80th Percentile Well
Gross Revenue	\$3,360	\$4,406	\$22,945
Landowner Royalty	\$420	\$551	\$2,869
Net Revenue	\$2,940	\$3,855	\$20,076

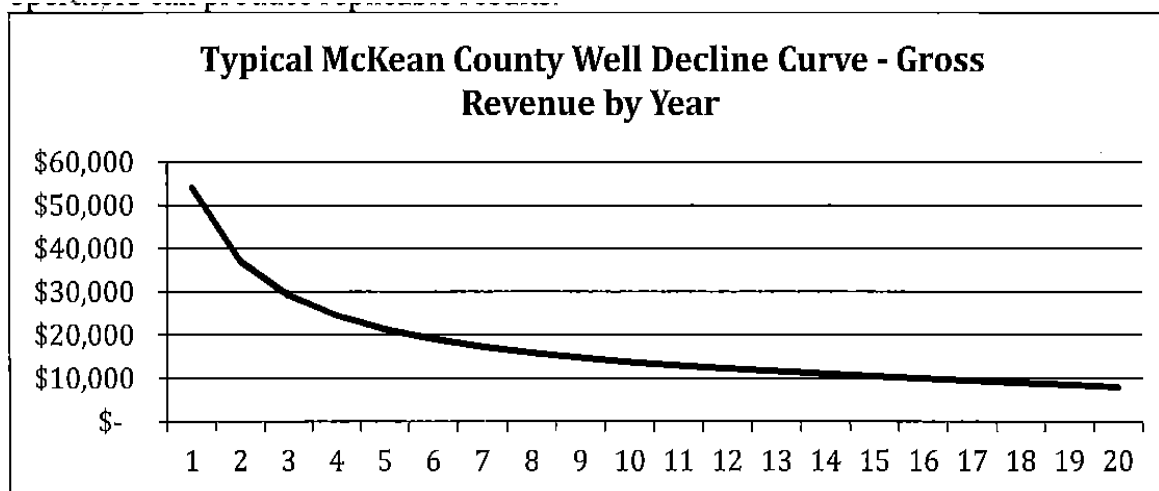
In 2010, McKean County was home to 4,120 wells that individually generated less than \$10,000/yr in gross annual oil sales. These 4,120 wells (in aggregate) contribute roughly \$22,550,000 in annual royalty and working interest payments in McKean County.

Compare the 4120 poorest performing McKean County wells to other industries:

Segment	Aggregate Personal Income
Accommodation and Food Services	\$18,667,000
Educational Services	\$19,925,000
Administrative and Waste Services	\$17,032,000
Professional and Technical Services	\$19,125,000
Finance and Insurance	\$15,669,000
Forestry	\$10,882,000
McKean County's lowest producing 4120 wells (Wells that individually generate less than \$10,000 per year in oil sales)	\$22,550,000

Economic Profile System – Human Dimension Toolkit January 20, 2014 McKean County Report

While the revenue generated by these low-producing legacy wells is modest *individually*, the aggregate revenue generated is significant for McKean County's economy. Moreover, McKean County's conventional wells are predictable performers. Efficient conventional operators can produce reliable results:



Data: Survey of McKean County Conventional Operators

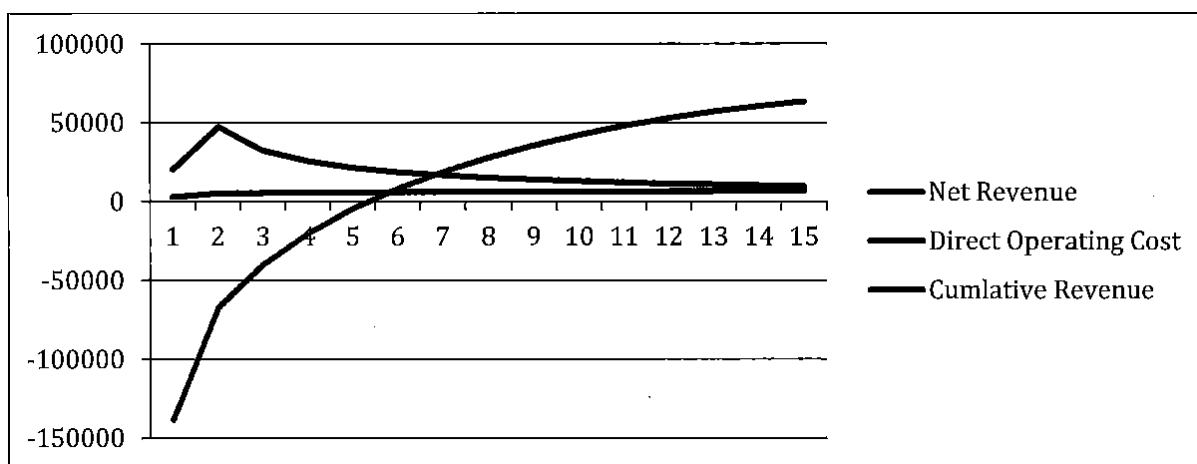
Wells have high levels of initial production (*flush*) then gradually decline. It is common for McKean County wells to produce economically for more than 25 years.

Economic Impact of New Well Drilling

While conventional Pennsylvania producers have enjoyed several years of strong oil pricing, natural gas sales are a critical part of the economics of Conventional Pennsylvania wells. McKean County conventional producers have faced strong price and capacity competition from Marcellus gas producers in recent years. The deterioration of gas prices, coupled with the shortage of takeaway capacity have significantly reduced the return on investment for conventional producers.

Consider a typical McKean County well, assuming:

- Well permitting, drilling and completion costs of \$138,500
- Standard 1/8th royalty lease
- Monthly maintenance & operations cost of \$444 with inflation factor of 3%
- Initial oil production of 541 barrels per year with typical decline curve
- Initial gas production of 2,494 MCF gas per year with typical decline curve
- \$85/BBL oil & \$3.25MCF Gas



Based on these parameters, we would expect the investment of \$138,500 to be recouped at roughly 5½ years. At year 15, we would expect this well to have a cumulative return of \$202,000 (\$63,500 profit after recouping the \$138,500 well cost]. This is roughly equivalent to a 2.75% annual rate of return.

- If new regulatory burden increases the initial well cost by \$10,000, investment recovery is delayed from 5½ to 7 years. The effective rate of return would be reduced to 2.15% annually over a 15 year period. This represents greater than a 21 % reduction in benefit of making the investment.
- If new regulatory burden increases the initial well cost by \$20,000, recovery is delayed from 5½ to over 8 years. The effective rate of return would be reduced to 1.75% annually over a 15 year period. This represents greater than a 36% reduction in the benefit of making the investment.
- Penn Grade Crude Coalition's (PGCC) analysis calculated \$52,000 in increased regulatory burden associated with proposed amendments to Chapter 78. This will delay recovery from 5½ years to over 12 years. The effective rate of return would be reduced to 0.4% over a 15 year period. This represents an 85% reduction in the benefit of making the investment.

Oil & gas investors expect a reasonable rate of return. 5 ½ year payback is close to the minimum acceptable return to attract new investment. New regulatory costs may dramatically erode future investment.

“Of the two types of crude oil, paraffin or methane series oil is the most prized, but it comprises less than 2% of the total world supplies. The “Industry Standard” is “Pennsylvania Crude” derived from oil wells in the state of Pennsylvania. Crudes dominated by naphthenic components are called asphalt-based oils.” Louisiana DNR -Educational Website

McKean County wells produce Penn Grade Crude, the paraffin based crude that is unique and highly valued due to the non-fuel products that are manufactured from Penn Grade feed stock. These products are essential for the manufacture of lubricants, and pharmaceutical & cosmetic base stocks and waxes.

Of particular concern is continued viability of refining capacity for Penn Grade Crude. There are two refineries in North America that refine Penn Grade Crude:

- American Refining Group (ARG), Bradford, PA - 10,000 barrels/day
- Ergon West Virginia, Inc. - Newell, WV - 18,000 barrels/day

If the two refineries are unable to source sufficient volumes of Penn Grade (paraffin based) crude, one or both of the refineries would be forced to either shut down or retrofit their facilities to accept *naphthenic* or *asphalt-based* oils.

ARG's refinery is the cornerstone of Bradford, PA's manufacturing industry. In 2013, ARG:

Purchases of Penn Grade crude	\$194,000,000
Purchases of other raw materials	\$41,000,000
Direct wages and benefits to employees	\$25,300,000
Payments to local utilities & sewer districts	\$7,900,000
Local tax payments	\$479,000
	\$268,600,000

A shutdown of the Bradford refinery would be devastating to McKean County and Northwestern PA. In addition to the loss of ARG's direct economic benefits, Pennsylvania's conventional producers would be reduced to a single buyer for their crude. Competitive pricing support would be diminished, further reducing incentive for conventional producers to invest in new production.

Alternatively, one or both of the refineries may elect to retrofit their facilities to accept naphthenic crudes. While conversion would preserve some of the economic benefits, it would represent a permanent destruction of the domestic market for Penn Grade crude. ARG currently spends \$194,000,000 purchasing crude within the Commonwealth and neighboring NY, OH & WV. Conversion would mean those dollars would leave our region and instead go to Texas, Oklahoma, North Dakota or Alberta.

The refineries use legacy well production to plan for capacity. Transient downturns in drilling can be “averaged out” over several years, but sustained downturns in drilling eventually translate into reduced legacy production.

At first glance, it seems reasonable to think shutting down or retrofitting the refinery(s) is hyperbole. There have been periods in prior decades where drilling activity in PA was reduced, and two refineries were able to survive.

Today's environment is decidedly different. In prior decades, reductions in PA drilling coincided with national drilling trends. Oil & natural gas prices moved in tandem. When commodity prices increased, Texans and Pennsylvanians alike put rigs to work.

In the shale era, there has been a de-coupling of oil & natural gas pricing. North America has seen a dramatic reduction and stabilization of natural gas prices, while oil has maintained a persistent high price. Conventional PA producers rely on both natural gas and oil sales to make their well economics work. This is creating a historically unique period where drilling activity is strong throughout North America, but is weak among Penn Grade crude drillers.

In prior periods, refiners facing reduced volumes of Penn Grade would have also faced reduced volumes of naphthenic crude. Conversion would have made little sense, as existing naphthenic refiners would readily soak up demand for all available crude stocks.

In contrast to prior eras, Naphthenic crude is becoming increasingly abundant; we have sustained high levels of drilling in a low-priced natural gas price environment. If producers of Penn Grade have a sustained reduction in capacity, conversion would likely be the only option available for survival. If conversion is deemed uneconomic, the refinery(s) will close.

In either scenario, the Commonwealth will lose the most important economic driver in McKean County - conventional well production. Without refining capacity, Penn Grade Crude wells will no longer be drilled.

Based on *Human Dimension Toolkit January 20, 2014 McKean County Report*, McKean County's conventional producers and their associated drilling and completions contractors account for 2,017 (2011) of McKean County's 22,104 jobs. These jobs average \$78,954/yr - twice the county average of \$39,631 (2012).

It is beyond the scope of this report to extrapolate the broader impact of such loss. Every sector of McKean County's economy would be devastated.

The Commonwealth's conventional producers fueled America's rise to greatness. Penn Grade crude was the feedstock for innovation in manufacturing, petrochemicals and transportation. It powered our military, and helped us end two great wars.

Pennsylvania needs its conventional producers - McKean County depends on them. *Conventional oil & natural gas production is essential to the societal and economic wellbeing of McKean County.*

Regulation impacting the conventional producers has the potential to curtail capacity at one or both of North America's two Penn Grade Crude Refineries.

Loss of Penn Grade Crude refining capacity (at either refinery) would trigger catastrophic and irreparable harm to McKean County and its citizens.

The Regulatory Review Act Compels EQB to consider "hidden cost upon the economy of Pennsylvania". (1105)

Response: See responses to comments 2456, 2627 and 2800.

2755. Comment: Thank you for your continued cooperation in addressing the regulatory concerns of the Commonwealth's conventional oil and gas industry. I am sure that you appreciate the significance of this issue to small businesses in Western Pennsylvania and the regional economy.

I was recently made aware of a glaring divergence in cost analyses of implementing the proposed Chapter 78 regulations, which I wish to bring to your attention. The Department of Environmental Protection estimates the cost of implementing the proposed regulations at between \$5.39 million and \$12 million, whereas the Pennsylvania Grade Crude Oil Coalition (PGCC) will be submitting comments to the EQB showing compliance costs between \$1/2 billion and \$1.5 billion for the first year and up to \$387 million annually in maintenance costs thereafter.

If even the implementation and maintenance costs would in actuality fall in the middle of these estimates, it would still have a devastating impact on the industry and regional economy. It is my understanding that you are in receipt of a chart summarizing PGCC's cost study and I ask that the Department investigate the vast discrepancy between the two analyses.

Also, while I maintain that the Department should promulgate entirely separate regulations for the conventional oil and gas industry, I believe it *must* provide a regulatory flexibility analysis of the currently proposed regulations in accordance with Act 76 of 2012. As required by Act 76, the analysis should include *"methods that will accomplish the objectives of applicable statutes while minimizing adverse impact on small businesses."*

Thank you for your consideration of these requests. Again, I appreciate your ongoing dialogue and efforts to address the concerns of Pennsylvania's conventional oil and gas industry. (1113, 1115)

Response: See responses to comments 2456 and 2627.

2756. Comment: I am writing to request, to the greatest extent possible, that shallow gas producers be granted substantial relief from the proposed oil and gas drilling regulations recently proposed by PA DEP.

The economics of shallow well drilling are much different from unconventional drilling, and it is not clear that the proposed regulations make that distinction, nor are the impacts of shallow well drilling of the same environmental magnitude as deep, unconventional oil and gas wells. The purpose of Act 13 was to address issues associated with unconventional, horizontal well drilling, and not intended to regulate shallow gas or conventional oil drilling in the same manner.

Because many shallow oil and gas wells produce only small quantities of oil and gas, the cost of the proposed regulation, in many cases, will make these wells economically unfeasible. The result will be an increase in the number of abandoned wells, creating a whole new set of environmental challenges to the Commonwealth.

In addition, the proposed regulations are wide-ranging, creating confusion within the industry as to which regulations apply only to Marcellus operators and which apply to shallow wells. The hallmark of good regulation is simplicity, allowing the regulated community to know what is required of them, and the proposed regulations have only created confusion within the shallow oil and gas industry by their apparent complexity.

In view of these concerns, I believe it would be in the best interests of the Commonwealth to limit the proposed regulations to addressing issues associated with unconventional horizontal drilling of deep wells. I trust that comments you receive from the shallow oil & gas industry will lead you to the same conclusion. (1117)

Response: See responses to comments 2456 and 2627.

2757. Comment: The DEP Analysis also fails to adequately discuss the financial, economic and social context into which the proposed regulations will be introduced. The conventional oil and gas industry is very different than the unconventional, and the conventional industry is not enjoying an economic surge. In fact the profit margin in conventional oil and gas wells is very low. The conventional oil and gas industry is already suffering harm from recently enacted changes in erosion and sedimentation practices and well casing requirements. The difficult economics are reflected in shrinking conventional oil and gas production; new conventional well completions have dropped from 4500 wells six years ago to approximately 1000 this past year. The cost of the proposed regulations will have a catastrophic impact on an industry already in difficulty. The DEP Analysis fails to identify either the amount of those costs or the economic and social context of the conventional oil and gas industry. (389, 1123, 1125, 1136, 1171, 4683 – 4686, 4687 – 4702, 5707 - 5709, 5741 - 5760, 5761 – 5762, 5763 – 5773)

Response: See responses to comments 2456 and 2627.

2758. Comment: I am writing to let you know we oppose the new proposed rules to regulate the production of oil and gas. We have a conventional gas well on our property in Somerset County, PA and we rely on the income of this well. The proposed ruling is unfair to owners of conventional wells and should not be put in effect. Please vote against these new regulations. They threaten the future of the conventional oil and gas industry in Pennsylvania.(152)

Response: The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2759. Comment: Before new regulations are imposed on a small business careful steps should be taken to make sure that the regulations are necessary, that all alternatives have been considered, and that the costs of the regulations are justified. That has not happened with these new proposed regulations. Instead my business is going to be hurt because the small businesses that make up the conventional oil and gas industry are going to be hurt by these proposed regulations. That harm is unnecessary because the state has not properly considered the small impact of conventional oil and gas and because the state has not considered alternatives. (413, 444, 5710 – 5717)

Response: See responses to comments 2456 and 2627.

2760. Comment: The Cost of Doing Business?

If regulatory burdens, whose intended designs are meant for the unconventional aspects of the industry, increase the price-tag to drill and complete a conventional oil or natural gas well it makes the viability of future conventional drilling projects less and less likely. The Pennsylvania Department of Environmental Protection MUST restructure Chapter 78 in order to separate the regulations that exclusively apply to unconventional oil and gas operations.

According to a White Paper study released by the Pennsylvania Grade Crude Oil Coalition

published September 1, 2013:

“It is the Department’s responsibility to conduct a small business review before submitting the Chapter 78, Subsection C proposal to the Environmental Quality Board. This is a legal obligation under the 2012 Regulatory Review Act. In addition, by Executive Order and DEP policy, DEP must rigorously review a proposed rule, before it is published, in accordance with Executive Order No. 1996-1, 4 Pa Code Chapter , Subchapter FF, and the policy for the Development, Approval and Distribution of Regulations (Doc. No. 012-0820-001). These require that:

- regulations address a “compelling public interest.”
- the costs do not outweigh the environmental benefits.
- viable non-regulatory alternatives are explored and preferred over regulation
- regulations “shall not hamper Pennsylvania’s ability to compete effectively with other states.”

I do not see evidence supporting that the above steps were taken or considered by the Department in regards to the conventional oil and gas operators of this Commonwealth. We need only look to our neighbors to the North in New York State to see the disastrous socio-economic effects of hyper-regulation and moratoriums on the drilling industry. (420)

Response: See responses to comments 2456, 2627 and 2800.

2761. Comment: As the manager of a new business in McKean County I have become aware of the proposed regulations affecting unconventional as well as conventional wells. It is of great concern to me as to how these new regulations are going to affect my customers. Through conversation with many of them it has become aware to me that these proposed regulations could have huge adverse effects on many of their businesses, which will then hugely affect mine. These effects are not good; they could potentially put me out of business. All the time, energy and money thus far put forth to build what we have will all have been for nothing. How can your board members possibly NOT see that these proposed regulations will severely cripple much of McKean, Warren, Elk, Clarion, Potter and Forest Counties ...just to name a few? Bradford Pa could potentially lose its refinery which will do far more than just put people out of work. Have any of you ever felt that you hold people’s lives in the palm of your hand? If not, you need to deeply consider what your vote has the potential to do. I am telling you that as an employer that is exactly how one feels. As an employer, not only do you hold your employees life, you also hold the lives of their families in the palm of your hand. It is very scary to think that someday you may have to tell these people that you are closing your doors due to government over regulation...that makes no sense ... so therefore we are all out of work. How does that make economic sense?

I am not saying that I do not want to protect our environment; as a matter of fact I very much do because I am a lover of the outdoors as is my family. There is a need for regulations that make sense to not only protect the outdoors but, ones that will protect the future of MANY MANY businesses in the counties that I have already listed. None of us want to see the streams we fish or the lands we hunt “destroyed or ruined” by hazardous, careless drilling practices. The business that is new to my life is a regulated bird hunting grounds, it doesn’t get any more outdoors than that. All of my customers love the hunting grounds and want to see nothing “bad” happen to them or any other ground. Shallow oil and gas operators have been working in this area for 150 years which mother nature has had no problem with standing and surviving. As the saying goes...”you can’t fight mother nature.”

In conclusion I am asking you to PLEASE vote “NO” to the proposed changes to Chapter 78 regulations so that I do not have to fear potential loss of business and possibly closing my doors to something I have become attached to. If these regulations pass they will ultimately put many shallow operators out of business that will have a detrimental effect on much of Pennsylvania. (425)

Response: See responses to comments 2456 and 2627.

2762. Comment: I am an employee of a small land surveying business in northwestern Pennsylvania. My employer has many clients in the oil and gas industry. I am aware that DEP is proposing new oil and gas regulations that will have a harmful economic effect on the conventional well oil and gas industry and, in turn, will affect the income of my employer’s business.

My employer’s oil and gas clients are small businesses who already have to follow tight regulations that DEP set for unconventional well drillers with no separate distinctions for conventional well drillers who are my employer’s clients. My employer’s clients do not produce large volumes of oil and gas and do not make large profits. It is a major economic concern how they can comply with these new regulations. The increase in costs to my employer’s clients will have a harmful economic effect, not only to them but, to my employer, to me, and to our local economy.

In making regulatory changes that include unconventional wells with conventional well operations, the DEP did not properly analyze the costs to the small conventional oil and gas businesses. All aspects of conventional wells should be regulated separately from unconventional wells.

The conventional oil and gas industry is vital to our community for creating jobs. It is important that these new regulations not be passed in their current form. Please vote “NO” to the current policies until they are altered to support the economic well-being of northwestern Pennsylvania.

Another problem I see with these changes is spills. In the past, spills in excess of 15 gallons were reportable. Now, apparently, DEP wants all spills reported regardless of volume. Does that mean that when anyone spills a little oil, gas, or grease while maintaining their lawn mower, chainsaw, snow blower, ATV, or other vehicles, that they will be required to report the spill to DEP? If this will be a regulation; it should affect all people not just the oil and gas industry. Surely, we don’t want that. When walking through a parking lot for shopping malls or office complexes, you can usually find oil sheen on the surface. Who will be responsible for reporting that? Let’s leave well enough alone. (424, 436, 437)

Response: See responses to comments 2456 and 2627. Sections 78.66(b) and 78a.66(b) only requires reporting of a spill or release of 5 gallons or more of a regulated substance over a 24-hour period that is not completely contained by a containment system, or spills or releases causing or threatening pollution of the waters of the Commonwealth.

2763. Comment: I am a manager at a Conventional oil and gas company in western Pennsylvania. We are trying to stay afloat in these trying economic times. These proposed changes would virtually wipe-out the Conventional, (shallow/vertical), oil and gas industry in PA.

The justification used to modify the Oil and Gas Act was that Unconventional (deep/horizontal) Gas Well Development had changed the process for oil and gas extraction of the industry. This change vastly increased; site sizes, pit sizes, water utilized, gas production, waste production, road use, and general disturbances.

The Conventional oil and gas industry has had no substantial changes to its process for about 60 years. With the Conventional industry having no increased impact on the environment, I do not see the need for these increased regulations and burdens. The Conventional Oil and Gas Industry is comprised primarily of small business, family oriented operations. Most are multigenerational Pennsylvania companies that have provided jobs and energy for the Commonwealth for a long time, some for over 100 years.

These proposed revised regulations will further burden the Conventional Oil and Gas Industry with increased costs and paperwork. These increases will impact our industry immensely. With many Conventional, (shallow/vertical), operators being squeezed by a flooded gas market, unnecessary and costly regulations will push these previously stable companies to the brink. Remember that the small Conventional operators receive the same commodity prices for their oil and gas production as the large Unconventional operators. (627, 4681 – 4682)

Response: See responses to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2764. Comment: I am aware of new regulations being considered by your board. I oppose passage of these regulations.

Shallow gas and oil wells have operated in our state for more than 140 years. The regulations currently governing these wells are more than adequate to protect the environment.

My existing old wells produce only a few gallons of oil per day. These wells will not be able to cover the cost of these additional regulations. The proposed new regulations will force me to terminate these old wells and reconsider drilling any additional wells.

Drilling and operating conventional wells must not be regulated by the same rules as deep wells. The regulation package as it stands is overly board and burdensome without adding meaningful protection to the environment. Please vote “NO” to the proposed new regulations. Please allow conventional wells to operate under the same regulations in place before passage of Act 13 of 2012. (428)

Response: See responses to comments 2456 and 2627.

2765. Comment: I am a small oil producer of shallow oil wells. I have 24 wells. I have operated these wells since 1984. These are old wells. These new laws & regulations would cause hardship on me as the owner. I don’t pump that much oil. How do I pay for this? Act 13, 2012. Please use your undivided discretion for the little guy and represent us. (435)

Response: See responses to comments 2456 and 2627.

2766. I am a resident of Harrison valley, PA and think that the PA act 13 Oil & gas regulation updates to Chapter 78 is unfair. I feel if these updates go in effect that small oil business will go out of business. I feel that this country was formed on small business and that the rules and regulations should help them stay in business. If bigger companies get all of the business then they would be able to grow much larger than any other companies, therefore being able to control every aspect going into the oil field. I just hope you take the time to really think about what this country is based on and look at our roots. (500)

Response: See responses to comments 2456 and 2627.

2767. Comment: I feel your intensions of changing the PA Act 13 regulations, are going to negatively affect oil industry. PA has a strong history of oil production that dates back to 1800's, and it would be a shame for politics to disrupt this heritage. You will be cutting the throats of the little guys while leaving the big players to resume business as normal, due to their large pockets. (504, 506)

Response: See responses to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2768. Comment: The passage of new regulations as they apply to conventional oil and gas wells will likely create another impediment for the small independent producer. This one size fits all approach to regulation will further hurt the fragile local economy by hampering production, driving up costs, and increasing unemployment. Our nation has a chance to become energy independent and the implementation of new regulations will create another bureaucratic barrier in preventing our nation from achieving that independence. (563, 1014)

Response: See responses to comments 2456 and 2627.

2769. Comment: I am a fourth generation oil producer. We have supported our families for over a hundred years working in the oil fields. If these chapter 78 regulations get adopted into law we will be forced to go out of business.

These regulations were written for the Marcellus wells but they now include the conventional wells. We are two completely different industries. The Marcellus should have its own regulations and inspectors. The conventional wells should go back to the Oil and Gas Act of 1984 and have our own inspectors and have regulations enforced with reasonable and knowledgeable enforcement.

Please do not pass these regulations until they excluded us small producers. If you change the regulations it will save many jobs and our refinery. (446)

Response: See responses to comments 2456 and 2627.

2770. Comment: The company that I represent employs six men. We frack them; I plug them; I pump them; I attend to them. 90% of our work is oil-related shale. These guys that work for me work today. Its 10° out. I ask them to go out and they go out. They are dedicated. They work an average of 50 to 70 hours a week. They have got kids to feed, mortgages to pay, got loans on their minivans. They have got dreams too. If DEP and EQB go through with these regs, will my employees still be able to chase their dreams?

I'm a second generation oil man and I am currently working on the third. My father has worked very hard to build our company, and I hope to carry on the legacy of operating our shallow oil wells. If the EQB and the DEP go through with these regs, there will be no legacy for my kids to carry on.

I realize there have been no studies on the effect of fracking on the deer population, but the deer that I harvest over my brine pits tastes pretty good. And for you folks that want to end the road spreading, I bet you don't live on a dirt road like I do, where my wife has to dust every day. I'd like to end with a quote from Ayn Rand. "When you see that in order to produce, you need to obtain permission from men who produce nothing, you may know that your society is doomed." (1209)

Response: See responses to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2771. Comment: The proposed regulations would severely impact any future drilling of shallow gas wells. The cost of the various requirements will not be recovered by potential return for the small companies drilling these wells. The potential return from the drilling of a “deep” unconventional well would easily cover the cost of the additional new regulations.

I urge you to vote NO to these proposed regulations and allow conventional wells to operate under the effective regulations in place before the passage of Act 13 of 2012. (458)

Response: See responses to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2772. Comment: I am here this evening to testify as part owner and employee of Oil & Gas Management, Inc. Ten years ago, after much thought and consideration, I closed the doors to my own business that I owned and operated for 14 years and began to work at Oil & Gas Management, Inc. alongside my husband and his partner. We now own and operate approximately 300 conventional wells in southwestern Pennsylvania and currently have a staff of seven (7) people. Our company was founded and established in 1991 with very little financial resources and we have made many sacrifices along the way. Nevertheless, it has provided for our families, and up until now we have a great sense of security and great hopes for the future.

At Oil & Gas Management, Inc., I am the first person you see when you walk through our doors and the first person you talk with when you call our office. I can speak for myself and our employees when I say that our security has been diminished by the many challenges this industry has handed us. The gas prices are very low and revenue has decreased dramatically, however the costs of services and materials has not followed that curve. The number of conventional wells drilled has dropped from 4,836 in 2007 to a mere 1,000 wells drilled in 2013. Pending regulations and revisions of Chapter 78 of The Pennsylvania Code will create an environment in which the conventional operators will not be able to sustain simply; these revisions and regulations will force us out of business.

The conventional oil & gas industry has been a part of the Western Pennsylvania landscape for over 150 years. Now, in an effort to regulate a new, unconventional industry, namely The Marcellus Shale development, the department is imposing inappropriate, onerous regulations on the conventional operators with economic burdens that will devastate a small business such as ours. The vast majority of conventional oil and gas wells are drilled and operated by small locally owned companies just like ours, and in **most** cases are family owned. A critical distinction of the conventional industry is the cost to develop the wells, lower production and smaller return on investment compared to unconventional wells. The unconventional operators MAY be able to comply with these proposals without a devastating economical outcome for their company, but the conventional operators cannot. In accordance with the requirements of the Regulatory Review Act, as amended on June 29, 2012, the DEP is required to consider the impacts to small business from new regulation, including legal, accounting and consulting compliance costs that would be incurred. Also noted in Act 76 of 2012, Act of June 29, 2012, under the statute, the DEP MUST consider the establishment of less stringent compliance requirements for the small businesses throughout Chapter 78.

I am here to ask you to consider alternatives for small businesses such as ours which can include the establishment of less stringent schedules or deadlines for compliance or reporting requirements, the consolidation of compliance or reporting obligations and exemptions. In addition to excessive costs to comply with the proposed regulations, most small oil and gas business owners will find it necessary to reduce their current work force, which will result in higher unemployment and lower tax revenue received by the state. Small businesses are the economic engine in our society and with unending regulation we find ourselves fighting a daily battle to survive. Through our drilling programs, we have enabled landowners to prosper from their land thru lease bonuses, royalty payments, free gas and right- of-way compensation. We have purchased property on which to drill and in turn paved roadways, installed water lines, removed trash and helped improve the communities in which we operate. Our lessors have called and stopped in our office to find out why their leases are being surrendered or not being renewed or to find out where we have been because they have not seen our rigs coming into their area. These people truly rely on the monetary income from their royalties and the free gas that they receive. If these regulations are imposed on the conventional operators, thousands of wells will be plugged and tens of thousands of landowners will be deprived of this income.

I have traveled 3 hours today to be here to express my concern with the proposed regulations. I love what I do. As citizens of the great state of Pennsylvania, we have been enriched with the abundance of oil and natural gas that lies beneath our land. I believe that it is our responsibility to extract this source of natural energy in a responsible, respectable, and safe manner while complying with the CURRENT regulations that have been in place for thirty years. The DEP should give serious consideration to the exemption of small business from all or any part of the new requirements contained in the proposed regulation.

I would like to leave you with one thought:

Should the shoe industry decide that they are only going to manufacture size 8 shoes, that would leave many people barefoot without a means to cover their feet... ..as one size does not fit all.... all the time! I URGE YOU TO VOTE 'NO' ON THE PROPOSED REGULATIONS! (876)

Response: See responses to comments 2456, 2627 and 2800. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2773. Comment: My personal view as being a small business owner myself: I would ask to not impose unnecessary regulations on business that is so important to everyone's lives. When small business can't compete we will all suffer. (574)

Response: The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2774. Comment: Bradford Pipe & Supply was founded in Bradford, PA, in 1907. It was originally a machine shop and supply house for the oil and gas industry. Over 100 years later Bradford Pipe & Supply continues in the oil field business. The cornerstone of our business is the supply of materials to the oil and gas industry such as tools, tubing, pipeline, tanks and so forth.

At our Bradford store we serve over 400 oil and gas customers in northwestern Pennsylvania and we employ 12 people. Bradford Pipe & Supply believes in social responsibility. Our employees are encouraged to intake positive contributions to our community. Through personal involvement and contributions, Bradford Pipe & Supply supports the Boy and Girl Scout programs. Chamber of Commerce, social organizations such as the Rotary, Elks, and Kiwanis, educational institutions, and summer Little League athletic programs, plus many other activities.

Bradford Pipe & Supply is a small business, and virtually every oil and gas customer that we serve in northwestern Pennsylvania is a small business. Tonight I want to talk about how the proposed regulations fail in the small business context.

I want to read these words about small businesses: “A vibrant and growing small business sector is critical to creating jobs in a dynamic economy. Small businesses bear a disproportionate share of regulatory costs and burdens. Fundamental changes that are needed in the regulatory and enforcement culture of agencies to make them more responsive to small business can be made without compromising the statutory missions of the agencies.” That quote is from the Regulatory Review Act which became Pennsylvania law a little under two years ago.

The Act goes on to say this: “The process by which State regulations are developed and adopted should be reformed to require agencies to solicit the ideas and comments of small businesses, to examine the impact of proposed and existing rules on such businesses and to review the continued need for existing rules.”

To accomplish those goals the Act requires that a very specific economic impact statement be prepared. The Act requires that the statement identify the number of small businesses subject to the regulation, the impact of the regulation, and a description of less intrusive or costly alternative methods that could achieve the purpose.

The Act also requires a regulatory flexibility analysis which requires consideration of less stringent compliance methods, alternative performance standards, and even the exemption of small businesses from all or any part of the proposed regulations.

The DEP analysis that is before you does not do these things. Even though the law requires it, you will not find regulatory flexibility analysis that considers less stringent compliance methods, alternative performance standards or the exemption of small businesses from all or some of the proposed regulations.

The proposed regulations, however, impose exactly the kind of devastating threat that the Regulatory Review Act worries about. From discussions with our customers, from comments that we have seen, and from listening to testimony tonight we know that there are hundreds of millions of dollars of costs that will be imposed on the conventional oil and gas industry that are not discussed in the DEP documents. I believe the initial costs of compliance alone is over 1 billion dollars and that year in and year out the proposed regulations will add 100's of millions of dollars of costs to the small businesses that make up the conventional oil and gas industry.

These costs have not been properly considered or presented to you as required by law. And the alternatives and the analysis that are required under the Regulatory Review Act have not been performed. I know the importance of a small business. I work in one, and every business in my community in Bradford Pennsylvania is a small business.

These proposed regulations will have a crushing effect on these small businesses. This process has to go back to the beginning in order to do the studies that the law requires for small businesses. (983)

Response: See responses to comments 2456, 2627 and 2800. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2775. Comment: I had never even seen an oil well until I traveled to St. Bonaventure University for my initial visit and I remember thinking how cool it was to find that there were oil wells so close to where I grew up. I ended up marrying a fourth generation oil producer. After graduation one of my first jobs was in a laboratory analyzing produced water from secondary recovery wells. So here was someone who wasn't even from the area reaping the financial benefits of a viable industry for both myself and my spouse. Imagine the ties the people who have lived their whole lives in the Pennsylvania Oil Region, which includes southwestern New York, have to this industry. Generations of families have benefitted by the presence of this industry, as has, directly or indirectly, almost everyone living in the Pennsylvania shallow oil field.

My husband has worked long backbreaking hours on his oil properties (with no benefits because he is self-employed) because he loves what he does and is proud to be producing a valuable resource, and there have been some tough times. But as hard as the physical work has been it is the regulatory burden that has broken his spirit. And we live in constant fear of not knowing what will be coming next. His one-man operation does not have a tiny fraction of the impact that the deep non-conventional wells do. Each well averages only gallons of oil per day so the economics to comply with regulations is finite. Please allow him to continue to do what he loves to do.

We live in the country and appreciate more than most city dwelling bureaucrats ever could the beauty of the land we live on. We as well as our oil producing friends would do nothing to harm the environment because that is where we live and work and play and we respect the land that has in many cases been in the family for generations. Putting a 150 year old industry out of business by promulgating onerous and unnecessary regulations would have devastating effects on the economy and the people of this entire area. (979)

Response: See responses to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. ,

2776. Comment: The costs associated with complying could not be absorbed by many, if any, of our conventional producers. This would be a "game changer" for the way we have done business for 150 years, and continue to do it today. If these regulations come into effect, it would mean the unnecessary and premature plugging of many existing legacy wells. These wells truly make up the backbone of our industry. The expense involved in complying with the proposals is not justifiable; meaning tens of thousands of wells would have to be eliminated. Similar to the idea that no one would pay \$3,000 to insure a \$3,000 car. If producers determine that even 25% of leases are not economically worth reworking infrastructures to come into compliance, approximately 32,500 wells will be filled with concrete. For no other reason than because operations that were deemed safe even a few years ago, have now been deemed unsafe and illegal regardless of evidence to contrary. This idea alone, of wasting the millions of dollars already invested into infrastructure, the thousands of acres of ground disturbance, the hundreds of thousands of trees already cut, and the countless man hours involved is grossly unethical at best. It seems that if the dollars have already been invested, the

trees have been cut, the ground disturbed and the well drilled, that it would be poor stewardship of the highest magnitude to do anything other than to continue to produce these wells for as long as feasibly possible. As environmental protectors, it must be among the departments top priority that this goal is accomplished. Otherwise, we would all experience the epitome of the end, in no way, justifying the means.

The question then arises that perhaps it is the department's intent to knowingly force producers to plug these conventional oil and gas wells, and over time, be a state solely producing from the larger, higher paying unconventional wells. If this is the case, and I hope it is not, we must ask ourselves what the future could possibly hold for the unconventional drilling industry over the next several years. With the increased success of producing the more valuable liquids from the wet gas in the Midwest and northern plains, the struggling gas prices of the past years and the threat of increased regulation, we must remember that these larger companies can move out of our state just as quickly as they moved in. Unlike the family owned businesses that make up our industry, the large unconventional drillers hold no allegiance to any particular geographic area. It would be a tragedy for our children, communities and state, if at this point in history, we chose not to work together to protect both the conventional and unconventional producers within the commonwealth, while striving to maintain a clean and safe environment in which to raise our families.

As a state, we are presented with the option of "out with the old, in with the new", or, of treading slowly and cautiously, while preserving two industries that represent billions of dollars to our area of the country. Please consider the impact we could have and the precedents we could set by demonstrating what is possible in allowing two very different industries to thrive side by side. It is imperative that you vote "no" to these proposals, while we work on alternatives that allow everyone involved to operate at their full potential. (897)

Response: See response to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2777. Comment: Curtis & Son Oil, Inc. was started in 1939, 85 years ago by my grandfather Howard Curtis in Warren County. He and my father Bud worked around the clock drilling wells with a cable tool rig. I remember going out on the night shift with my father as a kid trying to dress a bit with a hammer. I could hardly pick it up; I might have gotten two swings to his six.

In those days after the well was drilled they used nitroglycerin to blow up the oil and gas formation to give up more oil with not the best results. In 1961, my grandfather and father hydrofractured their first oil & gas well in the Sugar Grove area.

Being new technology it was an expensive gamble. It worked so well my father decided it would be more economical to build his own fracturing equipment. He bought two piston pumps and six 1964 Ford cement mixers that were used to build the Kinzua Dam. Three of the trucks were stripped to build the frac trucks, two pump trucks and one blender. The other mixers were used to haul the silica sand; this was the start of Curtis Well Service Company.

Our companies, in addition to me and my four sons, employ twenty men and women. The salaries we pay are very competitive in our area and we also provide health insurance.

Other than employment in natural resources such as oil and gas or timber there are not a great many local opportunities for a young man or woman growing up in Warren County. Our county population is shrinking and we don't have the road network or other infrastructure to attract large

businesses.

Thus, I am proud that Curtis Well Service has grown over the years. We need to appreciate that those jobs cannot be easily replaced. We need to remember that each job supports someone's family.

I am very worried about the proposed changes to Chapter 78. The new regulations will impose huge compliance costs. I am a member of PGCC and we are studying those costs. Our calculations show that initial compliance will likely cost over a billion dollars to the conventional industry. Every year thereafter will be several hundred million dollars more.

I work for dozens of small conventional oil and gas producers. I can tell you that all of them are small businesses and many run on a shoestring. These costs will harm everyone in the industry and the result will be fewer new wells and the retirement of existing wells. For my company that will mean layoffs.

Why is this happening? The conventional oil and gas industry has been consistently regulated for over 30 years and these proposed changes are not due to problems. The changes are happening because the DEP mixed up the conventional industry with all the changes that are happening in the unconventional industry. That is a sad mistake. I ask that you fix that mistake. (444a)

Response: See responses to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2778. Comment: An exemption should be provided for Small Businesses who cannot afford to hire or train staff to comply with proposed electronic submissions, which are numerous in the proposed rulemaking. Upon registration with the Department, Small Businesses should be allowed to provide hard copy submissions or notifications by telephone as appropriate. This accommodation would not create any negative impact to the environment and would enable conventional operators some time to transition to electronic submission requirements. (1135, 1153)

Suggested regulatory language:

§ 78.3. Small Business Exemption

Upon registration with the Department, Small Businesses, as defined in the Regulatory Review Act, are exempt from the electronic notification and submission requirements throughout this chapter and may submit such notification and applications to the Department in hard copy by United States mail or by telephone as provided in the regulations below. (1135, 1153)

Response: See response to comment 219.

2779. Comment: The Regulatory Analysis Form (RAF) is incomplete and fails to estimate the costs associated with new oil and gas gathering lines and horizontal directional drilling requirements. The RAF only briefly discusses potential costs to conventional operators and does not include an analysis concerning the costs to pipeline companies. The RAF significantly underestimates the costs that will be added to pipeline projects to achieve compliance. (1154, 1155)

Response: The costs presented on the Regulatory Analysis Form are based on the cost information provided by the industry and based on this information is considered appropriate and reasonable.

The Department disagrees that it failed to make a complete assessment of the costs of the rulemaking. The Department used cost information provided by the industry to develop the Regulatory Analysis Form. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2780. Comment: **78.59b** – The Department’s cost estimate considers only the cost of fencing around existing impoundments, ignoring all the other requirements associated with both existing impoundments and the construction of new impoundments, to reach an estimated cost of \$0.7 million to \$5 million. The commentators believe the cost of all the new requirements applicable to fresh water impoundments is \$250,000 to \$500,000 per impoundment, producing a total cost of \$25 million at the low end of the estimate, or five times the Department’s figure. See also commentators’ comment to 78.59a above. (1137, 1153, 1174)

Response: It is not the intent of the Department to apply new regulations to existing facilities including impoundments.

The Department disagrees that it failed to make a complete assessment of the costs of the rulemaking. The Department used cost information provided by the industry to develop the Regulatory Analysis Form. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2781. Comment: These new regulations will do great harm to the conventional operators. The added cost of trying to comply with these new regulations will force many operators out of business, which in turn will close our refinery. The refinery will not have enough Penn Grade Crude oil to keep running and make a profit.

The refinery along with the producers already operates with a small profit margin. The difficult economics are reflected in shrinking conventional oil and gas production; new conventional well completions have dropped from nearly 5000 wells six years ago to less than 1000 this past year. The conventional oil and gas Industry is already in difficulty. (1132, 2176 – 2377)

Response: As part of this rulemaking, in response to comments and recent legislation (the Act of July 10, 2014 (P.L. 1053, No. 126)), the Department split Chapter 78 into two separate Chapters – one for conventional oil and gas wells (Chapter 78) and the other for unconventional wells (Chapter 78a). The purpose of this amendment to the final rulemaking was to clarify the different requirements for conventional and unconventional wells. The Department believes that having two completely separate regulatory Chapters should serve to eliminate any confusion about what requirements apply to conventional and unconventional wells. In addition, having separate Chapters allows the Department to craft regulations to match the environmental risks posed by each segment of the industry (compare, for example, section 78.56 and section 78a.56, which contain significantly different requirements for temporary storage at conventional and unconventional well sites, respectively).

The Department believes that the rulemaking accurately reflects the intent of Act 13 and is not overly prescriptive. The Department disagrees that it failed to make a complete assessment of the costs of the rulemaking. The Department used cost information provided by the industry to develop the Regulatory Analysis Form. The Department believes the revisions to Chapters 78

and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2782. Comment: The proposed regulations are unclear on how the new requirements will apply to existing operations. It will put an undue burden on pipeline companies and conventional well operators both financially and practically to impose the proposed regulations on existing operations already working within the scope of DEPs current regulations. A provision should be included to clearly state the that new standards do not apply to operations that have already been constructed, are being constructed under issued permits and for other operations for which permit applications have been submitted to DEP prior to the effective date of the final rulemaking. (1154, 1155)

Response: It is not the intent of the Department to apply new standards to existing facilities operating under issued permits. Where the final-form rulemaking applies to existing facilities, the regulations are explicit. For example, sections 78.59c(a) and 78a.59c(a) require operators using a centralized impoundment at the time of the effective date of the regulations to close the centralized impoundment or obtain a residual waste permit within three years of the effective date of the rulemaking.

2783. Comment: The proposed regulation does not meet the requirements of Executive Order No.1996-1 or Departmental policy, which require rules to address “compelling public interests “in a manner by which the costs do not outweigh the benefits.

Example 1:

Section 78.15 (Application Requirements) proposes to equate Act 13’s reference to habitats of “critical communities” with the phrase “special concern species” without justification in fact or law. This rule would significantly expand the time, expense and resources required for the permit application process because oil and gas operators are not currently obligated by law to mitigate impacts to special concern species, the designations of which far outnumber listings of threatened and endangered species protected under federal and state law.

This section of the proposed rule also requires unbounded additional time, effort and costs to engage in consultation with other Commonwealth agencies, such as the Department of Conservation and Natural Resources, the Pennsylvania Game Commission, and the Pennsylvania Fish and Boat Commission regarding impacts to listed public resources and to obtain comments and recommendations from those agencies regarding potential well permit conditions for the protection of public resources.. The proposal creates, in effect, another permit requirement that is not authorized under Act 13 or any other statute. The potential costs of the proposal far outweigh the potential benefits of such a process. Consultation and satisfaction of the other Commonwealth agencies as a precondition for well permits can take several months, imposing costs of field surveys and mitigation measures above and beyond what is legally required.

Example 2:

Section 78.52a Abandoned and Orphaned Well Identification proposes an obligation to identify the location of orphaned or abandoned wells within 1,000 feet of the well bore and along the entire length of a horizontal well bore, the costs of which could far outweigh any realizable benefits.

Example 3:

Section 78.73 Well Construction and Operation proposes an obligation to monitor orphan or abandoned wells and to notify the Department of “any change,” take “action to prevent pollution of waters of the Commonwealth,” and plug any orphan or abandoned well “altered” by hydraulic fracturing. In addition to obvious problems surrounding access to property not owned by the well

operator, this provision includes ambiguous and sweeping obligations that are not clearly delineated.

Example 4:

Section 78.57 Production Fluids proposes the removal, within three years of promulgation of the final regulations, of all underground or partially buried storage tanks used to store brine or other production fluids. This requirement fails to recognize the impact that it could have on conventional operators with dozens of such tanks.

Example 5:

Section 78.59a-c Impoundments would create excessive requirements for freshwater and flowback impoundments that are more stringent than requirements for hazardous waste impoundments.

Example 6:

Section 78.66 Reporting and Remediating Releases would require small spills of less than 42 gallons of brine to be cleaned up and documented through the Land Recycling and Remediation Standards Act (known as Act 2, the Pennsylvania brownfields statute) process outlined in 25 Pa. Code 250. This proposal substantially increases the time and costs for addressing such small spills, costs that far outweigh any benefit to be realized in most circumstances.

Example 7:

Section 78.68 (Oil and Gas Gathering Lines) would impose requirements for pipelines used in the oil and gas industry that are not imposed on any other industry utilizing pipelines.

The Department's Policy requires that regulatory strategies should be designed to achieve the desired goal at the "lowest possible cost." It does not appear that the Department has considered the economic impacts of this regulation, especially in light of other recent development of permits and policies that have substantially increased the cost of doing business in Pennsylvania, such as the Act 9 (Emergency Planning) regulations, ESCGP-2 (Erosion and Sedimentation Control and Post-Construction Stormwater Management Permit), the Spill Policy, the Pennsylvania Natural Diversity Index (PNDI) Policy, and others. The Department is required to consider economic impacts of its proposed rules and cannot do so in a vacuum. Each of these rules, policies and permits, while intended to achieve laudable environmental goals, must be considered for its cumulative impact on the oil and gas industry in Pennsylvania. (1172)

Regulation, which can stifle and prohibit short and long term economic growth when overly broad, should be narrowly tailored to meet actual needs while staying true to the purpose of Act 13, which is to "permit optimal development of oil and gas resources of this Commonwealth consistent with protection of the health, safety, environment and property of Pennsylvania citizens." 58 Pa.C.S. § 3202(1). The required cost-benefit analysis must be done before a regulation is proposed for public comment. The proposed regulation is legally incomplete without this analysis and would change substantially from its proposed form upon such review. (1172)

The Department should also consider the costs of a regulation that spurs litigation if it is proposed before it is fully developed in accordance with both legal and practical requirements. (1172)

Response: The adoption of new regulations that to some seem overly burdensome and to others not burdensome enough is based on the need to protect the health and safety of the public and the environment while allowing the legitimate development of oil and gas resources. In addition to the need to address unconventional well operations, there is a significant need to update the regulations that apply to conventional well operations, which were last updated in

2001. Statutory changes resulting from the passage of Act 13 of 2012 as well as other program developments (such as the passage of final Chapter 102 regulations in 2010) and environmental protection gaps in the Department's current regulatory requirements necessitate modest, common sense revisions.

The Department believes that the rulemaking accurately reflects the intent of the 2012 Oil and Gas Act and is not overly prescriptive. The Department disagrees that it failed to make a complete assessment of the costs of the rulemaking. The Department used cost information provided by the industry to develop the Regulatory Analysis Form. The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2784. Comment: I am writing to express my opposition to the Environmental Quality Board (EQB) adopting the revisions proposed by the Pennsylvania Department of Environmental Protection (PADEP) to 25 Pa Code Chapter 78 "Oil and Gas Wells." We and our sixty-one Commonwealth based employees have firsthand experience with the extraordinary efforts made by Pennsylvania's oil and gas industry to be good stewards to the environment and good neighbors to the communities in which we live and work. Based upon these experiences, we find the proposed revisions to lack sufficient justification, to have costs far in excess of any benefits, and to provide very little in actual real-world environmental protections. In fact, we believe the proposed rule will diminish the recent prosperity created by Pennsylvania's oil and gas industry and will cost our communities revenue while increasing their social burdens. We urge you to stand with us by voting against finalization of this rulemaking in its current form. Unless the proposal is substantially revised based on full consideration of the costs and benefits, it will cause harm to the prosperity of our communities, and especially to those people who will lose their jobs. To the extent that portions of this rulemaking are mandated by state law, the EQB should insist that the DEP propose revisions only to fulfill those obligations, with simple rules, based on empirical science, and written in plain language. (12, 623)

Response: The Department believes that the rulemaking accurately reflects the intent of Act 13 and is not overly prescriptive. The Department disagrees that it failed to make a complete assessment of the costs of the rulemaking. The Department used cost information provided by the industry to develop the Regulatory Analysis Form. The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2785. Comment: We are a construction Company in Bradford PA that performs work for the oil and gas industry. It has come to my attention that the Department of Environmental Protection (DEP) has proposed changes in regulations affecting the oil and gas business.

I understand that these new and modified regulations will unnecessarily increase costs for oil and gas companies and will be particularly costly for companies operating conventional oil and gas wells. While the regulations will significantly increase costs, the regulations will not result in significant environmental benefits in the conventional oil and gas industry.

We strongly oppose these new regulations. In addition to causing severe economic harm to the oil and gas industry, they will have detrimental effects to the community as a whole. More regulations, at a time when the economy is so unstable, is reckless and will only damage our economy further. And, all of these negative consequences will result from new regulations that will bring insignificant environmental benefits.

For these reasons it is important that these new regulations not be passed in their current form. Please vote “NO” to the current regulations until they are altered to account for the economic well-being of the Commonwealth of Pennsylvania. (387, 485)

Response: See response to comments 2456 and 2627. The Department believes that the rulemaking accurately reflects the intent of Act 13 and is not overly prescriptive. The Department disagrees that it failed to make a complete assessment of the costs of the rulemaking. The Department used cost information provided by the industry to develop the Regulatory Analysis Form. The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2786. Comment: We are writing in reference to the Environmental Quality Board (EQB) adopting the revisions proposed by the Pennsylvania Department of Environmental Protection (PADEP) to 25 Pa Code Chapter 78 “Oil and Gas Wells.” As a consultant, our company and its approximately 75 Pennsylvania employees have firsthand experience with the extraordinary efforts made by Pennsylvania’s oil and gas industry to be good stewards to the environment and good neighbors to the communities where we live and work. Based upon those experiences, we are concerned that sufficient justification for cost vs benefits as it relates to real-world environmental protections was evaluated. We believe the proposed rule will cause economic burden to Pennsylvania’s oil and gas industry and our communities. We ask that you vote against finalization of this rulemaking in its current form. (126, 423)

Response: The Department believes that the rulemaking accurately reflects the intent of Act 13 and is not overly prescriptive. The Department disagrees that it failed to make a complete assessment of the costs of the rulemaking. The Department used cost information provided by the industry to develop the Regulatory Analysis Form. The Department acknowledges the comment.

2787. Comment: The Economy

- a. In general terms, the Shale Gas Industry has provided opportunity to Pennsylvania that many other states in the union could only wish for. We are lucky to have the jobs both in the gas industry as well as construction, hospitality and support services. Our unemployment is below national averages.
- b. We now have opportunities for our young people to earn a family sustaining incomes without having to spend a life savings on a college education. And for those that do attend higher education, they have opportunities to find careers here in their home state of Pennsylvania.
- c. The Gas Industry has paid \$1.8 billion in taxes to Pennsylvania since 2008.
- d. Act 13 Impact revenues of \$406 million paid to local communities both impacted & not impacted (Philadelphia & Pittsburgh) by the industry. As the chair of our local Mt. Pleasant Twp. Municipality Authority, I like the idea that these funds are paid directly to the communities that have been impacted without going through Harrisburg. These funds are being used to improve our local environment with the construction of a community sewage system. This will provide safety & peace of mind to our citizen who own property and receive a royalty check as well as those who live in small mining villages with no financial connection to the industry.

- e. I can go on and on about how the Gas Industry has helped our economy, both locally & at the state level. But let me just restate my opening points about our family business. We were surviving as a business in 2007, the economy was bleak and we did not see any opportunities to grow our business. Since the Gas Industry has come to town we now see a future in our business. Sure there will be peaks and valleys with activity as the play develops, but that is a challenge any business person must evaluate. There are no guarantees in life, only opportunities!
- f. Lower natural gas prices are driving a manufacturing renewal across the region. Moreover, natural gas liquids are the building blocks for a variety of products, including plastics, tires, pharmaceuticals, and other. Consider the employment impact of a manufacturing renaissance in our state!
- g. I have heard people say that the gas industry can't leave, the shale is here in PA. Wrong! If you look at the number of shale plays that have become active in the last 4 years it is amazing. There are other places that have shale and the equipment and technology is mobile. The industry operates as a business; they have stockholders to answer to. If a play is not profitable they will find another place to drill. I suggest that the economic impact of your regulations, has to be considerate of the Oil & Gas Industry, to keep the economy strong here in Pennsylvania. (133)

Response: The Department acknowledges the comment.

2788. Comment: There are many costs, which the DEP Analysis either overlooks completely or else understates significantly. One such requirement is the increased burden imposed upon conventional operations resulting from small spills, including the burden to attain demonstration under the Act 2 process. DEP has not weighed the harm that is to be mitigated with the costs imposed for mitigation of small brine spills at conventional well sites. Operational releases of brine to the ground surface during the 100-year history of oil and gas drilling in the Commonwealth for the most part has not been observed to have any significant or lasting environmental effect. DEP must consider this historical knowledge and context before altering cleanup requirements, especially for small spills of substances that have low toxicity and are readily bio-remediated, such as brine and crude oil. Additionally, the Regulatory Review Act compels the DEP to consider alternatives in precisely a circumstance such as this, where historical experience demonstrates that environmental impact is small and that alternatives are viable.

The Analysis fails to discuss any such alternatives or to account for the substantial increases in the time and costs for addressing small spills, costs that far outweigh any benefit to be realized in most circumstances. DEP should not require an attainment demonstration under the Act 2 process for small spills because that process can require many soil and groundwater samples over several months or years, which imposes significant cost to clean up a small spill and provides no meaningful additional environmental protection.

As for larger spills, persons who remediate spills at oil and gas sites in Pennsylvania have always had the option to utilize the Act 2 process to obtain liability relief. However, there are no statewide health standards for chlorides, which may be a common constituent of spills related to oil and gas operations. Requiring compliance with Act 2 for brine spills potentially creates an excessive burden and expense for oil and gas operators to develop background or site specific standards of attainment, with uncertain environmental benefit. By the time such standards and cleanup plans are developed, chloride impacts may have naturally attenuated to the point that further remediation is unnecessary or could do more environmental harm than good. This is not in the spirit of Act 2, which was intended to encourage voluntary cleanups that address actual risks and not require that every site be

immediately returned to pristine condition. Site specific factors should be reviewed to allow bioremediation and natural attenuation for such spills. As for crude oil spills, a spill of 50 gallons would trigger the greater reporting, documentation, sampling and cleanup standards under Act 2. Ironically, these reporting requirements for brine and crude oil are greater than reporting requirements associated with the transportation of hazardous substances such as sulfuric or hydrochloric acid.

The DEP Analysis fails to include a cost estimate for the greater reporting, documentation, sampling and cleanup standards. But obviously, such additional burdens will add significant cost. This is just one example of where the Analysis fails to discuss the cost of a new item. There are many others. (1171)

Response: The reportable release of brine has only changed minimally from the existing regulatory standards. Sections 78.66(b) and 78a.66(b) only require reporting of a spill or release of 5 gallons or more of a regulated substance over a 24-hour period that is not completely contained by a containment system, or spills or releases causing or threatening pollution of the waters of the Commonwealth.

2789. Comment: I am writing on behalf of my company in opposition to the Environmental Quality Board (EQB) adopting the revisions proposed by the Pennsylvania Department of Environmental Protection (PADEP) to 25 Pa Code Chapter 78 "Oil and Gas Wells." As a PA BASED consulting firm, I have seen and experienced the extraordinary efforts made by Pennsylvania's oil and gas industry to be good stewards to the environment and good neighbors to the communities where we live and work. Based upon those experiences, I find the proposed revisions to lack sufficient justification, to have costs far in excess of any benefits and to provide very little in actual, real- world environmental protections. Instead of providing the residents of PA with any real benefit or protections, I believe the proposed rule will diminish the recent prosperity created by Pennsylvania's oil and gas industry and will cost our communities revenue while increasing their social burdens. I urge you to vote against finalization of this rulemaking in its current form. I urge the Environmental Quality Board to reject this rulemaking as proposed. Unless the proposal is substantially revised based on full consideration of the costs and benefits, it will cause harm to the prosperity of our communities, and will cause harm to the people who depend on the industry for their livelihoods. To the extent that portions of this rulemaking are mandated by state law, the EQB should insist that DEP propose revisions only to fulfill those obligations, with simple rules written in plain language. It is apparent that PA is attempting to set a new benchmark for regulation of an industry. One that the entire nation will admire and want to emulate. Similar words of those being spoken by the very folks who are championing the effort. As a resident I appreciate the State taking a hard look at how to improve the way things are done and perhaps some of the changes called for in Chapter 78 are needed and warranted. I am certain that the industry will agree to and endorse positive and reasonable rules, restrictions and guidelines. I feel that the industry will accept that with these changes will come additional costs and time burdens that they will have to factor into their plans to operate within the Commonwealth. I am also convinced that with overreaching and purposeless rules and regulations the industries will withdrawal from PA when evaluating the value proposition of development here as opposed to other areas of the country. We are already seeing the negative impacts that other very suspect and questionable legal and legislative actions have had on investment interest and development in this State. The Chapter 78 revisions will make even clearer that PA is not the place to position capital or to establish a business. (433)

Response: The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2790. Comment: Currently the Pennsylvania government is in the process of changing many of the regulations which dictate our operations. Many of these regulations are seen by the oil and gas industry as unfounded and would have a negative lasting effect on all oil and gas operations within the commonwealth. As an independent producer of oil and gas, DE Limited Family Partnership/ BLX Inc./Redmill Drilling is deeply concerned what type of impact these new regulations would have on the landowner and their families.

The employees of DE Limited/ BLX Inc./Redmill Drilling live and work in the communities in which we operate. The oil and gas industry has been a vital part of the development and success of the surrounding communities for decades. We have always placed compliance with regulations at the utmost importance when conducting our operations. Placing such a high priority on the environment as well as working with landowners and regulating agencies has allowed us to build a lasting relationship with the communities and its members. The financial pressure that these new proposed regulations impose has the potential to diminish the success that has been established over many years. By applying new and costly regulations, the cost effectiveness of operating in the commonwealth would come in question.

Overregulation has become a serious issue within the industry, and has already compromised many operations throughout the commonwealth. Many of the proposed regulations have not taken the landowners futures into account. As a landowner, your opinion has, and always will be an important voice that needs to be heard throughout the independent oil and gas community.

DE Limited/ BLX Inc./Redmill Drilling has prepared letters for landowners, business associates, employees, and stake holders to sign and mail to the board currently reviewing these regulatory proposals. If you feel that the oil and gas industry is a vital part of the economic growth of your family, commonwealth and nation, and over regulation will hamper the progress of this growth, please read and sign attached letter. DE Limited/ BLX Inc./Redmill Drilling respectfully requests that you mail this letter to the reviewing board expressing our/your concerns.(463, 1007, 5774 - 5781)

Response: The Department acknowledges the comment. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. Additionally, the Department believes that the rulemaking accurately reflects the intent of Act 13 and is not overly prescriptive. The Department disagrees that it failed to make a complete assessment of the costs of the rulemaking. The Department used cost information provided by the industry to develop the Regulatory Analysis Form.

2791. Comment: I am a second generation oilman. The regulations we are discussing have got to be obvious to almost everybody in oil industry that they are very nervous and to the point now we will be put out of business. We've heard DEP's estimates of cost and actual estimates of costs up to billions of dollars. If you put us out of business, it's going to create a problem that is consequences that the environmentalists are screaming at us about, and that's fresh water.

Abandoned, orphaned wells - tens of thousands in this state right now. Who's taking care of them? Whose responsibility are they? Under the new regulation, it proposes that it puts the onus on me as the producer and the driller of the well. You go out and find wells. We wouldn't find 10% of them, let alone 10,000. These regulations stating the way they are, you put these numbers to me. It's simple math. I can do calculations in my head. I make X amount of oil, and I got to spend X amount of dollars. Where are those dollars coming from? You can't get blood out of a turnip.

As a producer, I have to look at it. I came back here 15 years ago on an old Quaker State lease. Had several hundred wells on it. I can't plug that out. I work it every day. When oil was \$12 a barrel, I was working that lease. A hundred barrel sells for \$1,200. Now we get a better number, but our production quota for a barrel a day, those numbers just don't add up.

With additional regulation that is being put on it, the unintended consequences I can see is going to be a liability to the state and taxpayers of this Commonwealth that's unbearable. We'll be the first state to go bankrupt strictly because of regulations. There are three generations of people working a patch.

This is an industry that I've been in since I was seven years old. I remember the first time getting a drilling rig. With the regulations being proposed, we cannot be subjected to the exact same regulations that are being placed on unconventional oil or the gas industry. Commonsense just tells you that the regulations don't make sense. They are impractical, and they're going to destroy this industry. And if it destroys the industry, I feel sorry for the state, because there's not enough money in the coffers to take over the problems that have been created by the new regulations. (1234)

Response: See response to comments 2456 and 2627. Additionally, the Department believes that the rulemaking accurately reflects the intent of Act 13 and is not overly prescriptive. The Department disagrees that it failed to make a complete assessment of the costs of the rulemaking. The Department used cost information provided by the industry to develop the Regulatory Analysis Form.

2792. Comment: The oil and gas business has not always been labeled as a "clean and green" industry. Opponents of the business use this as their number one reason for trying to shut us down time and time again. When the environmental terrorists get their way new regulation is passed making my job as an independent producer and service company employee much more difficult. Needless regulation dealing with small insignificant spills, air quality, chemical contamination, water consumption and many others are all put in place to keep certain people happy.

What do these regulations really accomplish? Laws and regulation are not a cure all to accidents that can and do happen from time to time. They are guidelines that we follow the best we can, but when it gets to the point the "rule" book is no longer understandable, and the "rules" do nothing to help the environment we all love and enjoy why should we be held accountable for them? The new updated regulations for Act 13 and Chapter 78 are a prime example of the laws being written by people that know very little about the oil and gas business. Have officials in Harrisburg ever put in a pipe line, drilled a new well or pumped cement on a plug job? Why can't the voices of independent producers as well as industry leaders be heard when laws are proposed? Listening to people that actually work in the field will benefit all the parties involved.

I ask you members of the Board, to please consider that the industry that has provided me a good living thus far in my life is under attack. I urge you to please vote no, to any and all propositions that may adversely affect the oil and gas industry in Pennsylvania. If these laws are passed many people employed in the oil and gas business may lose everything they have ever worked for and be unable to feed their families. (457a)

Response: The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2793. Comment: I am a licensed professional engineer and a partner in BJS, LLC, and a small conventional oil well company that currently operates 5 wells in the City of Warren. All our wells are at 1,000 feet or less in depth.

We lease land for oil and gas development; we hire drilling, fracking and other associated companies to drill our wells, pay engineers and operators to permit and operate them and receive payments for production from conventional oil and gas wells.

In the last three years we have spent more than a half million dollars on contracting and equipment to drill and operate our wells. We have used 36 local companies for various supplies and services. We have paid the Commonwealth of PA more than \$5,000 in fees, and considerably more in taxes. The Department of Environmental Protection (DEP) has proposed changes in regulations affecting the oil and gas business. We are very concerned that there is not enough distinction being made in the new regulations between conventional and non-conventional wells.

It is our concern that these new and modified regulations will unnecessarily increase costs for conventional oil and gas companies. They will also significantly increase the amount of time required to complete and submit well permits. While the regulations will significantly increase costs, the regulations will not result in significant environmental benefits in the conventional oil and gas industry.

As we have reviewed these new regulations, in the context of a conventional well operator, we can find no environmental justification for them that justifies the added costs and time delays imposed on the conventional well operators. There is no analysis completed by DEP to show the affect these proposed regulations will have on the conventional well operators who are almost all small businesses. (84a)

Response: See response to comments 2456 and 2627. The Department believes the revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2794. Comment: Commentator supports strong environmental regulation to ensure the responsible development of Pennsylvania's valuable natural gas resources. We were active in the discussions leading to the passage of Act 13 of 2012 (Act 13) and endorsed the passage of that legislation with its enhanced environmental provisions. We believe that Act 13 set a high bar for environmental performance, which has been copied by other states, and accordingly it is not necessary, nor in some cases lawful, for the Pennsylvania Department of Environmental Protection (DEP) to add additional burdens onto the industry. In several areas the DEP has increased those burdens in ways that do not add meaningfully to environmental protections. The Proposal should not: 1) exceed statutory authority, for example, by expanding regulatory provisions beyond the terms of Act 13; 2) impose standards on oil and gas operations that are more stringent than for other industries; 3) introduce operational complexity or obligations that have no meaningful environmental benefit; or 4) create ambiguities or duplicative requirements. While the Proposal contains many appropriate provisions to enhance environmental protections, it also contains several excessive and costly provisions that go beyond Act 13, impose unique and unnecessary burdens on the industry and are overly prescriptive with little if any environmental benefit. These provisions will be discussed in detail below. We support Governor Corbett's "Energy= Jobs" Plan which recognizes the key role natural gas plays in Pennsylvania's energy portfolio. The Plan, among other things, states that "regulatory certainty saves time and money." Please consider our detailed comments, provided below, with these principles in mind.

Cost of Compliance : In both the Preamble and the Regulatory Analysis Form (RAF) the DEP sets out its estimate of the costs of complying with the proposed amendments to Chapter 78. We believe that the DEP has greatly underestimated those costs and has also failed to justify or demonstrate that adverse environmental impacts related to this industry warrant or require the imposition of regulations that are more stringent than existing regulation, or, that are more stringent than those for other industries. DEP's description of the "compelling public interest that justifies the regulation" notes that DEP "evaluated all surface activity regulations and based on its analysis decided to initiate this comprehensive rulemaking." (RAF 10) No such analysis or factual basis for the Proposal, however, has been provided. DEP appears to assume without explaining, that environmental impacts are not being addressed through current regulation of the oil and gas industry. DEP estimates that the cost for unconventional operators will range from \$75 million to \$96.6 million annually (approximately \$58,000 to \$74,000 per well based on the estimate of 1300 unconventional wells drilled per year). However, that estimate evaluates only a small subset of the provisions in the Proposal, not the full cost of compliance. We believe that, when all requirements are considered, the full cost of implementing the proposed amendments will more likely be \$200 million to \$300 million annually, \$154,000 to \$231,000 per well. A few examples will illustrate why we believe DEP significantly underestimates the economic burden being placed on the industry. The proposed regulations have extensive new requirements for impoundments storing fresh water, beyond those any other industry must follow for storing fresh water. However, the DEP cost estimate considers only the cost of fencing around existing impoundments, ignoring all the other requirements associated with both existing impoundments and the construction of new impoundments, to reach an estimated cost of \$0.7 million to \$5 million. We believe the cost of all the new requirements applicable to fresh water impoundments is more likely \$250,000 to \$500,000 per impoundment, producing a total cost of \$25 million to \$50 million. The DEP failed to include any estimate for the costs associated with the new pad restoration requirements (Section 78.65). Rather, the DEP claims the industry will realize a cost savings because an operator may be able to obtain a 2 year extension to postpone the restoration. However, a mere postponement of a cost is not an avoidance of the cost. The DEP's estimated savings of \$21.7 million (estimated by DEP as \$50,000 per site for 434 sites per year) is actually a cost that will ultimately be incurred, not a savings. Moreover, we estimate that the cost of pad restoration, as proposed in the regulations will be approximately \$200,000 to \$300,000 per pad; not \$50,000 as DEP estimates. Therefore rather than a \$21.7 million savings, the restoration requirements as proposed are a cost of \$130 million. The DEP also failed to properly balance the cost of permit conditions to protect public resources against the benefits of these provisions. In an attempt to demonstrate how the benefits of the new consultation and mitigation provisions outweigh the costs, the DEP simply compared the cost of consulting a database and a field site visit to the "permanent loss of a public resource." (RAF 18) Such a comparison is very misleading. That analysis assumes that every impact results in a total loss of a public resource or endangered species, which is a facially unreasonable assumption, and assumes there are no costs beyond the search of a database and a field visit. Yet when estimating the costs of the public resource provisions, the DEP fails to include even these costs and assumes that consultation costs are zero. (RAF 19) Experience with the current consultation requirement indicates that there will be considerable expense from industry personnel time, expert consultants needed for surveys, and project delays in receiving resource agency responses - all well beyond a simple field visit. We believe the costs will be orders of magnitude higher than the DEP estimate, even without considering mitigation. DEP plainly acknowledges that it has included no estimate of mitigation costs, which precluded full analysis of the provision by EQB, the Independent Regulatory Review Commission, and interested stakeholders. Even under existing, less expansive, requirements individual operators have experienced mitigation costs in the hundreds of thousands of dollars. The DEP has not complied with the Regulatory Review Act, 71 P.S. § 745.5(a) ("RRA"). It has failed to perform a complete assessment of the costs of the Proposal and has, therefore, underestimated the full economic burden being placed on the industry. In addition, DEP's explanation of how the

benefits of the Proposal outweigh any costs and adverse effects merely states that “costs associated with pollution prevention measures are a small fraction of the costs associated with the cleanup and remediation of an area impacted with pollution.” (RAF 18) This over-simplified justification falls far short of providing the factual basis and analysis that would enable an objective review of the Proposal. While we recognize and accept that there are significant costs for environmental protection, when evaluating our concerns regarding specific provisions which we believe to be unnecessary or excessive, the true magnitude of the costs, as well as a factual description of the benefits, must be identified. Additionally, the DEP’s Proposal must allow industry a reasonable amount of time to implement the new and complex operational and design criteria for well sites, impoundments, or other related operations permitted and constructed after the effective date of the final regulation. DEP has stated on a number of occasions that these proposed requirements, if enacted, would be among the most stringent state oil and gas industry environmental standards in the U.S. The vast majority of the requirements in the Proposal do not include a phased timeframe for implementation by industry. In fact, most requirements would be immediately applicable upon the effective date of the final regulation. As DEP is aware, the planning, design, permitting, and construction of oil and gas well sites and related operations are a lengthy and complicated process for operators involving many factors and considerations. A sudden and immediately enforceable change in regulatory requirements would create tremendous uncertainty for the oil and gas industry. For example, the Proposal’s new design and approval requirements for impoundments will take time to incorporate into industry’s business practices and planning. Furthermore, industry’s identification of abandoned and orphaned wells will benefit from further development of the Department’s database, and should be postponed until the database and mapviewer system is improved. Finally, any reporting that requires new forms to be developed by DEP or electronic submissions by industry to DEP should be delayed until DEP has finalized its forms and implemented its electronic interface. As such, we believe that a phased implementation of many of the operational and design criteria in the Proposal would be appropriate to include in the rulemaking. As currently proposed, it is unclear as to how the new and revised requirements will apply to existing oil and gas well sites and related operations. It would put an undue burden on the oil and gas industry both financially and practically to require that the Proposal’s new operational and design criteria apply to existing operations already working within the scope of DEP’s current regulations. Moreover, a requirement to retrofit or update existing operations would put Pennsylvania at a competitive disadvantage with respect to other states. As such, DEP should include a clear “grandfathering” provision in the Proposal. DEP’s “grandfathering” provision should state that the new standards in the Proposal should not apply to well sites, impoundments, or other related operations that have been already constructed; to oil and gas well sites where wells have already been drilled; or to well sites, impoundments, or other related operations for which permit applications have been submitted to DEP by an operator prior to the effective date of the final rulemaking. (1174)

Response: The Department believes that the rulemaking accurately reflects the intent of Act 13 and is not overly prescriptive. The Department disagrees that it failed to make a complete assessment of the costs of the rulemaking. The Department used cost information provided by the industry to develop the Regulatory Analysis Form. The restoration requirements do not add new stormwater management requirements, but rather provide a mechanism for demonstrating satisfaction of *existing* stormwater management requirements under 25 Pa. Code Chapter 102. Identification of abandoned and orphaned wells is intended to protect the operator from costly environmental remediation should communication between a new and old well occur during drilling or fracking. Also, public health and safety concerns are being considered. New forms and electronic submission requirements will be available when the new rulemaking becomes effective. Implementation of the new rulemaking will provide adequate time to meet the requirements. It is not the intent of the Department to apply new

requirements on existing permitted facilities unless such intent is explicit in the final-form regulations (see, for example, §§ 78.59c and 78a.59c).

2795. Comment: The fiscal analysis provided by EQB in the RAF indicates that the proposal will cost the regulated community between \$79,572,410 and \$102,792,950 with an approximate savings of \$22,071,380. The oil and gas industry, especially the conventional operators, believe EQB's cost estimates are greatly understated. To illustrate, we note that EQB has calculated the annual cost for the conventional oil and gas industry to be between \$5,389,360 and \$12,006,000. The Pennsylvania Grade Crude Oil Coalition has estimated the annual maintenance cost for this industry to be between \$181,238,215 and \$387,300,715 with a first-year compliance cost of between \$567,063,975 and \$1,510,488,975.

We are concerned that there is such a large disparity between the cost estimates prepared by EQB and the cost estimates prepared by the industry as a whole. There appears to be a basic misunderstanding of what this proposal will require and when those requirements will become effective. As this proposal moves forward, we strongly encourage EQB to consult with both conventional and unconventional operators and their associations so that all parties can gain an understanding of what will be required, when it will be required, and what it will cost to comply with the rulemaking. In the RAF accompanying the final-form regulation, EQB needs to explain why its cost estimates are appropriate compared to the vastly different estimates presented by commentators. (1099)

Response: The Department acknowledges the comment.

2796. Comment: The DEP analysis also fails to accurately state the costs of complying with the new regulations. The DEP estimates the impact to the conventional industry will be between \$5 to \$12 million. The DEP analysis is barren as to supporting evidence for its calculations. The PGCC document estimates initial compliance costs will be between \$1/2 billion and \$1.5 billion; thereafter annual compliance costs will range between \$181 million and \$387 million. The PGCC document provides detailed support for its calculations. The disparity is shocking. (900a)

Response: The Department used cost information provided by the industry to develop the Regulatory Analysis Form. The changes in the final-form rulemaking reflect the Department's consideration of the comments relating to cost of compliance.

2797. Comment: The proposed Chapter 78 regulations and the DEP regulatory analysis are flawed by the failure to state the need for the changes and by the failure to properly analyze the changes' severe economic consequences. Under current conditions it is not economical to drill a new conventional gas well; it barely economical to drill a new conventional oil well. This accounts for the drop in new conventional oil and gas well completions from an average of over 4500 per year just 7 years ago, to about 1000 last year. The PGCC well information demonstrates that new regulatory costs of any magnitude will obviously have a severe negative impact on new conventional well completions. A similar situation pertains to the production of existing wells. The PGCC documents show that new regulatory costs have a significant negative impact on the economic lifespan of existing wells. New regulatory costs of any magnitude will also have a severe negative impact on the continued production of existing conventional wells.

The precarious balance of conventional oil and gas well economics makes it critical that the compelling need for new regulations be articulately defined and that the need be genuinely substantive. The DEP analysis fails in both of these respects. The PGCC document details these failures and I respectfully ask that you refer to that PGCC document. (900a)

Response: The Department disagrees with the comment. The Department considered the quantifiable economic impacts with regard to the rulemaking. The changes in the final-form rulemaking reflect the Department’s consideration of the comments relating to cost of compliance. Details regarding the economic considerations are included in the RAF.

2798. Comment: The regulation does not meet the requirements of Executive Order No. 1996-1 or departmental policy.

Under the 1996 executive order and DEP policy, regulations must address a “compelling public interest” and “definable public health, safety or environmental risks”; costs of regulations cannot outweigh the benefits; viable non-regulatory alternatives must be explored and are preferred over regulation; and regulations “shall not hamper Pennsylvania’s ability to compete effectively with other states.”

The Department’s proposed revisions include new obligations that would increase operational costs and complexity without clear justification or environmental necessity. New application requirements will require consultation with agencies such as the Department of Conservation and Natural Resources, the Pennsylvania Game Commission and the Pennsylvania Fish and Boat Commission regarding impacts to public resources and to obtain comments and recommendations from those agencies about imposing conditions in individual well permits. The permit requirement is not authorized under Act 13 or any other law, and will likely cause permitting delays and increased costs of field surveys and mitigation measures.

Other proposed provisions where costs are likely to outweigh benefits include the requirement to identify all abandoned or orphan wells within 1,000 feet of the well bore and along the entire length of horizontal legs; monitoring these abandoned or orphan wells for “any change” and plugging them if altered by hydraulic fracturing; removal of all underground or partially buried storage tanks used to store brine or other production fluids; requirements for freshwater and flowback impoundments that are more stringent than those for hazardous waste impoundments; reporting and remediation requirements that substantially increase the time and costs for addressing small spills; and gathering line requirements more stringent than those imposed on pipelines used by any other industry. (126, 423)

Response: The Department disagrees with the comment.

The proposed rulemaking was, and the final-form rulemaking is, consistent with Executive Order 1996-1 and Department policy. The rulemaking is also consistent with the Pennsylvania statutes pertaining to rulemakings, including the Regulatory Review Act. The Department notes that the commentators do not specify the “departmental policy” to which they refer.

With regard to the reference to operational costs and complexity, and costs versus benefits, please see responses to comments 2794 and 2796 in this Comment and Response Document regarding operations costs and complexity, and the justification or need for them.

With regard to the references to public resources, and the commentators’ assertion that, “The permit requirement is not authorized under Act 13 or any other law, and will likely cause permitting delays and increased costs of field surveys and mitigation measures,” please see response to comment 291 relating to section 78.15 of the rulemaking. Please see the response to question 8 in the final Regulatory Analysis Form for a comprehensive list of the statutes that provide authority for this rule.

While there are additional costs associated with some of the provisions in the rulemaking, the overall benefits to the environment are numerous. The costs of reasonable environmental protective measures are relatively small compared to the costs associated with cleaning up a release of a pollutional substance into the environment and restoring the impacted area. With regard to the various other items referenced in the comment, please note that these items are addressed throughout the Regulatory Analysis Forms for the proposed and final rulemakings.

Please also see responses to comments 2797 and 2802.

2799. Comment: PGCC has prepared a response to the DEP's Analysis and proposed revised regulations. I ask that the Board give serious consideration to the significant concerns and substantive recommendations in those documents. For the reasons described in this letter as well as in the PGCC documents I ask that you assure that the full economic impact of the proposed rule is properly analyzed and that the final regulations fully comply with the Regulatory Review Act. (389, 1123, 1125, 1136, 1171, 4683 - 4686, 4687 - 4702, 5707 - 5709, 5741 - 5760, 5761 - 5762, 5763 - 5773)

Response: The Department acknowledges the comment.

2800. Comment: In addition to the failure to properly consider the impact of the new regulations upon the conventional oil and gas industry the process that has led to the proposed regulations has failed to address the small business nature of the conventional industry. My company is a small business and virtually every conventional oil and gas company or owner that I know is a small business. The conventional oil and gas business has been part of our community for over 100 years and many owners of oil and gas wells are third or fourth generation oil and gas operators.

The Pennsylvania Regulatory Review Act embodies the concern that the Pennsylvania legislature has for small business such as those in the conventional oil and gas industry. That Act requires that special analysis be done of regulations that will affect small businesses; the analysis must insure that the regulations are necessary, that all alternatives have been considered, and that the costs of the regulations are justified. PGCC has submitted a Right to Know request to the DEP. In reviewing the Right to Know responses and in reviewing the DEP Analysis it is apparent that in proceeding to the current proposed regulations the DEP did not meet the steps required under the Regulatory Review Act. (389, 1123, 1125, 1136, 4683 - 4686, 4687 - 4702, 5707 - 5709, 5741 - 5760, 5761 - 5762, 5763 - 5773)

Response: The Department disagrees that it failed to properly consider the impact of the rulemaking upon the conventional oil and gas industry. The Department considered the impact of the rulemaking upon the conventional oil and gas industry in developing the proposed and final-form rulemakings. Please see the responses to comments 2798, 2801, 2805, and the numerous other responses regarding the conventional oil and gas industry, as well as the Regulatory Analysis Forms for the proposed and final rulemakings.

The Department agrees that the Regulatory Review Act reflects a legislative interest in small businesses and analysis of impacts on small businesses. The Department disagrees that the "process that has led to the proposed regulations" failed to address the small business nature of the conventional industry. The Department recognizes and has considered the small business nature of the conventional industry in developing both the proposed and final-form rulemakings. See, for instance, responses to questions 14, 15, 16, 17, 24 and 27 of the Regulatory Analysis Forms for the proposed and final-form rulemakings.

2801. Comment: In their current form it would be hard for the proposed regulations to include the alternatives and exemptions called for under the Regulatory Review Act. That is because the proposed regulations seek to regulate both the conventional and unconventional oil and gas industry in a single document. However, as many individuals have testified before the EQB, the two industries are distinctly different. The size of well locations, the amount of earth disturbance, the number of truck trips, the well pressures encountered, and the amount of oil and gas strata encountered are all on a different order of magnitude as between the two industries.

Thus, in addition to a need to correct the procedural problems which have led to the proposed regulations (failure to properly analyze the impact upon the conventional industry and failure to meet the requirements of the Regulatory Review Act), the substance of the regulations must be changed to reflect the differences between the conventional and unconventional oil and gas industries. (389, 1123, 1125, 1136, 1171, 4683 - 4686, 4687 - 4702, 5707 - 5709, 5741 - 5760, 5761 - 5762, 5763 - 5773)

Response: The Department disagrees that there are procedural problems with the rulemaking or that it fails to meet the requirements of the Regulatory Review Act. The Department included alternatives throughout the proposed and final-form rulemakings. In addition, many of the standards in the proposed and final-form rulemakings are performance based, allowing operators to choose which practices are best for their operations. Please see, for instance, the responses to Questions 7, 10, 13, 17, 24, 26, and 27 in the Regulatory Analysis Form for the proposed and final rulemakings.

The Department disagrees that it did not consider the differences between the conventional and unconventional industries in developing both the proposed and final-form rulemaking. See, for instance, §§ 78.56 and 78a.56. Section 78.56(a) allows conventional operators to continue to use a pit for temporary storage of regulated substances while section 78a.56(a) requires unconventional operators to use tanks or aboveground modular structures only. In line with that prohibition, section 78a.56(d) requires unconventional well operators to properly close and restores any existing production pits within six months of the effective date of the rulemaking, while section 78.56 imposes no similar requirement on conventional operators. Similarly, section 78a.56(a)(7) requires unconventional operators to equip all tank valves and access lids to regulated substances with reasonable measures to prevent unauthorized access by third parties, while section 78.56 imposes no similar requirement on conventional operators. Section 78a.56(a)(8) requires unconventional operators to display a sign on the tank or other approved storage structure identifying the contents and an appropriate warning of the contents such as flammable, corrosive or a similar warning, while section 78.56 imposes no similar requirement on conventional operators. Additionally, in the draft final-form rulemaking and final-form rulemaking, the Department separated the requirements for the conventional and unconventional industries into separate regulatory chapters.

Please also see responses to comments 2797, 2800, 2802, and 2811.

2802. Comment: The Regulatory Analysis Form (RAF) fails to satisfy the requirements of the Regulatory Review Act (RRA) because various subsections only address portions of the proposed rule rather than the comprehensive rule package. Both the comparison to other states' regulations and the estimate of costs are limited in scope to only a few select provisions, failing to provide the required analysis and underestimating the full economic burden the proposed revisions would place on the industry. The document also fails to provide a factual description of the benefit. (1154, 1155, 1164)

Response: The Department disagrees that the Regulatory Analysis Form for the proposed rulemaking fails to satisfy the requirements of the Regulatory Review Act. The Regulatory Analysis Form addresses the rulemaking as a whole and addresses salient provisions in a more individual way. See the Regulatory Analysis Forms for both the proposed and final rulemakings.

The Department disagrees that the Regulatory Analysis Form for the rulemaking failed to provide a factual description of the benefit. The Department described benefits of the rulemaking throughout the Regulatory Analysis Form. See, for example, responses to questions 10, 15, 17, 18, 24. Some of the benefits identified are the prevention and minimization of spills and releases to the environment; protection of parks, scenic rivers, national natural landmarks, historical sites, water supplies, and species of special concern; and notification to landowners of impacted water supplies; and identification of abandoned or orphaned wells. Benefits to the regulated community include streamlined authorization approval processes and the establishment of performance based requirements.

2803. Comment: DEP has not conducted the required small business review. In June 2012, the General Assembly amended the Regulatory Review Act to recognize that small businesses are critical to Pennsylvania's economy and that uniform regulatory and reporting requirements can impose unnecessary and disproportionately burdensome demands on small businesses that have limited resources. As a result, in any new rule DEP must consider creating less stringent compliance, reporting and performance standards, along with exemptions when appropriate, for small businesses.

It was unclear if the department incorporated these mandatory considerations in the proposed regulations. The analysis must be part of the proposed rules so that small businesses and the public have the opportunity to review and comment on all proposed accommodations. (126, 423)

Response: The costs presented on the Regulatory Analysis Form are based on the cost information provided by the industry and is considered appropriate and reasonable. Please also see responses to comments 2800 and 2801.

2804. Comment: Another significant problem with the regulations is that they do not take into account considerations for a small business like mine. Under section 10.1 of the Regulatory Review Act the DEP must prepare an economic impact statement for any proposed regulation that may have an adverse impact on small businesses, that includes an estimate of the number of small businesses subject to the proposed regulation, a projected cost for reporting, record keeping and other administrative costs and a statement of the probable effect on impacted small business.

Section 11 states that a description of any special provisions which have been developed to meet the particular needs of the affected groups and persons including minorities, the elderly, small businesses and farmers should be included by the regulatory agency. Section 12 requires a description of any alternative regulatory provisions, which have been considered and rejected and a statement that the least burdensome acceptable alternative has been selected.

Section 12.1 requires a regulatory flexibility analysis that shall include the establishment of less stringent compliance and reporting requirements, the establishment of less stringent schedules or deadlines for compliance or reporting requirements, consolidation or simplification of compliance or reporting requirements, the establishment of performance standards to replace design or operational standards required in the proposed regulations and the exemption of small business from all or any part of the requirements contained in the proposed regulation. The DEP failed to meet these

important requirements. Yet mine is the exact type of business that is supposed to be protected by these provisions.

PGCC has prepared a response to the DEP's Analysis and proposed revised regulations. I ask that the Board give serious consideration to the significant concerns and substantive recommendations in those documents. For the reasons described in this letter as well as in the PGCC documents I ask that you assure that the full economic impact of the proposed rule is properly analyzed and that the final regulations fully comply with the Regulatory Review Act.

Unlike the owners of more established multi-generational companies in Pennsylvania, my family and I moved to Northwest Pennsylvania for one reason, to drill shallow oil wells. I am not from here and don't have extended family in the area. I don't have extensive undrilled lease holdings. What I do have is access to capital and the technical skills needed to grow a company. If the regulations in Pennsylvania become too burdensome and expensive and I won't go out of business, I will just take my capital and move to Kentucky or Ohio or Texas. Warren will have one emptier house and there will be four more empty desks in the declining school system. I hope this doesn't happen. (389, 1136, 1171)

Response: The Department conducted the requisite analyses in developing the proposed and final-form rulemaking provisions. These analyses are reflected in the Regulatory Analysis Form, preamble and other rulemaking documents. Among other things, the Department considered the potential costs, benefits, need, impacts on small businesses, alternatives and other potential impacts of the rulemaking provisions. The final-form rulemaking represents the Department's revisions to the rulemaking provisions after careful consideration of all comments received during the rulemaking process and of the additional public input. The revisions to Chapters 78 and 78a are consistent with applicable statutes and provide reasonable protections for public health and safety, and the environment. Please also see responses to comments 2800 and 2801.

2805. Comment: The proposed Chapter 78 regulation submission is incomplete and therefore not a "proposed regulation" under the Regulatory Review Act and must be resubmitted as a valid proposed regulation after DEP finalizes the proposal per the public comments

- In May 2013 the Technical Advisory Board (TAB) asked DEP not to submit the regulation package to the EQB as a proposed regulation because it was incomplete, as significant portions of the proposal were unresolved.
- In a May 10, 2013 email response to TAB's request, the DEP Deputy Secretary, Office of Oil and Gas Management, acknowledged that the proposed submission was a "proposal for consideration."
- No changes to the proposal were made as a result of the TAB subcommittee workshop process addressing these unresolved issues:
 - Public resource protection/species of special concern
 - Waste management at well sites (centralized impoundments/on-site processing)
 - Pre-hydraulic fracturing assessment (abandoned and orphan wells)
 - Water supply restoration standards
- The Regulatory Review Act defines a "proposed regulation" as "[a] document intended for promulgation as a regulation which an agency submits to the commission and the committees and for which the agency gives notice of proposed rulemaking and holds a public comment period pursuant to the act of July 31, 1968 (P.L.769, No.240), referred to as

the Commonwealth Documents Law.”

- A proposal with unresolved issues cannot, as a matter of law, be considered a regulation intended to be promulgated.
- After DEP resolves these issues, the completed proposal must be resubmitted to EQB as a valid “proposed regulation” to comply with the Regulatory Review Act.

The promulgation or proposed promulgation of any regulations related to Act 13 Sections 3215(b), 3215(c), and 3215(e) must be discontinued because of the Pennsylvania Supreme Court December 19, 2013 rulings in *Robinson Township v. Com. of Pennsylvania*.

- The Court ruled that these sections delegating authority to DEP/EQB to develop regulations and apply the statutory requirements therein has been enjoined. Specifically, at pages 158-159 of the lead opinion (*copies attached*), the Court held these sections to be not severable from Section 3215(b), which was enjoined in its entirety as unconstitutional.
- The Court stated: “Moreover, insofar as Section 3215(c) and (e) are part of the 3215(b) decisional process, these provisions are as well incomplete and incapable of execution in accordance with legislative intent. Application of Section 3215(c) and (e) is therefore, also enjoined.” (Emphasis added)
 - The subjects of Section 3215(b)’s setback buffers -blue-lined streams, bodies of water and wetlands - are identified “public resources” themselves in Section 3215(c) (e.g., “scenic rivers” or “habitats” of endangered species) and may be or clearly are part of, found upon, integral to, and indispensable or key features of all of the other public resources identified in Section 3215(c).
 - As such, consideration of impacts to Section 3215(c) public resources is incapable of being accomplished or executed “in accordance with the legislative intent” because the legislative intent is for the now-declared constitutionally defective waiver provision to apply to the location of all wells with respect to the stream, water body, wetlands, and public drinking supply setback buffers to/on all the Section 3215(c).public resources.
 - Consequently, Section 3215(c) is now incomplete because the location of wells on or in relation to the identified public resources is a part of the 3215(b) decisional process.
 - In like manner, as Section 3215 contemplates waiver of various setback buffers, the development of the criteria to use in conditioning a well permit, providing for optimal development of oil and natural gas resources, and protecting private property rights - as directed in Section 3215(e) - cannot be accomplished in accordance with the legislative intent because the now-declared constitutionally defective waiver provision would necessarily be a part of the decisional process of conditioning permits.
 - Consequently, Section 3215(e) cannot stand alone and is also now incomplete.
- DEP acknowledged in the Commonwealth’s request for reconsideration of the Supreme Court’s ruling on Section 3215(c) and (e) that these sections are currently enjoined.
- In their answer to the Commonwealth’s request for reconsideration, the citizens/municipalities agree that these sections are currently enjoined.

The proposals unreasonably impact conventional oil & gas well operations without a compelling environmental justification.

- The limited time for this public testimony is insufficient to address this subject in detail, but PIOGA and other trade associations and their members with conventional oil & gas well operator members have already provided public hearing testimony on this subject and will be providing additional public hearing testimony on this subject, and will also be providing extensive written comments that support this statement.

The regulatory analysis fails to address the requirements of Act 76 of 2012, which amended the Regulatory Review Act to require an economic impact statement and a regulatory flexibility analysis for any proposed regulation that may have an adverse impact on small businesses.

- Many of PIOGA's conventional oil & gas operator members are small businesses within the scope of Act 76 of 2012.
- This Act expressly recognizes that small businesses are critical to Pennsylvania's economy and that uniform regulatory and reporting requirements can impose unnecessary and disproportionately burdensome demands, including legal, accounting, and consulting costs, upon small businesses with limited resources. DEP is required to consider the establishment of less stringent compliance requirements for small businesses, performance standards to replace design or operational standards, as well as an exemption of small business from all or any part of the requirements contained in the proposed regulations – but DEP has not done so.
- The limited time for this public testimony is insufficient to address this subject in detail, but PIOGA and other trade associations and their members with small business oil & gas operator members have already provided public hearing testimony on this subject and will be providing additional public hearing testimony on this subject, and will also be providing extensive written comments that support this statement. (634)

Response: The Department disagrees that the rulemaking fails to meet the requirements of the Regulatory Review Act. The Regulatory Review Act does not specify that a rulemaking must be ready for final adoption when published; rather the act anticipates that an agency will amend a rulemaking in response to public input. The Department considered the input provided by the Oil and Gas Technical Advisory Board (TAB) in developing the rulemaking. The Department disagrees with the suggestion that there was limited time for the commentator to address concerns. The Department underwent a lengthy and involved regulatory development process before publishing the proposed rulemaking, during which the Department consulted with numerous groups, including five meetings over a two-year period with TAB. (See response to question 14 in the Regulatory Analysis Form.) Instead of a typical 30-day public comment period, the Department provided a 90-day public comment period and seven public hearings, followed by publication of a draft-final rulemaking with a 45-day public comment period and three public hearings. In preparing the final-form rulemaking, the Department has reviewed and considered all public comments and the Independent Regulatory Review Commission, as required by the Regulatory Review Act.

With regard to the portion of the comment pertaining to Act 13 and *Robinson Twp.*, please see response to comment 265.

The Department disagrees with the portion of the comment asserting that the “proposals” unreasonably impact conventional oil and gas well operations without a compelling environmental justification. The Department also disagrees that the Regulatory Analysis Form for the rulemaking failed to address small businesses adequately. Please see responses to comments 2798, 2800, 2801, 2804 and 2807.

2806. Comment: I write asking for your rejection of the proposed amendments to Chapter 78 as presented by the Department of Environmental Protection. These amendments, as proposed will impose significant and unnecessary financial hardships upon the conventional oil and natural gas operations throughout the Commonwealth of Pennsylvania, endangering countless business operations and individual jobs.

The following calculations of the financial impact of the proposed amendments upon conventional oil and gas operations have been developed by DEP:

- Changing of tank access lids - \$53,360 to \$6,670,000
 - Secondary containment for brine containment - \$4,002,000
 - Removal of underground tanks - \$1,334,000
- TOTAL ANNUAL COST PROJECTED TO BE BETWEEN
\$5,389,360 and \$12,006,000

Likewise, the department has calculated the annual potential savings possibly to be seen by conventional operators to be a mere \$36,680.

Based upon meetings with members of the conventional oil and gas community I believe that the DEP's calculations dramatically understate the actual costs of compliance. For example, the DEP's calculations state that the responsibility of identifying orphaned and abandoned wells will not pertain to the conventional industry. Therefore, the DEP does not attribute any cost. Nevertheless, the proposed regulations do make this requirement applicable to conventional operations. Obviously the DEP's costs are understated.

Similarly the changing of tank access lids only considers tanks for new wells. But the proposed regulations apply to the tens of thousands of tanks already existing in the conventional oil and gas industry. Using the DEP's own cost estimate per tank the DEP has understated the costs of compliance by hundreds of millions of dollars!!!

The list of DEP omissions goes on and on. For example, we know there are buried tanks in use in the conventional industry and we know that there will be costs associated with the removal of those and with the replacement of those tanks in accordance with the new secondary containment requirements. But because the DEP doesn't attempt to estimate the number of buried tanks involved, the DEP attributes cost to this new regulatory requirement. This is a remarkably inadequate analysis.

DEP does not attribute any cost to the new requirements regarding public resources. The proposed regulations refer to special concern species. This is an open-ended term that clearly means something more than the endangered species now covered by law. But even though the term means something more, with the associated additional obligations that will go along with that "something more", the DEP does not attribute any more costs to compliance.

To the extent the DEP analysis is intended to help us make an informed decision as to the consequences of the proposed regulations and their impact on commerce, the DEP analysis is a failure. Surely an informed vote cannot be taken on the basis of such incomplete information.

To the contrary the information I have related shows that the DEP must be sent back to do the analysis over and to take into account the many factors that it missed.

When that process is re-done, as I think it must be, I also ask that the DEP do a proper analysis of

the impact to small businesses that is required under the Regulatory Review Act. All of the businesses in my community are small businesses of the type targeted for special consideration under the Regulatory Review Act. That Act requires that before these new regulations are approved there is a very specific analysis done of alternatives, exemptions, and impact upon small businesses. The DEP document does not come close to satisfying the Regulatory Review Act and the new regulations cannot be approved without the Regulatory Review Act being satisfied.

When the proper analyses are done I firmly believe that the facts will show that the costs of initial compliance with these new regulations will involve hundreds of millions of dollars or even a billion, and that annual compliance will also be in the hundreds of millions of dollars. To believe that this business community is capable of absorbing such an egregious bureaucratic assault without being forced to commensurately reduce direct operational expenses, such as wages, employee benefits and capital investments, is unrealistic. What is realistic is that these businesses will be forced to close their doors.

Adoption of the proposed amendments to Act 78 will cost Pennsylvania jobs while providing no meaningful or proven enhanced environmental protections.

Your adoption of the proposed amendments will have devastating economic consequences in Warren County. We ask for your serious consideration of rejecting the proposed amendments in their entirety in favor of the necessary study of financial impact and alternatives under the Regulatory Review Act. (784, 784a, 5763 – 5773)

Response The Department conducted the requisite analyses in developing the final-form rulemaking provisions. These analyses are reflected in the Regulatory Analysis Form, preamble and other rulemaking documents. Among other things, the Department considered the potential costs, benefits, need, impacts on small businesses, alternatives and other potential impacts of the rulemaking provisions. The final-form rulemaking represents the Department's revisions to the rulemaking provisions after careful consideration of all comments received during the rulemaking process and of the additional public input. The revisions to Chapters 78 and 78a are consistent with applicable statutes and provide reasonable protections for public health and safety, and the environment. Please see the detailed cost analysis in question 19 of the final Regulatory Analysis Form. Please also see responses to comments 2800, 2801 and 2802.

2807. Comment: These new regulations should not be passed in their current form. Please vote "NO" to the current regulations until they are altered to account for the differences between conventional and non-conventional well drilling and they have met the requirements of the Regulatory Review Act. (84a, 445a)

Response: The Department acknowledges the comment. See response to comment 2627. The costs presented on the Regulatory Analysis Form are based on the cost information provided by the industry and were considered appropriate and reasonable. Please see responses to comments 2797, 2800 and 2801.

2808. Comment: My comments are directed toward the Regulatory Review Act. The preamble to the Act states:

(a) "The General Assembly has enacted a large number of statutes and has conferred on boards, commissions, departments and agencies within the executive branch of government the authority to adopt rules and regulations to implement those statutes. The General Assembly has found that this

delegation of its authority has resulted in regulations being promulgated without undergoing effective review concerning cost benefits, duplication, inflationary impact and conformity to legislative intent. The General Assembly finds that it must establish a procedure for oversight and review of regulations adopted pursuant to this delegation of legislative power in order to curtail excessive regulation and to require the executive branch to justify its exercise of the authority to regulate before imposing hidden costs upon the economy of Pennsylvania To the greatest extent possible, this act is intended to encourage the resolution of objections to a regulation and the reaching of a consensus among the commission, the standing committees, interested parties and the agency.”

“(c) This act is intended to improve State rulemaking by creating procedures to analyze the availability of more flexible regulatory approaches for small businesses”

Section 3 of the Act lists fourteen requirements of the regulatory analysis some simply administrative, others are more substantive. Section 10 requires DEP to provide an economic impact statement that includes:

- 1) Identification of the number of small businesses subject to the rule;
- 2) Projected reporting, recordkeeping and administrative costs of compliance,
- 3) A statement of the probable effect on impacted small businesses; and
- 4) A description of less intrusive or less costly alternatives that could achieve the purposes of the rule.

In my opinion, DEP has failed to provide an adequate economic impact statement as it has failed to;

- (a) Identify ancillary businesses that will be impacted by the rule;
- (b) Appreciate the administrative burdens being placed upon very small operators
- (c) Provide factual data to support the assumptions of adverse impact on tourism and harmful impacts to state parks
- (d) Provide less intrusive or less costly alternatives as specifically called for in the Act.

Section 12.1 of the RRA requires DEP to conduct a regulatory flexibility analysis in which it must consider methods that would accomplish the objectives of the applicable statutes while minimizing adverse impacts on small businesses. Such analysis must include consideration of:

- 1) Less stringent compliance or reporting requirements;
- 2) Less stringent schedules or deadlines for compliance or reporting requirements;
- 3) Consolidation or simplification of compliance or reporting requirements;
- 4) Establishment of performance standards to replace design or operational standards; and
- 5) Exemption of small businesses from all or any part of the requirements contained in the rule.

DEP failed to provide an adequate Regulatory Flexibility Analysis under the RRA for the following reasons:

- a) DEP’s proposed rule provides NO express accommodations for small businesses in any section of the rule.
- b) Electronic reporting is actually a requirement that will create new burdens and costs for small businesses.
- c) New requirements for certifications from licensed professionals and scientists will add

substantial costs for small businesses where performance standards could easily be substituted for this operational standard.

d) DEP failed to consider or provide an exemption for small business from all or any part of the rule, even where such exemption would not impede accomplishment of the objectives of the applicable statutes.

DEP's full compliance with the RRA would likely have resulted in regulations that acknowledged the impact on small business and provided alternatives. This is not unprecedented. Several other programs provide subsections of rules for different aspects of operations within one industry. This rulemaking is the perfect opportunity to draft separate rules for conventional and unconventional operations. In addition, alternatives and exemptions for small businesses could be provided in both rules, as some unconventional operators qualify for the definition of small business under the RRA. (893)

Response: The Department conducted the requisite analyses in developing the proposed and final-form rulemaking provisions. These analyses are reflected in the Regulatory Analysis Form, preamble and other rulemaking documents. Among other things, the Department considered the potential costs, benefits, need, impacts on small businesses, alternatives and other potential impacts of the rulemaking provisions. The final-form rulemaking represents the Department's revisions to the rulemaking provisions after careful consideration of all comments received during the rulemaking process and of the additional public input. The revisions to Chapters 78 and 78a are consistent with applicable statutes and provide reasonable protections for public health and safety, and the environment. See the regulatory analysis form for the final-form rulemaking for the complete analysis of the final-form rulemaking. Please also see response to comments 2798, 2800 and 2801.

2809. Comment: I urge you to vote NO to these regulations as proposed and allow conventional wells to operate under the effective regulations in place before the passage of Act 13 of 2012. You have heard and will hear more facts that delineate and clearly define TWO completely different industries with a need for TWO different sets of regulations so both can continue to flourish in an environmentally sound manner.

With the passage of the Regulatory Review Act also known as the Small Business Act last year by the legislature the regulators by statute must do the hard and arduous work of determining the economic impact of the proposed Chapter 78 regulations on small businesses like ours **in** the state of Pennsylvania. It is CLEAR that the necessary level of due diligence to comply with this new statute was not done. I urge this board NOT TO BE A PART OF ANY REGULATION THAT BREAKS THE EXISTING LAWS OF PENNSYLVANIA. Conventional operators that by definition are a small business and are now protected by law against additional regulations without all possibilities being explored, including exemption from these proposed regulations. We would have every reason to expect the DEP and this board to desire to be in compliance with this Act and be willing to fully comply with the Laws of Pennsylvania as we the conventional operators have been expected to do for decades. The only reasonable course of action due to your own non-compliance with this statute would be to exempt all conventional activities from these proposed regulations.

In closing, I ask that you assure that the full economic impact of the proposed rule is properly analyzed and that the final regulations fully comply with the Regulatory Review Act. Don't put your good name and reputation on the line for those who have not done their job. (898)

Response: See response to comment 2627, 2798, 2800 and 2801. The Department believes the

revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment.

2810. Comment: Section 5(a)(12.1) of the RRA (71 P.S. § 745.5(a)(12.1)) requires promulgating agencies to provide a regulatory flexibility analysis and to consider various methods of reducing the impact of the proposed regulation on small business. Commentators, including legislators, do not believe that EQB has met its statutory requirement of providing a regulatory flexibility analysis or considering various methods of reducing the impact the proposed regulation will have on small business in its responses to various sections and questions on the RAF. While we appreciate the effort put forth by EQB to meet its “small business” obligations under the RRA, we agree that more information is needed in the RAF. We ask EQB to provide the required regulatory flexibility analysis for each section of the proposed rulemaking. (1099)

Response: The Department has provided the additional flexibility analysis for each section of the rulemaking in the final regulatory analysis form.

2811. Comment: We ask EQB to explain how the standards set forth in the regulation meet the criterion under Section 5.2(b)(2) of the RRA (71 P.S. § 745.5b(b)(2)) pertaining to the protection of the public health, safety and welfare and the effect on the Commonwealth’s natural resources while imposing reasonable operating standards on the oil and gas industry. (1099)

Response: The Department developed reasonable operating standards in developing performance standards for surface activities that ensure protection of the public health, safety and welfare and take into consideration the effect on Pennsylvania’s natural resources. Please see the final regulatory analysis form for an explanation of the many protections afforded by the final-form rulemaking and a comprehensive analysis of the regulation.

2812. Comment: The DEP’s Regulatory Analysis Form: The DEP is required by the RRA to provide a regulatory analysis of its proposed rulemaking to the Independent Regulatory Review Commission and the relevant standing committees of the Senate and House of Representatives. The DEP’s RAF, which is posted on EQB’s website along with the proposed rule and preamble, however, fails to satisfy the requirements of the RRA. Generally, the analysis is incomplete because the various subsections only address portions of the proposed rule, rather than the comprehensive rule package. Both the comparison to other states’ regulations and the estimate of costs (as noted above) are limited in scope to only a few select provisions, failing to provide the required analysis. In addition, the analysis is often incomplete or one-sided. For example: The RAF describes the compelling public interest as motivated by unconventional operations, which may result in earth disturbance “at least 10 times the size of earth impacted at a conventional site.” (RAF 10) This characterization fails to acknowledge that unconventional well sites may have ten or twelve wells on one site, thus efficiently using a single earth disturbance to develop multiple wells and actually reducing the amount of earth disturbance required on a per well basis. Furthermore, the productivity of an unconventional well pad greatly exceeds that of a single conventional well and the earth disturbance is therefore much smaller on a production per well basis. - In describing the “compelling public interest” for the rule, the RAF asserts that the draft rule protects the Commonwealth’s tourism and recreation industries, merely assuming, without first demonstrating, that oil and gas operations have, in fact, affected those industries. (RAF 10) In describing small business impacts, the DEP alleges that small businesses which benefit from park visitors will benefit from the rule, without any foundation that those businesses have or will suffer losses from the oil and gas industry. (RAF 15 and 23) DEP has provided very detailed estimates of the anticipated annual economic activity and jobs generated by tourism without providing any comparable estimates of economic activity and jobs

generated by the oil and gas industry. - The RAF repeatedly states that the Proposal is “performance based,” when in fact a review of the Proposal will reveal that it is unnecessarily prescriptive in many areas, as we explain in more detail below. The commenter recognizes the importance of strong environmental protections and accepts them as an essential part of its operations. However, we believe that the DEP has significantly underestimated both the operational and economic burden that the Proposal will impose on the unconventional gas industry and has failed to provide an adequate fact-based analysis for the rule that would allow for an objective assessment of whether any additional environmental protection measures are needed to address specific, documented environmental impacts. Accordingly, we believe the Proposal requires major revisions as is suggested in our attached detailed comments and summary document. (1174)

Response: The Department conducted the requisite analyses in developing the proposed and final-form rulemaking provisions. These analyses are reflected in the regulatory analysis form, preamble and other rulemaking documents. Among other things, the Department considered the potential costs, benefits, need, impacts on small businesses, alternatives and other potential impacts of the rulemaking provisions. The final-form rulemaking represents the Department’s revisions to the rulemaking provisions after careful consideration of all comments received during the rulemaking process and of the additional public input. The revisions to Chapters 78 and 78a are consistent with applicable statutes and provide reasonable protections for public health and safety, and the environment. The regulatory analysis form for the proposed rulemaking addressed the rulemaking as a whole and addressed salient provisions in a more individual way. The Department has revised the regulatory analysis form for the final-form rulemaking to include all relevant information included in the comment.

2813. Comment: The EQB, in interpreting and implementing Act 13 or any other existing statute, must interpret and give effect to the legislative intent of the statute. See, 1 Pa.C.S. § 1921. That is, when promulgating regulations based on a statute, the EQB must do so in a manner that is not contrary to the clear and plain meaning of that statute. See, *Bethenergy Mines, Inc. v. Commw.*, Dept. of Environ. Protection, 676 A.2d 711 (Pa. Commw. 1996).

The proposed revisions/additions to Chapter 78 are not wholly consistent with the legislative intent of Act 13. In fact many of the proposed changes go well beyond the requirements of Act 13 and impose additional requirements on oil and gas development that provide no meaningful environmental benefits and increase costs to the industry by imposing additional administrative and operational burdens. Many of the proposed changes appear to derive from the EQB’s or DEP’s own opinions/initiatives rather than being based on statutory guidance from the General Assembly. (1140)

Response: The revisions to Chapters 78 and 78a are consistent with applicable statutes and provide reasonable protections for public health and safety, and the environment.

2814. Comment: In addition to the challenge presented by Act 13, EQB must develop a regulation that takes into consideration the regulatory review criteria of the RRA. To illustrate, we note that Section 5.2(b)(2) of the RRA (71 P.S. § 745.5b(b)(2)) is the criterion related to the protection of the public health, safety and welfare, and the effect on the Commonwealth’s natural resources and Sections 5(a)(12.1) and 5.2(b)(8) of the RRA (71 P.S. §§ 745.5(a)(12.1) and 745.5b(b)(8)) relate to regulatory flexibility for small business. We acknowledge that devising a regulation that meets all of these requirements is not an easy task. (1099)

Response: The rulemaking takes into consideration the regulatory review criteria of the Regulatory Review Act. The rulemaking balances the needs of the citizens of the Commonwealth with the needs of the conventional and unconventional oil and gas industries, including the small business community. Several initial concepts that were considered early in the rulemaking process were refined through years of formal and informal stakeholder engagement during development of the proposed and final-form rulemakings. Please see the Regulatory Analysis Form for both the proposed and final rulemakings regarding the protections afforded by the rulemaking for the public health, safety and welfare, and the effect on the Commonwealth's natural resources, as well as flexibility for small business.

2815. Comment: Section 28 of the RAF relates to the regulatory review criterion of whether the regulation is supported by acceptable data. If data is the basis for a regulation, this section of the RAF asks for a description of the data, how the data was obtained, and how it meets the acceptability standard for empirical, replicable and testable data that is supported by documentation, statistics, reports, studies or research. EQB has indicated that data is not the basis for this regulation. If data is not the basis for this regulation, how did EQB determine that the many standards being imposed are adequate? As noted in our first comment, various segments of the regulated community have opposing views on many provisions of the proposal. Those commentators often call for either: more stringent regulations, less stringent regulations, no regulations at all or a more flexible regulatory approach to standards being put forth. Since the regulation is not based on data, we ask EQB to explain how it determined that the numerous standards being proposed are appropriate and why it believes those standards strike the appropriate balance between environmental protection and the optimal development of the oil and gas resources of this Commonwealth. (1099)

Response: The Department describes in the final rulemaking documents, and in particular the regulatory analysis form, the data that forms the basis for this rulemaking. See, for instance, the response to question 28 in the regulatory analysis form, and other responses throughout the regulatory analysis form

2816. Comment: The estimated figures in the Regulatory Analysis Form completed by the DEP are not unfair or uncompetitive expenses given the volume and value of the hydrocarbons produced in the Commonwealth currently and for the foreseeable future. Yes, some small conventional well operators will go out of business. But if they cannot afford to comply with the very limited number of proposed regulations DEP has deemed applicable to them, the harsh reality is that their resource production in the current era is insignificant. Whereas their industry's history and legacy of environmental degradation unfortunately, is not. As the DEP phrased it, "the costs of reasonable environmental protective measures are relatively small compared to the costs associated with cleaning up a release of pollutational substance into the environment and restoring the impacted area." (846, 1109)

Response: The Department acknowledges the comment.

2817. Comment: I note that in the regulatory analysis, costs and benefits to the state government and to the industry are detailed. A key stakeholder group has been omitted from this analysis, namely the residents living in close proximity to oil and gas surface installations. A number of the costs of the drilling and processing activities have been thus far externalized to them, including, in many cases, their ongoing purchase of drinking water, the purchase of air purifying equipment for their homes, medical care in response to chemical or heavy metal exposure, loss of property values and, in some cases, their complete relocation. A complete analysis of the costs and benefits of the proposed regulations should also include those of these stakeholders as well. (945)

Response: To the extent that the commentator is suggesting that the regulation should ban oil and gas operations in Pennsylvania, see the response to comment 2501. The Department conducted the requisite analyses in developing the rulemaking provisions. These analyses are reflected in the Regulatory Analysis Form, preamble and other rulemaking documents. Among other things, the Department considered the potential costs, benefits, need, impacts on small businesses, alternatives and other potential impacts of the rulemaking provisions. The final-form rulemaking represents the Department's revisions to the rulemaking provisions after careful consideration of all comments received during the rulemaking process and of the additional public input. The Department does not believe that the costs to stakeholders mentioned in the comment are a burden created by the revisions to Chapters 78 and 78a.

2818. Comment: Further we agree with the statement that “the DEP has not complied with the Regulatory Review Act. It has failed to perform a complete assessment of the cost of the Proposal and has therefore, underestimated the full economic burden being place on the industry.” In fact at this point we adopt the Marcellus Shale Coalition’s “Cost of Compliance” discussion in its entirety in addressing said issue in relation to the Proposal. Id. 3-6. (638a)

Response: The costs presented on the proposed Regulatory Analysis Form are based on the cost information provided by the industry and were considered appropriate and reasonable. The Department has updated those costs and benefits based on the language in the final-form rulemaking and more current cost estimates.

2819. Comment: The proposed revision to chapter 78 has not complied with the laws of PA. It does not address the needs of small business, and DEP has not conducted the required determination of impact to small business. Most of conventional oil & gas operators in PA are small businesses within the scope of Act 76 of 2012.

The regulatory analysis fails to address the requirements of Act 76 of 2012, which amended the Regulatory Review Act to require an economic impact statement and a regulatory flexibility analysis for any proposed regulation that may have an adverse impact on small businesses. I have spoken to many of the operators and their internal review indicates the proposed revisions to Chapter 78 will have a dramatic impact to their business, and will negatively impact a billion dollar investment, over 20,000 jobs, and domestic energy production. A few natural gas operators have told me the proposed regulations will cause them to stop drilling new wells, and evaluate the continued operation of existing wells.

This Act expressly recognizes that small businesses are critical to Pennsylvania’s economy and that uniform regulatory and reporting requirements can impose unnecessary and disproportionately burdensome demands, including legal, accounting, and consulting costs, upon small businesses with limited resources.

DEP is required to consider the establishment of less stringent compliance requirements for small businesses, performance standards to replace design or operational standards, as well as an exemption of small business from all or any part of the requirements contained in the proposed regulations - but DEP has not done so.

Unconventional vs Conventional

The proposed changes to chapter 78 do not adequately address the significant differences between Conventional and Unconventional exploration and production. The industry met with DEP on numerous occasions to address this issue and DEP appears to have disregarded the advice of experts.

Expert Recommendations

No changes to the proposal were made as a result of the Technical Advisory Board workshops, that included recommendations in the following areas:

- Public resource protection/species of special concern
- Waste management at well sites (centralized impoundments/on-site processing)
- Pre-hydraulic fracturing assessment (identification of abandoned and orphan wells)
- Water supply restoration standards (936)

Cost Benefit Analysis

The proposals unreasonably impact conventional oil & gas well operations without a compelling environmental justification. The state should conduct a reasonable cost benefit analysis, to determine if the cost to the industry is justified by the benefits of compliance to the Chapter 78 revisions. It is my opinion that the cost far exceed the value of the benefits, and that the commonwealth will suffer as a result of these requirements.

- The revisions will likely lead to a dramatic reduction of investments in new exploration and reserves of natural gas and oil.
- Revisions will likely lead to a dramatic reduction in production from existing natural gas and oil wells.
- Revisions will likely lead to an increase of plugging, or abandonment of wells.
- Revisions will likely lead to dramatic decrease of jobs associated with conventional wells.

I recommend that the EQB and other state authorities, stop the approval of the current revision of Chapter 78 and require DEP to conduct the necessary review of expert testimony to make changes to Chapter 78 that are in the best interest of the Commonwealth. (936)

Response: The Department conducted the requisite analyses in developing the proposed and final-form rulemaking provisions. These analyses are reflected in the Regulatory Analysis Form, preamble and other rulemaking documents. Among other things, the Department considered the potential costs, benefits, need, impacts on small businesses, alternatives and other potential impacts of the rulemaking provisions. The final-form rulemaking represents the Department's revisions to the rulemaking provisions after careful consideration of all comments received during the rulemaking process and of the additional public input. The revisions to Chapters 78 and 78a are consistent with applicable statutes and provide reasonable protections for public health and safety, and the environment. See the regulatory analysis form for the final-form rulemaking for the complete analysis.

Regarding the applicability of the regulations to conventional and unconventional operators, see response to comment 2627, 2800 and 2801.

2820. Comment: My reasons for commenting on the proposed rule-making is the potential impact it would have on the conventional oil and gas producers in Pennsylvania, the inadequate justification of these regulations for conventional producers given in the Agency's Regulatory Analysis Form, and the embarrassingly unrealistic and incomplete cost of compliance analysis to conventional producers provided in the Agency's Regulatory Analysis Form.

In section 10 of the Regulatory Analysis Form, the EQB justifies the new regulations explicitly based on the growth of the number of unconventional wells being drilled in the common wealth, with not a single mention of any justification related to the conventional producers. Furthermore, I would expect a careful regulatory analysis to include some indications of the numbers and types of actual incidents that new regulations would prevent if enacted. It seems that the justification for the new rule-making, as presented in this form, is reliant on a general perception that there are widespread environmental impacts and that they are implicitly and equally attributable to the conventional oil and gas producers as the unconventional producers. The analysis form fails to draw any connection between real environmental impacts from oil and gas production to the conventional producers.

In section (15) of the Analysis Form, the EQB incorrectly asserts that conventional oil and gas producers do not employ the practices regulated by the proposed provisions, particularly, hydraulic fracturing. In fact, conventional producers in this State have used hydraulic fracturing as a means for well stimulations for over 50 years. This is an indication that the EQB is unintentionally or even unknowingly proposing new rules in response to unconventional drilling operations that can directly affect conventional producers.

The most disappointing component of the Regulatory Analysis form is section 19 which details the expected costs of compliance of the new rule making for conventional producers. The calculations are based on an expected 2,000 wells permitted per year. This number is not representative of an average count of well permit over the past 7 years. Furthermore, the analysis seems to forget to include the cost of compliance associated with existing wells, bringing the count up many thousands. There are several cost estimates that the EQB attributes a \$0 cost to base on either an inability to anticipate the costs, or in some cases without any explanation at all. For example, the EQB estimates that the cost of Identifying Abandoned or Orphaned Wells to be negligible for Conventional Producers. If this important task was without cost, than why hasn't the DEP been able to reconcile its own estimates of hundreds of thousands of abandoned or orphaned wells with its paltry list of only 12,127? If the endeavor was without cost, what excuse does the DEP assert for not having compiled a complete list?

Concerning the removal of underground storage tanks, the DEP does not assert a cost of compliance based on the Department being "unable to estimate the number of buried tanks". If the DEP cannot estimate the number of tanks, how can they justify the need for new rulemaking to begin with, let alone the cost? On the whole, it appears that the EQB did not adequately consult with conventional operators on the costs of compliance, as several other cost estimates are considerably lower than anyone with a working knowledge of a conventional well site would estimate. For example, the costs associated with equipping tanks with valves and access lids to prevent unauthorized access seems to omit the scenario where existing tanks are incompatible with such modifications, requiring the operator to remove and dispose of the old tank and purchase and install new tanks.

Still other estimates are difficult to comprehend how such a low number could possibly be attributed to the tasks required. For example, installing secondary containment for all existing fluid structures costing only \$3,000 per well clearly doesn't account for even the lost time in production associated with such a comprehensive operation. In section 20 the form estimates that there are no costs to local governments, however, it did not present appropriate economic models verifying that conventional producers would not have to decrease, or even cease, production; which would manifest as a lost source of tax revenue for local municipalities.

In section 24, part C, the form indicates that the DEP has made efforts to minimize the costs of compliance to small businesses, particularly conventional well producers. However, these efforts

were not enumerated. From the costs estimates, it appears the only effort to minimize costs to the vulnerable small businesses was to underestimate the costs of compliance. The form also cites a 2011 study indicating a \$1.145 billion dollars in economic activity associated with tourism to State Parks. However, it should be noted that this economic activity occurred under existing regulations. Furthermore, the form fails to indicate the economic activity associated with conventional oil and gas producers. In this way, the form makes no effort to quantify the impact to the affected small businesses, even in reference to its questionable cost estimates.

In summary, while I appreciate the efforts and responsibility of the DEP to protect our environment, the documentation generated in support of these new rules does not adequately justify the need, nor accurately anticipate the impact to the conventional producers of Pennsylvania. Considering that these small businesses and associated industries are significant providers of employment in the struggling economies of rural Pennsylvania; a more careful justification and complete cost estimate is owed to the citizens. Without more careful consideration, these new rules risk decimating jobs in the areas already worst off. (889)

Response: The Department conducted the requisite analyses in developing the proposed and final-form rulemaking provisions. These analyses are reflected in the Regulatory Analysis Form, preamble and other rulemaking documents. Among other things, the Department considered the potential costs, benefits, need, impacts on small businesses, alternatives and other potential impacts of the rulemaking provisions. The final-form rulemaking represents the Department's revisions to the rulemaking provisions after careful consideration of all comments received during the rulemaking process and of the additional public input. The revisions to Chapters 78 and 78a are consistent with applicable statutes and provide reasonable protections for public health and safety, and the environment. See the Regulatory Analysis Form for the final-form rulemaking for the complete analysis.

2821. Comment: Associated Guidance - The Department will be developing new or updated Technical Guidance and Authorization Lists for several elements of the Proposed Rulemaking, including but not limited to Water Management Plans (§ 78.69), as well as approved modular aboveground containment structures (§ 78.56(a)(2)), liners (§ 78.56(a)(8)(ii)), and solidifiers (§ 78.61(d)). It was our understanding that the Department would be advancing drafts of this new guidance concurrent with the Proposed Rulemaking, but to our knowledge this has not occurred. Given the apparent reliance in the Proposed Rulemaking on this new (but not yet available) guidance, it is imperative that the Department promptly provide opportunity for public review and comment of these documents. (997a)

Response: The Department was not able to finalize the draft forms and technical documents until the final rulemaking language was finalized. The Department plans to have all necessary forms, guidance documents, and procedures available at the effective date of the rule making.

2822. Comment: Induced Seismicity. Induced seismicity can result in environmental and human health impacts identical to those caused by natural earthquakes of similar intensity, including the potential for property damage and injury. Earthquakes may also result in changes to groundwater or surface water level or quality. (See, e.g. Fleeger, G. M., Goode, D. J., Buckwalter, T. F., & Risser, D. W. (1999). *Hydrologic effects of the Pymatuning earthquake of September 25, 1998, in northwestern Pennsylvania*. US Department of the Interior, US Geological Survey; King, C. Y., Zhang, W., & Zhang, Z. (2006). Earthquake-induced groundwater and gas changes. *Pure and Applied Geophysics*, 163(4), 633-645.) Seismicity can also compromise wellbore integrity by damaging the cement sheath and metal casing installed as pressure control and ground water protection barriers. Even in the

absence of actual damage, induced seismic events can be a nuisance to communities and a source of anxiety; they also may have financial and manpower costs associated with the investigation of the causes and effects of the earthquake and from the suspension of operations until such studies are completed. For these reasons, we recommend that the EQB, in consultation with the Pennsylvania Geological Survey, develop regulations to address induced seismicity. Our reasons for recommending an evaluation of seismic risk and the potential for induced seismicity at a proposed well site, and the scope of the suggested analyses, are set forth in Appendix A. (1143)

Response: The Department acknowledges the comment. Induced seismicity is beyond the scope of this rule making.

2823. Comment: The proposed regulations should address seismic testing activities Seismic testing activities are not adequately regulated in PA and pose threats to safety, infrastructure and natural resources of the Commonwealth. Infrastructure includes homes, buildings, roads, water lines and sewer lines. Vibroseis trucks are especially problematic because when seismic activity is conducted by them, it is nearly completely unregulated. Chapter 78 should be revised to include notification requirements, setback distances, prohibitions, special considerations for certain areas and bonding requirements for seismic testing operations. The revisions should also make it clear that compliance with local seismic activity ordinances is required. (853a)

Response: The Department acknowledges the comment. Although seismic testing activities are beyond the scope of this rule making, there are separately proposed amendments to Chapters 210 (Blasters' Licenses) and 211 (Storage, Handling, and Use of Explosives) that would update these regulations to account for the proper regulation of seismic testing.

2824. Comment: The proposed regulations should include waste management provisions similar to those contained in the 2013 consent decree between EPA and XTO Energy, including mandatory flowback and produced fluids recycling and prohibition against storing flowback and produced fluids in tanks with open tops, open pits, lagoons or other surface impoundments. (853a)

Response: Sections 78.57 and 78a.57 of the rulemaking prohibits storage of brine and other produced fluids in open top structures. Unconventional operators are currently reusing most of the flowback and produced water for their operations, the remaining is processed at waste treatment facilities.

2825. Comment: Drillers should not be exempt from hazardous waste regulations that other companies have to follow. (40)

Response: Drillers are not exempt from hazardous waste regulations. See response comment 1525.

2826. Comment: Any entities drilling for natural resources in the state of Pennsylvania should be held to the same standards and federal regulations governing the disposal of hazardous materials required in any other situation for any other trade. Any preferential treatment or leniency towards these entities drilling in Pennsylvania will only encourage behaviors that can and will lead to extreme, adverse, long-term health effects to those living in this state and the surrounding states. Any entities drilling in the state of Pennsylvania should be required to return contaminated water to a quality that meets Safe Drinking Water Act standards. If they cannot, then they should not be permitted to drill for profit at the expense of on the most basic requirements for life to sustain itself. (61)

Response: Residual waste from oil and gas operations is not classified as a hazardous waste. See response to comment 1525. See response to comment 500 regarding Safe Drinking Water Standards.

2827. Testing of all drill cuttings and waste from NG drilling process should be made mandatory and comply with safe standards for the public. (13, 976, 976a)

Response: Wastes from oil and gas operations are classified as residual waste. See responses to comments 1492 and 1493.

2828. Comment: The EQB should take the steps necessary to regulate flowback and produced water through Chapter 78 in accordance with Subtitle C of the U.S. Resource Conservation and Recovery Act (RCRA). More than 25 years ago EPA determined that exploration and production (E&P) wastes would receive a categorical exemption from Subtitle C of RCRA. Most states have incorporated this exemption into their regulations. EPA has acknowledged that regulation of certain E&P waste streams as hazardous would otherwise be appropriate stating that “it is clear that some portion of both the large-volume and associated waste would have to be treated as hazardous if the Subtitle C exemption were lifted.” This perspective has been supported by a number of recent news reports and studies that have document toxicity and ignitability level high enough to trigger RCRA, were it not for the exemption. In addition some chemicals have exhibited toxicity characteristics that would normally require management as a hazardous waste if they were not otherwise exempt under RCRA. Ignoring the applicability of RCRA to the increasingly common realities in oil and gas fields including in Pennsylvania, effectively implies that weak environmental regulation on the federal level renders acceptable equally weak regulation on the state level. Both the hazardous waste loophole in RCRA and other shortcomings in the proposed regs may reflect a wish on the part of PA Government to promote oil and gas development, but such reasoning directly contradicts and must not be allowed to trump the EQB and DEPs shared mandate to protect health and the environment by adoption strong, effective regulation sand ensuring that they are followed. (853a)

Response: The Department acknowledges the comment.

2829. Comment: Prohibition of Land Application of Drill Cuttings, Burial of Contaminated Wastes, and Discharge to Land of Contaminated Fluids. Contaminated oil and gas wastes, including drilling muds and cuttings, that are buried underground or applied to land present an unacceptable risk of contaminating soil and groundwater. Tophole water that has been contaminated by Oil and Gas Operations presents the same risk if it is discharged to land, as does brine used for dust control or de-icing. We oppose the land application not only of all drilling muds and cuttings but also of brine and residual waste. All contaminated drilling muds and cuttings, brine, residual oil and gas wastes, and contaminated fluids, including contaminated tophole water, should be classified, handled, and disposed of as waste. (1143)

Response: The rulemaking does not permit the storage of production fluids in open containers. Brine from unconventional wells is prohibited from use for dust control or de-icing. Tophole water may not be discharged unless free of additives, drilling muds regulated substances or drilling fluids. See responses to comments 2202, 2206, and 2210.

2830. Comment: Prohibition of Open Pits, Tanks, and Centralized Impoundments for Contaminated Fluids. Open pits and centralized impoundments have the potential to contaminate groundwater and surface water, and many spills, leaks, and other problems involving pits and impoundments have occurred in gas development regions of Pennsylvania. Open pits, tanks, and impoundments can be located very close to homes, exposing nearby residents to toxic emissions. Collecting waste at the

drill site, removing it from pits, and then transporting it by pipeline or truck to a larger open impoundment at a centralized location away from the well site results in additional transfer steps that provide unnecessary opportunities for pollution releases. It also is inefficient from a logistics and energy use standpoint to construct a reserve pit for temporary waste storage and then remove this pit later. It is substantially more efficient to use a closed-loop tank system for waste collection, because the wastes can be transported directly to a waste handling facility. Closed-loop tank systems should be used to prevent avoidable spills and to contain volatile materials and wastes, and wherever possible the systems should route captured vapors for use or sale as power. (1143)

Response: The Department is no longer permitting certain pits and centralized impoundments for unconventional oil and gas operations. All existing centralized impoundments must be closed or obtain a residual waste permit within three years. If a new centralized impoundment is to be constructed it will be permitted under the Department's waste program. See response to comment 1251.

2831. Comment: In 1980, Congress passed the superfund law, CERCLA, which sought to clean up America's most toxic, most contaminated sites. Since its inception, tens of billions of dollars have been spent and tens of billions of future dollars will need to be spent to fund continued cleanup operations around the country. More than 1,500 superfund sites have been declared since the law's inception though tens of thousands of sites could technically qualify for inclusion. Pennsylvania has about 300 sites. And as more superfund sites continue to be added each year, the costs of future remediation will skyrocket, diverting scarce resources from schools, transportation infrastructure, park creation and maintenance, public health, and so much more. In what has become a familiar pattern, most of the corporations which polluted these sites have since gone out of business, leaving the enormous costs of cleanup to be borne by the taxpayer. One would think that pollution on this kind of scale would make us vigilant and very opposed to any industry that could contribute to this ongoing disaster. However, recent history suggests that we have not learned much from our own history.

Given the millions of gallons of toxic fluids that are pumped into the ground or stored on site at each of Pennsylvania's 6,400 fracking wells, it is fair to suggest that each of these wells is a potential superfund site. And the industry, which was exempted from the Superfund Law provisions, the clean water act, as well as meaningful taxes, would like to drill hundreds of thousands of wells in our state. Consider that Bradford County in northern PA currently has 1,150 hydraulically fractured wells. That is, just one of Pennsylvania's 67 counties has nearly 4 times the number of fracking wells as there are superfund sites in the entire state. Chester County where we are now has 11 superfund sites. Imagine the impact on our health if it had a thousand. That's what every northern county in the state is facing. If experts like Tony Ingraffea are correct and just 5-8% of wells fail immediately and 50% of wells fail as they age, we can expect the number of superfund sites in Pennsylvania to increase astronomically, and when the cleanup becomes unavoidable, the corporations who caused the mess will be long gone. Pennsylvania will be riddled with possibly thousands of superfund sites with little or no funding to remediate them, if it is even possible to remove deadly toxins from an aquifer. Consider also that tourism is Pennsylvania's second largest industry. Thousands of visitors come to Pennsylvania's forests and parks every year to camp, to hike, to fish. This is a billion dollar industry. Will they still come if every northern Pennsylvania stream is polluted and all the fish are dead? I urge you to make all DEP regulations for fracking as stringent as you possibly can. Future Pennsylvanians are depending on you. (121)

Response: The Department acknowledges the comment.

2832. In addition, DEP's mission is to protect Pennsylvania's air, land and water from pollution and to

provide for the health and safety of its citizens through a cleaner environment. To achieve this, DEP must uphold the safe Drinking Water Act and see that our water doesn't fall below its standards. To achieve its mission, DEP must prohibit the use of brine in any beneficial manner and treat it as the hazardous waste material. DEP must prohibit the treatment of brine at municipal water treatment facilities. DEP must prohibit the processing, storage or exposure of drill cuttings onsite and treat it as the hazardous waste it is. (1223)

Response: The use of brine in a beneficial manner saves the amount of fresh water used. Brine cannot be treated at municipal wastewater treatment facilities. Contaminated drill cuttings from unconventional oil and gas operations must be disposed of in permitted landfills. Residual waste from oil and gas operations is not classified as a hazardous waste.

2833. Comment: The DEP permitting process does not seem to take into account the cumulative effect of the natural gas industry on our environment.

Many of the chemicals used to in hydrofracing are known carcinogens, neurotoxins and endocrine disruptors. These wastes as well as others are a direct threat to our water supplies, air quality, and wildlife. What is the acceptable risk? While these chemicals may be beneficial to the gas industry, their use must be tightly regulated so as to prevent harm to us. DEP should follow the mantra "If you can't measure it, you can't manage it."

Since the gas industry had a hand in drafting these regulations, "weasel clauses" and other ambiguous language must be eliminated. Flowback water should be regulated tightly, with documentation via a "cradle to grave" paper trail.

Operators will naturally seek the most cost-effective method of disposal. DEP is not fulfilling its mission of Environmental Protection if operators are allowed to bury drill cuttings [AKA "Toxic Teabags"] on site. On-site disposal is not equivalent to a well-designed and regulated landfill. Disposal of drill cuttings must be treated in the same way as flowback water - Cradle to Grave documentation. (631)

Response: Because of the need and cost of water to drill and hydraulically fracture a well flowback and produced water from unconventional oil or gas operations is reused at subsequent wells or well sites. Flowback that cannot be used because of its quality or need is taken to a treatment facility for reconditioning or is disposed at an appropriate landfill.

Drill cuttings from above the casing seat do not create a significant threat to the environment if the requirements in § 78.61 or § 78a.61 are met. The requirements include that the drill cuttings are not contaminated with a regulated substance, including brines, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids, or drilling fluids other than tophole water, fresh water, or gases. Contaminated drill cuttings may be buried on site in accordance with § 78.62(a)(5)-(16) and (b) (relating to disposal of residual waste – pits) or land applied at the site in accordance with § 78.63(a)(5)-(20) and (b) (relating to disposal of residual waste – land application). Beneficial reuse, burial, or land application of drill cuttings from below the surface casing seat at an unconventional well site may only occur with a permit or other approval obtained from the Department otherwise, the drill cuttings must be disposed of at a permitted landfill.

Please also see response to comment 2910.

2834. Comment: Prohibition of open pits, open tanks, and centralized impoundments that contain waste and/or contaminated materials

We oppose the use of open pits, open tanks, and central impoundments because of the numerous pathways of pollution these facilities provide and which cannot be avoided. The pollution from these open facilities also cannot be mitigated due to their very nature. Whether used as “temporary”, as is proposed for the open pits, or for a longer time frame, the water and air pollution caused by the pits, open tanks, and centralized impoundments is not justified and must be altogether prohibited.

One note we want to emphasize is our opposition to the allowance of acid mine drainage (or “mine influenced water”) or other fluids (such as sewage effluent, landfill leachate, cooling tower water, etc.) to be placed in centralized impoundments or otherwise mixed with other fluids (usually for reuse for hydraulic fracturing) and considered to be “fresh water”. The proposed provision that DEP can allow contaminated fluids to be used on well sites and mixed with other waters in impoundments intended and constructed only for fresh water rather than hazardous materials is completely unacceptable and is an irresponsible provision in this rulemaking. We are opposed to this proposal. (1156)

Response: The Department does not have sufficient data to support complete prohibition of all open top storage structures for temporary storage. The Department has amended the final rulemaking to ban the use of open-air pits for temporary waste storage at unconventional well sites. Sections 78.57 and 78a.57 eliminate the use of pits for the collection of production fluids during the operation of a well. Sections 78.59c and 78a.59c require operators of existing centralized impoundments authorized under a Dam Permit to either submit a closure plan to the Department within 6 months and close the centralized impoundment with 3 years of the effective date of the rulemaking or obtain a residual waste permit in accordance with Subpart D, Article IX within 3 years of the effective date of the rulemaking.

Permitting of centralized impoundments under the Office of Oil and Gas Management is no longer available to oil and gas operators.

The utilization of less than fresh water for oil and gas operations conserves fresh water supplies. Oil and gas operators are very particular relative to the quality of water used to drill and stimulate a well. Water that is used to develop a well must meet certain pH, TDS, bacteria, and other standards before an operator would use it to drill or stimulate a well.

2835. Comment: Prohibition of the placement in a pit, the burial and land application of drill cuttings and prohibition of the spreading of brine for dust control, road stabilization, and pre-wetting, anti-icing and de-icing

The drilling muds, cuttings, solids and liquids, including tophole water, produced by oil and gas extraction contain contaminants that must be treated and disposed as waste. The burial, land application, use in road stabilization or spreading of these materials allow the placement and movement of pollutants, threatening water supplies and the environment. It is unacceptable to allow and facilitate this pathway of pollution. (1156)

Response: See response to comment 2833. Drill cuttings from unconventional oil and gas operations are prohibited from disposal in a pit or by land application. Brine from unconventional oil and gas operations is prohibited from use for dust control, road stabilization, pre-wetting, anti-icing, or de-icing. Contamination of any material including tophole water by drilling muds, drilling fluids additives other than bentonite must be disposed

of in a permitted landfill. The Department notes that, as with any other industry in the Commonwealth, there may be opportunities for beneficial use if permitted by the Department's Waste Management program.

2836. Comment: Highland Street Extension residents have worked with community leaders in three municipalities, along with our Representatives and Senators to present over 2,000 comments to the EPA to stop a proposed disposal injection well near the City of DuBois. Many residents fear a disaster similar to the recent West Virginia incident could happen here if a disposal well were permitted to be placed within a residential area. The history of Pennsylvania waste disposal injection wells shows affects can be seen up to five miles away and at least five cases of Pennsylvania disposal injection wells had violations or contaminated water supplies.

Leaders of our community requested we submit all the information collected on the disposal of waste and the protection of our water sources (municipal and private water wells). A binder is being provided with all the information I have collected, which is extremely relevant to protecting Pennsylvania's water sources.

We request the DEP get copies and review all the public comments collected by EPA for December 2012 and September 2013 to aid in decisions on the future regulations dealing with waste disposal from oil and gas production to protect our water supplies. Some information was provided by engineers.

The EPA deals only with underground sources of drinking water and residents found no way to protect above ground water sources. Our local coal mines are of great concern, which are located near the proposed site and extend under the City of DuBois into Sandy Township and into many other municipalities throughout our area. Residents' concerns dealt with protection of water supplies, cost to check water sources regularly, roads, air quality, soil, loss of property values and much more. The DEP needs to review all this information collected by private citizens on potential hazards to Pennsylvania water supplies from the waste disposal of the oil and gas industry since it has a direct impact of over a 2 mile radius. Anything happening underground really is an unknown and loss of water to homes is one of the most important items to home owners and to protecting the home owner's property values.

Please make sure the regulations prohibit: use of open pits for storage of regulated substances; onsite processing of drill cuttings due to hazardous substances requiring analysis; burial or land application of drill cuttings; onsite burial of waste pits; use of brine for dust suppression, de-icing and road stabilization; land application of top hole, pit water, fill or dredged material and use of disposal injection wells in Pennsylvania due to the history of abandoned and orphaned wells. Ensure that the regulations will identify existing wells, which include old and abandoned oil and gas wells. Make sure that the regulations plug and seal old abandoned and orphaned wells appropriately prior to new well construction to prevent pollution from accidents.

Operators should be required to do pre-drill water quality testing and make the data publicly available. If contamination of a water source should happen the operator should be required to restore the supply to pre-drilling quality. (932)

Response: See response to comment 2833. Onsite processing as authorized under the subsections 78.58(e) and 78a.58(e) is limited to processing drill cuttings only at the well site where the drill cuttings were generated. Therefore, this processing is temporary in nature and is intended to facilitate proper handling and disposal of the drill cuttings. The Department

believes the existing and new regulations for on-site processing ensures the protection of the environment.

Unconventional operators are not allowed to spread brine on roads for any reason. Conventional operators are permitted to spread brine on roads for dust control, road stabilization pre-wetting, anti-icing, or de-icing under controlled conditions that require the brine to meet certain water quality criteria and limit the application location, rate, and duration.

The rulemaking allows the discharge of tophole water or water in a pit from precipitation only if it includes no additives, drilling muds, regulated substances, or drilling fluids other than gases or fresh water. In addition, the water must meet certain water quality standards and be discharged to an undisturbed, vegetated area capable of absorbing tophole water and filtering solids in the discharge. Tophole water or water in a pit as a result of precipitation may not be discharged to waters of the Commonwealth except in accordance with Chapters 91-93 and 95.

The Department currently issues well permits for all UIC wells only after the EPA has completed a rigorous analysis aimed at verifying that the activity will be protective of Underground Sources of Drinking Water (USDW). This analysis is considerate of abandoned wells surrounding the proposed injection location.

Section 3218(e) of the 2012 Oil and Gas Act requires that an operator electing to preserve a defense under § 3218(d)(1) or (2) to retain an independent certified laboratory to conduct a predrilling or prealteration survey of a water supply. The Department does not provide predrill data to the public, unless all identifying information is redacted, in order to protect the privacy and rights of the property owners. See response to comment 565.

Drill cuttings from unconventional oil and gas operations are prohibited from disposal in a pit or by land application. Contamination of any material including tophole water by drilling muds, drilling fluids additives other than bentonite must be disposed of in a permitted landfill. Tophole water can only be applied to the land if it is not contaminated. The Department does not regulate disposal wells and is therefore beyond the scope of this rule making.

2837. Comment: Commentator supports significant aspects of the proposed regulations. Among the changes the Commentator supports the requirements to transport wastewater via aboveground pipelines (78a.68b) as well as the banning of uncovered storage of produced fluids, which, among other things, will begin to mitigate air pollution concerns (78.57a).(929)

Response: The Department acknowledges the comment.

2838. Comment: I think if we all work together that will be really great. I do know that clean air and clean water is very important. We're so blessed to live in a state with so much water resources, but the problem is that so many of our waterways are already contaminated by previous industry.

Our Yellow Creek that runs right through Homer City is heavily contaminated. When we look around our natural environment, we see lot of industrial abuse whether just by negligence or ignorance or by the will of uncaring energy corporation. Coal industry has left its indelible mark on our waterways and on our air. Lots of environmental organizations are taking efforts to remediate some of the issues. If we allow the open wastewater pits, all conservation efforts are going to be vain and we may need to be accountable to future generations.

There are ways to manage wastewater. Open pits and natural depressions, even used for temporary storage should not be allowed. These pits can leak and they've been known to contaminate groundwater supplies, as well as soil for very long periods of time.

I have hard time forgetting the immense revenues and money that's being brought in by gas exploration and production while regular people are being poised on the sidelines. I also have a hard time with the quote, unquote, and economic benefits to PA that this gas boom is supposed to bring. A lot of people that I've met working in the Marcellus industry are from Oklahoma or Texas or Arkansas. And I've met some great people and made some friends out of the deal. But what benefits is this bringing Pennsylvanians, specifically in the long run, especially if our water resources are degraded to the point of being toxic, as in the case of the extreme radium concentrations in the Blacklick Creek Watershed.

On the flip side of this is energy production. We need to support the adequate energy production that we want and need as well as take good care our environment. An applicable philosophy founded by the American Indian League of Nations should apply in any situation dealing with our resources of the land. "In every deliberation, we must consider the impact on the seventh generation, even if it requires having skin as thick as the bark of a pine". We must be tough, practical and considerate, not only to people now, but for our future generations. (1208)

Response: The Department acknowledges the comment. See Response to 1493.

- 2839.** Comment: Please protect our environment now and for the future. My well water has been compromised by fracking near my property. Range Resources and DEP have found increased bromine and TDS. Range resources suggested it is from an old water softener, but in fact, in over 20 years I have lived here I never had a water softener. They may be more but my funds did not permit extended water analysis. We have responsibility to maintain safe environments and to bury or have holding ponds for produced water that cannot be cleaned enough to release it back to natural standards is not acceptable. Floods, earthquakes, animals drinking from this water, evaporation and condensation spread these toxic waste, hazardous waste to farm lands, people's yards, this is simply wrong. Please listen to the truth of this matter and do not make property next to home lands become dumping grounds for produced water. And I hold grave concerns over the use of brine water for roads especially near water sources. (630)

Response: To the extent that your concern is in regard to centralized wastewater impoundments, see response to comment 1251. Regarding use of brine water for roads, see responses to comment 2161 and. 2163

- 2840.** Comment: GSE Environmental, LLC is a leading manufacturer and marketer of geosynthetic lining products and services with a worldwide presence. For over four decades, GSE products have been known throughout the world as the benchmark of quality and reliability. As the pioneer in our industry, GSE is known for leadership, innovation, and dependability. Our industry has an inherent responsibility to help protect the environment and surrounding communities. Our customers depend on us to deliver products that withstand virtually every threat and danger imaginable while providing the best possible performance; we take that responsibility seriously.

Major geosynthetic applications with respect to unconventional well development and operations include:

Temporary Storage, Long-term Storage, Freshwater Storage, Secondary Containment, Well Pads

By specifying the appropriate synthetic flexible liner performance in the proposed Amendments to Pa 25 Chapter 78, Subchapter C, synthetic liner system durability can be assured, long-term performance can be predicted, and long-term maintenance can be minimized. GSE respectfully submits the following revisions to the proposed Amendments.

1) Synthetic flexible liner shall be defined as a polyethylene geomembrane manufactured in accordance with the Geosynthetic Institute's GR/Test Method GM-13 Standard Specification for Test Methods, Test Properties and Testing Frequency for High Density Polyethylene (HOPE) Smooth and Textured Geomembranes (<http://www.geosynthetic-institute.org/grispecs/gm13.pdf>) and GR/ Test Method GM-17 Standard Specification for Test Methods, Test Properties, and Testing Frequency for Linear Low Density Polyethylene (LLDPE) Smooth and Textured Geomembranes (<http://www.geosynthetic-institute.org/grispecs/gm17.pdf>). Polyethylene is, for practical purposes, considered to be impermeable and resistant to a great number and combinations of chemicals.

2) Synthetic flexible liner seaming shall be in accordance with the Geosynthetic Institute's GR/ Test Method GM-19 Standard Specification for Seam Strength and Related Properties of Thermally Bonded Polyolefin Geomembranes (<http://www.geosynthetic-institute.org/grispecs/gm19.pdf>).

3) Synthetic flexible liner shall be installed per the design engineer's requirements and recommendations. Additional installation guidance is commonly available from the materials supplier and industry institutions such as the Geosynthetic Institute (Folsom, PA www.geosynthetic-institute.org) and the International Association of Geosynthetic Installers (www.iaqi.org).

4) Synthetic flexible liner shall have a minimum thickness of 40 mils.

5) Pits designed with a synthetic flexible liner (as defined in this letter) and a leak detection layer are a suitable long-term storage alternative to tanks. In addition to tanks, long-term storage pits shall also be protected from unauthorized acts of third parties.

6) Synthetic flexible liner (as defined in this letter) or coated geosynthetic clay liners with a maximum permeability of 5×10^{-11} cm/s are suitable for secondary containment applications. (1036)

Response: The Department acknowledges the comment and notes that the commentator appears to be referencing a portion of the rulemaking under 78.57 regarding the control, storage and disposal of production fluids, which was proposed for deletion. The Department does not believe that on site, open pits are an appropriate storage facility for oil and gas production waste.

The Department believes that the requirements for liner thickness are appropriate to ensure protection. The subsection allows for a liner to be approved if the manufacturer demonstrates that an alternative thickness is at least as protective as a 30 mil liner. A list of approved alternative liners shall be maintained on the Department's web site.

To the extent that the comments refer to requirements proposed to be retained under 78.56 regarding temporary storage, the Department disagrees with the commenter's suggestion that a composite liner system should be required. Due to the type and scope of use of temporary pits by conventional operators, a liner system meeting the requirements described by the

commenter is not necessary to ensure protection of public health and safety and the environment.

The final rule does not include any specification for the synthetic impermeable liner for well development impoundments

2841. Comment: All radioactive contaminated waste and equipment from conventional and unconventional oil and gas drilling must be hauled to and disposed of in a licensed radioactive waste facility. Immediately stop all dumping of radioactive drilling contaminants in municipal landfills that were never permitted for radioactive waste. (1158)

Response: Wastes that contain radioactive material that exceeds radiation limitations at municipal landfills are disposed of in a waste facility licensed to accept such wastes.

2842. Comment: “Waste Disposal” (para 2) is among the topics included in this ACT, yet omits two items. The Act omits 1) the handling, monitoring and storage of radioactive waste and 2) waste disposal in landfills an industry-accepted method of disposal of the waste of the hydraulic fracking process, fracking fluid and drill cuttings.

Current language of the Act calls this waste “contaminated” (e.g. § 78.62), yet classifies it as “residual waste.” Since fracking fluid and drill cuttings contain Radium-226, radioactive material, provisions should be made for safe handling and disposal. Radium-226 has a half-life of 1601 years and will forever remain to impact the health of residents and the environment.

The ACT fails to mention Radium-226, TENORM or the radioactive nature of this waste. In fact, “radioactive” is found once in the document in § 78, 123 re: logs maintained on the well. Radiation should be addressed since the Solid Waste Management Act (35 P.S. §§ 6018.101- 1003), referred to § 78.58(d) has limited provisions for radiation. In addition the Guidance on Radioactivity Monitoring at Solid Waste Processing and Disposal Facilities (Document 250- 3100-001) was offered only as a best management practice in the absence of regulation. This Guidance is dated written in 2004, only handles small quantities of TENORM, did not anticipate the nature and volume of fracking waste disposed in landfills, and carries no regulatory authority, The following need to be added to the Act

Radiation: This should include the monitoring and labeling of waste disposed of and stored on- site at well in 1) temporary and permanent impoundments, storage tanks, pits and by other means, and in its 2) transport to permanent sites such as landfills and injection wells.

Centralized impoundments should be monitored for Radium-226 and other markers of radiation. It should be listed with other parameters in § 78.59c(h)(6)

Landfill waste disposal where DEP permitted: the following should be addressed:

- Standards for radiation monitor alarm set points.
- Limit radiation of fracking waste to no greater than > 50 mrem dose per truck as an Action Level Two requiring immediate notification of the DEP and disposal at another site.
- Monitor radiation on landfill perimeters and in storm run-off and streams nearby.
- Annual public disclosure of radioactive drill cuttings and fluid accepted to include truckloads, tons, gallons, doses, with a focus on increasing trends in leachate results and future plans, especially to those residents living within a 5 mile radius.
- Quarterly testing and reporting of landfill leachate to the DEP for the presence of radium-226 and

- other markers (e.g., tritium, barium, bromides) of fracking residual waste.
- Quarterly testing and reporting of landfill flairs to the DEP for radon and other markers of radium-226 by-products.
- If leachate is pumped to waste treatment facilities, the testing and reporting of flow to such waste treatment facilities. When this sludge is returned to landfills, the radium-226 and other markers are similarly quarterly tested and reported to the DEP.
- Discussion about the effects of rationing of radioactive waste in landfill sections. (944)

Response: The Department's 2015 TENORM Study Report presented several observations and recommendations regarding radioactive material associated with the oil and gas industry. While the study outlines recommendations for further study, it concluded there is little potential for harm to workers or the public from radiation exposure due to oil and gas development. The Department remains committed to protecting the public from unnecessary exposure to radiation and is actively pursuing the recommendations of the 2015 TENORM study report. The Department has added 78.58(d) to this rulemaking that requires an operator processing fluids onsite to develop a radiation protection action plan that specifies procedures for monitoring and responding to radioactive material produced by the treatment process. This section also requires procedures for training, notification, recordkeeping, and reporting to be implemented. Landfill waste disposal is beyond the scope of this rule making.

2843. Comment: (b) Air -- guaranteed clean air by the Pa. Constitution. The same chemicals (about 150 toxics) that are in the returning frack water get into the air, with health effects such as emphysema and skin rashes already showing up in Washington and Greene Counties. Need one mention that it is only a matter of time (5-10 years) before the cancers start showing up? DEP does very little testing of VOCs (volatile organic compounds) - we apparently don't want to know what is in the air. And we allow fracking sites to be too close to our schools - a potentially disastrous policy, although local zoning might eventually correct this ill-chosen lack of foresight (thank you, Pa. Supreme Court). (25)

Response: 25 Pa. Code Chapter 78 subsection C and 25 Pa. Code Chapter 78a Subchapter C do not regulate air emissions from an oil and gas operation. This comment is outside the scope of this rulemaking. Pennsylvania Air Quality regulations remain in effect and are enforceable for any "offsite" air pollution issues and odors.

2844. Comment: Establish strict standards and regulations for silica sand dust from fracking on sites near people's homes. This is not being addressed! (13, 976, 976a)

Response: See response to comment 2843.

2845. Comment: Increase air monitoring sites close to sources of pollution and facilities of NG extraction protecting local residents from sources and inversion caused by local topography. All issues suggested here are needed to make natural gas extraction comply to being a safe source of energy in PA. (13, 976, 976a)

Response: See response to comment 2843.

2846. Comment: The regulations do not even address arguably the most important resource of all and that as air. Land and water, of course, are precious, too, but fouled, polluted air sickens people and causes premature deaths.

None of these regulations address strongly, and most not at all, the total problem of new sources of

air emissions in local areas where gas drilling is taking place. Best practices and pollution controls should be mandated for drilling rigs, compressor stations, trucks, fracking pumps and engines, and other sources of local air pollution so that our precious air resource is protected in all parts of Pennsylvania. (1055)

Response: See response to comment 2843.

2847. Comment: Worried about what is in the air from a gas drilling site less than 1,000 feet from our home. Will it affect our health? Thank you. (6)

Response: See response to comment 2843.

2848. Comment: Drilling Operations: Regulate and reduce air emissions from gas drilling. Best practices and air emissions controls should be mandated for drilling rigs, compressor stations, trucks, fracking pumps, and engines and other sources of air pollution. Technology now exists that can cut air emissions by 90%. (140)

Response: See response to comment 2843.

2849. Comment: As much as possible, gas, liquid, and solid leaks of any sort from wells should be eliminated unless they are proven safe. E.g. release of N₂ or O₂ is fine, but release of CH₄ (methane) is not, as its potency as a greenhouse gas is 105 times that of CO₂. (156)

Response: See response to comment 2843.

2850. Comment: After reading the proposed regulations I realize that there is no mention of a strategy for minimizing or eliminating methane leaking into the atmosphere from existing/operational wells. The sources are numerous; pipes, brine tanks etc. Is this correct? If so, why does this source of greenhouse gas continue to be unaddressed? (398)

Response: See response to comment 2843.

2851. Comment: As a retired school teacher, I have studied and read about these issues for years. I believe that we need natural gas, not as an additional fuel that we can waste, but as a clean fuel to reduce air pollution. I believe that fracking is not a danger to the groundwater in our area where the Marcellus Shale is located 5,000 feet below our aquifers, although I do think that the handling of the wastewater at the surface has created problems. Although I'm not as sure that the fracking is safe in the shallow formations to the west.

On the other hand, while I think that most companies are trying to do a good job, many have cut corners or relied on older techniques in order to help make a profit. And that has created problems with wastewater spills, contamination of stream and wells. I know the state inspectors are mostly hardworking people trying to do a good job, but they need clear rules and regulations to enforce. I also believe that gas companies are mostly trying to do a good job, and they also need clear rules and regulations to help them stay within the law and to keep less careful companies from having an economic advantage.

I also hope that the DEP is proposing standards on the amount of methane that is allowed to escape during the drilling and production phases of these wells. It seems ridiculous to allow valuable fuel to escape, especially when it's a powerful greenhouse gas that severely reduces the clean image that this industry is trying to uphold. (1207)

Response: See response to comment 2843.

2852. Comment: Air quality measurements should be mandatory around all wells and compressor stations on regular bases. Leaks of methane that contribute to greenhouse gases and global warming are at alarming rates and are all too prevalent in this industry both at old wells, (leaks), and new Marcellus wells. Flaring should be eliminated and closer, timelier inspections of existing wells and pipelines should be instituted. (1072)

Response: See response to comment 2843.

2853. Comment: Monitor air quality downwind of well pads and compressor stations continuously. Relative to Environmental Protection and Performance Standards, the League is pleased to note the inclusion of “site specific” plans, precautions relative to orphaned and abandoned wells, fencing requirements, and posting of contents and warning labels. (855, 1098)

Response: See response to comment 2843.

2854. Comment: Upon review of 25 PA Code Chapter 78 it appears that attention to air quality emissions has been sorely overlooked. The Department, being charged with protecting the air quality of the Commonwealth, should incorporate language within all applicable parts of 25 PA Code Chapter 78 to adequately regulate air pollution emissions. Owners/operators of wells should be required to identify and report all air pollution sources, be they temporary or permanent, along with estimated Potential to Emit emission calculations, during the application process and subsequent correspondence with the Department. Upon the Departments discretion, monitoring and reporting of air pollutant emissions should be incorporated into 25 PA Code 78. Processes to determine and report fugitive emission estimates already exist and are currently being used throughout the Commonwealth within other industries, including the conventional well industry. This same standard should be applied to the unconventional well industry as well.

Additionally, as required within the 2013 revision to the Departments Air Quality General Permit 5 (2700-PM-AQ0205) Natural Gas Production Facilities:

Section H Requirements for Equipment Leaks

- (1) The owner or operator of the natural gas compression and/or processing facility shall, at a minimum, on a monthly basis perform a leak detection and repair program that includes audible, visual, and olfactory (“AVO”) inspections.
- (2) Within 180 days after the initial startup of a source, the owner or operator of the facility shall, at a minimum on a quarterly basis, use forward looking infrared (“FUR”) cameras or other leak detection monitoring devices approved by the Department for the detection of fugitive leaks. The Department may grant an extension for use of FUR camera upon receipt of a written request from the owner or operator of the facility documenting the justification for the requested extension.
- (3) If any leak is detected, the owner or operator of the facility shall repair the leak as expeditiously as practicable, but no later than fifteen (15) days after the leak is detected, except as provided in 40 CFR 60.482-9. The owner or operator shall record each leak detected and the associated repair activity. These records shall be retained for a minimum of five (5) years and shall be made available to the Department upon request.

The Department should incorporate, or at least review the possibility of incorporating, language

within 25 PA Code 78 to include equipment leak detection monitoring and recordkeeping similar to that within General Permit 5. Again, if the conventional well industry is subject to this requirement, so too should the unconventional well industry. (625)

Response: See response to comment 2843.

2855. Comment: All gas facilities including tanks, pits, wells, and compressor stations should have air monitors designed and operated by a third party, functioning 24 hours a day, and recording findings that are directly available to the DEP and public. Monitors should record substances recognized as harmful to public health and associated with oil and gas operation emissions, e.g., VOC, NO_x, Benzene, and PM-2.5. (609)

Response: See response to comment 2843.

2856. Comment: Our comments 823, 1016, and 1103 recommend that systems be installed to capture air pollution and route vapors to be sold or used for power (preferably), or alternatively to an incinerator or flare. The operator should be required to examine the technical and economic feasibility of feasibility of using vapors for power, and only incinerate or flare when use as power is not feasible. Direct venting should be prohibited.

Gas flaring is environmentally preferable over venting because flaring reduces hazardous air pollutants (HAPs), Volatile Organic Compound (VOC) emissions, and Greenhouse Gas (GHG) emissions. When incineration or flaring is required, regulations should set an upper bound on the maximum volume of gas incinerated/flared. A minimum incinerator or flare efficiency of 98% should be required. The incinerator and flare systems should be designed in a manner that optimizes reliability, safety, and combustion efficiency. Requirements should include: minimizing the risk of pilot blowout by installing a reliable system; ensuring sufficient exit velocity or provide wind guards for low/intermittent velocity streams; ensuring use of a reliable ignition system; minimizing liquid carry-over and entrainment in the gas stream by ensuring a suitable liquid separation system is in place; and maximizing combustion efficiency by proper control and optimization of fuel/air/steam flow rates. (1143)

Response: See response to comment 2843.

2857. Comment: Flaring of wells should not be permitted as this pollutes the air and wastes the resource. (806)

Response: See response to comment 2843.

2858. Comment: Releasing contents of holding tanks into the atmosphere should be outlawed as it harms the air families breathe. (806)

Response: See response to comment 2843.

2859. Comment: I'd like to urge you to look at is the DEP's new authority that was not overturned at the Act 13 ruling, and section 3211, the bad actor clause of Act 13. Under the new statutory authority, DEP has the ability to deny a permit to any driller with an outstanding violation that had not been resolved to DEP's satisfaction. And the EQB helps determine what is satisfactory remediation.

I'd like to use the case of Southwestern Energy as an example. There's a well permit to start drilling on February 10th at the end of Margrove Road. I filed a 78 page public comment with a woman who

is on oxygen and will be and was notified under Act 13's notification requirements that the well was coming. We followed through the 45 day, filed the comment with the doctor statements from a Stanford and Harvard-educated doctor that states that she cannot withstand diesel soot. DEP just filed my letter that was the response I got from DEP.

So we filed an appeal with the Environmental Hearing Board, which is everyone's right if you live within a distance that you feel you may be harmed, or a habitat that you care about, a class A trout stream that you fish in will be impacted by a Marcellus or any DEP action or permit, you can file an appeal with the Environment Hearing Board. So we've been working through this system. We are seeking a Supersedes, an injunction, on the well that the cost of expert testimony and affidavits is at least \$250 an hour for the experts that are required. The Pennsylvania Bar Association has acknowledged that there are hardly any attorneys in this part of the state, they're all downstate where the drillers' headquarters happen to be, for environmental law attorneys.

I want to acknowledge a man who is not with us this evening but owns the Keystone Sanitary Landfill in Throop, PA. On April 30, 2013, Southwestern was disposing of a fluid that was transported by tanker truck to the Keystone Sanitary Landfill and disposed of its E10 drill cuttings, which should have been labeled fluids. And we all know, if you live around and in Scranton and you've talked to people who grew up there, stories about Mr. Louis DeNaples, who is accepting millions of dollars to make the waste disappear as landfill cover on top of his landfill.

At a Throop land screening that was sparsely attended with a few of us last year, I had them admit that the solids that are taken out of the recycling process are also disposed and mixed with drill cuttings and wood chips from the logging operations. I have another violation; Southwestern drove a truck down I-81 with a valve open and it got pulled over and they had to clean up all the way up and down.

In short, these are bad actors. You have your authority given to you and I had stories and things to tell you, but I am not going to say do your job because I know what your job is. And I hope that you'd be proud of that. (1220)

Response: The Department acknowledges the comment, however it is beyond the scope of this rulemaking. To the extent the commenter is concerned about air emissions, air emissions from are regulated by the Department under Article III. Changes to Article III are beyond the scope of this rulemaking.

2860. Comment: All oil and gas development whether its pipelines, pads, etc, should have to comply with NPDES so that we don't see our high quality, exceptional-value waters degraded any further. (845)

Response: The Department acknowledges the comment.

2861. Comment: Both the Clean Streams Law itself and the regulations promulgated by the Environmental Quality Board pursuant thereto articulates the General Assembly's clear intent to protect the waters from the Commonwealth from impacts associated with Oil and Gas operations. (1152)

Response: The Department acknowledges the comment.

2862. Comment: Several of the proposed revisions/additions create ambiguities or duplicative requirements, including unnecessary cross references to existing laws set forth in 25 Pa. Code Chapter 102 and 105. To the extent that these proposed revisions/additions create duplicative and/or unnecessary regulation, they should be deleted. (1154, 1155)

Response: The Department strives to limit any duplicative language or ambiguities in the regulations to instances where the duplication serves to strengthen the regulation. Cross-references serve to provide a larger context or background of the regulation.

2863. Comment: Unregulated fracking replaces clean drinkable water with hopelessly polluted radioactive water. We need drinkable water more than we need fossil fuels. (106)

Response: The Department acknowledges the comment.

2864. Comment: When we moved into our home in Sept 2008 our water was tested and it was good enough to cook and clean wash dishes wash clothes until 2010. When a person drilled a well behind our home, then he fracked it, and after fracking our well was not good after that our well has everything in from sand grit oil methane gas and ethane gas. About a year and a half later, the EPA told us not to cook, make coffee, and when we washed clothes we were supposed to open the door or the window in case it would explode. Now the EPA knew all of this and my better half has been sick ever since because they didn't tell us until later after we had been cooking with and drinking, all abandon wells were supposed to be sealed before he drilled the well. Guess what - they weren't. Now in September 2013, they decided to seal after the damage was done. Now that it is done we still have bad water. They say he did everything right but the wells were not sealed. The EPA has taken another sample of our water no results yet, but Culligan has tested our water and said no change. We are in debt for hospital and doctor bills for my better half and the doctor asked if we have been someplace where the water was bad. We said "no just from our well." They took a belly full crap out of his belly that looked just as black as oil. I would like to thank u for taking the time to read as now we have our home up for sale. (150)

Response: The Department acknowledges the comment.

2865. Comment: Our water must be safeguarded, and our air as well. There is NO justification for not taking every known precaution to safeguard them, *none*. Federal safe drinking water and air quality standards *should* apply to hydro fracking and because they don't, everything must be done regulation-wise in PA to make up for that reality. **SAFEGUARD AIR AND WATER** to the highest degree known to man. (187)

Response: The Department acknowledges the comment.

2866. Comment: DEP should not allow our clean water to be turned into "wastewater." Stop enabling corporations to waste our water!!! (185)

Response: The Department acknowledges the comment.

2867. Comment: We are deeply concerned about the impact on water supplies from drilling, the lack of safety from open pits and wastewater impoundments, and radioactivity from oil and gas operations. Regulations that protect water, health, and the environment may increase costs, but that is the REAL cost we must pay if we want the product. There is no free ride. (399)

Response: The Department acknowledges the comment.

2868. Comment: I am a fisherman who worries that Pennsylvania's water resources are being depleted and contaminated by the Oil & Gas industry. I believe that DEP needs more resources to protect our natural resources, health and way of life. The rapidity with which shale gas is being extracted seems

to be an industry strategy to outpace regulations and protections. We ask that you quickly create a stronger response in order that citizens don't feel exploited and powerless. I suggest that you look to Colorado which seems to be doing a better job of tightening up protections, while working cooperatively with the industry. (400)

Response: The Department acknowledges the comment.

2869. Comment: I am one of the 80,000 customers of the Municipal Authority of Westmoreland County whose water source is the Beaver Run Reservoir. I wish to take this opportunity to comment on the threat of contamination posed by shale gas extraction activities to this reservoir as well as to other public and private water sources in Pennsylvania. While the Environmental Quality Board's (EQB) proposed changes represent an improvement, they do not go far enough to protect the Commonwealth's public and private water sources. (402)

Response: The Department acknowledges the comment.

2870. Comment: This letter is in support of comments made to the Environmental Quality Board by the Potter County Board of Commissioners, and to add comments regarding the Galeton Borough Authority concerns and experience in our watershed.

The Galeton Borough Authority (GBA), is the owner of the Borough of Galeton's public water supply. The Authority is a member of the Triple Divide Watershed Coalition of Potter County and has a Department of Environmental Protection approved source water protection plan.

In March 2011, our public water system was extensively damaged, when road construction for a drilling pad, during a rain and snow melt event resulted in a high volume release of sediment into the right branch of the Wetmore Run. The right branch of the Wetmore Run, together with the left branch of the Wetmore Run is the source water for the borough of Galeton. This damage could have been avoided if an alternative route, primarily outside of the watershed, would have been used for the road construction. The amount of work necessary to correct the damage came at great expense. The damage to our watershed and public water system is well documented with DEP.

The Authority is concerned about the protection of the water on land in the recharge area of the aquifer as well as the contamination of ground water. Since the potential hazards of drilling operations could impact surface and ground water quality, the Authority requests advanced notification of planned oil/gas activity, and an opportunity to voice concerns, in order to minimize impacts to our water source.

We are in full agreement with the Commissioners comments to include the location of delineated recharge areas to the oil/gas review process. We are requesting that the department require any planned oil/gas activity in any public water supply delineated recharge areas to be subject to review and approval by the water system operators. (403)

Response: Sections 78.15(f)(1)(vii) and Section 78a.15(f)(1)(vii) require notification to a public resource agency when planned earth disturbance is "within an area designated as a wellhead protection area as part of an approved wellhead protection plan".

2871. Comment: It has been 40 plus years since the clean water act was passed, and we have somewhere in the neighborhood of 50 AMD sites that are not being treated. This is not the fault of this administration because over the last 40 plus years both parties have been in power. We must remember the water contamination in Charleston, WV and the present drought in CA. It is

important that we take care of our water for our children, grandchildren and for future generations. We must remember the young people that testified at the meeting in Indiana County. They are aware of these problems, and want to keep our water clean. In conclusion, we must look beyond the mineral extraction era for economic development. I believe that in the long run that a clean environment creates a better economy. Look at Germany. Germany has some of the most strict water quality standards in the world and still has the best economy in Europe! Thank you for all the work you do in protecting our greatest resource...WATER. (434)

Response: The Department acknowledges the comment.

2872. Comment: I am writing commentary on the proposed legislation regarding for environmental protection performance standards associated with oil and gas activities in Pennsylvania known as Chapter 78 of the Pennsylvania Code. Act 13.

I am concerned as this legislation affects the rural areas the most, leaving those of us who live in these locations most vulnerable to the degradation of our land, water, and air quality. This legislation and its enforcement are critical to healthful living and sustained livability.

In order to ensure safety and viability I would recommend pre-drill testing and the restoration and replacement of contaminated water. With over 161 complaints about water contamination from 2008 to midyear 2013, it is obvious that DEP's approach to letting the driller decide when, where, and how to conduct water quality tests is not working. The pre-drill data should be made public, protecting the homeowner rights. The DEP has been maligned for its stonewalling techniques, giving the appearance of protecting the drilling operators and their companies, especially when it comes to making violations public and the lack of fines enforced. The extent of the problem can be seen by accessing the Pennsylvania Alliance for Clean Water and Air's website and clicking on "List of the Harmed." Print that list off and you have 67 pages (!) of real life cases of people and animals who have suffered unnatural conditions as a result of tracking across the state. Further, operators need to restore contaminated drinking water to a quality that the Safe Drinking Water Act standards.

With laws that benefit both parties, i.e. the homeowner and the drillers, there can be positive economic gain without ecological consequences or health issues. I trust that testimony such as mine will be given serious consideration. (461)

Response: The pre-drill testing is intended to protect the property/home owner from the results of contamination of a water supply well from nearby oil and gas activities. However, in some instances the homeowner does not want the results of the pre-drill testing made public when existing poor water quality may affect the value of the property. Sections 78.51 and 78a.51 require a well operator who affects a public or private water supply by pollution or diminution shall restore or replace the affected supply with an alternate source of water adequate in quantity and quality for the purposes served by the supply as determined by the Department.

2873. Comment: Bradford City Water Authority is a purveyor of public water in McKean County and supplies the needs of approximately 6,100 residential, commercial and industrial customers. Service area covers the City of Bradford as well as the surrounding townships of Bradford, Foster, and Lafayette and includes sale of water to the Lewis Run Borough.

The Authority is also the steward of 12,000 acres of forested land holdings and enjoys ownership and control of the bulk of the mineral rights within its watershed boundaries.

In any conversation of ever changing regulations and oversight concerning extraction of oil and gas, such as those being presented to the Pennsylvania Environmental Quality Board via the Chapter 78 proposed rules changes, the Authority is a concerned stake holder.

Accepting input from all such stakeholders is critical if the proper balance is to be achieved of safe guarding our environment while not creating and over burden of new regulations.

It is requested that the Environmental Quality Board carefully consider all ramifications of the proposed Chapter 78 rules changes and their direct impact on conventional well producers.

Currently approximately 300 conventional oil and gas wells are incorporated on a lease within Bradford's watershed. For the past twenty-five years this lease has operated under existing conventional well standards of construction, production and plugging including crude oil storage and transportation without a negative event.

Independent oil and gas producers and stakeholders such as the Water Authority currently operate under an already daunting multitude of regulations. Chapter 78 as currently proposed would add redundant and harsh burdens more suited for unconventional deep well operations than for conventional well operations and operators that can least afford it. Like that of numerous small conventional well operators in the region the bulk of the crude from the Water Authority's producing wells are supplied to the American Refining Group. This local refinery is a major employer and key contributor to the economic engine of the Bradford area. Imposing additional excessive and duplicative regulations on the suppliers of crude to the refinery could have a devastating effect.

The history of the Bradford watershed providing quality water throughout the Tuna Valley dates back over 125 years. It is also a successful history of diversity of operations of all its resources including water distribution, sustainable yield forestry and conventional well extraction of oil and gas with the regulations currently in place.

We believe this to be a representative example that natural resource development and existing standards can go hand in hand with sound environmental protection practice. (484, 904a, 904)

Response: The Department acknowledges the comment. Separate rulemakings are being prepared to address the commentator's concerns.

2874. Operators would be required to replace a water supply that may have been affected, with a supply that meets the Safe Drinking Water Act (SDWA) standards regardless of whether the original water supply met those standards in the first place. (627, 4681 – 4682)

Response: Sections 78.51 and 78a.51 of the rule making requires a well operator who affects a public or private water supply by pollution or diminution shall restore or replace the affected supply with an alternate source of water adequate in quantity and quality for the purposes served by the supply as determined by the Department.

2875. Comment: Stop destroying our water! (783)

Response: The Department acknowledges the comment.

2876. Comment: In Lawrence County, where I live, four private water wells were affected soon after

drilling began for a non-conventional well in Pulaski Township in May of 2012. Two of the landowners contacted the DEP when they began to see changes in the quality of their water, the other two contacted Hilcorp Energy, who subsequently failed to report the incident within 24hrs; violating 25 PA Code 78.51. Correspondence records show that the DEP began investigating the possible contamination of all four wells and water tests were taken on numerous occasions.

On August 1, 2013 the DEP sent a letter to Hilcorp Energy requesting information regarding the investigation of the four affected water supplies. The last time any of these wells had been tested was November 8, 2012. An inter-office memo dated September 25, 2013 again reiterated that four private water wells had been affected and on October 1, 2013 the DEP finally went back to test those wells. But they didn't test all four wells; they only tested the two wells whose original complaint had been filed directly with the DEP. Based on the water tests taken in October, the DEP determined that nearby natural gas drilling had affected their private water wells and these two landowners were sent the results of these findings in early November of 2013.

The DEP never went back to re-test the water supplies for the two landowners who first contacted Hilcorp Energy when they notice changes in their water. They also received letters from the DEP around the same time as the first two determination letters were sent out, but their wells were only found to be "temporarily affect." Their results were based on water tests taken a year earlier on November 8, 2012 and according to the DEP letter, their investigation is now closed.

Why in the world wouldn't the DEP retest all four water wells? It makes absolutely no sense to me. You did NOT protect these land owners and you wasted tax payer dollars. You're not doing your job. From my perspective, this is a clear example of government allowing the exploitation of our resources at the expense of its citizens.

According to DEP's Geologist **Christine Minor**, "no one was complaining" in regard to water contamination at the later two locations. Do people in your administration really believe that Hilcorp Energy is going to continue complaining, on behalf of the landowner, regarding the impact that their gas well has had on the landowner's private water well for which they might be liable? Why does the DEP allows the industry to run their own investigations into such issues by hiring their own water testing companies; you've put the fox in charge of watching the hen house! Regulations are meaningless if the rules of practice and procedure do not allow - those trustees which we employ - to perform in a responsible and common sense manor. (1094)

Response: Any water testing company hired by an operator to conduct an investigation must be a third party accredited laboratory.

2877. Comment: Development of Pennsylvania's natural gas resources has the potential to be both a welcome blessing and a horrific nightmare for the Commonwealth's farm families. As business operators, farm families understand and appreciate the benefits that a vibrant local economy can provide to all local businesses. And the locations where abundant deposits of natural gas exist are mainly found in Pennsylvania's farming and rural areas. Numerous farm families have received significant financial benefits from leasing and royalty payments provided through natural gas development. The additional influx of income has provided these families a unique opportunity to more aggressively implement their long-term plans for capital improvements on their farms that enhance economic viability and improve environmental quality of their farming operations, which would otherwise be more challenging to implement through usual sources of income.

Farm families, however, are also keenly aware of the fragility of conditions that affect our natural resources and available water supplies, and the catastrophic effects that activities adversely affecting the quality of water supplies and natural resources will have on the future viability of their farms and the quality of life of rural residents. Groundwater continues to be the primary source of water supply for those who live in farm and rural areas. Once groundwater resources become reduced in quantity or become contaminated by an action, condition or occurrence, it becomes extremely difficult and costly for those resources to be restored to their prior levels of quantity and quality.

Water is a critical resource for agriculture, both in the production of field crops and in animal production. Farmers cannot sustain an economically viable level of field crop or animal production, nor can they provide the type or quality of production that meets consumer demands for quantity and safety of our nation's food supply, without an available and reliable source of water supply.

While we are supportive of responsible efforts to enhance the production of natural gas in the Commonwealth, the extreme depths and specialized activities to be performed to drill and operate "unconventional" gas wells, as well as the substances used to induce natural gas extraction and waste products resulting from these activities, give us a serious concern over the potential risk that the drilling and operation of these wells may pose for Pennsylvania farms and the future quantity and quality of water supplies, especially groundwater supplies.

Pennsylvania needs to be proactive and vigilant in its regulatory effort to establish thorough and effective protocols for quality control and prevention that will ensure to the highest degree reasonably possible adverse consequential effects of drilling, operation and gas extraction activities and handling and storage of substances used in and waste substances generated from these activities to water supplies and other natural resources do not occur. And where anomalies do occur in operational or conditional standards to protect water supplies and natural resources, these protocols need to include measures for immediate detection and response.

We do believe the Environmental Quality Board's proposed amendments to Chapter 78's well site standards are a significant improvement to existing regulations, and will largely help to accomplish the regulatory goals and objectives we see as vital to the future viability of Pennsylvania farms and the health and welfare of farm families and rural residents. (1144)

Response: The Department acknowledges the comment.

2878. Comment: Will PA become the next WV chemical spill in water supply?

We should make sure what happened in West Virginia does not happen to our water supply. I feel it not worth the risk if it is not 100% foolproof for protecting our water supplies. I feel we should do everything possible to protect our water and not look for quick and cheap ways to get rid of the chemicals and brine waste.

Plans must be made to protect our ground water under all conditions, including high water and flooding. Planning for average conditions is not good enough.

To ensure the best protection of our water, the DEP's investigation should extend to all oil and gas activities.

It is DEP's responsibility to put what is right for the environment, first. I only hope we will not have to go through what the people of West Virginia are going through. (181)

Response: The Department acknowledges the comment.

2879. Comment: There must be very strict regulation and very large fines for noncompliance for failure to protect the water aquifers. Once contaminated they are gone forever. A required well for State water sampling should be mandatory at all drilling sites. Policies must be in place to hold these drilling companies accountable for adherence to all regulations.

These suggestions may receive strong criticism from the drilling companies and politicians about being too costly, inhibit industry growth or stifle employment but rest assured with the billions of profit dollars at stake they will succumb if the State does not cave. (186)

Response: The Department acknowledges the comment.

2880. Comment: We already have very little power as to where the drilling sites are to be constructed and you want to decrease our input. Are you really thinking of the future consequences that will affect your grandchildren and future generations? Fracking has caused many problems already. 113 cases water was contaminated and 3300 incidents have resulted in fines. Think about the families behind the numbers. Would you want a water buffalo in your yard? (1017)

Response: The Department acknowledges the comment.

2881. Comment: We cannot underestimate the importance of water as a resource. Our public lands need to be protected from fracking. (1018)

Response: The Department acknowledges the comment.

2882. Comment: The use of any “suite code” keeping the complete results of water well quality from homeowners must be outlawed. (806)

Response: A “suite code” is an identification of a group of specific analyses common to a particular industry or activity. All Department “suite codes” and the specific analyses within the code are found on the Department’s website. Results of analyses are reported to the Department and results from predrill testing are provided to the landowner.

2883. Comment: Illegal dumping of well pad waste into any river, stream, or waterway should carry a mandatory fine of two million dollars. The company responsible should lose their license. (806)

Response: Operators found guilty of dumping any waste into waters of the Commonwealth are subject to penalties. The amount of the penalty depends upon the circumstances and could far exceed two million dollars and result in permits being revoked. Repeat polluters may not have future permits to operate in the Commonwealth approved.

2884. Comment: Impacting the quality of water in a homeowner’s water well should carry a mandatory fine of no less than \$500,000. The time frame for impact should be no less than 18 months after completion of a gas well. And the distance to homes should be no less than a 1 mile radius from each horizontal well bore. (806)

Response: The Department acknowledges the comment.

2885. Comment: I am writing to you regarding my concern over the safety of PA drinking water. As I watch the devastating effects of the chemical spill in WV, I fear that a similar event could take place

in PA if we are not vigilant in protecting our natural resources. Please consider the health and safety of our families as you propose revisions to oil and gas regulations in our state. (956)

Response: The Department acknowledges the comment.

2886. Comment: There must be very strict regulation and very large fines for noncompliance for failure to protect the water aquifers. Once contaminated they are gone forever. A required well for State water sampling should be mandatory at all drilling sites. Policies must be in place to hold these drilling companies accountable for adherence to all regulations.

These suggestions may receive strong criticism from the drilling companies and politicians about being too costly, inhibit industry growth or stifle employment but rest assured with the billions of profit dollars at stake they will succumb if the State does not cave. (186)

Response: The revisions to Chapters 78 and 78a are consistent with applicable regulations and statutes and provide appropriate protections for public health and safety and the environment. The Department ensures adherence to applicable regulations through its compliance and enforcement policy (Department Document No. 820-4000-001, *Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations*).

2887. Comment: I am going to attempt to show how fracking endangers our water supply-water being our most valuable and scarce natural resource.

Peak oil-the point at which we have reached the highest point of oil production possible-has generated headlines in recent years, but the real threat to our future is peak water-when, we have reached the point at which there is no more fresh water available for us. There are substitutes for oil, but not for water. We can produce food without oil, but not without water. There is a vast amount of water on the planet but sustainably managed water is becoming scarce.

Fracking a single well can require up to 5 million gallons of water. This depletes local groundwater and can dry up nearby creeks.

In 2012, PA used about 15 million gallons; of water a day for fracking-this is about 5-8% of the total 9.5 billion gallons of water the state uses daily.

Roughly 65% of that water comes from our rivers, creeks and lakes. The other 35% is purchased from municipalities by drilling companies. This is water that is lost to us because of the chemicals that are put into the 5 million gallons of water being forced down the well-it becomes wastewater. The chemicals are put there to dissolve minerals; kill bacteria that might plug up the well and insert sand to prop open the fractures in the shale. The fracking industry produced 2 billion gallons of toxic wastewater a day in 2012 alone-water that is no longer available for us to use.

The Marcellus Shale formation under PA is naturally high in radioactive material so the wastewater picks up radioactive material as well as barium, magnesium and various other volatile organic compounds. Because of this, no suitable treatment for making the wastewater safe for human or animal consumption has been found, so the industry has become increasingly dependent on underground injection wells -forcing the fluid deep underground and permanently taking the water out of its natural cycle. Usually the water we use is returned to its source to be used over again-not so with fracking wastewater.

About half of the wastewater returns to the surface and the other half stays underground. No one is

entirely sure what happens to that half of the toxin laced water that remains underground but there are strong indications that at least some of this toxic cocktail makes its way back into the water supply.

This happens in several ways. If the well casing that penetrates the aquifer is not well sealed, chemicals can leak into the aquifer and make the water not fit for us to use. And over time, most well casings fail. When fracking fluids seep from them to connect with underground fissures, previously abandoned wells and natural faults and fractures, the contaminants can readily migrate over long distances into underground water ways and fresh drinking water sources. There goes more of our potable water.

Trucking and storage accidents have spilled fracking fluids and brine leading to contamination of water and soils. Accidental spills, explosions and improper disposal of wastewater have polluted streams and rivers. There is one bit of good news however, since 2011, PA companies are reusing the some of the wastewater that came back to the surface to frack more shale.

Most of water treatment plants cannot remove enough of the radioactive material to meet federal Drinking water standards before discharging the wastewater into rivers, sometimes just miles upstream from drinking water intake plants.

As I mentioned, in addition to the chemicals used in fracking, the wastewater that is a byproduct of the drilling process picks up salts, naturally occurring radioactive material, barium, magnesium and various other volatile organic compounds, which are also carcinogenic. It has been definitively concluded that the wastewater contains radioactivity and other toxic materials at levels that are frequently much higher than the level that federal regulators say is safe for wastewater treatment plants to handle.

In Pennsylvania, these treatment plants have discharged waste into some of the state's major river basins. Great amounts of the wastewater went to the Monongahela River, which provides drinking water to more than 800,000 people in the western part of the state, including Pittsburgh, and to the Susquehanna River, which feeds into Chesapeake Bay and provides drinking water to more than six million people, including some in Harrisburg and Baltimore.

I will always choose water over shale gas. --Most of the material I used in compiling this came from the Pacifica Institute, Food and Water Watch, Earth Policy Institute and the Duke University Study regarding fracking. (814)

Response: The Department acknowledges the comment.

2888. Comment: I own 136 acres of land, the property our family moved to when I was 12 years old. The property was long-wall mined during the decade of the 1980's. I have my own water system consisting of a spring and a well.

We are in trouble in our state and our local region of Washington, Greene, and Fayette Counties. Our leaders and regulators have welcomed in unconventional slick-water drilling and have permitted them to proceed with outdated regulations and with less than strenuous oversight. Citizens in each of our counties have suffered from this rush to new jobs such as: a) exposure to carcinogenic and other gases from well sites, condensate tank vents, and venting associated with the increased number of compressor stations just starting to be constructed. Family members have become sick due to exposure. b) Home potable water, both private and public, has been tainted by flow-back and produced water. Water authorities have to face the problem of increased bromide

and trihalomethane. Home water systems have been contaminated. Farmers have lost livestock and families have lost pets when farm ponds and streams have been tainted with flow-back and produced water. We are just at the beginning of this process and many of our citizens have suffered because of an apparent lack of concern for the SAFETY and HEALTH of the people of Pennsylvania by our government and by the involved industries.

I have read DEP lab reports that verify that four sites on Greene County streams have been polluted through mine discharges of Alpha Resources' Emerald Mine and Cumberland Mine not with typical mine discharges but with excessive levels of bromides, Strontium and chlorides which are bi-products of unconventional slick-water drilling. DEP's Clyde Mine discharges the same excessive levels of the same chemicals. Greene County's Smith Creek, Whitely Creek, Frosty Run, and Ten Mile Creek continue to receive the same unregulated discharges with no apparent concern for the HEALTH and SAFETY of the citizens. How are unconventional slick-water drilling flow-back and produced water chemicals coming out of mine discharges? Why is no one in our government or the industries concerned with this? These discharges have already affected water quality of local water authorities. Citizens have had to boil water and authorities have been out of compliance because of the high levels of bromides and the increase in trihalomethanes. We have no knowledge of what the long run problems for our citizens may be with continued exposure to these chemicals in our water.

We need to be concerned with radiation associated with flow-back and produced water. The Duke study, released in October 2013 stated that radiation was a problem that was identified in sediment in Blacklick Creek in Indiana, County. Why has the DEP not responded to requests to come to Greene County hotspots and run radiation tests? Since the DEP has shown that flow-back and produced water is being discharged through mine discharges do we not have to be concerned with the health and safety of miners? Are miners being exposed to all the flow-back and produced chemicals and radiation? How about all the workers at drill sites? Should we not be concerned with the HEALTH and SAFETY of the gas and oil workers who may be exposed to flow-back and produced water and radiation?

Our neighbors in West Virginia are experiencing the end results of a lack of active regulation and industry concern in the current water crisis that has impacted 300,000 citizens. Do we not have a potential water and air crisis ahead of us? Without government, industry, and regulation concern are citizens in our counties and the Monongahela Valley and Pittsburgh not potentially in danger? We need modern regulations written specifically for unconventional slick-water drilling and applied equally to all forms of drilling. The industry is here; are we going to keep our communities and our culture by insisting that the process only moves forward provided the HEALTH and SAFETY of ALL Pennsylvanians are protected; or will we relegate our children to a future in a state transformed into a green chemical wasteland?

It is critical, in this industrialization of a once primarily rural state, that the DEP become political and be transformed into an independent agency. (843)

Response: The revisions to Chapters 78 and 78a are consistent with applicable regulations and statutes and provide appropriate protections for public health and safety and the environment.

2889. Comment: (c) Waste Disposal. No one hears much about spills and leaks at fracking sites. They are in reports to DEP, and what is DONE by DEP, after a reported spill or leak, is not very transparent. We hear only about occasional fines. The fracking company also seems to be responsible for containment and cleanup of spills, but their emergency teams are spread throughout the country. Meanwhile, local emergency response teams at the County level have little input from, and no

coordination with these company frack spill teams. This is a potential disaster waiting to happen. At least DEP should mandate cooperation and coordination with local county teams in order to be ready for emergencies. This should be in Act 13 and amendments. (25)

Response: Operators must report any spill of a regulated substance that equals 5 gallons or more. When a spill results in a violation, it will show up in the Compliance Report that becomes available on eFacts.

Each well site must have a PPC Plan that provides a response to spills and leaks and other emergency conditions at the site. The plan will identify local emergency response teams for notification and assistance if necessary. It is not practical that each well site have an emergency response team present at all times. Operators will typically have an emergency response team available to them to provide assistance during an emergency when onsite personnel or local emergency response teams cannot handle the situation.

2890. Comment: (d) Pipelines. We know that intrastate pipeline inspection is under the PUC, while interstate pipeline inspection is under the feds. The PUC has too few inspectors to keep up with the vast expansion of the pipeline network within Pa. In addition, their inspections tend to be paperwork shuffling, rather than checking for leakage at pipelines and compressor stations. It is estimated that if methane leaks along pipelines and compressors that CURRENTLY show up and are not corrected, then the long-range impact of deep gas wells (over 100 years) is worse for global warming than coal. In other words, we might as well stay with coal if the leaks aren't corrected (methane is 95 times greater than CO₂ as a global warming gas, though it dissipates quicker than CO₂). And all these documented leaks have an explosive potential both in the countryside and near our cities. Amendments to Act 13 need to identify the pipeline problems (see the League of Women Voters proposals) and give the public the assurance that this huge safety and environmental problem is being dealt with. (25)

Response: Amendments to the 2012 Oil and Gas Act are beyond the scope of this rulemaking.

2891. Comment: Pipeline Safety Coalition wishes to thank you for the opportunity to speak at this public hearing for the purpose of DEP accepting comments on the proposed Chapter 78 Environmental Protection Performance Standards at Oil and Gas Well Sites rulemaking. We understand the proposed regulation implements consideration of impacts to public resources, such as parks and wildlife areas; the prevention of spills; the management of waste; and the restoration of well sites after drilling, includes standards affecting the construction of gathering lines and temporary pipelines, and includes provisions for identifying and monitoring abandoned wells close to proposed well sites.

PSC's focus in the rulemaking is on pipelines. Although pipelines don't necessarily jump out in this discussion of Standards at Oil and Gas Well Sites, we believe they should. The universally inherent problem of secondary consideration of pipelines in Oil and Gas development is outdated and is ironic since drilling wells and producing - gas - oil - water - in most cases starts and ends with pipelines. Chapter 78 offers the venue for such regulatory acknowledgment of pipelines as integral in oil and gas operations.

Industry knows pipelines are foundational in oil and gas development. It is time for our environmental quality reviews to acknowledge this fact. At well sites alone there are various temporary - permanent, freshwater - flowback pipelines; pipelines associated with well installations, containment pit pipes, production and gathering, oil, gas and byproduct pipelines, fluids management, and storage by pipes ...to name a few. We assert it is incumbent upon PA DEP to

incorporate pipeline regulatory review in stringent, prescriptive terms.

While interstate and some intrastate & gathering pipelines are monitored and/or regulated, many pipelines associated with oil and gas production are not, yet pipeline review, regulation and impacts in well production largely appear non prescriptive in Chapter 78. We offer that Chapter 78 should incorporate more prescriptive language and stringent cumulative impact reviews in regard to pipelines associated with oil and gas well sites.

We offer an example of why regulatory language needs to be prescriptive. During House and Senate debates prior to enactment of ACT 13, PSC discussed pipeline implications of the bills with a PA State Senator who firmly believed that the language of “transportation” was unrelated to pipeline infrastructure; rather he believed transportation referred to transport by vehicle of people and or materials. The point is, if regulatory language is obscure enough to confuse legislators, we cannot expect meaningful legislative results. If language in Chapter 78 is not prescriptive, we cannot expect meaningful environmental protection in oil and gas development. (118)

Response: The Department acknowledges the comment. Pipeline regulation is beyond the scope of this rule making. Also, the Department has revised the definition to be “well development pipelines” instead of “temporary pipelines.”

2892. Comment: Additional Sections that appear to lack appropriate prescriptive pipeline infrastructure review include:

- § 78.56. [Pits and tanks for]Temporary [containment] storage
- § 78.57.Control, storage and disposal of production fluids
- § 78.58. Existing Pits used for the control, storage and disposal of production fluids. }
- § 78.59b. Freshwater impoundments
- § 78.62. Disposal of residual waste-pits
- § 78.63. Disposal of residual waste-land application
- § 78.64. Containment around oil and condensate tanks
- § 78.65. Site restoration
- § 78.68. Oil and gas gathering lines.
- § 78.68a. Horizontal directional drilling for oil and gas pipelines.
- § 78.68b. Well development pipelines for oil and gas operations (118)

Response: The Department acknowledges the comment. Pipeline regulation is beyond the scope of this rule making.

2893. Comment: The commentator respectfully recommends that proposed Chapter 78 *Environmental Protection performance Standards at Oil and Gas Well Sites* rulemaking should: incorporate stringent and prescriptive language for environmental protection performance standards for pipelines commensurate to function and cumulative impacts of pipelines in gas and oil development. (118)

Response: The Department acknowledges the comment. Pipeline regulation is beyond the scope of this rule making.

2894. Comment: DEP regulations should require that all pipes must be API standard to avoid the substandard pipe now being imported, used and prone to failure. (823)

Response: The Department acknowledges the comment. Pipeline regulation is beyond the

scope of this rule making.

2895. Comment: In line valves - There should be a standard establishing an amount of valves that should be installed along a transmission line and how far apart. Purpose is allowing a quick response in case of leaks and accidental line damage. (860)

Response: Transmission pipelines are not regulated by the Department and therefore beyond the scope of this rule making.

2896. Comment: I will only comment on one thing: the need for the Board to demand that the companies proposing to frack and those who have already engaged in fracking submit the information about the contents of what they are putting into the earth.

They have been insisting that it is “proprietary” information and refusing to do so. They should not be allowed to use this excuse, given the fact that the ingredients might well have a damaging effect on the water and soil of the state, the state that all its citizens have an important stake in and look to our government and its agents to protect. You must make any permit given to frackers conditional on their releasing to you (and every citizen of Pennsylvania) this information. There have already been sufficient causes for alarm in the Accidents that have already occurred -- flaming faucets, smells, defiled water, etc. We thank you in advance for insisting on this condition along with the others you may receive from concerned citizen. (44)

Response: Operators are required to report all additives and amounts used during the well drilling and stimulation process in the Completion Report (Form No. 8000-FM-OOGM0004b). This information is available to the public through the Department’s website in eFacts.

2897. Comment: The chemicals in use for any gas or oil operation (e.g. fracking fluids) should be detailed by chemical composition, health risks, quantity, and date, as drilling, fracking, and extraction operations proceed. This information should be easily accessible on the web. (156)

Response: Operators are required to report all additives and amounts used during the well drilling and stimulation process in the Completion Report (Form No. 8000-FM-OOGM0004b). This form can be found in the Department’s eLibrary.

2898. Comment: Each well should inject an inert tracer chemical unique to that well into the well so that any leaks (gas, liquid, or solid) will have a fingerprint identifying which well it came from (analogous to dye tests used in residential stormwater testing). Methods for detecting and distinguishing these tracer chemicals should be shared publicly, of course. (156)

Response: Injection of tracer chemicals into wells could further contaminate a water supply that has been contaminated by well drilling and/or well stimulation activity. The chemical characteristics of water contaminates from oil and gas development such as high TDS, Barium and Strontium among others are reliable indicators that a well has been contaminated by oil and gas development activities.

2899. Comment: Eliminate gag orders that ban landowners, workers, doctors, EMS, etc. from discussing drilling operations, health effects, etc. (156)

Response: The Department is not aware of the issues raised by the commenter.

2900. Comment: Prohibit the use of any chemical and/or compounds that cannot be chemically tested for

their presence even if these said chemicals or compounds are considered “proprietary”. Mandatory explanation to the well drilling workers as to the affects and dangers to human health risks of the chemicals being used in and associated with the drilling operations. (492)

Response: All chemicals and/or chemical compounds can be tested for their presence in the environment. All chemicals used at a well site must be accompanied by their respective Material Safety Data Sheet that describes among other things the contamination risks and possible health effects due to exposure.

2901. Comment: On December 16, 2013 the Los Angeles Times reported that water samples collected from hydraulic fracturing sites in Colorado showed elevated levels of endocrine-disrupting chemicals (EDCs) as compared to control samples taken from other locations. Endocrine-disrupting chemicals have been linked to infertility, birth defects and cancer in humans and animals. (<http://www.latimes.com/science/la-sci-fracking-health20131217,0,5154343.story#ixzz2nklq6TS>). In another disturbing report Bloomberg News exposed research showing a higher incidence of low birth weight and other health problems among newborns of women living within a 2.5 kilometer radius of drilling sites in Pennsylvania. <http://www.bloomberg.com/news/2014-01-04/study-shows-fracking-is-bad-for-babies.html>. Whether this phenomenon is due to soil and water contamination or to other stressors experienced by families living in close proximity to gas wells is unclear, but until the gas industry can prove beyond any doubt that the undisclosed chemicals used in hydraulic fracturing pose no risk to our water supplies, nor to the health of human, plant and animal communities within the Commonwealth, DEP must act on the assumption that these risks are real. (148)

Response: Operators are required to disclose all chemicals they use during well drilling and stimulation activity in their well completion report.

2902. Comment: I urge the DEP to make it mandatory for all drillers to provide a list of chemicals they use in their drilling process and the dangers to humans and the environment. It should be prohibited to not list a chemical because it is considered “propriety”. With public health and safety in mind, if a disaster were ever to occur, how would the public know how to prevent exposure or treat exposure to these chemicals if they are not known? How would our emergency room personal know how to treat citizens as they come in with varying symptoms? This is why it is critical that a regulation be passed to make these chemicals available to the general public, first responders, and medical personal. (848)

Response: Operators are required to disclose all chemicals they use during well drilling and stimulation activity in their well completion report. The required PPC Plan provides information necessary to respond to an emergency situation at a well site including response to exposure to chemicals used at the site.

2903. Comment: The oil and gas industry would not reveal the chemicals they use for fracking. Lot of people has said the necessity of pre-drilling water testing. You cannot do that if you don’t know what chemicals are there. The water companies or testing companies have a list of 500 chemicals which they can do testing. Nobody can afford to test for all 500 chemicals.

So the oil and gas companies either tell the landowners what they are using or pay for the water to be tested. They will tell them after a couple of tests because it’s very expensive. (990)

Response: Predrill sampling by the operators is conducted to identify any chemical constituents they may be present before oil or gas development begins. The list of chemicals

tested for is quite extensive and very expensive. The property owner is encouraged to conduct testing of their own water supplies prior to commencement of drilling to document the water quality of their supplies. It is not necessary for the property owner to conduct extensive testing similar to that of the operator's. The Department has identified typical contaminants associated with oil and gas development activities that, when detected, indicate that the water supply has been affected by the operator's activities. This list is relatively small and inexpensive and it will alert the landowner of potential contamination.

2904. Comment: There should be complete transparency in DEP's dealing with the public and drilling operations. For example, the reference to "trade secrets" in section 78.122 should be eliminated and instead industry must be required to list ALL chemicals to be used in the drilling process prior to drilling and keep inventories of names and amounts of chemicals used during drilling and extraction.

Next, very extensive independent air and water quality tests related to proposed chemicals and other byproducts to be used in the drilling process should be conducted prior to drilling for all residents near drilling sites and above all proposed horizontal pipelines connected to the wellheads on those sites. (823)

Response: The Department acknowledges the comment.

2905. Comment: The new Fracking rules need to be as strong as possible. The undisclosed chemicals being used are poisoning our water system and our lands which in turn are making people sick. Please encourage rules that will protect the residents of this state to the highest standards. (29)

Response: The revisions to Chapters 78 and 78a are consistent with applicable regulations and statutes and provide appropriate protections for public health and safety and the environment.

2906. Comment: Due to the wide-ranging impact these revisions will have on oil and gas operations it is important for industry to know if these new provisions will apply to existing wells and previously approved water management plans or sources. We suggest language be added to clarify the effective date for the new requirements in Subchapter C and that wells constructed prior to that date are grandfathered in for purposes of the new requirements. (124, 861, 913, 861a, 913a, 124a, 1057)

Response: Implementation requirements and grandfathering provisions are addressed throughout the rulemaking as appropriate.

2907. Comment: Need for Clarity on Provision-Specific Effective Dates

Due to the wide-ranging impact and additional costs of implementing the proposed Rule on oil and gas operators, Clarify the effective date for new requirements throughout the Rule. It is important for the regulated industry to know when specific new requirements will apply. Add the necessary clarifying language to limit the new requirements to new wells and expressly state that wells constructed prior to the determined effective date are grandfathered in for purposes of the new requirements. In summary, Clarify the extent of the proposed Rule's reach to avoid any uncertainty with interested stakeholders. (1085)

Response: The Department intends to establish an effective date for the new regulations that will provide sufficient time for regulated industry to meet any new requirements. New requirements will be applicable to new activities and facilities constructed prior to any effective date will be grandfathered in for purposes of the new regulations.

2908. Comment: The Department should have all proposed forms, database reporting requirements, e-permitting considerations (Greenport) finalized prior to effective date of the regulations. Incomplete forms, and inflexible/unavailable on-line reporting and permitting functionality add levels of complexity and confusion when Operators are trying to comply with new regulations and requirements. (1103)

Response: The Department plans to have all necessary forms, guidance documents, and procedures available at the effective date of the rule making.

2909. Comment: While we acknowledge that updates to Chapter 78 are necessary to reflect operational and technological advances, any standards imposed on oil and gas operations should not be more stringent than those for other industries. In addition, we hope to avoid provisions that introduce operational complexity or obligations without meaningful environmental benefit or create ambiguities and duplicative requirements.

One general concern is that the PADEP's proposed amendments must allow industry a reasonable amount of time to implement the new and complex operational and design criteria for well sites, impoundments, or other related operations permitted and constructed after the effective date of the final regulation. PADEP has stated on a number of occasions that these proposed requirements, if enacted, would be among the most stringent state oil and gas industry environmental standards in the U.S. The vast majority of the requirements in the Proposal do not include a phased timeframe for implementation by industry. In fact, most requirements would be immediately applicable upon the effective date of the final regulation. As PADEP is aware, the planning, design, permitting, and construction of oil and gas well sites and related operations are a lengthy and complicated process for operators involving many factors and considerations. A sudden and immediately enforceable change in regulatory requirements would create tremendous uncertainty, particularly for smaller operators.

For example, identification of abandoned and orphaned wells will benefit from further development of the Department's database, and should be postponed until the database and map viewer system is improved. In addition, any reporting that requires new forms to be developed by PADEP or electronic submissions by industry to PADEP should be delayed until PADEP has finalized its forms and implemented its electronic interface. A phased implementation of many of the operational and design criteria should be included in the rulemaking.

Moreover, as currently proposed, it is unclear as to how the new and revised requirements will apply to existing oil and gas well sites and related operations. It would put an undue burden on the oil and gas industry both financially and practically to require that the proposal's new operational and design criteria apply to existing operations already working within the scope of PADEP's current regulations. Moreover, a requirement to retrofit or update existing operations would put Pennsylvania at a competitive disadvantage with respect to other states. As such, PADEP should include a clear "grandfathering" provision in the Proposal. PADEP's "grandfathering" provision should state that the new standards in the Proposal should not apply to well sites, impoundments, or other related operations that have been already constructed; to oil and gas well sites where wells have already been drilled; or to well sites, impoundments, or other related operations for which permit applications have been submitted to PADEP by an operator prior to the effective date of the final rulemaking. (1147)

Response: The Department intends to establish an effective date for the new regulations that will provide sufficient time for regulated industry to meet any new requirements. New requirements will be applicable to new activities and facilities constructed prior to any

effective date will be grandfathered in for purposes of the new regulations.

2910. Comment: Preventing and avoiding damage v. mitigation alone; cumulative impacts must be considered

In addition to the Pennsylvania Supreme Court ruling that makes clear the mandates of Article 1 Section 27 of the Pennsylvania Constitution, as discussed above, the Board must reconsider its general approach to decision making regarding potentially harmful outcomes based on federal policies and science.

The bar needs to be raised to require that gas and oil development avoid harm to public resources, the environment, communities, and public health. In proposed Section 78.15, for instance, it is stated under (f)(3)(iii) “a description of the measures proposed to be taken to avoid or mitigate impacts, if any” are to be included in the application for a well permit, including a permit that will potentially negatively impact a public resource. To indicate that choosing to avoid or to mitigate is of equal value by not affirmatively stating the requirement to avoid harm in the first instance, is unacceptable and does not honor the duty to avoid damages.

The U.S. Council on Environmental Quality states that impacts should be avoided altogether by not taking a certain action or parts of a certain action and includes as options to minimize, reduce, rectify and compensate for adverse impacts of development. Once a natural system such as a wetland is damaged or destroyed, it is very difficult to restore that resource’s full function or to replace those lost ecosystem functions with another. The far better policy is to prevent the damage rather than try to repair or replace after the intact natural system is diminished. A report from New Jersey Department of Environmental Protection concludes that less than half the wetlands mitigated were successful; only 48% concurred with their design specifications on average, leaving most sites without the mitigation goals accomplished. A report from the New Hampshire Office of the Energy and Planning warns that there is a lack of scientific evidence that documents the success or failure of mitigating adverse impacts through wetlands creation or expansion; contracted wetlands are not necessarily successfully providing environmental benefit. In other words, mitigation is a leap of faith not founded on scientific evidence.

DRN requests that it be stated affirmatively that harm to the environment should be avoided first and foremost. Only after avoidance or prevention has been thoroughly exhausted as an option should an application for a permit be allowed to proceed. This precautionary approach is reasonable when considering how much damage has already been done to the environment in the Commonwealth.

The cumulative impact of development activities has caused substantial harm that has handicapped our ability to achieve and maintain environmental quality and healthy communities. For instance, in regards to wetlands, Pennsylvania has lost approximately 56% of its original wetlands, according to EPA studies. 2200 miles of streams in Pennsylvania have been harmed by coal extraction. When looking at both groundwater and streams, coal mine drainage has contaminated more than 3,000 miles of streams and associated ground waters in Pennsylvania.

Pennsylvania cannot afford to absorb more environmental degradation; oil and gas development can reasonably be considered the straw that breaks the Commonwealth’s back. A recent report by the Nature Conservancy concluded that by 2030, 38,000 to 90,000 acres of forest could be cleared by Marcellus gas well development in Pennsylvania; already 3,500 acres have been cleared and another 8,500 acres of forest is within 300 feet - a critically damaging distance – of new edges created by gas wells and their infrastructure. 300 to 750 well pads can be expected within a half mile of Exceptional Value streams, the Pennsylvania’s highest quality waterways. And between 900 and 2200 well pads can be expected across state lands; the State doesn’t own 80% of State Park and

Game Lands.

According to a peer reviewed journal paper that examines the footprint of Marcellus shale gas and wind through scenario analysis, a model showed that 1.1 million acres of presently intact forest in the Marcellus shale play will be impacted by this “energy sprawl”, most of it from natural gas development; approximately 70% of the land underlain by Marcellus shale is forested. The report points out that forests provide important water quality benefits and the loss of forested land increases the cost of providing safe drinking water to the urban areas that rely on it. The documented benefits of forest ecosystem services to water purification are discussed in a U.S. Forest Service report; the loss of these services can degrade water quality. Scientific literature explains the clear link between forests and water quality, verifying that reductions in forest cover correlate with negative changes in water chemistry, such as increased levels of nitrogen, phosphorus, sodium, chlorides and sulfates as well as reduced levels of macro invertebrate diversity.

Researchers at the Academy of Natural Sciences have discovered that where high density of natural gas wells occur, adjacent streams in Pennsylvania’s Marcellus are experiencing decreased water quality as demonstrated by lower macro invertebrate density and higher levels of specific conductivity and total dissolved solids.

Also projected in Evans et al is upwards of 1 ¼ million acres of new impervious surface across the Marcellus from gas well development, which has directly adverse impacts on water quality and water supplies and the maintenance of biological life in streams and causes increased polluted stormwater runoff, sedimentation and flooding to waterways. The report concludes that the cumulative impacts of this industrial development will be the most challenging and most damaging. These cumulative impacts must be considered by DEP in this rulemaking. Viewed in the context of legacy pollution and ecosystem degradation from coal extraction, other development and prior land use changes across the State, the damage to Pennsylvania’s environment that will result from the proposed gas and oil operations has the potential to cripple our air, water and natural values and must be fully analyzed by the Board from this perspective. (1156)

Response: The EQB has considered cumulative impacts related to this rulemaking consistent with Pennsylvania law. The Department administers and enforces environmental laws in Pennsylvania and, as one of the trustees of Pennsylvania’s public natural resources under Article I, Section 27 of the Pennsylvania Constitution, is charged with conserving and protecting those resources. The General Assembly has provided the EQB and Department with authority to carry out this constitutional mandate through the statutes under which this final rulemaking is promulgated.

This rulemaking is one piece of an interrelated collection of environmental regulations in Title 25 of the Pennsylvania Code developed in accordance with a variety of enabling statutes. For example, the stream classification, water quality standards and antidegradation requirements promulgated under the Pennsylvania Clean Streams Law, which are found in Chapter 93 of Title 25, provide broad standards of protection for all surface waters of the Commonwealth. Specifically, Chapter 93 “sets forth water quality standards for surface waters of this Commonwealth, including wetlands. These standards are based upon water uses which are to be protected and will be considered by the Department in implementing its authority under The Clean Streams Law and other statutes that authorize protection of surface water quality.” 25 Pa. Code §93.2. Chapter 93 is one of the pillars of environmental regulation in the Commonwealth relied on to implement Article I, Section 27 of the Pennsylvania Constitution, and is applicable to oil and gas activities also regulated under this rulemaking. Cumulative impacts are additionally assessed through a variety of other environmental regulations and

requirements related to water obstructions, encroachments and discharges, air emissions, waste management, and remediation, as well as compliance with the Pennsylvania Natural Heritage Program and the Pennsylvania History Code as part of Department permitting actions.

This rulemaking itself also implements Article I, Section 27 of the Pennsylvania Constitution with requirements specifically tailored to oil and gas activities to ensure these activities do not infringe on these fundamental environmental rights. The rulemaking broadly reflects a consideration of the cumulative environmental impacts associated with oil and gas activities, and provides mechanisms to ensure DEP considers cumulative impacts on a project-by-project basis as well. The public resource impact screening provisions are one example of such a mechanism which can be utilized by the Department to reasonably minimize the environmental incursion of a permitted activity.

The regulations and policies administered by the Department, as well as the enhanced environmental protections presented in this rulemaking by the EQB, have been developed to achieve the trustee obligations to protect and conserve public natural resources in a reasonable and sustainable manner and in accordance with the environmental amendment. These regulations concurrently ensure that private property interests, which are also protected under the Pennsylvania Constitution, are limited only to the extent necessary to achieve the constitutional mandates of Article I, Section 27 (*i.e.*, to protect the people's right to clean air, pure water and the preservation of natural, scenic, historic and esthetic values of the environment, and to conserve and to maintain public natural resources for the benefit of all the citizens of Pennsylvania, include future generations).

The trustee duties imposed on the Commonwealth by Article I, Section 27 of the Pennsylvania Constitution are carried out not just by the Department, but by other Commonwealth agencies and political subdivisions. For example, the principal stewardship responsibilities of Pennsylvania's state forests and parks are shouldered by the Department of Conservation and Natural Resources (DCNR). Pennsylvania's state forests are currently afforded protection from further leasing for oil and gas development and the associated cumulative impact associated with such leasing pursuant to the Executive Order No. 2015-03. With regard to forest resources that are not publicly owned, the Department considers cumulative impacts through its administration of all environmental regulations, including those specifically tailored to oil and gas activities, and requires appropriate measures to avoid, minimize and mitigate environmental incursions associated with the permitted activities.

There are limits to the EQB and DEP's authority, however. The General Assembly has not expressly authorized the protection of forests or empowered DEP or DCNR to limit forest fragmentation in and of itself, and neither agency has been granted land use restriction powers under Pennsylvania law. Such land use regulation is granted under Pennsylvania law to local governments, who are also trustees under Article I, Section 27. Nonetheless, forest fragmentation is limited generally by the considerations outlined above related to avoidance and minimization of impacts to water resources and through the reasonable protections provided to species and cultural resources.

The existing regulatory framework together with this rulemaking provide a standardized and transparent process for the Department to identify, consider and to protect public resources from the cumulative impacts of oil and gas operations, and to reasonably coordinate with other public resource agencies with constitutional and statutory duties to conserve and maintain these resources under Article I, Section 27 of the Pennsylvania Constitution.

2911. Comment: Sound abatement at the compressor stations. In other states the industry does not even cover the compressors. In PA the compressors are enclosed in a steel building and the building is designed to reduce the noise levels to a legal limit. (133)

Response: The Department acknowledges the comment.

2912. Comment: The noise from the high pressure compressors especially those used for the gas from the Marcellus formation are not healthy for human ears. So high pressure compressors shall be located in underground vaults in order to attenuate noise and vibrations. (860)

Response: It is not necessary or practical to place compressors in underground vaults to reduce noise levels.

2913. Comment: None of the municipalities are zoned within our watershed. Some of our members live very near well sites and have had intolerable impacts from noise, and some from lighting. The DEP needs to create some reasonable guidelines for operations which will assist folks that find themselves in such situations when the county and local governments are ill-equipped to respond. (1035)

Response: The Department acknowledges the comments. Based on public comment on the rulemaking raising concerns over noise issues at unconventional well sites, the Department developed section 78a.41 (relating to noise mitigation) to address noise issues at unconventional well sites and published that provision as part of the Advance Notice of Final Rulemaking (ANFR) on April 4, 2015.

Since that time, the Department has determined that the consideration of noise and possible mitigation is a concern not only with regard to unconventional gas production, but is an issue raised by other activities regulated by the Department (for example, mining). Because of this, additional cross-program collaboration and coordination will be required. In addition, there are a number of extremely complex technical issues that have to be resolved in order to develop a reasonable, but effective noise mitigation program. This complexity is demonstrated in the scope and breadth of the comments submitted on the ANFR, both supporting and opposing these draft regulatory provisions. Finally, the science surrounding noise issues is continuing to develop, particularly with regards to impacts to human health and sensitive wildlife populations. Any reasonable and effective regulation relating to noise issues will need to take those developments into account.

For these reasons, the Department has removed section 78a.41 from the final rulemaking in order to consider standards and enforcement that will maximize consistency and efficiency, where possible, among Department programs, while addressing the complex technical issues presented by noise at well sites. In its place, the Office of Oil and Gas Management intends to develop a noise mitigation “best practices manual” with input from a wide range of experts on noise issues as well as the public. If rulemaking is appropriate to address noise issues at well sites, the Department will develop such regulations at a later date.

2914. Comment: I am pleased that you are working to tighten the gas regulations to help protect the environment and also the surface owners’ rights. Your efforts to prevent problems instead of just dealing with the aftermath of disasters, is appreciated. There are a few weaknesses in the regulations I would like to mention: It would be very good to include rules for minimizing noise from the well development process. I have heard Texas has some rules regarding noise that could help here. I have

a niece with a house located just a couple hundred feet from a well drilled about 4 years ago in Springville. The 24 hour a day noise was extraordinarily stressful for her and her family with very young children. Any noise mitigation efforts that the industry has available would be helpful. The sound that was the worst for trying to sleep was having trucks come during the night and back up to deliver pipe or other supplies. They found it impossible to sleep through the truck backup alarms sounding. Certainly it should be possible to prevent at least that much of the noise by requiring deliveries to be made during reasonable hours of the day. (167)

Response: See response to comment 2913.

- 2915.** Comment: Noise - When it comes to noise, we are not referencing noise that windows are closed and the noise is absent or at tolerable levels. We are specifically referencing industrial noise from gas operations that are so tremendously and intolerably loud that sleeping is difficult or interrupted, common in-home activities such as TV watching is difficult since the site volumes overwhelm the TV and similar in-home activities to which the resident has no available means to adapt. Again, we are not referring to noise levels that may be considered annoying, but rather those noise levels which prevent normal and reasonable living conditions within one's home. In regards to well site drilling, fracturing and other intermittent facility operations, we recommend the noise level does not exceed a noise standard of 60dbA at the nearest property line or the applicable standard imposed by Federal law, whichever is less. - At a minimum, we recommend that the C.F.R. Title 18, Chapter I, Subchapter E, Subpart F, 157.206 Standard Conditions (b)(5)(iii) Any horizontal directional drilling or drilling of wells which will occur between 10 p.m. and 7 a.m. local time must be conducted with the goal of keeping the perceived noise from the drilling at any pre-existing noise- sensitive area (such as schools, hospitals, or residences) at or below a night level (Ln) of 55 dBA be adopted for all well pads and other facilities located in non-zoned municipalities with occupied dwellings within 750' of the well pad edge, thus requiring proper noise mitigation unless waived by all those occupying dwellings within that distance. This is an extremely liberal noise threshold given that fact that ambient noise samplings in our rural areas have indicated results of 35 decibel levels.

This may require the operator to erect a temporary, portable sound barrier or sound curtain. There is a Pennsylvania based company that offers such services. Oeler Industries, Inc. offers portable sound barrier products that may be used in both drilling and fracturing sites. When such products are indeed available, the neighbors need to be considered. The operator needs to do such mitigations. The fact of the matter is the operator chose the location. When they choose to operate within 750' [from the well pad edge] of occupied dwellings, they have determined in the same mode to utilize noise abatement technologies. The Department needs to protect the environment of the neighbors who live within 750' [well pad edge] of an active site. More information on Oeler Industries may be found here: (660a)

Response: See response to comment 2913.

- 2916.** Comment: Throughout the proposed amendments, other regulations and laws are extensively cross-referenced, with very few descriptive words included to provide context for what each regulation/law relates to, forcing the reader to perform legal research to determine the effect of the proposed amendments. This frustrates the public participation process, making it difficult for the lay person to understand the effect of the proposed regulations and provide meaningful input on the significant changes in the proposed amendments. We recommend that the DEP clearly define the scope of content of the referenced sections, and include appropriate descriptions with citations to demonstrate what language, within these proposed amendments, is not subject to public comment. (1157)

Response: The Department acknowledges that the interrelation of environmental statutes and regulations can be complex, as befits the complexities of the activities being regulated under those authorities. There are two problems with inclusion of the referenced language in Chapter 78. First, and most importantly, if the referenced language changes through statutory amendment or regulatory development, the language in Chapter 78 would not automatically change to match the new language. This would create two sets of regulations addressing the same subject in different ways. Simply referencing the other statute or regulation allows for these updates to occur automatically. Second, including the cross-referenced language would result in Chapter 78 being significantly larger than it is without including that language. The Department notes that all of the cross-referenced authorities are available free on websites accessible to the public. Additionally, the scope and content of the referenced sections is clearly defined with the rulemaking to allow the public and regulated community to determine the meaning and content of the regulations.

2917. Comment: The Incorporation of Pivotal Definitions Required for Uniform Interpretation of the Rule
The proposed Rule should include those express definitions needed for basic understanding and interpretation of the Rule's meaning. The proposed Rule contains a number of definitions and sections of text that refer the reader to a myriad of other Pennsylvania statutes and regulations. The commentator is concerned because this causes the reader to search through multiple documents to find possible definitions within these other statutes and to cross reference and research terms before even being able to understand basic provisions of the proposed Rule. This is not user friendly. The Rule would be streamlined by inserting the appropriate cross references to the specific provisions of the other statutes.

Any express terms from other federal or state law or regulation used in the Rule should be copied into the Rule's definitional section, § 78.1. This will avoid confusion in interpreting the details of the provisions and avoid easily overlooked express definitions. (1085)

Response: Reference to other Pennsylvania statutes and regulations provides the reader with a more robust understanding of the provisions of the rule. See response to comment 2916.

2918. Comment: Public Reporting - Section 3262 of Act 13 requires enhanced public reporting of inspection reports and permit violations. The Department should promptly publish information regarding spills, leaks, exceedance, loss of pressure, and remediation measures, as provided under § 78.51(c), § 78.59c(e)(4)(x), et cetera in the Proposed Rulemaking. (997a)

Response: The Department agrees with the commentator and to increase transparency the Department is developing greater reporting requirements for operators and developing the capability to make all pertinent data available on the Department's website.

2919. Comment: I believe the best way to protect Pennsylvania's citizens and our natural resources are through transparency and accountability. Every Pennsylvania citizen has a right to their health, clean water, and clean air. I believe and urge the Pennsylvania Department of Environmental Protection (DEP) to make as much information as possible from gas drilling operations available to the public online so the public can have all the information necessary to choose where they would like to live.

For each recommendation that I mention, I would highly urge that the DEP create an online database available for free to the public so that the public may have access to that information at any given time. (848)

Response: To increase transparency the Department is developing greater reporting requirements for operators and developing the capability to make all pertinent data available on the Department's website.

2920. Comment: The market for natural Gas is huge. Domestically and internationally. And the companies that profit from it are not going away. I believe in demanding the safest, most environmentally conscious fracking methods-including honest contracts, modern and sophisticated drilling, closed "frack pits", restoration of contaminated drinking water and severe/comprehensive penalties for companies that don't comply with these simple and humane requests.

Unfortunately, the desire to make money RIGHT NOW trumps any kind of commitment or concern for the future of our children and long term environmental sustainability. DEP has to demand full transparency and the ability to prosecute any organizations who fail to comply with safe and responsible fracking/drilling. (953)

Response: To increase transparency the Department is developing greater reporting requirements for operators and developing the capability to make all pertinent data available on the Department's website. The Department has the ability through enforcement activity to ensure compliance with applicable rules and regulations.

2921. Comment: Electronic filing and public posting of documents
Throughout the proposed regulations, electronic submission of applications and other documents is proposed for some items. DRN advocates that all submissions for applications, reports, maps, monitoring data, and other filings be required to be made electronically. The Pennsylvania Department of Environmental Protection (DEP) should post all of these documents on a publicly accessible web platform to allow access by the public in a timely way. The technology is available and should be routine practice by operators in their internal documentation processes.

We state this with the backdrop of a recent news article reporting that natural gas production reports filed by operators with DEP had incorrect data which had to be corrected by the agency 94 times since 2010. The news report contains a link to a DEP-generated document that shows several companies, operating in both unconventional and conventional formations, submitted incorrect information that DEP had to retract and resubmit to the database. Many of the errors were by the largest of companies such as Range Resources, Chevron, Chesapeake and Exxon's subsidiary XTO, companies that certainly should be able to use an electronic filing system with accuracy.

This poor performance by gas operators makes it clear that more accountability is needed in terms of accurate reporting and the attention that operators give to it and it raises questions about the accuracy of all reports filed by operators with DEP. The need for accurate reporting of gas and oil development activities is not just a bureaucratic exercise; it is the primary way that DEP provides oversight, especially considering that inspections and onsite visits are costly and require more staff than DEP can provide under current funding restraints.

We suggest that a requirement by DEP that all gas and oil reports be filed electronically will make this practice routine and mandatory filing will supply DEP with an enforcement mechanism when reporting is not accurate, complete or timely. DEP will need an internal review system that promptly verifies accuracy and should apply its power to issue violations and fines for inaccurate, incomplete or late reporting.

Finally, the posting of these reports on a publicly available web platform is crucial as a means of supplying information about operators and gas development activities to the public - activities that

directly affect many people who live, work and recreate in Pennsylvania. Much of this information is only available to the public through file reviews, which are time consuming, have costs associated with them, and is beyond the reach of most of the general working public.

The transparency of DEP about these activities can be measured by evaluating how open the agency is regarding reports from the industry. Under the current practices, DEP does not measure up well in this regard. We are aware that overall the industry lacks a willingness to share information, especially considering the nondisclosure of formulas used in hydraulic fracturing and other closely-held information. This argues for DEP to provide public access to the data they should be able to get and, indeed, DEP is proposing more reports to be filed and more public postings in this rulemaking than are required in current regulations. In all specific sections of this rulemaking where filing of documents by operators to DEP is required, the filing should also be electronic and made available to the public on a web platform. But there are many areas where DEP shrinks from this task. DRN requests that electronic filing and public posting of reports and data from operators be required for all information relevant to gas and oil development activities. (1156)

Response: To increase transparency the Department is developing greater reporting requirements for operators and developing the capability to make all pertinent data available on the Department's website.

2922. Comment: It is our belief that the citizens of PA should be better informed and involved so as to make decisions that are in the best public interest with respect to growth of resource utilization. We are hopeful that amendments such as these will be a step in the right direction toward empowering Pennsylvania citizens to lead happier, healthier lives. (604)

Response: The Department acknowledges this comment.

2923. Comment: We want the use of modern and developing technology to protect our environment and expand economic opportunities for the next generation. We do not want regulations that "lock in" existing technologies for the benefit of existing companies. I have had the opportunity to tour several drilling and fracking sites. It is clear to me that today's technology is capable of delivering gas at acceptable risk. I want the DEP to ensure best practices and not certain company practices that will reduce industry competitiveness. (989)

Response: The revisions to Chapter 78 and 78a include flexibility to accommodate future technological advancements.

2924. Comment: The proposed regulations need to be scientifically valid and based on best practices and state of the art methods and NOT upon any agenda of the gas industry or political plan. (632)

Response: The revisions to Chapters 78 and 78a are consistent with applicable regulations and statutes and provide appropriate protections for public health and safety and the environment.

2925. Comment: Our family has a cottage in Ogletown, PA which is one the recharge areas for the Mauch Chunk Aquifer in the Clear Shade Watershed. We draw our water from the Mauch Chunk which is one of the largest purest aquifers in the Eastern USA. The nine thousand citizens of Windber and many more from communities who live along the Allegheny Front from Jim Thorp in the North to West Virginia in the South - tens of thousands of Pennsylvania's citizens, draw their water directly from the Mauch Chunk Aquifer. It takes 40 years for rain water to percolate thru 800 feet of earth to recharge the Mauck Chunk. One gallon of Deisel fuel will render undrinkable 750,000 gallons of

Mauch Chunk Water. We have a neighbor in Windber whose water well went bad. Over the hill from his home 2700 feet away, out of sight, deep shale well was being put in. He went up there every day, made notes, and took photographs. He noted a tanker truck of diesel fuel, apparently going into the well. Just before the drillers packed up, he noted a flowback pit there one day and the next day it was gone. Bulldozed over. How long will it take before that entire diesel and that toxic flow back leach into Mauck Chunk Aquifer and it is destroyed forever and all those people along the Allegheny Front have to move away or get from bottled water. How many truckloads of bottled water will it take daily to serve the needs of 9000 people of Windber and everybody else along the Allegheny Front.? We are creating a disaster unnecessarily. The same applies to aquifers and ground water all over the state.

Both the Center for Sustainable Shale Development in their 2013 Performance standards and the International Energy Agency in their “Golden Rules for the Golden Age of Gas” report, mandate that diesel should never go into a well, and that thorough geological and hydrological baseline background studies should always be conducted on all areas of operation before any drilling is permitted. Neither of these best practices is mentioned in your regulation except briefly under the section on Centralized impoundments.

Water is essential for life. Without clean pure water, we would all die as would all of God’s creatures, as would our Earth. Pennsylvania has some of the best water in the world ... What’s left of it after an unregulated Coal Industry spoiled a significant percentage of our surface waters. Why risk our aquifers too. The same applies to our soil. We depend upon good soil for agriculture which produces our food. Without food we die. Pennsylvania has some of the best soil in the world. Agriculture is the #1 industry in PA, Tourism is #2. Both depend on fresh air, clean water and good soil. These God given assets have nourished the citizens of Pennsylvania for the last 350 years and the previous native populations that for 10,000 .Why risk those God-given natural assets unnecessarily in a mad rush for wealth for a few greedy unprincipled politicians and their out-of-state wildcat driller managers, at the risk of disease, suffering & poverty for our children and all the generations that follow them. What a legacy we leave them!

We want a rule of law in Pennsylvania. “Best Practices or Nothing. Best Practices or Nothing” (925)

Response: The revisions to Chapters 78 and 78a are consistent with applicable regulations and statutes and provide appropriate protections for public health and safety and the environment.

2926. Comment: Natural Gas which is primarily Methane is a non-renewable fossil fuel greenhouse gas which in the 20 year time horizon is between 75 and 106 x more potent than Carbon Dioxide (CO₂). It is already the 2nd major GHG contributing to climate change after CO₂. The International Energy Agency predicts that natural gas production will triple by 2035 with over 1,000,000 wells drilled world-wide.... 100,000 of those wells are scheduled to be drilled in Pennsylvania. Pennsylvania is already the 2nd largest producer of natural gas in the USA and therefore 2nd largest producer in the world because gas production in other countries is still in it’s infancy. We invented the process for extracting unconventional shale gas right here in Pennsylvania at Penn State University and we are the guinea pig for new techniques and technologies related to the development of Natural Gas nationwide and world-wide. What we do here in Pennsylvania will be copied all over the world. Therefore, it is essential that we get it right. If we get it wrong, then it is going to be wrong all over the world. And, we, Pennsylvanians are going to bear the primary responsibility for creating a world-wide Climate Change catastrophe which will not only cripple our nation but will cause world-wide chaos, suffering and death and which has the potential of destroying our civilization, causing mass extinctions and possibly even turning our planet into a lifeless wasteland. It’s a gamble with very big

stakes of Biblical proportions. Therefore, if we do it at all, we better do it right. Pennsylvania's Department of Environmental Protection is a lynch-pin in this process. Doing it right means absolute rigorous adherence to "best practices" regulated by law promulgated and enforced by the Pennsylvania Department of Environmental Protection.

There are two resources for "Best Practices" that are immediately available to the Pennsylvania DEP. Both documents are readily available online. The first of these resources is the International Energy Agencies (IEA) 2012 study entitled the "Golden Rules for the Golden Age of Gas". These "best practices" were formulated by energy and environmental experts from across the world representing among others: Exxon Mobil, Chevron, Shell, BP, American Petroleum Institute, US Department of Energy all of whom are active participants in the Marcellus Shale Play. The second resource for Best Practices is the Center for Sustainable Shale Development (CSSD) in the Appalachian Basin, based right here in Pittsburgh, PA. The CSSD's Performance Standards released in March of 2013, provide a number of measures which can and should be adopted by the DEP in the Environmental Quality Board's "Proposed Rule Making for Environmental Protection Performance Standards at Oil and Gas Well Sites". Although your proposed changes to Chapter 78 includes some of the CSSD's 15 "Water Performance and Air Performance Standards", they fall very short on many of the details. As the IEA's study emphasizes, industry performance standards are not enough to insure compliance with best practices. Stringent government regulation is essential. (138, 925a) See Appendix 2 for attachments.

Response: The revisions to Chapters 78 and 78a are consistent with applicable regulations and statutes and provide appropriate protections for public health and safety and the environment.

2927. Comment: All gas drilling activities in PA should be required to comply with the EPA's Natural Gas STAR Program (best practices for reducing methane emissions). See website: www.epa.gov/gasstar (1086)

Response: The Natural Gas STAR Program is a voluntary program administered by the Environmental Protection Agency. It is beyond the scope of this rulemaking and inappropriate to require compliance with a program of this nature.

2928. Comment: After conventional well regulations are strengthened, qualified inspectors who are willing to enforce the regulations need to be hired so surface owner's civil liberties are not trampled on by rogue conventional oil producers, while regulators look the other way for decades. (473)

Response: The Department agrees that a robust inspection program is necessary to ensure compliance of oil and gas regulations, however, factors such as budgetary constraints and staffing numbers affect the actual number of inspectors available to perform this task.

2929. Comment: Inspections to drilling sites must be done at least once a year by well-trained inspectors without the prior knowledge of the industry operators. It's obvious that with the increase in drilling, a burden will be placed on DEP to increase its numbers of inspectors. I suggest that DEP and its allies push legislative bodies to properly fund inspectors through the taxation of gas produced at the well head (as other states do), fees to operators, and/or through increased fines for violations. (823)

Response: The Department agrees that a robust inspection program is necessary to ensure compliance of oil and gas regulations, however, factors such as budgetary constraints and staffing numbers affect the actual number of inspectors available to perform this task. The Department appreciates the comment; however, generation of revenue through taxation of

the industry is beyond the scope of this rule making and the function of the Department.

2930. Comment: The number of DEP well inspectors should triple and the number of inspections at all drill sites or compressor stations must be no less than 10 visits annually, completely unannounced. (806)

Response: See response to comment 2928.

2931. Comment: On an annual basis, the vast majority of wells in Pennsylvania go uninspected, operators repeatedly violate the same rules at multiple sites and when inspectors do go looking, they inevitably find problems. (853a)

Response: The Department has developed a compliance and enforcement strategy to address issues with inspection frequency and compliance (Department Document No. 820-4000-001, *Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations*).

2932. Comment: The southwest region of DEP has a total of twelve Oil and Gas inspectors. These twelve individuals cannot possibly provide adequate oversight of the approximately 30,000 conventional and unconventional gas wells located in the region. DEP should immediately halt the issuance of new permits and suspend drilling on existing sites until DEP can effectively monitor existing operations. (919, 943)

Response: See response to comment 2928.

2933. Comment: I would like to point out that regulations will not accomplish their protective goals unless there is good enforcement of the regulations. This must be done by levying fines high enough to act as a deterrent. Otherwise, there will be “bad actors” making the same mistakes and repeated violations over and over again. I would also like to point out the current proposed state budget will cut staffing at the DEP, not reassuring for an agency responsible for protecting the health of Pennsylvania citizens and preserving its environment. (1089, 1229)

Response: See response to comment 2928. The Department administers its compliance and enforcement policy to ensure violations are adequately identified and corrected and penalized when necessary, considering severity of violation and willingness or reluctance on the part of those responsible to correct violations (Department Document No. 820-4000-001, *Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations*).

2934. Comment: New regulations will not change the fact that the PA DEP is woefully and purposefully understaffed and underfunded. You have failed to perform your duties with even the current regulations. You are not doing your job and the people of this Commonwealth have lost faith in you. (1094)

Response: See response to comment 2928.

2935. Comment: Chapter 78 covers more than Oil and Gas Wells and the title should be changed to “Oil and Gas Operations”. Chapter 78.15 should be changed to “Well Site Application Requirements”. Chapter 78.51 should be changed to “Protection of water supplies for well site activities”. Chapter 78.56 should be changed to “Temporary Storage in Pits, Tanks and Other Approved Storage Structures at Well Sites”. Chapter 78.60 should be changed to “Well Site Discharge Requirements”. Chapter 78.61 should be changed to “Disposal of Oil and Gas Well Drill Cuttings”. Chapter 78.62 should be changed to “Disposal of Well Site Residual Waste – Pits”. Chapter 78.65 should be

changed to “Well Site Restoration”. Chapter 78.66 should be changed to “Reporting and Remediating Spills or Releases from Well Sites”. Chapter 78.68b should be changed to “Temporary Pipelines.” Chapter 78.123 should be changed to “Logs and Additional Data for Oil and Gas Wells”. (1164)

Response: The Department believes that the proposed titles are appropriate.

2936. Comment: Existing Law - In light of the varying impacts on the land, it would be appropriate to clarify that the Proposed Rulemaking does not modify or pre-empt existing state laws on the legal relationships among the landowner, mineral owner and operator. We would encourage a statement be included expressing that the rules are not to be construed as a determination of rights of the mineral estate owner and/or operator, or to establish rights where none may exist or are uncertain. For example, although the Proposed Rulemaking does not expressly require landowner approval for land application of certain drill cuttings, the right to engage in that activity in the first instance would have to exist, such as through separate agreement or lease. (997a)

Response: The Department declines to add such language. Regulatory approval of an activity does not impact the legal relationship between landowner, mineral owner, or operator, and it is not a determination of rights among such parties. The existence or non-existence of a right to engage in an activity under private agreement or lease must be determined by the parties to the private agreement or lease.

2937. Comment: Regulations should be STATEWIDE, NOT rules that make Bucks County safe but that say the hell with the health or devastation visited upon the rest of Pa.(& I live in Bucks County). Companies should be monitored for safety to the ENVIRONMENT and should have to list all chemicals in the fracking material drilling or no drilling should be regulated locally. Forests, streams and soil should be protected from pollution. Politicians should have NO SAY in determining endangered species. (8)

Response: The Department acknowledges the comment.

2938. Comment: I am concerned that new regulations regarding the oil and gas industry are being considered. It is important that the public be protected from the pollution of air and water which occurs from hydraulic fracturing for natural gas. Any regulations considered must make public health a top priority. (11)

Response: The Department acknowledges the comment.

2939. Comment: Create a statewide information and response program throughout the state of PA to inform and protect all residents. (13, 976, 976a)

Response: Creation of a statewide information and response program throughout Commonwealth to inform and protect all residents is beyond the scope of this rulemaking.

2940. Comment: The use of Halliburton’s Clean Stim should be made mandatory for all future fracing done anywhere in the state of PA. (976, 976a)

Response: Restrictions on use of specific stimulation methods and additives is beyond the scope of this rulemaking.

2941. Comment: No fracking can be made entirely safe. We know that well casings will fail over time,

more significant over 100 year time frame. Having grown up in the northeastern part of PA, I'm all too familiar, with the fossil, fuel legacy of dirty coal banks and orange streams. I can only imagine the legacy that. I'm leaving for my son as oil casings fail over time, contaminating our well water and other people's drinking water.

We also know that there are significant amounts of spills and leaks that have been documented extensively through investigations and newspapers and through DSP reports. Surface disturbance to our wild land is significant, impacting both water quality and our air quality and the diversity of species that reside there.

We need more policies that decrease our reliance on fossil fuels and increase our reliance on clean energy. Having worked with states all over the country and the grass roots, I have seen multiple places where regulations do provide some better protection for public health and the environment than in Pennsylvania. So if Pennsylvania is going to drill, then we need to ensure that we're increasing or maximizing public health protection or environmental protections and pollution impacts that occur because of shale gas development. (845)

Response: The Department acknowledges the comment.

2942. Comment: The casings of the frack wells (steel and concrete) fail anywhere from 5-14% (of all wells drilled) in the FIRST year, and between 10-30% within five years. This is a horribly high percentage for an industrial process, and indicates a process out of control, and it must be lowered by aggressive action. Otherwise, water contamination complaints will continue to soar (approximately 500 in 2012 in Pa, approx. 400 in 2013 in Pa). If any other industry had a 5-14% failure rating of casings in the first year, that industry would be out of business. If DEP wants to save time, money, complaints, and aggravation of citizens, then this would be a great place to start by putting the spotlight on these failings, and push the industry to improve this dismal record. (25)

Response: Construction standards for Oil and Gas wells are beyond the scope of this rulemaking.

2943. Comment: It is imperative that protections are in place - greed must not dictate public policy. The money being thrown around by lobbyists and companies cannot substitute when the land and water are ruined and may take generations to clean up. PLEASE protect the citizens of Pennsylvania - from corporate greed, and unfortunately, in some cases, from themselves. (30)

Response: The Department acknowledges the comment.

2944. Comment: Any rules that are established should protect our natural resources first. After that is accomplished, the oil and gas industry need to start conducting their activities to comply with these regulations and not be allowed exemptions to make their profits larger at the expense of the health of our residents. If they don't like it, let them frack somewhere else. (31)

Response: The Department acknowledges the comment.

2945. Comment: I simply want to plead that we value long-term health and well-being of future generations over short-term profit and ease of life in the rulemaking, whether it applies to tempting shortcuts such as open pit waste storage, orphan well sealing before drilling the next well nearby, leaving every bit of earth, every stream and body of water, and the air we breathe better than it was when it was impacted by drilling, transporting, storing, etc., and to make it the responsibility of the drilling companies who are profiting from the permission to exploit these precious resources. We

have, through corporate internalizing of profits and externalizing social costs, often shortsightedly, been gradually destroying our future economy, environment and culture. As tempting as this always is, it must stop for the sake of our children, grandchildren, etc. (34)

Response: The Department acknowledges the comment.

2946. Comment: I want to make sure that our natural resources--air, water, etc., are safe for all in our great state. Thank you for your consideration in this important matter. (39)

Response: The Department acknowledges the comment.

2947. Comment: I want affordable natural gas as much as anyone, but not at the expense of our fish, game and selves. They must not be permitted to pollute our air during or following their operations. (41)

Response: The Department acknowledges the comment.

2948. Comment: There should be a fund into which companies which drill and transport shale oil pay at the time of their application to do so. This should pay for better and more frequent oversight and testing of water, air and environment where they drill and testing of people harmed by the drilling. They should be strictly liable for any and all damage of any kind which they cause. (45)

Response: At the time of application, oil and gas well operators pay a permit application fee. The funds collected through this fee provide for Department staff, equipment, and supplies that are used to implement environmental protection regulations. Oil and gas well operators are held liable for violations of environmental law.

2949. Comment: Please be sure that our air and water are protected when setting the standards at oil and gas well sites. (47, 66)

Response: The Department acknowledges the comment.

2950. Comment: Unless these changes better legitimately protect the air, water, and health of everyone in Pennsylvania, including fauna, this should not pass. (49)

Response: The Department acknowledges the comment.

2951. Comment: As part of this, all should be mandated by law to clean their messes properly in the course of any project. This means no further pollution of the air, water, or earth; the BACT (and similar highest, applicable standards and hazardous substance laws) throughout all processes, including waste management and disposal, should be mandated; and when such people regulated under this department finish or pause work at any site, they must appropriately address that site to ensure no future harm from it. (49)

Response: The Department acknowledges the comment.

2952. Comment: Let's keep politics out of this and keep our air and water clean. (56)

Response: The Department acknowledges the comment.

2953. Comment: To protect the environment and public health, oil and gas well sites must be monitored frequently to provide a record of pollutants released into the air, water and soil. DEP must have the authority to shut down operations that violate the allowable limits on emissions. (57)

Response: The Department agrees. Oil and gas well sites are inspected frequently and especially during critical phases of operation. The Department has the authority to shut down operations when requirements of their permits are violated.

2954. Comment: Save our natural habitat for our animals. (60)

Response: The Department acknowledges the comment.

2955. Comment: We have a poor history in western PA with the coal industry and want to ensure that we protect our environment. The gas industry should be held to the same standards that protect us all! (352)

Response: The Department acknowledges the comment.

2956. Comment: As an ardent birdwatcher and nature lover, I want to make sure that the new regulations protect the air, water, and health of everyone in PA. Once destroyed the water cannot be brought back. Look at what is happening in West Virginia. (368)

Response: The Department acknowledges the comment.

2957. Comment: Please ensure that standards are in place to protect public health by governing methane / toxic emissions into the water table and the air over Pennsylvania. In light of both the recent news of water contamination (resulting from a water treatment plant leak), as well as the undisclosed toxic chemicals forced underground during the fracking process, it is apparent that the pollution of water is a huge problem best prevented. This is the only water and air we have. (76)

Response: The Department believes that the rulemaking provides protection of public health and the environment.

2958. Comment: I read the proposed regulation and I read it very quickly. I did not go and check the references, because I didn't think it would be user-friendly. But just from doing word searches, how many times was the word transparency in there? Zero. How many times was right to know? Zero. How many times was approved for in there, once, and in portions pertaining to something that's still being considered. And that is whether or not it is, according to our Pennsylvania ruling, is it accurate to be able to have exceptions for rulings. (850)

Response: The Department acknowledges the comment.

2959. Comment: I'm real idealistic and am not as educated as these wonderful people. To me it's common sense. For me if you break it, you fix it. The idea that there would be any kind of question about well, but we should not have to remediate the water to a point if it wasn't totally clean to begin with. (850)

Response: The Department agrees with the comment. Sections 78.51(d)(2) and 78a.51(d)(2) states the quality of a restored or replaced water supply will be deemed adequate if it meets the standards established under the Pennsylvania Safe Drinking Water Act (35 P.S. §§ 721.1 – 721.17). If, prior to pollution, a water supply was of a higher quality than required under

Pennsylvania safe drinking water act standards, the restored or replaced water supply shall meet the pre-pollution quality of the water.

2960. Comment: If they happen to decide that they're going to lease and frack the land where there was already polluted water, I'm sorry. I believe that the fees have to be so much further increased. And as it was said earlier, not just based on the depth of the wells, but all the considerations. And if nothing else held in escrow. Those who take transactions do it all the time. Pay a huge fee in escrow. And from that, the cost that you, the DEP, must incur comes from it. (850)

Response: The amount of an escrow is based on the activity to be conducted not on preexisting conditions of a particular site.

2961. Comment: Now, I may be inaccurate, but about two years ago, Act 13 was just starting, it was pretty clear that one percent of impact fees was going to go to the DEP. I applaud that candidate who was involved with DEP who's now choosing to run for Governor himself for stating that it is terribly understaffed. And what I'm asking you to do I know is extreme, but let's get down to the point where if there is any land, or water. They talk about chain of custody, water testing. That's a joke. Anything, the fracking and, in particular, the radiation, has my concern. There's to be a chain of custody for all of it. My God, we hear that it's going in a barge and it's going down the Delaware. (850)

Response: All sampling must be conducted by an accredited laboratory certified in the analysis to be conducted and that employs appropriate chain of custody procedures.

2962. Comment: I know that recently the folks were to be able to have a chance to stop a treatment plant sewage treatment plant that's going to be built within two miles because what it basically was going to do is take whatever it was treating and dump it into a tiny little creek as opposed to where the treated water now goes, which is the whole Delaware. Look, we know that dilution is the only remediation we have for radiation. Well, that's my big concern. (850)

Response: Sewage treatment plants are no longer allowed to accept waste from oil and gas operations. Waste must be disposed of in facilities permitted to accept and treat oil and gas wastes.

2963. Comment: Let me go to one small part of your proposal. Basically, I did a search for the word, may, and obviously it was in there many times. 516 times the word may was there. And I understand from a legal standpoint you have to be careful you don't rope yourselves in. Yes, the burden of proof is terribly hard, especially when a few are so invested in things. But I believe that by having an impact hold it in escrow, so that whatever testing was needed would be paid through that fee. (850)

Response: The word "may" is often used in regulatory language when there are options available to an applicant when deciding the appropriate action to be acted upon. It is appropriate that the term should be used frequently in regulations that set performance standards and allow operators to decide how best to meet that standard in the context of their operations.

2964. Comment: I believe that natural gas is the most cost-effective fuel we have right now, so tell me what else we're going to do instead. You have chosen a profession where money is not your major concern. (850)

Response: The Department acknowledges the comment.

2965. Comment: The federal level, oil and gas operators are exempt from important sections of many important federal laws, hydraulic fracturing stemming from the Underground Injection Control Program under the Safe drinking Water Act. Oil and gas stormwater discharges are exempted from NPDES permit requirements under the Clean Water Act. Most oil and gas wastes are exempt from regulations under the Resource Conservation and Recovery Act. As a result, the DEP has to rely largely on state law to regulate oil and gas drilling operations. And the remaining state law, of course, is Act 13, as has been pointed out. (907)

Response: The Department acknowledges the comment.

2966. Comment: In December, the Pennsylvania Supreme Court struck down important sections of Act 13 as unconstitutional. But there are other laws; too, the DEP uses to regulate oil and gas operations, including the Pennsylvania Clean Streams Law as well as the Waste Management Act. And together these and other laws give the DEP significant power to protect public health and the environment and to make some of the bad features of Act 13 less bad. (907)

Response: The Department acknowledges the comment and agrees that the Department has adequate authority for this rulemaking. See response to comment 265.

2967. Comment: it's important that rules are followed. Existing rules and proposed rules need to direct behavior. Those who fail to do so, regardless of age and stage, must pay real, immediate and meaningful consequences. Making exceptions to the rules, caving to special interests, or ignoring bad behavior result in risks to health and safety not only in the classroom but also in our natural world. Responsibility and accountability should guide your implementation -not encouraged compliance. (120)

Response: The Department acknowledges the comment and continues to work on compliance strategies to ensure protection of public health and safety and the environment.

2968. Comment: A number of sections are very detailed and prescriptive. We suggest that these sections be given some flexibility to allow for the use of alternate methods as approved by the Department. These sections include § 78.59a. Impoundments and Embankments, § 78.59b. Freshwater Impoundments, § 78.59c. Centralized Impoundments, § 78.60. Discharge Requirements, § 78.61. Disposal of Drill Cuttings, § 78.62. Disposal of Residual Waste - Pits, § 78.63. Disposal of Residual Waste - Land Application, § 78.64a. Containment Systems and Practices at Unconventional Well Sites, § 78.65. Site Restoration, § 78.66. Reporting and Remediating Releases, § 78.68. Oil and Gas Gathering Lines, § 78.68a Horizontal Directional Drilling for Oil and Gas Pipelines, § 78.68b. Temporary Pipelines for Oil and Gas Operations § 78.70. Road-Spreading of Brine for Dust Control and Road Stabilization, and § 78.70a. Pre- Wetting, Anti-Icing and De-Icing. There may be additional sections where it would be advantageous to both the Department and the operator to apply the same concept. (124, 124a, 861a, 861, 913, 913a,)

Response: The sections identified by the commentator have appropriate provisions in place to allow deviation from the regulatory standard when appropriate. Also, please note that the Department has revised the definition of "temporary pipelines" to now be "well development pipelines."

2969. Comment: Though I serve as president of Hampden Township's Board of Commissioners, these comments are my own since our Board has not yet discussed or taken a position on oil and gas regulation.

If I were reading this aloud, my every breath would be polluting your air by exhaling carbon dioxide. Of course, I'm exhaling the same carbon dioxide simply by living. Since the Environmental Protection Agency (EPA) decrees CO₂ is a pollutant, I confess – I'm a polluter.

EPA, and other groups, decades ago warned us about "global cooling." When thermometers showed average temperatures increasing, the scare mantra changed to "global warming." That shibboleth lasted until more than a decade of relatively stagnant global temperatures showed it to be ludicrous. They apparently felt the need for us to have something to fear, so the mantra became "climate change." After all, since the world's climate has changed constantly since creation, people can be frightened – and regulated – based on that simple phrase. Whatever the perceived problem was called, they main culprit, they said, was fossil fuels. I drive a car and heat my home. I confess – I'm a polluter.

That brings us to fracking – which has been around for over six decades. Have there been abuses? Certainly. With every technology, someone does something wrong. But we now have the technology and controls to prevent and/or punish abuse. Despite propaganda films showing flames atop waters in parts of Pennsylvania (which condition has existed since before the white man invaded "pristine" Indian territories), fracking was and is not the cause.

The history of the "environmentalism" movement is replete with overstating the potential for and effects of "pollution" and the imposition of draconian restraints on the advancement of technology. While the intent may be pure, unintended consequences are detrimental to our country. Curtailing this technology inhibits America's quest for energy independence and keeps us reliant on foreign energy sources. We must not foster energy production in countries with little or no regard for the environment. We also must not impede our economy to the advantage of others (including enemies). And, in this era of historically low employment (including millions who have left the job market), it is important not to devastate an industry that will produce hundreds of thousands of Pennsylvania jobs.

At the January 16 public hearing in Hampden Township, two individuals (on opposite sides of this issue) made the same simple request: base your decisions on valid science. I, too, urge you to rely on scientific evidence, not emotional pleas from self-styled "environmentalists" whose prognostications of doom and gloom cannot be scientifically demonstrated. (146)

Response: The Department acknowledges the comment and utilized valid science during the development of this rulemaking.

2970. Comment: I've taken some aerial surveys of Bradford County and Susquehanna County. And I want to tell you that the amount of physical scarring that this industry is causing is unimaginable unless you see it from the air. It is absurd to suggest that any regulations can make this industry safe. This industry is proven to be inherently unsafe. It is toxic and deadly to living things.

I've done analysis. The amount of forests, the amount of forest land, that has been already destroyed, PA is two percent developed. At two percent development we've already lost 11,000,000 trees. They aren't coming back. These rights-of-way, the pipelines, the well pads, they are not going to be ever reclaimed. Massive scarring and damage has already been done to the Commonwealth of PA. (1217)

Response: It is not appropriate for the Department to comment on any analysis without the opportunity to review the analysis.

2971. Comment: I think it is absolutely unconscionable that you did not have these hearings in the counties that have the largest impacts. I'm looking at these regulations and I see 200 ft from publicly owned park, 1,000 ft from water well. Are these numbers scientifically-derived, scientifically determined or are they picked out of somebody's hat? There are three homes on Paradise Road in Terry Township, Bradford County and was determined that three homes have been abandoned, bought out by Chesapeake, because of water contamination. The homes were 4000 ft from the vertical well bore. (1217)

Response: The hearings were held in locations that provided reasonable access from all areas of the state impacted by oil and gas operations. The setback distances identified in the regulations are established by Act 13. The Department cannot comment on specific contamination issues without information that allows the Department to investigate the incident. See response to comment 2974.

2972. Comment: We have cases in Franklin Township, Susquehanna County, massive contamination – 81.3 milligrams per liter. That was Duke study in Franklin Township. Industry people say it's naturally occurring. Lisa Milofsky and GSI environmental did a pre-drilling survey of Susquehanna County and this reading was 10,000 times greater than theirs. When you get a pressure difference of 10,000 times, we don't call that naturally occurring, we call it an explosion. There is an explosion of methane in Franklin Township. There is no way that it is naturally occurring. And it's just not methane. There is heavy metal, total dissolved solids, chlorides, which my understanding can be salt and it also can be HCl. (1217)

Response: The Department cannot comment on specific contamination complaints without information that allows the Department to investigate the issue.

There is one lady in Susquehanna County, PA where she can hold a magnet to her water and it pulls iron filings out of it. In my opinion, this is proof of fracking fluids. So in conclusion, these limits are absolutely inadequate. We need to at least expand this to the Act 13 distances of 2,500 ft. But since they are doing the vertical or horizontal laterals that are 5000 ft, it seems to me that you need to be going out at least a mile. (1217)

Response: The Department cannot comment on specific contamination complaints without information that allows the Department to investigate the issue. All setback distances in the regulations are based on the 2012 Oil and Gas Act.

2973. Comment: You have allowed my beautiful home state to be destroyed. You have permitted a rogue industry to harm many human, animal, and plant lives. You have allowed the rape of Pennsylvania's forests, the contamination of its streams, the pollution of its air and crops. You have stood in allegiance with the oil and gas industry and turned a blind eye to those you swore to protect.

If the following ten parameters were met, I would say, drill on:

1. If there were no other options - However you know that conservation, energy efficiency, and renewable await development.
2. If the gas were not bound for foreign markets - However, you know it is. Realistic assessments say we have 12 years of natural gas supplies. These are needed for renewable Infrastructure, not for shipping abroad.

3. If it would not jeopardize our climate - Methane released from drilling and pipeline routes is 100 times more potent a greenhouse gas than CO₂ and threatens to engage feedback loops that end our ability to adjust to climate change. No regulations can stop the 6 - 8% Initial well-casing leakage rate, increasing with age.
4. If oil and gas Industry tactics wouldn't require perpetual vigilance - Gag orders on those whose water is harmed, gag orders on doctors, midnight dumping, thousands of violations do not bode well for this industry.
5. If Pennsylvania were not a beautiful state to visit - Travelers don't wish to share the roads with thousands of heavy trucks; nor do they want to refresh their spirits in an industrialized landscape.
6. If there was a place to ditch its radioactive toxic waste. Ohio and New York are not proud to be Pennsylvania's dumping grounds for its frack waste.
7. If it would not come back economically to bite you. Already there are boarded-up restaurants and hotels in Pennsylvania and increased crime and there are no sustainable businesses rushing in to fill the gaps and pay the bills.
8. If it would not harm air, water, or food. The "List of the Harmed" and increasing numbers of studies point to the life damage caused by toxic emissions from drill sites, compressor stations, and pipelines.
9. If there were no residents or animals living there. Every square Inch of the shale is required for unconventional drilling, accessed by thousands of drill sites and serviced by a web of pipelines and ancillary structures that do not serve life. Just as biocides are needed to kill life underground, people and animals are simply "in the way" of this extreme fossil fuel technology.
10. If it did not undermine our democracy. Our elections have become a charade, as our representatives are paid to do the oil and gas industry's bidding.

Because none of the ten guidelines above can be met, Implore you to stop high-volume, unconventional drilling in my beautiful home state of Pennsylvania! No "performance standards" will suffice to protect the residents of the state. (479)

Response: The Department acknowledges the comment.

2974. Comment: In the northwest section of PA shallow oil and gas wells are drilled. The O&G companies and other associated businesses employ well over 100,000 people. They are working together helping PA go and grow. Now the PA DEP has a mission to destroy the shallow Oil and Gas companies along with the associated businesses by enacting rules and regulations that are impossible for local oil and gas companies to abide by. 4 out of 7 selected hearing locations are not near shallows oil and gas fields. You would think the PA DEP controlled by far east oil countries. (591)

Response: The Department acknowledges the comment. The Department held nine public hearings throughout the state to ensure that residents statewide would be given an opportunity to provide testimony. Hearing locations included Indiana, PA; Washington, PA; Meadville, PA; and Warren, PA all of which are in the vicinity of conventional oil and gas operations.

2975. Comment: The Marcellus Shale and other unconventional gas plays offer an opportunity to reinvigorate our economy and our ability to compete on a global scale. By developing relatively clean domestic natural gas, and I say relatively clean because all energy sources be they fossil fuels or so called renewable energy sources come with an environmental cost, Pennsylvania can again compete as an industrial manufacturing center. The jobs that that have been sent overseas because of our desire to pay American workers a fair and sustaining wage has crippled our ability to compete for many manufacturing jobs and the opportunity is now before us to bring these jobs back to the US and back to Pennsylvania - not by cutting wages and jobs, but by offering safe, reliable and affordable energy. This is the glimmer of hope I see for our children and grandchildren to deal with the debt legacy of my generation and we must not miss this opportunity.

But, and this an important but, we must not squander this opportunity at the expense of clean water, clean air and a healthy environment and that requires a strong and protective environmental regulatory program which I believe now exists in our Commonwealth and it must continue to exist going forward. And I firmly believe that the development of this vast energy resource and the protection of the environment are not mutually exclusive.

Because the Marcellus Shale with the emerging technology to drill long horizontal well bores was new to Pennsylvania it was right and appropriate and necessary to generate new environmental regulations to manage this monster we call the Marcellus. But the regulations must not go so far as to hinder our ability to compete with other states and the rest of the world. We must not drive those that are willing to invest in energy development in Pennsylvania to other parts of the country. We cannot afford to lose this opportunity.

The proposed changes to Chapter 78, Subpart C go a long way to doing this, but in my opinion and in some instances the changes miss the mark. (606, 606a)

Response: The Department acknowledges the comment.

2976. Comment: I speak as the mother of 6, the grandmother of 12 (perhaps I may be part of the problem) and I am concerned about the future our children and coming generations in PA may experience with our water supply, the effect on our streams, rivers and agricultural land, secondary to this relatively new industry known as hydraulic fracturing of the natural gas covering 63 % of the state.

I am prefacing my comments with the approved position statement of April 2012 - "AAUW-PA opposes the development of shale resources in PA unless the environment, public health and safety and the welfare of the communities involved are protected. Any such permitted development should prioritize the value of water resources above gas resources". Our full report is available at <http://AAUW-PA.AAUW.net>

We make the following points:

- We note that in the 167 pages of the PA Supreme Court decision of December 2013, and based on the principles derived from the state Constitution of 1972, Section 27 is the most important.
- Currently, the PA Auditor General, Eugene DePasquale, is auditing how DEP is regulating the Marcellus Shale Natural Gas Industry. This audit is ongoing and close to completion. Therefore, the PA-AAUW recommends that the EQB study this audit and take the findings into account BEFORE any new regulations are approved.
- Because of the PA Supreme Court decision, we are holding this board to a higher standard

and hope we do not have to go to court again.

- Current Health Impact Reports should be included in regulatory decisions: such as SHALE DRILLING and PUBLIC HEALTH, released and presented on November 23, 2013 by the League of Women Voters in the Heinz History Center in Pittsburgh.
- Another study to take into account is the PIPELINES of PA, A CASE STUDY of LYCOMING COUNTY, prepared for the LWV in 2012.
- Defragmentation of our state parks and forests is a growing concern and well documented.
- The so called “revolving door” of nearly 50 current or former state officials who have links to the energy industry and gas drilling and fracking regulation is of growing concern to citizens of PA.
- We are keeping in mind the legacy PA has experienced from extractive industries in the past: logging and denuded forests; coal mining and miles of our rivers with dead zones from acid; and now the new industry of hydraulic fracturing of natural gas. Some questions being asked by our citizens are: Who is making the decisions on the development of Marcellus Shale? And what part does the public play in all this? Is the public adequately represented? It appears that decision making is in the hands of a few. And will the people have to pay for the results of Marcellus Shale natural gas drilling in the future? The economy of PA requires a delicate balance of industrial and economic development with· tourism, recreational, agriculture, dairy, grapes and wine, hunting, fishing and wildlife watching. The states of New York and Maryland are learning from the rush into horizontal fracturing in PA and are waiting until full impact studies are complete before permitting gas companies to drill. West Virginia has serious & current problems with impacts from industry on their water and land.
- Pennsylvania was the birthplace of the Articles of Confederation and the Declaration of Independence. In the spirit of learning from history, PA may again become a beacon of environmental leadership in regards to this natural resource lying under 63 % of the Commonwealth. We hope our elected representatives and regulatory agencies are prepared to lead the state and heed the inspiring words of the PA Constitution. (632)

Response: See responses to comments 2580, 2627 and 265.

2977. Comment: Energy development has an incredible history in the Commonwealth. And indeed, natural gas development can serve to enhance and improve our natural resources.

Significant investments have been made across the Commonwealth by our industry to provide needed habitat and restore lands and watersheds. Partnerships with conservation groups are examples of our industry’s willingness and commitment to voluntarily protect and preserve our natural resources. And our industry has raised the bar for shale development further with practices designed specifically to lessen the impact on surface disturbance and provide strategies to improve habitat and landscapes.

The benefits do not end there. Take, for example, the fact that the Commonwealth accounted for 18 percent of the nation’s natural gas production in recent months, according to the Energy Information Administration. This has led to more revenue. The natural gas industry has paid over \$1.8 billion in taxes since 2008 and \$406 million over two years to communities, counties, and the state in impact fees. More than 200,000 new hires in Pennsylvania are supported by industries associated with shale development, according to Labor & Industry. And despite the rhetoric, these are - myself included - lifelong, tax paying residents of this great Commonwealth. In addition, there is a great cost reduction in residential fuel. My grandparents, married 63 years, saw their monthly budget for natural gas heat be reduced by \$150 per month. That is a \$1,800 per year savings to senior citizens on a fixed

income.

These benefits, unfortunately, are at risk. Pennsylvania has a complex regulatory environment and an uncertain fiscal climate, which has resulted in the Commonwealth falling behind. And there is even less certainty in the wake of a decision of the Pennsylvania Supreme Court to reject portions of Act 13 of 2012 that established a statewide standard for oil and gas development. Moreover, a plurality of the Court ruled to roll back many of environmental protections under Act 13 -including more stringent well setbacks. Nevertheless, our industry will voluntarily comply with these setbacks, at the Governor's request.

Other regulatory provisions spurred by Act 13 and the Chapter 78 revisions that followed add to the Commonwealth's strong regulatory framework, which the State Review of Oil & Natural Gas Environmental Regulations, or STRONGER, a national non-profit organization dedicated to assessing states' regulations, referred to last fall as "well- managed, professional and meeting its program objectives." And for that, we applaud both the General Assembly and the Pennsylvania DEP.

At the same time, many of the DEP's proposed regulatory changes to Chapter 78 stretch beyond legislative intent and will undercut the Commonwealth's ability to compete for capital -while providing little or no additional benefit with regard to safe and secure oil & gas development. One such example is the establishment of special concern species, which raises questions about how any such list is generated, what criteria are used to determine whether there is an impact to these species, and how DEP proposes to mitigate impacts to such species.

The Marcellus Shale Coalition will provide detailed written comments on the Department's proposed regulations in the weeks to come. Our over-arching message, though, is straightforward: instead of undermining our strong, consistent, and predictable regulatory framework, we should work cooperatively to revise these proposals to maintain a balance between strong environmental protections and a competitive economic climate. It does not need to be a false choice between the environment and economics, and we urge the DEP to continue working with our industry and stakeholders across the Commonwealth on a reasonable, competitive path forward. Thank you for the opportunity to provide this testimony. (633, 633a)

Response: The Department acknowledges the comment.

2978. Comment: I assumed that most testimony given tonight would be empirical in nature. So, I choose to speak more philosophically, because actions are guided by values, and legislation is crafted not just from knowledge, but influenced by attitude and moral integrity. That said, it's time we undertake bolder efforts to put tougher, more specific language in these proposed regulations. If we can't balance public health needs and land stewardship properly with economic growth and the search for new energy sources, Pennsylvanians will pay a price that we and our offspring will sorely regret.

I speak with confidence because, as 300,000 West Virginians were learning of a chemical spill that rendered their water virtually untouchable, the U.S. House of Representatives was hard at work gutting the Federal Hazardous-waste Cleanup Act. How ironic! If this bill becomes law, it will seriously erode the federal government's ability to help us if a similar disaster were to happen here. We could be in dire straits unless we get our own house in order, and fast.

The Elk River spill in WVA, while not due to fracking, is a cautionary tale, because the CEO of the company responsible is considering bankruptcy; so he won't be paying for cleanup, and in PA,

we've not required drillers to establish a remediation fund for accidents that may well devastate our water supply. Yes, we have an impact fee, but that's simply for mitigating day-to-day wear and tear on a community's infrastructure.

It's reported that a legislative plan is evolving to entice drillers to substitute "mine-influenced water" for their fracking process in place of clean water. While that sounds like a tantalizing concept on its face, a tricky use of the term "beneficial" in the plan's text and a proposal to exempt companies from liability who would agree to use this stuff clearly doesn't.

While much is promised by operators and legislators, and agency spokesmen assure us that all is well, I suffer cognitive dissonance when reviewing information that contradicts the pro-fracking message; like countless violations, token penalties, inadequate rules for safe use and disposal of hazardous substances, danger from orphan and abandoned wells, methane migration, and wording in laws that smacks of bias favoring mine operators over public health and environmental safety. Just one issue I shudder to think about is: what happens if we permit long-term burial of waste pits and toxic or radioactive materials like drill cuttings? Why, we could create sites like the infamous Love Canal, which, quoting NY's health commissioner "remains as a national symbol of failure to exercise concern for future generations." Is that how we want to be remembered?

I'm no expert, but distance and location limits listed in these proposed regulations seem uncomfortably close to areas they're designed to protect, accompanied by vague enforcement language. Won't such laissez-faire approach just invite less safety and more risk?

I'm troubled, too, when many people (including elected officials) willingly accept drillers' assurances of safety. For me, their credibility sank after hearing that the industry hired the same public relations firm tobacco executives employed back in 1994: the ones who raised their hands at a congressional hearing, and under oath, stated "I believe that nicotine is not addictive".

On that note, I'll close by sharing 2 wise and very relevant proverbs: first, it seems the only thing we've learned from history is that we don't learn from history at all, and second, humans come to their moment of clarity only through pain and humiliation. Sadly, their own, and not someone else's. My hope is that these tendencies can be reversed at this crucial time; and that wisdom, foresight, and courage will prevail over greed and expediency. Our land, our citizens and even mine operators, will be the better for it. Thank you. (641)

Response: The Department acknowledges the comment. See response to comment 1492 regarding onsite disposal of drill cuttings.

2979. Comment: Add language specifying that hydraulic fracturing will continue to be banned in the Delaware River Basin until a full environmental impact study is completed. The Delaware River Basin contains some of the most beautiful land in the country, hosts some of America's most visited national parks, provides clean drinking water for 15 million people, and is home to a rich diversity of wildlife. Permitting fracking to take place within the basin before potential impacts are understood could forever harm one of the greatest treasures of this state and the nation. (205a, 219a, 278a, 255a, 304a, 650, 651, 653, 655, 656, 657, 658, 663 - 675, 678, 680, 681, 682, 683, 684, 687, 688, 692, 693, 694, 697, 701, 703, 704, 705, 706, 710, 711, 713, 717 - 723, 726, 727, 728, 733, 735, 736, 744a, 746, 747, 750, 751, 752, 755, 756, 757, 759, 762-767, 769, 771, 775, 778, 779, 780, 789, 790, 791, 796, 797, 803, 805, 811, 815, 816, 817, 818, 825, 826, 828, 829, 830, 834 - 839, 960 - 969, 1020 - 1027, 1096)

Response: The regulations will be implemented consistently statewide. Protection of public resources is addressed under §§ 78.15 and 78a.15.

2980. Comment: Stop (702)

Response: The Department acknowledges the comment.

2981. Comment: Stop the writing of regulation by those who the regulation is to be enforced. (709)

Response: The Department acknowledges the comment.

2982. Comment: I am very worried about the impact of fracking on all of our public and private land. I am worried about our water supply and I am worried about the impacts downstream from accidents and run-off. Please keep our water and our natural environment safe from chemicals! (715)

Response: The Department acknowledges the comment.

2983. Comment: There are horror stories of what gas and fracking companies are causing to peoples properties and lives. They need to be regulated in a serious way (724)

Response: The Department takes regulation of the oil and gas industry very seriously.

2984. Comment: Do you have any children that will have to live with your posture? (725)

Response: The Department acknowledges the comment.

2985. Comment: Please lives, health & natures are more valuable than the careless greedy pockets. (730)

Response: The Department acknowledges the comment.

2986. Comment: Our land and water must be protected. NO MORE DE-regulations (731)

Response: The Department acknowledges the comment.

2987. Comment: We have to be very careful not to destroy this planet or there will be nothing for our children. (734)

Response: The Department acknowledges the comment.

2988. Comment: The fracking companies must be responsible for the waste water they produce. And in my opinion there is no such thing as a safe fracking well! And should never be allowed in the Delaware River watershed! My drinking water comes from the Delaware River! (736)

Response: The Department acknowledges the comment. Oil and gas operators are responsible for the waste they produce.

2989. Comment: Pennsylvania's eco balance is being put at great risk, its beauty denuded and the welfare of its already threatened wildlife further marginalized. (737)

Response: The Department acknowledges the comment.

2990. Comment: stop the poison. (738)

Response: The Department acknowledges the comment.

2991. Comment: I find it deplorable that EPA isn't all over this! Whatever happened to the value of human life over the value of money? Please do the right thing for the families and children counting on you! (739)

Response: The Department acknowledges the comment.

2992. Comment: I'm concerned about the open "fracking" policies of Pennsylvania. I hate the fact that hydraulic fracking seems so popular these days; it's going to be our undoing! There is not enough environmental information on all this attacking on our natural resources. Oil spills and water contamination are still problems in our state. And why are these companies not paying taxes? Charge them high extracting taxes and I bet they'll think twice before drilling here. Please keep them away from the Delaware River Basin-I love the Delaware-I don't want another waste land! I have become quite the fanatic when it comes to our Mother Earth and her precious wildlife-these cannot be replaced once they are gone-clean air, clean water and state and federal parks should not fall to these "gas companies". (741)

Response: The Department acknowledges the comment. Taxes or fees on oil and gas production are beyond the scope of this rulemaking.

2993. Comment: Fracking is ok but it should not contaminate the ground water and the rivers. Also, it should never spoil the nature and should not disturb the animals. (754)

Response: The Department acknowledges the comment.

2994. Comment: Save what is left of our environment. (760)

Response: The Department acknowledges the comment.

2995. Comment: Please. All of our grandchildren must have the beauty that our grandparents gave us. It isn't ours to give away to the greed of big business. (761)

Response: The Department acknowledges the comment.

2996. Comment: I really believe we need to extract gas and oil from our land, however I think it must be done extremely safe. Please only allow companies to do these things under strict observation, and no wetlands or game lands or state parks. (768)

Response: The Department acknowledges the comment. The rulemaking provides adequate protection for wetlands, game lands and state parks.

2997. Comment: Stop the frack. (770)

Response: The Department acknowledges the comment.

2998. Comment: The Department of Environmental Protection of Pennsylvania should KEEP the AIR and WATER of this state to the highest standards possible without someone trying influence the outcome, and we ALL know what this means. Let's KEEP it this way. (772, 1056)

Response: The Department acknowledges the comment.

2999. Comment: Until we can determine the effects of fracking fluids on our underground water quality we must place severe limits on fracking. There are also unanswered questions related to air quality when tremendous explosions are set off deep underground which in turn allow air contaminants to be released into the atmosphere. We also must be vitally concerned about the cumulative effects of setting off thousands of explosions deep in the earth is going to do regarding the stability of the earth over time. Air quality and water quality are vital to the survival of humans and animals; oil and natural gas are not vital; clean renewable energy is vital. The interests that are pushing for fracking are driven by the greed for short term profit, not the best interests of the earth, human kind or animal kind. (794)

Response: The Department acknowledges the comment. Well construction and stimulation practices are beyond the scope of this rulemaking.

3000. Comment: Clarifications regarding notification and inclusions of cited sections and acts are most helpful to encourage compliance both in the gas storage section (78.87), general provisions (78.91) (78.101), annual monitoring (78.103), and revocation of inactive status (78.105). (645)

Response: The Department acknowledges the comment.

3001. Comment: I come here tonight to address my key concerns about unconventional drilling as they relate to these new regulations. I first want to say that the DEP needs to have greater accountability and implement regular intervals in the monitoring of ground water, air, and land in all areas being affected by drilling. There needs to be public access to the data for all the violations committed by the gas and oil industry. There needs to be complete transparency on the specifics of those violations and the amount being fined. The funds then could be used to hire more staff to locate and identify abandoned wells so they can be permanently sealed to the highest standard to prevent future leakage. As a public employee, it is my concern and duty to ensure that the protection and safety of 120,000 students who are currently enrolled in the fourteen State System universities, have the constitutional right to pure water, air, and land. (792)

Response: The Department strives to ensure transparency which is why most notifications, reports and other submissions to the Department required by this rulemaking are required to be electronic submissions. Additionally, the Department has made available, on its website data regarding all violations at oil and gas projects sites, recorded by the Department's Office of Oil and Gas Management staff. The Department believes the revisions to Chapters 78 and 78a are consistent with the Constitution and applicable statutes, and provide appropriate protections for public health and safety.

3002. Comment: In my testimony, I want to talk about how these proposed regulations relate to my own experiences as a former worker on the gas rigs. When I started in the industry, I thought this was the best thing to happen here ever! They paid great money, and I was thankful for the job I had. Only after leaving the industry and dealing with health issues from working in the fields, did I see what this industry was really all about. But for me, and countless others who are discarded by the industry, life goes on, and the gas continues to flow. The gas industry destroyed the entire area of Towanda, Pennsylvania where I was working, and the devastation it brought to that region should be a wake up to everyone considering letting these companies come to your town. We are told by the industry that unconventional drilling can be done safely. Having worked on the rigs, I can tell you this notion is completely false! Not only can it not be done safely under the best of conditions, but, in actual

practice, it is not being done safely. I started working as a truck driver hauling water from the impoundments to the rigs. In doing that work, I knew first-hand that DEP regulations were a joke to the operators of the rigs, were not being enforced, and that things were covered up constantly when spills and other environmental damage occurred. The order of the day was to turn a blind eye.

While working for the gas industry, I was promoted to Environmental Clean-up, then Environmental Supervisor in charge of many rigs. My thoughts and desires to live up to these titles were shattered when spills and cover-ups became part of the job dictated by operators who ruled with a heavy hand making sure we did not dare to question what was being done or said. The only thing that mattered was getting the gas. We were told to "be as safe as you can, but get the gas". That's just the way it was! We made up our own rules on the pads, and were not subject to any enforcement what so ever. If we were to be inspected, the operators knew of the inspection well in advance, giving us time to cover things up so that everything during the inspection went without incident. I think many of the proposed regulations before us have value, but they will not be enforceable without drastic changes to the way things are done. Corruption is common and rampant throughout the industry. Letting this industry police itself is not only asking for trouble, but inviting it. Any legislation has to be enforced by sources completely independent of the gas industry. There was a saying we were always used to repeating - ram and cram - get the gas! We were drilling in Wyalusing just outside of Towanda, Pennsylvania. One night, the crew fell asleep, no doubt exhausted from the long hours working on the rigs - ninety to one hundred twenty hours a week was not uncommon. That night, flow-back and other compounds from drilling left the containment, and untold amounts of fluids went into the Wyalusing creek for hours, before anyone discovered this. I don't know how much went down the creek, but it stunk to high heaven for almost a week, and the drivers were fired on the spot. This is what happens on the pads. We're told that if you can make the problem go away, do it! If not, cover it up. That was when I started to see what this game was about and decided to leave the industry to deal with my own shattered job expectations and chronic health problems caused by that industry! Once again, these proposed DEP regulations have value but won't mean anything without very strong enforcement. I love Pennsylvania and I want to save it for future generations. Thank you. (799)

Response: The Department acknowledges the comment and intends to enforce this and all other applicable regulations. The Department has recently updated its compliance and enforcement policy which outlines the Department's commitment to appropriate and effective enforcement (Department Document No. 820-4000-001, *Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations*).

3003. Comment: Liberty lies in the hearts and minds of the citizens of Pennsylvania. Our inalienable rights to life, liberty, and the pursuit of happiness are the bedrock of our nation and our commonwealth. The citizens Commonwealth! Responsible, representative government for the people's best interest was born here. Our forefather's blood spilled and our veterans sacrifice through the ages have made this liberty and this government of popular consent a reality for our families.

Penn's Woods was founded as a refuge for settlers seeking religious freedom and the sacred right to the ownership of private property, which is pursuing happiness. This is our understanding; these are our constitutionally guaranteed rights. Owning a home, raising a family, and enjoying one's property free from contamination or nuisance is our dream. This is the true economy that builds this commonwealth and will see it well into the future.

But today the actions of our assembly and our governor have denied us these rights. Public Health, private property rights, and the right for families to enjoy the resources of the Allegheny River,

Tamarack Swamp, Edinboro Lake, and the farms and woodlands and streams of all of Pennsylvania is being summarily pushed aside and ignored for quick profit.

As a registered Republican, I stand in disbelief and remorse over what the assembly and governor have done to citizens through Act 13, and continue to do through acts that force the pooling of private property with decades old leases for unconventional drilling units, and bills that permit the use of coal mine waste run-off across the state to further degradation of our water, and a bill to remove the power of the expertise of the Fish and Game commission from listing animals as endangered. This is not compassionate conservatism; it is the result of rampant crony capitalism.

Chief Justice Ronald D. Castille, a Marine and Vietnam Veteran who understands true sacrifice, got it right. Act 13 is unconstitutional. The blatant removal of local self-governance, removal of zoning, permitting waivers of environmental laws and property boundaries, and the removal of physicians' rights to serve public health is unconstitutional.

This is our Rule of Law. Stop wasting our time and our future and start to enforce this right. Since unconventional drilling began in Pennsylvania, citizens Ron Gulla, Crystal Stroud, Jared McMicken, Joe Giovaninni, and Jim Harkins have been forced from their homes. Farmers Terry Greenwood, Carol French, Don Johnson, and Wayne Smith have had their cattle and calves poisoned.

Twelve families in Dimock, 50 families in the Woodlands of Connoquenessing, four families in Pulaski Township in Lawrence County, and families south of the city of Warren have had their rights to clean air and pure water denied due to unregulated oil and gas development. You have obviously not protected the people and the families of this Commonwealth.

Registered Nurse Stacey Haney should never have had her children poisoned and forced to enter into a lawsuit against the very agency meant to protect her water and air on her farm. Chris and Stephanie Hallowich should not have lost their dream home and worry about their children's future. David and Linda Headley should not have to worry about their children's health and future. The DEP has failed all of these families and many more.

Permitting the dumping of radioactive waste in the Allegheny and Monongahela Rivers is unacceptable. The Duke study shows this is occurring at the Josephine Treatment plant and the Center for Disease Control clearly shows the radium will bio-accumulate. Our fisheries, dairy cattle, milk, and aquifers deserve much better protection.

The citizens of Pennsylvania need the following changes and consistent enforcement by the DEP: Unconventional wells should never be permitted less than 1 mile from any school or college.

Flaring of wells should not be permitted as this pollutes the air and wastes the resource.

Releasing contents of holding tanks into the atmosphere should be outlawed as it harms the air families breathe.

Permitting the drilling and operation of unconventional drilling between 9 pm and 7 am within 1 mile of residential neighborhoods or homes needs to end completely as the stress this places on families who cannot sleep is uncalled for.

Tier -3 testing of water wells and streams on private property must be done before, during, and after production of a well. The testing must be done for every homeowner within no less of a one mile

radius for the entire length of each and every horizontal well bore. The hydrogeological test company must be the choice of these homeowners, and the entire fee must be paid by the oil and gas company. All results must be delivered first to the homeowners without exception. Compressor stations for unconventional gas wells must not be permitted less than one mile radius from family homes or farms.

The use of pits, ponds for storage of fracturing fluid or waste needs to end completely as these leak and flood into the water table.

Burying of frac waste on site or of drill cuttings should end completely and carry a fine of no less than \$ 500,000.

Impacting the quality of water in a homeowner's water well should carry a mandatory fine of no less than \$500,000. The time frame for impact should be no less than 18 months after completion of a gas well. And the distance to homes should be no less than a 1mile radius from each horizontal well bore.

Illegal dumping of well pad waste into any river, stream, or waterway should carry a mandatory fine of two million dollars. The company responsible should lose their license.

The use of "lab error", "naturally occurring", "migration from pre-existing salt or coal mines or vertical wells" by the DEP in their findings must be followed up by no less than three hydrogeologic tests that are tier 3.

Illegal dumping of well pad waste into any river, stream, or waterway should carry a mandatory fine of two million dollars. The company responsible should lose their license.

The use of any "suite code" keeping the complete results of water well quality from homeowners must be outlawed.

We demand that you follow through on your mission.

Protect the people and their natural resources before permitting. Adhere to Article 1 Section 27 and follow the sacred words from Leviticus enshrined on Our Liberty Bell:
"Proclaim Liberty unto the Land unto ALL the inhabitants thereof." (806)

Response: The Department acknowledges the comment. See responses to comments 2857, 2858, 2882, 2883, 2884, 2913, 265, 282, 291, 561, 1010 and 1571 regarding the specific issues raised.

3004. Comment: Tens of thousands of people in West Virginia still don't have water because of the coal chemical spill that happened last Thursday, January 9. Now officials in Ohio and Kentucky are preparing for the 60- mile long chemical plume, as it flows downstream, fouling air and water. According to an NPR News report, there are around 2000 leaks every year of above-ground storage tanks. In 2001, more than 1 million gallons of sulfuric acid spilled from an above-ground storage tank in Delaware. In 2008, 2 million gallons of fertilizer spilled in West Virginia. In another accident involving an above-ground storage plant at a Bayer pesticide plant, 2 workers were killed. The Chemical Safety Board which has been investigating chemical spills and accidents has concluded that there are too many gaps in rules and regulations governing the storage of chemicals. After thousands of incidents, no one has made any effort to close this gap, so the leaks continue. Public health specialists and some government officials say the consequences for violating existing rules and regulations for above ground storage tanks amounts to almost nothing.

This sounds all too familiar with regard to leaks and spills stemming from natural gas activities. In 2012, according to a report delivered to New York state regulators by Cornell engineering professor, Anthony Ingraffea, inspection data from the state indicate that over 150 Marcellus shale wells in Pennsylvania had severe flaws that have led to sometimes large leaks, and yet the operators of those wells were never issued violations by regulators for these breaches of state law.

Rules are effective only if they are enforced so that penalties for violations are severe enough to discourage and prevent industries from violating them. It is obvious that the DEP doesn't have enough staff to do this job. Pennsylvania must hire at least 100 more staff, and the oil and gas industry should fund the inspections as well as their enforcement.

It has been stated that without oil and gas industries, we could not have the life style we enjoy today. The continuous oil and gas activity will ensure that we will not continue to have the life style that we have today as it is putting us in the fast lane to global warming and all the catastrophes that come with this. (808)

Response: The Department has very stringent requirements regarding the storage of chemicals, including secondary containment. The Department acknowledges the comment regarding staffing and inspections and continues to strive to provide adequate and appropriate oversight of the oil and gas industry.

3005. Comment: Protect our homes and Environment!!!(840)

Response: The Department acknowledges the comment.

3006. Comment: The Thomases. When they look out their window they see abandoned wells and oil tanks.

A large number of these wells are leaking oil and natural gas. There are puddles of oil, acres of contaminated soil, pump-jacks, an abandoned brine pit, plastic and metal pipelines, electric wires, deteriorating storage tanks, all abandoned.

The Thomases recently discovered another abandoned well on their property, bringing the number of found wells up to 32. Some wells have had their wellheads and the entire related infrastructure removed, in areas where the vegetation is heavy, locating wells has been difficult 65 are identified on a historic map.

Sometimes there is a light sheen of oil flowing down Knapp Creek, a tributary of the Allegheny River. During rain and flood events, the flow of oil increases. The situation recently took a turn for the worse when a large oil storage tank failed, sending its contents of oil downstream. Another well, (one of the 32 wells) that has not leaked in the past; started to leak (oil) the other day. Thirteen of the wells don't have API numbers. None of the 32 wells are identified on DEP's online map; even after many reports to DEP officials.

In addition to the DEP, Rep. Martin Causer, many individuals, and officials, from local on up to the governor's office, organizations including the McKean County Conservation District, the Fish and Boat Commission, The National Response Center, the EPA, and many others have been contacted about this.

An administrative order was issued (several months ago) by the DEP to the administrator of the deceased operator's estate; it doesn't seem to be worth the paper it's printed on. None of the 19 wells that are identified in the order has made it to the DEP's online map either. Despite emails,

phone calls & many pleas for help, oil from these wells continues to enter the watershed many New York State and Pennsylvania citizens rely.

Currently operators are required to post bonds equal to *only a fraction** of the actual cost of plugging. This *increases* the likelihood of improper well abandonment Regulations which would require operators to post bonds *equal to the approximate cost* of plugging their wells would immediately *reduce* the risks associated with improper well abandonment Some operators have accrued large numbers of inactive wells. In some cases these represent a great percentage of their well inventories.

Limiting the number of inactive wells, and also the percentage of inactive wells operators are permitted to accrue in their inventories by setting regulatory limits will minimize the risk of inheritance these wells present to surface owners, stakeholders and more importantly, The Commonwealth.

Requiring operators through regulations to plug orphan, abandoned and inactive wells in their inventories, before authorizing permits to drill and operate new wells will encourage operators to plug their depleted wells and would also provide much needed protection for the environment, surface owners and other stakeholders.

Allowing operators who have accrued large numbers of depleted inactive wells that may never be commercially viable to apply for Act 13 impact funds to be used to plug inactive (depleted) wells would go a long way to addressing these risks, while providing employment opportunities.

Allowing surface owners to apply for Act 13 impact funds to be used to plug legacy wells on their property would enable citizens to take a pro-active role in reducing contamination and The Commonwealth's greenhouse gas emissions. Conservation districts, and other organizations that have refused to assist or chosen not to respond to oil and gas related contamination incidents, should not be eligible to receive Act 13 funds. This will encourage conservation districts, and other organization to take a pro- active role in remediating oil and gas related impacts on The Commonwealth's natural resources. This was one of the intended uses for Act 13 funds. The organizations that would use Act 13 funds for pet projects while turning their backs on needed remediation is an insult to the spirit of Act 13. (844)

Response: The Department acknowledges the comment. The regulations are intended to address many of the problems your comment has identified. Well plugging funding is available from 2012 Oil and Gas Act impact fees for certain entities through the Commonwealth Financing Authority (<http://community.newpa.com/programs/orphan-abandoned-well-plugging-program-oawp/>).

3007. Comment: Consideration should be given to regulations regarding well pad spacing (846, 1109)

Response: See response to comment 3023.

3008. Comment: Casing standards – I hope it is common sense that the standard for casing should include a standard that the casing material is capable to withstand temperature that is consistently found in ten thousand feet (10,000) below the surface. (860)

Response: Well construction requirements are beyond the scope of this rulemaking.

3009. Comment: My name is Tom Shepstone. I am a planning and research consultant from Honesdale,

Pennsylvania. I have consulted with numerous municipalities through the Northeastern Pennsylvania gas region and have assisted some in drafting regulations having to do with certain aspects of the industry. I also consult with some gas companies, am a leased landowner and publish a blog: *NaturalGasNOW.org*

I support most of what is in the proposed new version of the Chapter 78 regulations because they strike a reasonable balance of economic and environmental concerns and address some of the details that need to be addressed to keep Pennsylvania's regulatory program where it should be.

Nonetheless, I remind you Pennsylvania's existing regulations were reviewed, in the fall of 2013, under the State Review of Oil & Natural Gas Environmental Regulations or "STRONGER" program. It was determined the Commonwealth's Oil and Gas regulatory program, even before the currently proposed revisions, is "well-managed, professional and meeting its program objectives." Moreover, this followed an earlier STRONGER report that called Pennsylvania's hydraulic fracturing regulations one of the nation's most stringent.

So, the system is hardly broken. We don't need to *fix* anything, although upgrading and tweaking to keep up with technology are always warranted, provided Pennsylvania avoids the temptation to fall into mission creep, that horrible disease of all governments that has paralyzed our neighboring state of New York and resulted in job stagnation and sales tax declines just over the border. We don't need their zero job growth across the Southern Tier or 8.7% sales tax decline in the Binghamton area.

What we do need is a balanced set of regulations, not unlike the ones we have now, that have protected the environment and allowed our economy to compete with that of other states. The proposed revisions to these regulations include a few troubling things in that regard. (866)

Response: The regulations need to be amended to implement provisions of the 2012 Oil and Gas Act and to better address the type and scope of oil and gas exploration and production that is occurring in Pennsylvania at this time.

3010. Comment: I am a physician and Erie, PA, resident. I am extremely concerned about public health and environmental issues resulting from unconventional shale oil and gas development. I submit this verbal comment on behalf of myself and all citizens who may be directly, indirectly or potentially affected adversely health wise.

The proposed new oil and gas regulations state that the purpose of this update is four- fold. In my opinion: "Ensuring protection of public health, safety and the environment" is the first and foremost duty of the DEP, EQB, legislators, governor and the gas companies.

In order to accomplish this, all parties must ensure that potential or real exposures to toxic substances are minimized or removed completely. Land, air and water all need to be monitored appropriately and consistently, and reported on regularly-something the new regulations do not address or mandate.

Potential exposures of the general public and OG workers to various pollutants occur in most phases of gas well development Toxic substances can cause morbidity and mortality to people located at, next to, or even at some distance from the well pad, compressor stations, flaring towers, condensate tanks, impoundments, etc. In addition, light and noise pollution issues need to be addressed and mitigated effectively.

Possible routes of contamination, exposures and drilling and gas well-related dangers include, but are not limited to, the following:

- a) Drilling mud chemicals
- b) Casing and cementing failures resulting in methane migration
- c) Chemical migration
- d) Spills and discharges impoundment leakage
- e) Drill cutting contamination and disposal
- f) Land-spreading of residual waste at the site or anywhere Residual waste disposal
- g) Well blowouts
- h) Venting/flaring
- i) Compressor stations
- j) Explosions/fires
- k) Diesel/ozone/particle pollution
- l) Hydrogen sulfide emissions that can cause death within a few minutes of exposure
- m) BTEX
- n) Radioactivity (radon, radium 226 and 228)
- o) “Proprietary” chemicals
- p) Shale formation chemicals
- q) Frac sand
- r) Noise pollution/vibration from 24/7 activity
- s) Erosion & sedimentation/stormwater failures
- t) Property damage from seismic testing and potential earthquakes from tracking/deep well injection of wastewater
- u) Increased sensitivity of children and older individuals to toxic air, water and contact exposures
- v) Stress-related illnesses from fear of water/land/air contamination, intimidation, loss of property values and way of life.

Our governor, legislators, regulatory agencies, and industry need to answer this question practically, and deal with it appropriately BEFORE any further unconventional shale development occurs. They also need to perform long-term health impact studies in concert with public health experts and toxicologists to determine what damage has been done so far to citizens and what one can expect in the future. There have been no appointees from the public healthcare arena or environmental biology on either the Oil and Gas Technical Advisory Board, nor the Marcellus Shale Advisory Committee. In my opinion, unconventional shale development in Pennsylvania is one of the biggest threats to public health facing us all.

Therefore, ban unconventional shale well development period until protections for both citizens and oil and gas workers can be guaranteed. We should follow after our intelligent NY neighbors.

According to the new regulations, solutions to wastewater storage and disposal actually contaminate Pennsylvania landscapes and cause MORE HARM, rather than protect health and the environment. DEP appears to be talking out of both sides of its mouth. On the one hand, it issues violations, occasionally fines OG companies and waste haulers for spills and discharges, and then permits the same material to be dumped in rivers at brine treatment facilities and POTWs, on land in the form of “land spreading”, road spreading and de-icing, or buried. The term “land spreading” needs to be defined in the document.

“Land spreading” and waterway dilution need to be abolished from any consideration as appropriate

OG waste disposal methods. Similarly, drill cuttings from deep shale layers are radioactive, are contaminated from drilling mud chemicals, and should not be buried at the site. How many thousands of tons of drill cuttings are produced from a 10-well unconventional well pad? Apparently obtaining landowner consent for burying waste has been dropped from the initial discussions by DEP.

I also strongly advocate the following:

- Ban all dumping of frac waste into our rivers, streams, and on our lands
- All wastewater trucks should be equipped with a GPS device and monitored from a central non-government computer location to assure that they are not dumping illegally into streams in the middle of the night or at P01Ws.
- Drillers should be mandated to use individualized non-toxic tracers in their drilling solutions, frac fluids and water (mine drainage, treated sewage effluent or freshwater) so there is no doubt who and where the pollution is originating from.
- Air monitoring should be performed at all sites and inside homes for 2.5 and 10 micron particles at least.
- Setbacks (from homes, schools, universities) should be at least one mile from the well site pad, impoundments and lateral well trajectories.
- Find and plug all abandoned and orphaned wells within one mile of the well pad and lateral trajectories. (873)

Response: Dumping of frac waste from unconventional oil and gas operations into rivers, streams, wetlands or on land is prohibited in the Commonwealth. Liquid wastes are treated at permitted treatment facilities and solid waste must be disposed in landfills permitted to accept oil and gas wastes. Wastewater haulers are required to maintain a log of where, what and how much material they picked up, transported and delivered. The Department does not have the resources to equip and monitor all oil and gas waste hauling vehicles in the Commonwealth.

The movement of a “non-toxic tracer” through the ground may not mimic the movement of drilling or frac fluids and could indicate a false positive for toxic material. The tracer would have to have similar chemical characteristics as the solutions that are being targeted. What would the detection of the tracer mean if no other contaminants were detected? Would the tracer now be the contaminant? The Department does not have the resources to monitor and analyze the air at all well sites and all homes for particulates.

The Department requires an operator to locate abandoned or orphaned wells at well sites and above the lateral trajectories. Abandoned or orphaned wells identified and that have the potential to communicate with unconventional well drilling activity must be plugged.

Regarding noise, see response to comment 2913. Regarding seismic testing, see response to comment 2823.

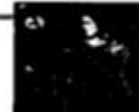
3011. Comment:

[illegible]



Fair Queen crowned

GAZETTE
WELLSBORO



Hickory Post is awarded

Old wells are forgotten, not gone

By Anne Prochaska

prochaska@wellsboro.com

During the past few years, the town of Wells has seen a number of old wells being abandoned...

But if you really want to know the history of the town, you have to look at the old wells...

It is not just the old wells that are being forgotten, but the history of the town...

Just before hydraulic fracturing operations, the town of Wells...

Shall's data

Shall's data shows that the old wells were not just abandoned...

Public data

public data shows that the old wells were not just abandoned...

Public data

Public data

Public data

Public data

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Public data

Superintendent to answer questions Monday

By Anne Prochaska

prochaska@wellsboro.com

Wellsboro Superintendent John A. ...

Four employees, supervisor resign

By Anne Prochaska

prochaska@wellsboro.com

Four employees and a supervisor ...

Four employees and a supervisor ...

Four employees and a supervisor ...



Four employees and a supervisor ...



Supervisor ...

Richmond approves Dunkin' Donuts

By Rebecca Haines

haines@wellsboro.com

Richmond Township ...

Richmond Township ...

Richmond Township ...

Richmond Township ...

Richmond Township ...

Richmond Township ...

Richmond Township ...

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Richmond Township ...

Richmond Township ...

Richmond Township ...

Richmond Township ...

Richmond Township ...



Cats!
See page 1
in The Marketplace

Methane, water spout

Cabin evacuated, gas well
work halted in Union

by Jason Przybylo
przybylo@wellsboro.com

Shell Appalachia subsidiary SWIFT LP suspended operations in Union Township while they contain and investigate methane and water releases around the Guindon K 706 well pad. The Department of Environmental Protection (DEP) is also working in the area.

Overflowing well

The problems began at the Ralston Hunting Club on Goose Town Road on June 14 or 15. Leam and Coulson, a certified emergency management coordinator working in Union Township, and Kim Jennings, Canton fire chief, gave similar accounts.

"They had water in one of the cabins starting Thursday," Coulson said. "The well was backing up."

Deborah Sawyer, Shell communications business adviser, described the situation in different terms.

"On June 16, 2012, during routine operations on the Guindon 706 well pad, Union Township in Tioga County, well operations were informed that a private landowner in the area was experiencing a change in the functioning of their water well," she said. "Shell representatives immediately began investigating the situation. Water well conditions tested positive for methane. As a result, we suspended operations on the Guindon well pad."

Daniel Spadoni, DEP community relations coordinator for the North Central Region, said the cabin in

question is about 2,400 feet from the well pad. DEP was informed of the situation June 17.

"Shell is fully cooperating with the response and investigation," Spadoni said. "Shell has several well pads in the area in various stages of completion. They stopped all operations in the area when notified of a problem involving a hunting cabin that had an overflowing drinking water well inside a mud room."

Water erupts

On Monday morning, June 18, someone noticed a "geyser" of water coming out of the ground a quarter mile from the cabin on the hunting club's land. Jennings said the geyser reached up to 50 feet in the air and contained methane.

"There is a geyser there, about 35 feet off the ground," Coulson said.

Jennings added that the township does not maintain that portion of the road and it is traveled infrequently.

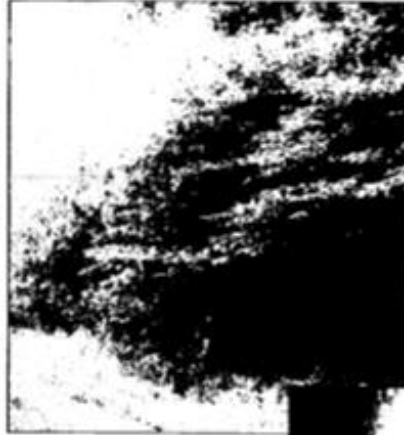
"I recommended that they close it completely," Jennings said.

By June 19, Shell had posted security guards on Goose Town Road.

DEP and Shell are also investigating bubbles in a nearby stream.

"On June 18, 2012, while continuing our investigation it was discovered that a nearby stream was impacted and it has tested positive for methane," Sawyer said. "We are currently conducting field studies to determine the type and extent of the impact."

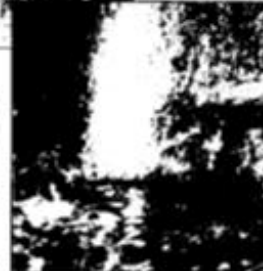
Spadoni added, "DEP Oil and Gas staff collected water and iso-



photos provided by
Canton Fire
Chief
Kim Jennings
snapped these photos of the
geyser with his
mobile phone.

topic samples from the hunting club well and stream on June 18. A Shell contractor drilled a hole in the water well casing and installed an overflow line to stop the overflow, installed methane alarms in the cabin, and will vent the well to the outside (June 19). DEP has recommended the cabin not be occupied until further notice."

See SPOUT on page 9-A



Spout...

continued from page 1-A

Investigation continues

Spadori said the source of the methane has not been confirmed, but Shell and their consultants are screening homes and water wells within a one-mile radius for additional methane.

According to a publication by the Penn State School of Forest Resources, methane gas is explosive in concentrations of 5 to 15 percent within a home. Coulson said the concentration was only dangerous in the first cabin.

"The first cabin went as high as 14 percent gas above the well," Coulson said. "They made him move out. We tested everyone else and the [water] wells tested all right."

"Shell will also begin the process of mobilizing equipment to conduct further investigation and operations on their nearby well pads," Spadori said.

"In the short term, it may be necessary to de-pressure some wells on the identified pads that are currently shut-in," Sawyer said. "This action could result in the need to flare some natural gas through the systems on site

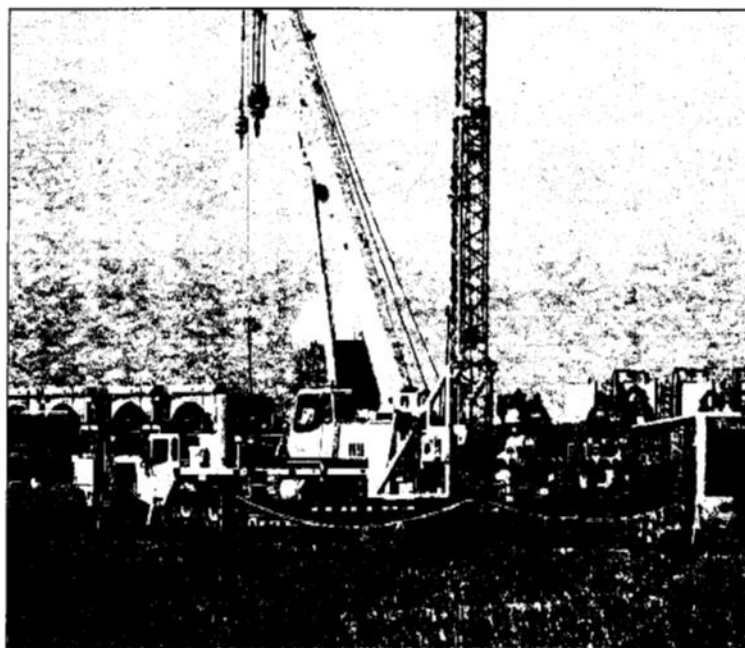


photo by JASON PRZYBYCIEL

Though equipment from several gas industry contractors remains on scene, hydraulic fracturing and other work have stopped around this well head on the Guindon K 706 pad.

for a period of time still to be determined.

"If you have any concerns or questions please contact the Shell Neighborhood Call Center at (570) 662-9415," said Sawyer.

According to public databases available online, DEP

permitted the first three horizontal wells at the Guindon K 706 pad in December 2011 and drilling began in January 2012. Shell started five other wells on other pads in Union County since then. DEP records show no violations at the Guindon K 706

pad, but DEP recorded three violations at the Cochran T 705 well pad, also on South Union Road. DEP alleged in May that Shell spilling fracturing fluid outside a containment area into a sedimentation basin at the Cochran T 705 pad.

(878)

Response: The Department acknowledges the comment.

3012. Comment: As an avid archery deer hunter, there is another matter of significant importance to me and, to the extent they soon become aware of it, to over 1 million PA deer hunters. Contamination of deer meat may be yet another issue (along with a growing list of other issues) related to the impacts of drilling for natural gas by hydraulic fracturing (or fracking) in the Marcellus shale. I say that this may be an issue because, according to the PA Game Commission, this issue (like many others regarding fracking) is not being studied or even monitored in Pennsylvania. Why should this be a concern for over 1 million PA hunters and their families? The process of fracking requires millions of gallons of water at each well site and up to 50% of that water comes back out of the well-hence the term "flowback". This flowback, held in open frack pits, contains large quantities of salt brine which as all hunters know attracts deer. Unfortunately, the brine also contains heavy metals (cadmium) and sometimes radioactive materials that come from deep within the earth. The brine likely contains other extremely toxic and carcinogenic chemicals but those are kept secret by the gas

industry thanks to legislation pushed through by the Bush/Cheney administration-the so called “Halliburton loophole”.

Deer store all of their fat before the mating and hunting season. The fat and possibly the liver store the carcinogens. How much of that gets into the meat is a concern to me. The salt that attracts the deer could come from several potential sources in areas where Marcellus drilling is occurring-spent and uncapped wells, frack ponds (which store frack flowback water in open pits for a year or more at the well site), contaminated streams, public water sources, spills, leaking trucks and pipes and even road runoff where brine is used to treat roads in the winter. Note that, incredibly, frack waste has been declared a “beneficial use” in PA.

Pennsylvania needs to thoroughly study this issue. If the gas industry, PA agencies, or our politicians say “There’s no problem here”, then they should be willing to prove it! What are they worried about-finding something wrong with our deer herd?

In closing, virtually all of the issues I’ve discussed can be mitigated or indeed eliminated by the use of currently available technologies and alternative operating procedures by drill companies. Closed loop systems, for example, should be used by all NG operators within PA. With the incredible amounts of money generated by NG operations (with most operations conducted by major multi-national oil and gas companies), the costs of such technologies and alternative operating procedures are fair and reasonable. Pennsylvanians deserve nothing less. (926)

Response: The Department welcomes all information provided from scientific studies appropriately conducted and peer reviewed through the scientific process; however, the Department does not have the resources to be able to conduct studies on its own of all topics that may be of concern.

3013. Comment: The proposed amendments do not provide appropriate protection to the environment or the health and welfare of citizens of Pennsylvania.

In Pennsylvania, we have new shale gas wells within 2 miles of at least 190 day care facilities, 223 schools, and 5 hospitals. Many new shale wells are immediately above or adjacent to well water and municipal water supplies for over two million citizens and many wells are on or adjacent to property with critical public food supplies such as dairy herds. These herds put us fourth in the nation in milk production and top in the number of farms. The DEP has much to protect including a tourism industry of \$33 billion and agribusiness of \$32 billion. Hunting licenses alone collect almost \$1 billion. All this depends on people trusting that our air, land and water are not contaminated or at risk for harm in the future.

The new technologies of shale oil and gas development have created health and environmental impacts scientists have just begun to document. A pattern of harm from normal operations and accidents is emerging. For example, the DEP has sent over 161 letters to residents indicating water sources were contaminated by operations at shale gas wells. In just 2 years, from 2008 to 2010, the DEP recorded thousands of violations of environmental regulations and 241 were at well sites within 2 miles of day care centers and 40 within 2 miles of schools. Many peer reviewed scientific publications and records from the EPA, PA DEP, and agencies from other states document substantial contamination from shale oil and gas development in just the last decade, often originating from surface operations. These wells and their waste will be part of PA decades after the oil and gas are gone. We must limit the damage with clearer, more pro-active regulations. Every recommendation I propose is possible and practical, and many are already in practice in other regions.

Peer-reviewed scientific reports of impacts from shale gas development under normal operations:

McKenzie 2010 Univ. Colorado - persons living within 1/2 mile of tracking operations have an increased risk of disease-- both cancers and non-cancers-- due to exposure to airborne toxic chemicals from normal operations.

Adgate 2010 - Colorado School Public Health - chronic health risks near drilled areas were greatest (in order of prevalence) for neurological disease, hematological disease, respiratory effects, and developmental effects.

Mead 2012 - PA Academy Of Natural Sciences.” As the density of well pads increased, the number of types of stream insects decreased,”

Hill 2012 - Cornell University - A 25 % increased prevalence of low birth weight and lower apgar scores occurred for babies of mothers who experienced their pregnancy near frack operations.

Currie 2014 - Princeton - Pennsylvania infants born within 2.5 kilometers of frack sites have higher incidence of low birth weight. The chances of a low apgar score doubled. (in Review)

Warner 2013 - Duke University study found methane 6 times higher and ethane 23 times higher if a home was within a kilometer of a gas well, probably through natural pathways underground.

Schug 2013 - University of Texas - Elevated concentrations of arsenic and selenium were in water closest to gas extraction sites.

Nagel 2013 - water samples from sites in a drilling dense region of Colorado exhibited more estrogenic, anti- estrogenic, or anti-androgenic activity than reference sites.

States - 2013 - Pittsburgh Water Authority - Industrial treatment facilities accepting oil and gas waste legally release bromides into source waters, raising drinking water contaminants above allowed limits.

Papers involving a mix of normal operations, poor management and/or accidents:

Osborn 2010 - Duke University - water wells within 1 mile of fracked gas wells had 17 times the methane as reference sites.

Bamberger 2012 - Cornell - farm animals .with neurological, reproductive, and acute gastrointestinal problems after being exposed to fracking chemicals

Vengosh 2013 - Duke University - brine from Marcellus shale containing bromide and radioactive radium was incompletely treated and contaminated a PA river upstream from drinking water intakes.

Peer-reviewed Scientific Reports on General Risks

The Texas Commission on Environmental Quality - 2010 - fracking fluids. Associated health problems included: 65% of the chemicals were associated with serious health effects, 94% with skin, eye, and respiratory harm, 93% with gastrointestinal problems, 87% with respiratory system damage, 83% with brain and neurological effects

Colburn - 2011 - The Endocrine Exchange - Of the 300 chemicals used on a fracking well site, fluid, over 60% can harm the brain and nervous system, 40% are endocrine disrupting, 1/3 are suspected carcinogens and 1/3 are developmental toxicants. (609, 938, 938a)

Response: The Department acknowledges the comment.

3014. Comment: The Southwest Pennsylvania Environmental Health Project (EHP) was established to respond to individuals' and communities' need for access to accurate, timely and trusted public health information and health services associated with natural gas extraction. Our office is located in Washington County, and we primarily serve community members in this area.

We have completed a thorough review of sections directly or indirectly related to public health impacts and concerns as noted in the Independent Regulatory Review Commission's Regulatory Analysis Form (ID# 7-484). As a result of that review, we note the following specific concerns:

Language in various sections appears directly contradictory to proposed regulations in other sections. From a layperson's perspective, there are apparently contradictory regulations which have implications for public health impacts, from both long-term and acute perspectives. An example of this is the statement on pg. 4 that "proposed regulations would prohibit the use of underground storage tanks because these storage structures are more susceptible to corrosion and are not able to be inspected by the department or the operator properly."

This apparently contradicts language in the "Containment" section on pages 6-7, which asserts that "the proposed rule which allows buried tanks be used if they are approved by DEP." One need only to remember the experience with Methyl Tertiary Butyl Ether (MTBE) leaking into groundwater in various locations in the U.S. in the 1990s as a primary example of why use of underground storage tanks has public health implications. Insofar as EHP recommends consistency in regulations that are fully health protective, both immediately and for long-term population health, we recommend deletion of the language under "Containment" on pages 6-7.

Residents have reported breathing difficulties and skin rashes occurring when such practices are used in close proximity to their houses; In particular, public health concerns are associated with the industry practice of burying on-site waste pits. The potential for toxic chemicals to leak from the burial sites into the ground water present potential problems for the health of current and future residents.

The primary concerns of the families we work with relate to how the entire fracking process - from exploration to fracking to condensing and shipment through pipelines - is impacting air, water, and soil. We know that if these exposure routes to humans are contaminated, then so is our health. Researchers who have examined the composition of fracking fluids and the mixtures that come back to the surface as flowback report cause for concern. Likewise, scientists who have measured air quality in close proximity to gas well pads have concluded that exposure risks are elevated. Some chemicals identified in air and water -- benzene, arsenic, and naturally-occurring radioactive materials - are known to cause cancer and other illnesses in humans if they are exposed to them in large enough doses over time.

Scientists don't yet have all the information necessary to definitively link worker and residents' exposures to chemicals to impacts on human health. However, we do know that Commonwealth residents living near some drilling sites are experiencing illnesses that they didn't have prior to the arrival of the shale gas industry in their communities.

We also know that health care providers in the region who are trying to diagnose and treat the rashes, gastrointestinal problems, muscle and joint aches, and other symptoms that patients present are sometimes at a loss to understand the underlying causes. Without comprehensive air, water, and soil data collected by the Pennsylvania Department of Environmental Protection (DEP), health care providers cannot take into consideration the impact of the drilling on patient health. If this information might help a health care provider offer a more accurate diagnosis or course of treatment, it must be provided.

Using federal or state regulatory action limits to police the industry has proven to be less than health protective in our opinion, and does not adequately account for acute or even chronic exposures from one-time or ongoing releases, spills, or accidents. If the DEP were instead to adopt a guiding philosophy of exposure monitoring and reduction, many of the probable and/or worst health impacts might be avoided or minimized.

The DEP has a mandate to monitor and regulate the gas extraction process. It has the skills and ability to collect information required by law, and beyond what any community-based organization can currently provide. But if the DEP does not step up to its responsibility, residents who believe their health is being compromised will find allies to pursue the scientific and political means necessary to protect themselves and their families.

Please keep speakers on topic tonight. At the Pa DEP's Smith Compressor Station hearing in Burgettstown last year, the night was filled with rhetoric and hoopla that had no relation to the topic at hand.

Move the DEP into the 21st century by creating all documents in PDF format and posting them online. Convert archived paper documents into PDF's to save us all time. Be more transparent and representative of the citizens of Pennsylvania instead of industry.

Require tracers to be used in all frac fluid so that water contamination sources can be easily and readily identified, saving extensive lab expenses and legal fees. Provide full water test results to concerned parties and the public.

Add provisions for controlling the clouds of deadly silica dust that seem to billow from every frac job. Worker safety is of the utmost concern here.

Do you remember Dunkard Creek with the decimation of over 20,000 fish and a unique mussel population? Regulations need to be added to prevent the further spread of Golden Algae and you need to better enforce random withdrawals from any stream.

Put an end to all drilling wastewater dumping into drinking water sources. Tell don't ask.

Air pollution knows no boundaries, crossing state and county lines from multiple sites. Aggregate air pollution sources when doing any further permitting.

Well site restoration reports must include often omitted acreage details, since our county tax office has had extreme difficulty removing Clean & Green classifications from many of these industrial well sites, some unchanged for as many as five years.

Regulate and enforce better placarding of tanker trucks for emergency responders and the public, far beyond the typical non-descriptive "Residual Waste" placard.

Ban the burying of ‘toxic teabags’ on well pads and require all drilling waste to be removed and properly disposed of.

Increase fines to more appropriately fit the crimes when they occur. This will work as a great deterrent as well. (901, 939)

Response: The Department acknowledges the comment. The revisions to Chapters 78 and 78a are consistent with the Pennsylvania Constitution and applicable statutes and provide reasonable protections for public health and safety and the environment. The rulemaking addresses the many specific issues presented in the comment. Please see responses to comments related to transparency, waste management, protection of water supplies and well site restoration.

3015. Comment: In order to: 1) minimize the risks of damages incurred from unconventional gas and oil operations; and 2) require restitution for any mishaps be made by only those parties benefiting directly from the activity’s profits, it is proposed that both parties to the lease agreements, lessee and lessor, be held accountable for resulting problems and remediation expenses, on a proportional basis’.

Currently, only the operators are held responsible for any damages while lessors continue to be treated as mere sideline spectators with no accountability for what happens. In support of making this second party responsible for sharing in these expenses, we should recognize they are the ones:

- A) Benefiting financially from the operations;
- B) enabling the operations to occur in the first place along with selecting the operator;
- C) in a position to set the contract terms for how best practices are to be implemented; and
- D) In the best position to monitor operations and report any problems or, as an alternative, permit others access to their property to do the same.

Just as established law holds certain other parties, e.g. business partners, employers, landlords, and homeowners, liable for the actions of those they have dealings with, the same principle can be put to good use here. For instance, since lessees would want to minimize their exposure to the potential risks and losses from shale gas activities, they would have a strong incentive to be more cautious and conscientious about addressing items B, C, and D shown above.

Whatever amendments the EQB recommends to DEP for improving the safety of shale gas and oil development, they will be made more effective with the active support and cooperation of those property owners. (955)

Response: The property owner’s estate is subservient to the mineral owner’s estate. The property owner has very little say in selecting an operator, control of practices to be implemented and for safety reasons is prohibited from entering the drilling site.

3016. Comment: I am the wife of an independent oil producer in Venango County, Pa. My husband and I have been in the oil business since 1976. We also got married the same year we started in business and the first year was very difficult. My husband has worked very hard for a lot of years and pushed on because his love of the oil business. Looking back I don’t know how we ever did it. He has put in 12-14 hour days and worked 6-7 days a week all of his working life.

My comments today originated from a letter I wrote nearly a year ago to the D.E.P. to the acting Secretary Abruzzo.

I was prompted to write that letter because of the frustration I was feeling at the time in regards to what seemed like a difficult relationship between the shallow oil producing community and the agency charged with regulating it. My comments this evening contain a lot of the thoughts and emotions I was feeling that day.

There is not one day that goes by that my husband and his fellow oil producers have something to deal with when it comes to the D.E.P. If it's not one thing it's another - the rules change daily depending on who comes out to the leases. These guys work so hard - 12-14- hours a day and now they have a job on the side - trying to comply to the D.E.P. regulations. My husband is on the phone at least two - three times a day trying to deal with these problems. If it's not phone calls it is meetings. These guys are no spring chickens either - I can see a lot of them aging rapidly over all of this. I can only imagine what this is doing to their health. My husband is so down right now I feel so bad. His love of the oil business has become tainted with regulations that have become out of control.

We are trying to comply with the regulations. For example, we have made an application with the Department for a small lease sized on-site disposal facility to process our production water. The application for the first part general permit was filed on June 24, 2013. It's been 159 days and we have heard no reply regarding this matter. These small treatment systems will not be the complete answer for all small producers but they might be a practical solution for some operators. The department needs to expedite the permitting process for these systems. Provisions in the proposed Chapter 78 regulations concerning the reporting of small accidental discharges of crude oil or production water are onerous and unnecessary.

We were in Hawaii (as a 35th wedding anniversary gift from our children) two years ago and as we looked down into the water surrounding the Arizona memorial we saw old fuel oil bubbling to the surface with fish swimming in it (they weren't dead!.) Oil creek in Venango County got its name because of naturally occurring crude oil floating on the waters. By the way - how much salt does Penn Dot discharge into Pennsylvania waters each year either directly or indirectly? As far as soil erosion controls and road construction goes there seems to be two standards between the oil and gas industry and everyone else. Why for example are many logging locations left with no seed and mulch restoration when the operations are completed? It seems as though our small independent industry and way of life are being singled out for extinction.

I hope this letter does not cause increased scrutiny and enforcement of my husband's operations. It's just that I can no longer standby and observe what is going on without raising my voice in opposition!! (991)

Response: The Department acknowledges the comment. To address the differences between conventional and unconventional well operations, the Department divided this rulemaking into two chapters, Chapter 78 for conventional operations and Chapter 78a for unconventional operations.

3017. Comment: I am a Buffalo Township resident. I am a lease holder with Range Resources.

2013 was a very wonderful year three terms emerged within our culture to show how the integrity of our society has advanced so upward....."Selfie", "Twerking" and "Responsible Drilling" all gained light-speed momentum throughout last year. However, one of these terms concerns me a bit as being somewhat more of a concern to our society than the other two terms.

I am talking about “Responsible Drilling”.

Webster’s Dictionary defines the term “responsible” as “liable to be called on to answer.” This raises three questions.

- a. What liability do the gas companies hold to answer? (What is their responsibility?)
- b. What liability does our DEP hold to answer? (What is their responsibility?)
- c. What liability do legislatures hold to answer? (What is their responsibility?)

So let’s look at the first question. What liability do the gas companies hold to answer? What are they actually responsible for? We residents are not naive - we are uneducated. We understand completely that the gas companies are liable...to satisfy their investors and stock holders through increased profit margins. That is it, nothing more; nothing less. This will not be found in their company mission statement, but we as residents know their number #1 goal is to make money. Let’s face it, if they could quadruple their profits tomorrow by selling knick knacks in, let’s say, Omaha, the industry would move out tonight. They came to Pennsylvania to make money and to keep their stock prices solvent. This is Capitalism folk, we understand their goal. This is free market.

The second question. What liability does the DEP hold to answer? The DEP “Works to reduce air pollution, makes sure our drinking water is safe, and makes sure waste is handled responsible” among other things. Their intent and liability then should be very different than that of the gas companies. They should be our watchdog.

And the third question. What liability do the legislatures hold to answer? Now this one is a bit more difficult to answer because you must first find out what the people, the residents, want these are the people who elected the legislatures ...to be our voice and represent our position. So this ultimately comes down to the people.

SO as one of those people...as a voter ...as a resident, I am here to tell you what it is that I want.

I want our elected officials to understand that a healthy balance needs to exist. One where all are held accountable. A balance where the landowner receives his or her fair share in payment and in royalties’ without being taken advantage of by the gas company. A balance where our environment, our air quality, our water supply, this beautiful Earth is being treated with the very same focus & attention....as toping last year’s gas production records receive.

We all have grandchildren or know people who have grandchildren. We owe it to these children and to generations & generations down the road to be good and responsible caretakers of this planet. I have heard from so many who agree that our elected officials need to help ensure this ‘ healthy balance’ while ensuring that our watchdog, the DEP, is working creatively & very hard to officiate and oversee these operations without getting too close.

So it does frustrate and it does upset us...the people... when we hear contradictions to this balance...when we hear companies preach that their tracking recipes are “safe to the environment” but then hear that they wish not to disclose the specifics of their cocktails because they need to “protect their interests”. And then we pick up the papers and read where drinking water was shut off to over 300,000 people living in Charlestown, West Virginia. Were they once told these chemicals for that particular industry were “safe for the environment”?

Ethane migration into water tables, well casing compromise, risky open impoundment settings, waste water injections & Earth quake activities, land spreading, road spreading, suspected radioactive drill cuttings, swift laws affecting our endangered species ...these are all buzzwords we hear that cause us great concern.

Look, we all understand that every single industry possesses some negative effect.

Renewable energy windmills that have killed birds, emissions from steel mills of yesteryear, some coal mine runoff. It happens.

I want this industry to thrive for all of us. I want the land owner to receive his well-deserved royalty. I want companies to reach profit levels while employing the Pennsylvania worker ...while employing Pennsylvania Veteran who fought hard for our Freedoms. I believe we all want to see a healthy balance where these negative effects are held to an absolute minimum.

So I conclude by asking ...Do we need to slow down this train a bit? Do we need to have long term studies completed on air quality & water quality at these sites and at our residents?

As a resident I beg lawmakers, gas companies, and our DEP alike to please sit down in a very mature fashion & respectfully and open-mindedly find this healthy balance. And if personalities make this sit down impossible then new people need to sit at the table. Personalities cannot get in the way here folks. We the people demand it and our grandchildren deserve it...for this to be done successfully ...for us to achieve that healthy balance. (1001)

Response: The Department acknowledges the comment.

3018. Comment: I am writing this letter to ask you to make environment safer for our community. Please do not use toxic chemical agents, follow SOP with caution. (1010)

Response: The Department acknowledges the comment.

3019. Comment: The Pennsylvania landscape is a magnificent resource of irreplaceable value, recognized in the designation of such regions as the Pennsylvania Wilds, the Endless Mountains and the Allegheny National Forest. Residents are proud of the rural character, glistening waterways, and forests that blanket the rolling mountains. Visitors explore the continuous woodlands, navigate and fish the trout-rich waters, hunt in private forests and game lands, and hike the historic trails to see the many natural wonders of the commonwealth. Just as the air, water, and soil are protected for our physical health, the wilderness character, scenic views, rich habitat and pristine ridgelines need protection for water and wildlife resources, for protection of the landscape that fuels property values and the economic well-being of tourism—as well as the spiritual and recreational enjoyment of visitors and residents.

Scenic viewsheds, overlook areas, roadways, and ridgelines in areas affected by development, particularly those associated with the Marcellus shale industry, need protection. These include areas where well pads, accessory and storage areas, access and maintenance roads, pipeline and utility right-of-ways, and wind turbines may be placed. These areas are important to the overall character of the region and to the tourism industry that is a large part of the areas' local economies. They are closely associated with watershed headwaters and are critical elements of wildlife habitat. Ridgeline-disrupting development should not be allowed to occur in the viewsheds of scenic overlook areas, important natural, cultural, and historical amenities, and scenic roadways, or on the ridgelines of the endless rolling mountains of the Allegheny and Appalachian ranges. Well pads, pipeline and utility right-of-ways, wind turbines and roads should be sited either completely out of view, such as on the other side of a mountain, or designed and situated to minimize or eliminate visual impacts.

We request the inclusion of a ruling that would allow for the regulation of development and land-

use change within important scenic vistas, on ridgelines and steep slope (15% and greater) and in the viewsheds of important natural, cultural, and historical amenities. A ridgeline is “a visually prominent, relatively narrow strip or crest of land, which includes the highest points of elevation within a watershed, that separates one drainage basin from another”. A viewshed is the area of land visible from a single point, typically locations such as private homes, scenic overlooks, and scenic highways. Examples below were drawn from rural Sullivan County, PA, and include the Canyon Vista Overlook viewshed at Worlds End State Park near Forksville; views of the Loyalsock Trail, a near-60 mile scenic hiking trail in Lycoming and Sullivan counties, and the High Knob and Wright’s View overlooks. Protection in the form of regulations prohibiting development in these areas.

This protection can be accomplished by implementing statewide regulations that have already been modeled in other parts of the nation. While often focused on protection of scenic resources, the ridgelines and steep slopes constituting viewsheds are also critical areas for control of surface flow of storm water as well as protection of key migratory and refuge habitat. The Indiana Department of Transportation (INDOT) guidelines for scenic viewshed protection (*Protecting Natural Resources: Scenic Viewshed Protection*) represent examples suitable for adoption in Pennsylvania. The Napa Valley, CA, *Viewshed Protection Ordinance* and its supplementary *Viewshed Protection Manual* provide comprehensive guides to what could or should be included in landscape protection.

Supporting Figures:



Unregulated Well Pad location adjacent to the Loyalsock Trail (Marked in Red)



Ridgelines prominent in the view from Canyon Vista at Worlds End State Park

Photo Credit Casey Kreider



Wright's View
2.3 sq mi visible



Canyon Vista
1.9 sq mi visible



High Knob Vista
9.3 sq mi visible⁵



(1016)

Response: The Department acknowledges the comment; please also see the responses to comments on the Department's consideration of public resources in Sections 78.15 and 78a.15. The management of viewsheds is beyond the scope of this rulemaking, and is more appropriately regulated as a land use by local governments.

3020. Comment: The very nature of your stated purpose in requesting these comments and for amending these regulations recognizes that gas extraction is a practice with successes and failures and these failures can affect the health and safety of our citizens and detrimentally affect the environment.

From your bulletin requesting comments your goals are –

- “Ensure the protection of public health, safety, and the environment
- “Protect public resources to minimize impacts from oil and gas drilling.
- “Modernize the regulatory program to recognize advances in extraction technology.
- “Specify the acceptable containment practices to prevent spills and releases..

We, the Board of the E.L Rose Conservancy, believe that the proposed changes just scratch the surface of what needs to be added to Act 13 to address your goals as stated above. Further, because we have a special standing as owners and stewards of a conservation easement protected property in an Exceptional Value Watershed in Susquehanna County, we will use this Exceptional Value designation as background and as a reference point for our comments. Please see the attached maps showing the EV area as a whole and another showing the E. L. Rose High Point Preserve (HPP) that covers 168 acres with 2100 feet of frontage on Silver Lake, all within the Silver Creek Exceptional Value Area)

Our points will be-

1. Present a short summary of DEP and other source data that shows that even with best practices, gas extraction has predictable rate of surface and subsurface spills, contaminations and other environmental impacts.
2. Reference existing Chapter 93 requirements that protect High Quality and Exceptional Value watersheds and suggest that your proposed changes to Act 13 Chapter 78 should recognize these requirements within the law and ban and/or severely limit gas extraction activity in these special environmentally sensitive areas.
3. If we are to attain your stated goals we must have all the data available so laws and regulations are made based on science and not emotion or profit; therefore we believe Act 13 should include provisions that ban gag orders that keep contamination data out of the public domain.
4. As the science and data on spills and adverse events associated with gas extraction is collected we believe that the risk of contamination can be actuarially quantified and that all Pennsylvanians should be protected by 3rd party or state sponsored insurance so that if they are impacted by gas extraction environmental damage, they are not left to their own devices to take on multinational corporations.
5. Well head metering – with billions already produced and billions more to come out of the ground, all Pennsylvanian’s deserve regulatory accountability on the quantity of our natural resources being extracted from under our feet. “Trust but Verify” as famous past President once said - it’s a basic practice that must be implemented.

What do we know to be the contamination rate associated with gas extraction in Pa. from 2005 to present? – (all data unless otherwise noted is from MarcellusGas.Org which is a web site that compiles DEP published information into a searchable database. Both industry and environmental groups use this site for unbiased data)

1. As of January 2014 there are there are 7982 permitted wells in PA with listed start dates and 7751 show at least one inspection.

2. 231 show no inspections.
3. 1613 wells or 20.2% show cited violations
4. Not searching for all violations but instead selecting for violation codes that reference spills or contamination or violations of clean water regulations (see attached file “violations state”) there are 5894 violations cited by PADEP. Careful reading of the inspector’s notes associated with some of these violations show they are anything from a few gallons spilled off a truck to thousands of gallons of contaminants lost into streams, even explosions and bubbling annuli.
5. Some of these notes specify fracking fluid spill and contamination which is especially deadly to mayfly species.
6. The Associated Press in a story written by Kevin Begos on January 5, 2014 states that Pennsylvania has confirmed at least 106 water-well contamination cases since 2005 out of more than 5000 new wells. He also states statistics showing similar water-well contaminations in at least 4 other states. In Pa. this represents a 2.12% rate of water well contamination per 5000 wells using the number stated in the story as the baseline. It represents a 1.3% rate of water well contamination if we use 7982 as the number of started wells as of January 2014.
7. What makes this percentage murky is that it is unknown how many gag orders are in place between land owners and gas companies as requirements for the land owner to receive compensation for environmental damage to their well or land. This practice makes the finding data on the true level of water well or private surface water contamination incomplete.
8. There is no single place where long and short term surface water and aquifer contamination data is being placed and made into easy access for the public to access. In Begos’ article he points out that Texas has a much better system of identifying and cataloging complaints, inspections and results so a usable data base is generated. Nothing like it exists in Pa.
9. From a story from Tom Wilbur Friday, November 22, 2013

Cabot buys second polluted residential property in Dimock 12-acre parcel on Carter Road flanked by faulty gas wells

Cabot Oil & Gas has closed a deal for a second residential property affected by chronic methane pollution in the heart of its prolific gas operations in Susquehanna County, Pennsylvania.

The Texas-based company paid Michael Ely \$140,000 for the 12-acre property that includes a doublewide modular home, according to records filed in Susquehanna County Courthouse Wednesday. The property – now vacant – borders the intersection of the south end of Carter Road with State Route 3023 in Dimock Township.

The state Department of Environmental Protection has identified at least two malfunctioning gas wells operated by Cabot bordering the property, including the Gesford 3 well, several hundred yards to the north off Carter Road, and the Costello 1 well, just to the south off Route 3023. The agency has forbidden Cabot to drill more wells in a nine-square mile area around the intersection until the company resolves problems with these and other shale gas wells that – according to the DEP inspectors – are causing methane pollution. (It should be noted these deals were accompanied by gag orders so the results of tests done by the individuals or the gas companies are not available to be added to the public data base)

10. Even the gas industry seems to agree that not everything is under their control and sometimes the nature of the process and geologic formations will contribute to violations. We agree that gas extraction is not a perfect process without complications and unintended consequences

and that is our point. Things will happen as part of the process no matter how well done. See the attachment “Williams response to 4-18-11...” for the complete letter

... but in this paragraph, we found it especially interesting that the gas company invoked “acts of god” and “unexpected and atypical conditions” as the reason of for the run off violation and we are sure they acted in good faith and as quickly as possible to correct the problem... but the point is over the 30 year life of a well there will be more atypical weather and unanticipated geologic, weather and man-made issues.

Exceptional Value Areas – Can evaluation of the present data and law allow DEP to issue permits for gas extraction activities in Exception Value Areas when we know there will be problems?



This is the cover of the “Water Quality Antidegradation Implementation Guidance” manual DEP is to use when reviewing permits that may impact water quality and the environment. It is specifically aimed at HQ and EV waters.

The manual says - The basic concept of antidegradation is to promote the maintenance and protection of existing water quality for High Quality (HQ) and Exceptional Value (EV) waters, and protection of existing uses for all surface waters because it recognizes that existing water quality and uses have inherent value worthy of protection and preservation. As a required element of a state’s water quality standards, the Antidegradation Program introduces levels of protection for deserving waterbodies above the basic standards.

The law says – in **Exceptional Value Waters (EV)**

DEP is supposed to be conducting an antidegradation analysis as part of its review of well permit applications in HQ and EV watersheds. See, e.g. the settlement in Damascus Citizens for

Sustainability, Inc. et al. v. Commonwealth of Pennsylvania, Department of Environmental Protection and Newfield Appalachia, LLC, EHB Doc. No. 2010-102-M, notice available at <http://www.pabulletin.com/secure/data/vol42/42-19/838.html>

The law and the manual also say – (Bold, red, and underline are my emphasis)

Exceptional Value Waters - This highest level of protection requires that “*water quality ... be maintained and protected.*” To be compatible with the federal regulation, Pennsylvania’s EV waters classification includes “Outstanding National Resource Waters.” In addition, outstanding state, regional, and local waters are also protected at this level. Thus, the Pennsylvania antidegradation regulation provides multiple routes for these waters to qualify for EV protection. At this highest level, no lowering of water quality is allowed. For point sources, only discharges that produce a nondegrading effluent can be allowed in EV waters.

In other areas of the manual it says

For EV waters and HQ waters where SEJ has not been demonstrated, protection of existing use is accomplished through maintenance of existing water quality.

“*Existing use protection.*” This section of the regulation contains important elements regarding how DEP will act when, upon evaluation of data, it determines that a waterbody is attaining or has attained an existing use.

For all surface waters, the existing uses of the water must be protected when an activity, which may affect a surface water and which requires a DEP permit or approval, is proposed. Existing use protection also includes the protection of threatened and endangered species.

It is our position therefore that the points made in the “What do we know..” section of our comments show, without a doubt, that even with best practices and intentions, gas extraction has an inherent and quantifiable history of surface spills, surface and aquifer contamination and wells that become unviable. Also it doesn’t take much to contaminate the highly sensitive environment of Exceptional Value waters as recent studies show the discharge of even the smallest amount of fracking fluid can be deadly to a population of mayflies which, in the Silver Creek Exceptional Value watershed, are a foundation food source for the biosphere present there. (below is a summary statement from a study on the effects of fracking water on mayflies that supports the statement above – the study is 42 pages long and available upon request) ...results of two acute toxicity test reports prepared in 2012 by the American Aquatic Testing, Inc. for the Delaware River Basin Commission. These reports show that exposure to produced water in concentrations near 1% will significantly affect mayflies in the short term. In the long term (over the course of a 20-30 day mayfly life cycle), it’s even lower: less than 0.25%.

- Half the mayflies across all three species died after 20-30 day exposures to concentrations of less than 0.5% produced water.
- Among the mayflies that survived to reach the adult stage, development time slowed, indicating they were stressed.
- Reproduction rate was significantly reduced in two of three species and somewhat reduced in the third, mostly because mortality increased and development time slowed.
- The water flea was less sensitive than mayflies to produced water, but the fathead minnow was more sensitive than mayflies.
- The produced water was more toxic to mayflies in soft waters (Dyberry Creek) than in moderately hard waters (White Clay Creek).

Taking this point one step further, the laws regarding Exceptional Value waters clearly state that “At this highest level, no lowering of water quality is allowed.”

Therefore it seems impossible to us that DEP should be allowed to permit an activity to proceed in an EV area when that activity has a documented rate of contamination, however small, when all regulations, as well as the spirit of the law say it must ...” promote the maintenance and protection of existing water quality for High Quality (HQ) and Exceptional Value (EV) waters, and protection of existing uses for all surface waters because it recognizes that existing water quality and uses have inherent value worthy of protection and preservation”

We do recognize the SEJ Chapter in the antidegradation manual and its original purpose to be used in consideration of the placement of sewage treatment plants. (Social and Economic Justification for allowing an activity that lowers the existing standards in a HQ waters)

EV waters represent less than 4% of the waters in Pa. and they do not represent a large area of exclusion or economic loss to gas industry interests. While a sewage treatment plant has to be sited to serve an in place population, there is no urgent or economic need to extract gas from under every square inch of Pa. since as stated by the gas industry itself, we are sitting on a lifetime of natural gas. Your new proposed regulations are important to protect all of Pennsylvania and recognize the need to continue to work the rules to reduce the known risks associated with gas extraction. Exceptional Value Waters are a special part of our heritage and deserve the highest protection. The law does not allow for risk or percentages of contamination when it comes to Exceptional Value waters and therefore they should not be exposed to any industrial practices that have documented rates of spills and contamination. These waters are irreplaceable, and there is no social or economic reason to expose them to gas extraction which could change them for generations to come.

Ban gag orders that remove the data on environmental contaminations of any kind from the public domain.

To evaluate the real impact of gas extraction in Pennsylvania we must have accurate and complete data. We understand that it is common practice for participants in legal actions to sign gag orders in order to get compensation paid and avoid legal action in the courts, but in the case of environmental cases that affect all of us, the data/science surrounding the case must stay in the public domain. If this practice is not changed we can't really evaluate the impact an action has on our environment or the benefit a change in best practices or laws as you propose is really having on our communities. Look at the data we presented earlier on water-well contaminations...consider that complete knowledge on the frequency of that devastating occurrence is not really known due to gag orders.

Cradle-to-Grave Financial Responsibility and Third Party Insurance:

As the data presented shows, and even industry will admit, gas extraction comes with risks. Accidents will happen.

Just as drivers are required to have insurance because driving is a risky endeavor where you could injure yourself or your neighbor, so too should every well developer. If natural gas extraction using hydraulic fracturing is as safe as the industry claims, then the premiums should be as insignificant as the risk potential it represents. Yet while the public as individuals and as communities are now being forced to absorb these risks; not all share in the profits where they would be made whole in the case of a contamination.

Requiring accurate and complete data, with no gag orders hiding incidents will illuminate the real risks as will complete, frequent and thorough DEP inspections. Having the complete picture will allow actuaries to calculate what the premiums should be to insure individual landowners and communities against those risks.

As an example and just using the lowest risk data we started with at the beginning, if the real water-well contamination rate is 1.3% that may seem very manageable unless of course you are in the 1.3% and your water supply is lost along with the value of your home. Also consider that 1.3% of the 100,000 – 300,000 wells proposed for Pennsylvania would mean 1300 to 3900 wells would cause water-well contamination as gas extraction expands over the years.

With the amount of resources below our feet we shouldn't be playing Russian roulette with our residents' financial and physical well-being, forcing them to fend for themselves against multinational corporations. We all share at different levels in the economic benefits of gas extraction and we should all be insured against the known risks as well.

Therefore, every application for a well should be accompanied by a third party insurance policy or premium paid into a state insurance fund in an amount sufficient to restore the environment and compensate both the State and every citizen directly harmed by any event associated with the drilling and fracking of the well and the disposal of its byproducts. We require bonding and insurance for all types of industrial activities, gas extraction should be no different.

Metered Wellheads: Consider that there has been over 6.6 billion Mcf of natural gas self-reported to have been produced at the well head to date in PA using the DEP data compiled by Marcellus Gas. Org. At a well head price of \$3.35 per Mcf that is over 22 billion dollars and at residential prices of \$16.15 per Mcf over 107 billion dollars at the retail endpoint.

How can this be an unconfirmed self-reporting number when it is a State resources?

There can be no reliable regulation, royalty compensation, or taxation without state controlled meters on every wellhead. Just as we have meters for natural gas that we use in our homes we deserve the same information from the gas industry. This finite domestic resource should be measured by government calibrated metering as a way to assure clarity and accuracy for those citizens receiving royalties, those communities receiving impact dollars and the state who should start charging an extraction tax. (1201)

Response: The Department acknowledges the comment.

3021. Comment: I am President of the Edward L. Rose Conservancy, a land trust doing business in Pennsylvania and New York. I am writing in support of the response made by Anthony Palombaro, co-chair of our Conservation Committee. His comments are correct and scientifically accurate and the Conservancy supports them without reserve. Thank you very much. (1029)

Response: The Department acknowledges the comment.

3022. Comment: I am an attorney with the Law Offices of Greco and Lander in Clarion, Pennsylvania. I have practiced law in Pennsylvania for over 36 years, specializing in natural resources law, representing individuals and companies in the areas of oil and gas, coal, timber, land and farming. I have participated in the comments filed with the Board by one or more of the Pennsylvania oil and gas associations. The comments that have been filed with the board are a good analysis of the technical, economic and legal defects in the proposed regulations and the reasons why they should not be adopted as binding on the industry. I ask that this Board give the comments due consideration.

There is no merit in repeating what has already been said by the oil and gas associations, therefore, I will not do so. The bottom line to all of the comments that have been filed is So What?

Why does it matter?

- Why does it matter if the proposed regulations expand the PNDI database to include “special concern” species, plant communities or geological features that have never been designated or listed under any federal or state rule making process?
- Why does it matter that the proposed regulations do not define criteria for determining if a proposed well, well site, or access road poses a “probable harmful impact to a public resource”?
- Why does it matter that the proposed regulations do not define the area of review, both horizontally and vertically for orphaned and abandoned wells that may be impacted by a hydraulic fracturing, and use open-ended obligations or technological determinations of risk assessment of subsurface features?
- Why does it matter that the proposed regulations require an operator to restore or replace a water supply affected by drilling operations to the standards established under the Pennsylvania Safe Drinking Water Act even though the water source did not meet the standard before drilling was conducted?

It matters because:

- The vague and undefined standards in the proposed regulations will lead to inconsistent and contradictory outcomes based on the proclivity of the permit reviewer, inspector or other enforcement official.

One of my coal clients who sought to permit a coal mine was delayed for 8 years in the permitting process because of the vague and uncertain standards that gave the reviewer the ability to require repeated tests, studies and to impose onerous permit conditions.

In another situation, I had a client whose permit of a coal mine was denied because the permit reviewer, in applying vague and undefined standards, determined that there would be significant environmental harm result from mining the coal reserve. A year later, my client’s competitor picked up the leases and was issued a permit by another reviewer within 2 years. When the coal was mined, the adverse conditions predicted by the first reviewer did not occur. Vague and ambiguous standards, such as many in the proposed regulations, give wide latitude to permit reviewers, inspectors and other enforcement officials to pursue personal vendettas and enforce anti-business philosophies.

- We are a nation governed by the rule of law, not by executive fiat.
- Proposed regulations such as the replacement of water supplies to the Pennsylvania Safe Drinking Water Act standards in some cases will be impossible and in most cases prohibitively expensive. It is also unjust and unfair to impose upon the oil and gas industry the burden and expense of addressing water contamination unrelated to oil and gas operations.

A study by Penn State in 2009 entitled “Drinking Water Quality in Rural Pennsylvania and the Effect of Management Practices” reported that up to 50% of private water systems fail at least one safe drinking water standard.

- The expense of replacing tanks, dikes and other procedures required for replacement equipment will be uneconomical or burdensome for older wells and may lead to the

- economic peril for some operators.
- The proposed regulations will have a high cost to the industry and will result in a loss of good paying jobs and economic development.

Companies are making profits and can afford to implement higher environmental standards.

- Oil and gas operators are not making high profits. The price of natural gas has dropped from \$15 per mcf to \$3 per mcf with a temporary spike during this cold winter.
- The Wall Street Journal and trade journals have published numerous articles on the losses and write down of the shale assets of the major oil companies.
- Leasing bonuses, royalties and damage payment have fallen significantly with declining gas prices.
- The major oil and gas operators in Pennsylvania are also operating in Ohio and other shale plays. As a result of Pennsylvania's burdensome regulation, increased risk and uncertainty, many have shifted exploration funding from Pennsylvania to Ohio and other shale plays. Implementation of the proposed regulations will accelerate the flight from Pennsylvania.
- As a result of current regulation, Pennsylvania is suffering not only a decline in economic development, but also layoffs and loss of jobs.

Who profits from a robust oil and gas industry?

- Consumers - through lower heating bills and lower gasoline prices.
- Workers - through increased high-paying jobs.
- Industry - through lower energy costs and raw materials.
- Governments - through high taxes, user fees and lower social support payments.
- The American people - when we establish energy independence we will not be sending our sons and daughters to remote places in the world, sacrificing our blood and treasure to protect our energy supply.
- When my daughters graduated from the university with master's degrees, they moved out of Pennsylvania to find a job.
- When I go to church, I see many empty seats.
- When I go to a school board meeting, I am reminded of empty classrooms.
- When I meet as a director of the Clarion University Foundation, I am reminded of a 10% drop in enrollment and the pending threat of further declines because parents and students cannot afford the cost of education.
- When I read that the drafters of the proposed regulations conclude that adoption of the proposed regulations will increase jobs through increased tourism, I am reminded of those who will lose a high-paying job and good benefits working in the oil and gas industry that may be forced to take a seasonal job at minimum wage in a trinket shop.

Conclusion:

If the proposed regulations are adapted, it is not only the oil and gas industry that will suffer, but consumers will suffer by paying higher energy prices, workers will suffer with the loss of good-paying jobs; business and industry will suffer by paying higher prices for energy and feed stocks making them less competitive; and government will suffer by receiving less tax revenue and burdened with higher social support payments. I ask that you assure that the full economic impact of the proposed rule is properly analyzed and that the final regulations fully comply with the Regulatory Review Act. (911)

Response: The costs used to evaluate the economic impacts of the rulemaking were provided by the industry and they provide a fair estimate of the costs resulting from the changes to the

regulations. For many years, the true cost of production was unequally shared by the industry and the environment; the rulemaking ensures that the true cost of production is borne by the industry not the environment.

3023. Comment: We recommend that the DEP create well pad spacing regulation. There needs to be an overview of the development in a planning module that only DEP can play that role. If we are to ensure the integrity and flavor of our watersheds and our rural areas, the Commonwealth needs to be guiding the development rather than being driven by it. (1035)

Response: It is beyond the scope of this regulation to address well pad spacing in the form of a planning module. The Department believes that so long as the regulations are followed, placement of well pads will not pose risk to the environment.

3024. Comment: I'm a victim of the oil business. We fracked a well two weeks ago and it took a week for my skin to grow back. Then when I finally got back on my feet, I went to my drilling rig and the drill cuttings made my hair fall out. Some of its coming back. We've got two different groups here. I don't need BOPS in my wells. There is no pressure on them.

I don't frack with millions of gallons of water. I frack with thousands of gallons, 10,000 on average. I need help here and you've got to help us. You're doing a good job. I have a nine-month-old daughter. And her mother cares for her and loves her, just as much as I do. And I won't do anything to put her in danger. (1038)

Response: The revisions to Chapters 78 and 78a provide appropriate protections for public health and safety and the environment.

3025. Comment: Shell commends the Department of Environmental Protection's (DEP) effort to work with a broad stakeholder group to address many of the issues related to chapter 78 and we look forward to future dialog. (1049)

Response: The Department acknowledges the comment.

3026. Comment: Municipal authorities and its citizens know the environmental impacts of oil and gas drilling in their community and want to keep standards to protect their right to clean air, pure water and preservation of material, scenic, historic and aesthetic values of Moraine State park area. We are to be good steward of these resources and maintain them as a public trust. Act 13 denies local communities and citizens this right. Since PA's main industry is agriculture, this is unacceptable. Please understand our rights to protect and defend the Moraine State park area and its natural resources. We don't want Franklin Townships dotted with industrial eyesores for the next 20-30 years. If this short term "gains" continue the future of our way of life is jeopardized for the long term.



Cratty property
160 Election House Rd.
Butler PA 16001
Franklin Twp.



Cratty property
160 Election House Rd.
Butler PA 16001
Franklin Twp.

(1050)

Response: The Department believes that there are sufficient environmental protection measures in the regulations to protect the public resources that the commentator is concerned about. The revisions to Chapters 78 and 78a are consistent with the constitution and applicable statutes and provide appropriate protections for public health and safety.

3027. Comment: The proposed rulemaking also provides a framework for Compliance Assistance that states that *"the Department has worked extensively with representatives from the regulated community and leaders from several industry organizations"* in developing the proposed amendments. Were independent experts and researchers external to industry sources also included to assess potential environmental and ecological impacts? In addition, since many of the potential impacts may have significant public health consequences, were medical and health professionals invited to provide input to assess human health impacts that may dictate a more robust regulatory response? Given the degree of uncertainty that many scientific and public health experts have expressed regarding potential adverse impacts of this extraction technology the use of a primary compliance assistance strategy seems inadequate. Taking the Pre-Cautionary Principle approach, because potential impacts remain to be fully defined, suggests that a comprehensive enforcement strategy for industry and a suspecting public is warranted in the final regulations. Though not as popular an approach recently with regulatory agencies, enforcement is a basic tool that has historically yielded improved public health and environmental safeguards to protect our air and water quality. (1063)

Response: The rulemaking provides stronger environmental controls to protect the environment and limit ecological impacts. These strengthened requirements should improve public health and safety and protect the environment.

3028. Comment: In my case, I have land that is polluted with oil and oil production leftovers. These leftovers include steel and wooden oil storage tanks with oil and fluids in them, oil pipelines, oil jacks, and abandoned oil wells, some with jacks present, some with the jacks removed and open casings. The owner/operator of the oil production has since died, with only token citations served against the him for his total disregard of production rules and regulations. Our situation has been going on for 25 years, our first report to then Department of Environmental Regulations of Pennsylvania was in 1989. No action was taken against Jerry Brenan of Norris Oil Company to clean up the way he produced with no regards to the environment, now 25 years later I have a parcel of land that has the above mentioned mess.

An order was issued by PADEP to the estate for plugging and restoration of our land to the tune of 19 wells in May of 2013. PADEP later negotiated that number down to 7 wells, of which the estate hired a contractor to plug. Of the 7 wells on the order, PADEP had the estate plug one well that was not on my land, and not on the order. That well was not leaking. I have several wells on my land that

are leaking that were passed over for the one that was not.

I would like to say I am happy 6 wells on my land have been or are going to be plugged; there has been no mention of getting the infrastructure of tanks, jacks and pipelines removed, nor has there been any definite plans for the rest of the wells left abandoned and leaking to be addressed. The other BIG issue is the remediation or removal of contaminated soil, the contamination has spread far and wide from the well heads, and has made it's way to Knapp Creek, a direct tributary of the Allegany River.

Please visit the following links to see photos of our property, yard and also information on our experience while we try to attain justice: http://www.cardcreek.com/Other/Duke-Center-Wells/28890531_sxPNqz#!i=245649975&k=sQSFwXC

Spreadsheet with well location info, photo and map links:

<https://docs.google.com/spreadsheet/cc?key=0AgV75wo6lhJPdE92VTE4a1daeU51NEkzUGpFTDh6ekE&usp=sharing>

<https://www.facebook.com/pages/Duke-Center-PA-Historic-Wells/148967731950176>,

<http://saveourstreamspa.blogspot.com/2013/12/life-on-wrong-side-of-oil-field-tracks.html>.

Any regulatory changes to be addressed should require the operator to BE responsible for the plugging and cleanup of production facilities/sites to restore the environment to an uncontaminated state, clean of any oil production infrastructure and residual contamination. Please surprise me with changes that will benefit the environment and the landowner, not the oilman or company pillaging, plundering, cashing in and bolting.

I look forward to hearing from the Environmental Quality Board, please feel free to contact me.
(1067)

Response: To the extent that the commentator suggests that the final-form rulemaking address plugging, restoration and remediation of spills and releases, this final-form rulemaking contains updated requirements for well site restoration, containment and remediation of releases and spills. The existing regulations contain plugging requirements. Plugging requirements are outside the scope of this rulemaking, but will be addressed in future rulemakings.

To the extent that the commentator has issues related to an enforcement matter, the commentator should contact the applicable District Oil and Gas office.

3029. Comment: All gas drilling activities in PA should be required to comply with U.S. Resource Recovery and Conservation Act standards (regulating hazardous materials). Permanent 24-hour air monitors should be required at all multiple-compressor stations, with real-time readings accessible online 24/7 to the public. (1086)

Response: Establishing a requirement to require all gas drilling activities to comply with the hazardous waste provisions of the Resource Conservation and Recovery Act (RCRA) is beyond the scope of this rulemaking. Under the federal regulations, drilling fluids, produced waters and other wastes associated with the exploration, development or production of crude oil or natural gas are excluded from the definition of hazardous waste. 40 CFR 261.4(b)(5). This exclusion was incorporated by reference into the Pennsylvania hazardous waste regulations. 25

Pa. Code §§ 260a.1(a) and 261a.4. Establishing state RCRA requirements relating to crude oil or natural gas exploration, development or production would necessitate amendments to the hazardous waste regulations set forth in 25 Pa. Code Chapters 260a – 270a.

3030. Comment: Tonight, I'd like to put an old guy's perspective on the Marcellus Shale Water Quality Issue here in PA.

As we travel down Memory Lane in the next 3 or 4 minutes, please keep in mind the old adage, "Names and faces keep changing, but the stories are always the same." Those of us who were around in March 1979 probably recall Jack Herbein, Vice-President for Power Generation for Metropolitan Edison/GPU holding a news conference at Three Mile Island, telling us the situation was under control, when at that very moment, uncontrolled radioactive releases were occurring. Remember the Exxon Valdez? Instead of complying with remedial sanctions to clean up the environmental disaster they caused, Exxon/Mobil spent the next twenty years in court attempting to mitigate or eliminate the extent of the fines and penalties imposed.

And the warm and fuzzy BP "Commitment to the Gulf" ads aired constantly over the past year ...guess what? Their legal team commenced the same kind of legal campaign that Exxon/Mobil employed in their attempts to get the financial sanctions necessary to clean up their mess reduced or eliminated.

We know that next to agricultural runoff, acid mine drainage is the greatest contributor to water pollution in the Commonwealth; and most of the culprits are mining operations shut down more than 50 years ago.

We know that Governor Tom Corbett has received \$1.8 million in campaign contributions from gas companies. And we know that Halliburton, Cabot, and other drillers have amassed over 4,000 violations over the past four years.

We know there are roughly 200,000 abandoned oil wells statewide, mostly unmapped, dating from the discovery of oil in PA in 1859.

We also know that 10% of Marcellus Shale drill holes leak methane when they are first drilled, and that number grows to about 50% after 10 years. We know that 30-40% of the water injected into the earth as part of the tracking process stays within the earth. We do NOT know where that toxic waste will end up, especially if an earthquake or a change in the rock strata occurs, possibly causing water way pollution, or else remaining underground—never again to be part of the water cycle; either way, the indigenous water supply we all need for survival is depleted.

We know that a gag order is imposed when fracking companies enter into settlements with aggrieved citizens whose wells have been polluted, so the rest of us can't access information that would identify risks to which we may unknowingly be exposed.

So tonight I ask you this fundamental question. Do you believe the fracking companies are any different than GPU, or Exxon/Mobil, or BP, or the mine owners who've been gone for 100 years? Does their commitment to their shareholders take a back seat to public health concerns? I think not, especially when key political leaders are in their back pocket.

I believe fracking will create a major environmental disaster within the next decade. I say that because even if frackers go by the book 99% of the time, the fact that we're knowingly polluting the earth's crust will eventually catch up with us. What PA needs is a "disaster fund", regularly

replenished by tracker earnings, so the drillers pay for the damage they cause, not the Commonwealth's taxpayers.

Perilous Pathways: How Abandoned Wells Can Contribute To Methane Migration Problems

PERILOUS PATHWAYS

The Danger of Drilling Near Abandoned Wells

Part 1: Why abandoned wells are a problem

Infographic: How abandoned wells can contribute to methane migration

Part 2: How many wells dot Pennsylvania, and why aren't we plugging more of them?

Map: Known abandoned wells in Pennsylvania

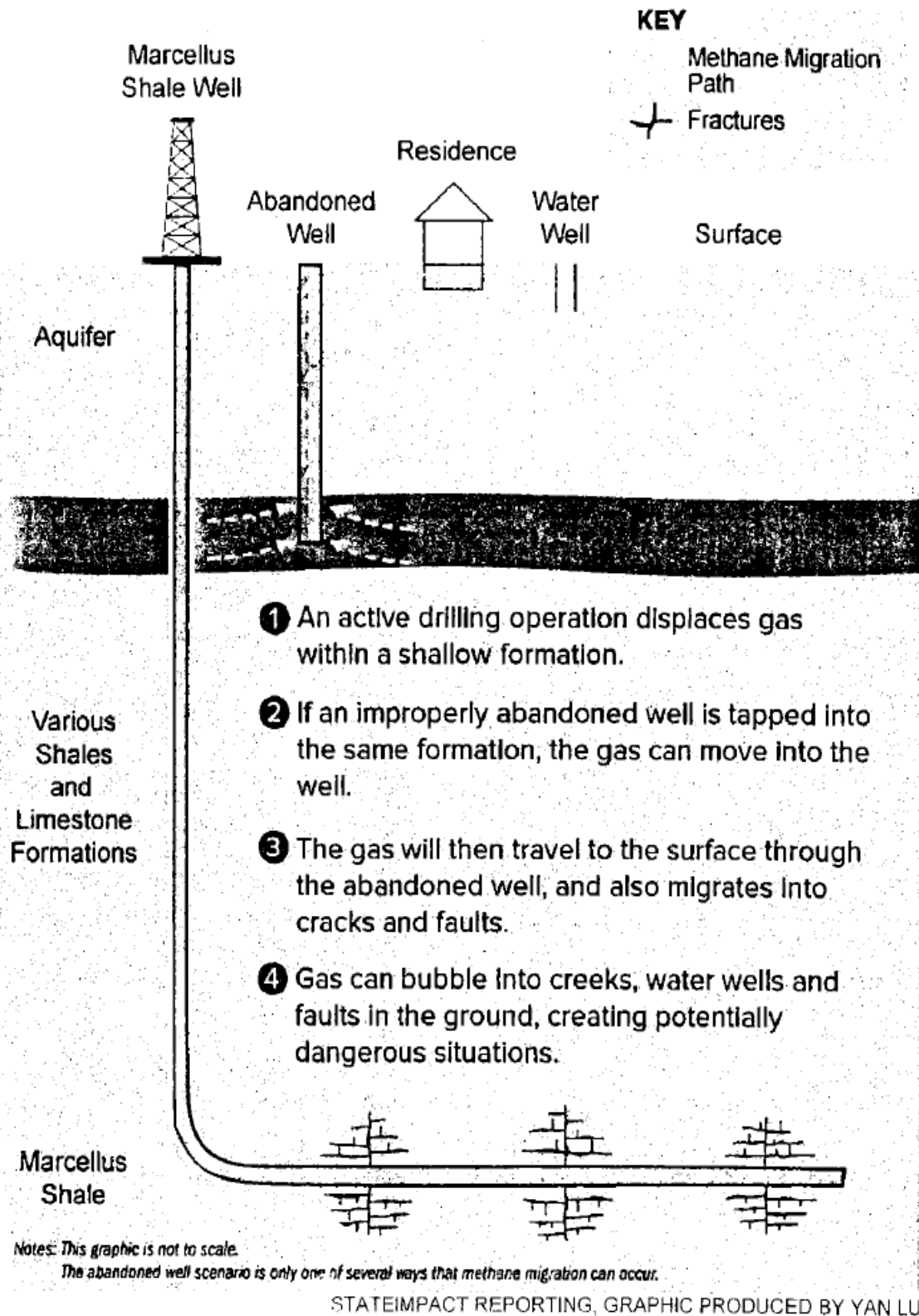
Part 3: How to track down an abandoned well

Part 4: States don't do much to regulate drilling near abandoned wells

Methane is a flammable, odorless gas that exists within underground shale formations. Because of the porous, intertwined rock formations that many parts of Pennsylvania sit on top of, the gas can naturally seep to the surface. Methane can be dangerous when it migrates into water wells or basements.

Orphaned and abandoned oil and gas wells create a natural pathway for methane to migrate from. The process can be accelerated when an active well is drilled into the same formation the abandoned well is tapped into. This occurrence — called “communication” — is extremely rare, but it can create major problems at the surface. A 30-foot geyser of gas and water that burst through the ground in Tioga County in June was likely caused by Marcellus Shale drilling near an abandoned well.

This graphic shows how methane gas can make its way from deep underground into a basement, water well or the ground.



(1088)

Response: It is beyond the scope of this rulemaking for the Department to develop a program where funds received from penalty assessments can be used for clean-up of pollution caused by

oil and gas activities.

3031. Comment: As you know, the General Assembly’s passage of Act 13 modernized our environmental protections with respect to newer, “unconventional” drilling operations used in the Marcellus and other shale plays. As a result, many provisions relating to our older, conventional well operations were left largely unchanged. Unfortunately, proposed updates to the 25 Pa Code Chapter 78 Oil and Gas Well regulations to implement many of the Act’s provisions have become the source of particular concerns within the House Republican Caucus due to the difficulties they present to the industry and to conventional operators in particular.

For example, while Pennsylvania has proudly protected endangered species, proposals related to “species of special concern” stray from the intent of Act 13 and this undefined list of species will likely generate uncertainty with regard to permit applicants’ obligations. Similarly, the proposal to identify abandoned wells, although critically important, seems to be without a specific scope or limitation on our operators’ obligations under this rule.

Concerns have also focused on the department’s assessment of the costs of compliance and resulting impacts on small businesses. Our oil and gas industry, and especially our small conventional operators, will face significant impacts from these proposed regulations as provisions related to the use of impoundments and pits, underground storage tanks, abandoned wells, and permit conditions related to species of special concern will result in a certain competitive disadvantage for those operating here, and in many cases these hardships will far outweigh any perceived benefits. The likely resulting hardships do not seem to have been afforded proper consideration per Our Regulatory Review Act.

Moreover, these proposed changes deviate from the very spirit of Act 13 to exempt conventional operations. Members of the Caucus have heard from numerous residents, workers, small business owners, and others who depend upon our conventional industry about this regulatory language and the effects it will have. In fact, our conventional industry differs so significantly that its operators warrant their own set of regulations specific to them, and the difficulties with these revisions further demonstrates this need.

Finally, the recent Pennsylvania Supreme Court decision in *Robinson Township, (et al). v. Commonwealth of Pennsylvania (et al)*, invalidated the Environmental Quality Board’s authority to promulgate new regulations pursuant to Section 3215(c) or 3215(e). And, as remaining portions of the law have been remanded back to the Commonwealth Court, the timeline for these regulations is problematic at best.

Accordingly, we greatly appreciate the opportunity to comment on the proposed 25 Pa Code Chapter 78 revisions and respectfully ask that you consider these observations as well as others who have voiced similar concerns throughout the public hearing and comment period. Should you need anything further from us on this matter, please do not hesitate to contact us. (1060, 1095, Rep Miller Letter)

Response: The Department appreciates these observations. However, the Department believes that the regulatory package being developed under Act 13 is consistent with the intent of the General Assembly. The Department also believes that it has fulfilled its obligations under the Regulatory Review Act in the promulgation of these regulations. Furthermore, the Department believes that its regulations are consistent with the *Robinson Township* decision. See response to comment 265.

3032. Comment: Clarifications regarding notification and inclusions of cited sections and acts are most helpful to encourage compliance both in the gas storage section (78.87), general provisions (78.91)(78.101), annual monitoring (78.103), and revocation of inactive status (78.105).

To make the document more user-friendly, include the complete text of cited documents for reader understanding – not just reference them.

For the benefit of taxpaying citizens: increase all fees and bonding to cover real and anticipated costs to avoid passing on expenses to Pennsylvanians of today and the future; and establish a super fund to cover unforeseen consequences. All such regulations should include provisions for a periodic, 5-year review and updating so they can keep pace with technological advances and codify more advanced “best” practices. “Beneficial” uses should not be authorized without objective, peer-reviewed scientific studies to determine long-term impact.

Finally, consider the needs of conventional drillers while recognizing the potential for such wells to morph into sites for unconventional natural gas extraction processes (1098)

Response: Providing the complete text of all cited documents would create a regulation document that would be exceeding large and fragmented resulting in a very user-unfriendly document. Fee and bond amounts are established by the 2012 Oil and Gas Act and the Fiscal Code. Although the Environmental Quality Board has authority to amend these requirements through regulation, such changes are beyond the scope of this rulemaking. Regarding consideration of conventional industry needs, see response to comment 2627.

3033. Comment: In support of the mission of the D.E.P. and the intentions of the EQB, may I offer the following petition: Adopt a regulation or amend existing regulation(s), whichever is appropriate, distinguishing products (lubricants and chemicals) that are free of regulated substances and are environmentally-safe from those which are or contain regulated substances. Included in the new or amended regulation should be reduction or relief from civil penalties for spills or discharges of such environmentally-safe products, with the following conditions:

- Spills or discharges must be promptly reported.
- The substance has been correctly identified.
- The substance meets or exceeds standards of biodegradability and aquatic toxicity as defined by the state. (Note: there are industry standard tests for this purpose; the new Vessel General Permit (VGP) issued by U.S. EPA requiring Environmentally Acceptable Lubricants (EAL’s) does exactly that.)
- Biodegradability and toxicity of the reported substance must be certified through independent laboratory testing.
- The amount of the discharge or spill must not exceed limits established by D.E.P. (Most spills and discharges of oilfield lubricants and chemicals are a few gallons or less. Spills of hundreds or thousands of gallons would not meet these conditions.)

The burden of proof remains with the generator of the spill. If any of the above conditions are not met, the incident will be dealt with according to existing regulations.

This would provide certainty to the regulated community and would encourage them to use environmentally-safe products instead of those which are environmentally-harmful. To the best of my knowledge, there is presently no rule or language within PA Code addressing this subject.

In closing, I wish to thank the EQB and PA D.E.P. for the measure of environmental protection you have accomplished to date, and I also wish to acknowledge the time and hard work you have put into the present proposed new regulations and performance standards. However, I must urge the Environmental Quality Board to reject this rulemaking as proposed. Unless the proposal is substantially revised based on full consideration of the costs and benefits, it will likely cause harm to the prosperity of our communities, and will cause harm to the people who will lose their jobs. To the extent that portions of this rulemaking are mandated by state law, the EQB should insist that DEP propose revisions only to fulfill those obligations, with simple rules written in plain language. (854a)

Response: The Department acknowledges the comment. The rulemaking addresses the commentator's concern by stipulating reporting requirements, chemical substance identification, safety through Material Safety Data Sheet requirements and spill limits. The regulations provide a balance between costs/benefits and protection of public health and safety and the environment.

3034. Comment: Health should be put above profit. Remember we live in a closed system. The pollution we make isn't going anywhere. It'll be here to harm generation after generation. (1108)

Response: The Department acknowledges this comment.

3035. Comment: I just happened to read in this week's Guardian Weekly from the United Kingdom, an article by Suzanne Goldenberg. The cover article title says, meet the frackers. And inside it's fracking hell, what it's like to live next to a shale gas well. Nausea, headaches and nosebleeds, invasive chemical spill, constant noise. Welcome to Ponder, Texas, where drilling has overtaken the town. Could Britain be facing the same dire fate? It ends with comments by Caroline Lucas, whose a Green Party Member of Parliament.

Quickly, just half a dozen comment based on what I've heard tonight. This handout I could dismiss it right away because I read under written comments and verbal comments that below that it's dated August 27, 2013 and then you say proposed regulations can be commented on for 60 days this fall. I mean it's outdated already, that you handed out tonight. It needs to be updated.

I sympathize with Mr. Fink. The lighting here is so poor. That may be why you stumbled over your reading of the statement from your paper when you began tonight. It was hard to follow you, sir. It's hard for me to see what I'm reading. So I urge improvements in the process and the facilities.

What's the overall impact of these proposed regs on state greenhouse gas emissions that cause climate change?

How do the regs encourage attainment of the Commonwealth's Renewable Energy Portfolio Standard? Where is the Commonwealth on Renewable Energy ---? And finally, we need a toll-free number for the public to call, not an area code 717 numbers that requires us to pay out of pocket. (1175)

Response: The Department acknowledges the comment. Regarding the telephone number, the commentator should refer to the Department's website to view the toll-free number they may dial for any emergency that should warrant Department attention.

3036. Comment: Many aspects of this unconventional gas industry are not addressed by these regulations. These include: the amount of fresh water they're using; truck and diesel traffic on our roads; health and safety conditions of the workers; lack of training of local emergency workers;

compressor stations and containment tanks and noise. (1003)

Response: Regarding noise, see response to comment 2913.

The revisions to Chapters 78 and 78a provide flexibility for recycling/reusing of fluids to minimize fresh water use. The Department encourages the recycling and reuse of mine influenced water, production water and other low quality water in well development to conserve fresh water. When used in conjunction with well development pipelines, centralized impoundments can actually reduce the amount of truck traffic necessary to stimulate an unconventional well.

3037. Comment: Methane gas intrusion is one of my biggest objections as 1 in 30 of these casings will leak and the ones that don't are subject to normal ground shifting that can occur over time. Cement plugging the outside of the well casing is not a solution that I believe is trustworthy in preventing methane seepage on a well that once drilled is there to stay whether its production capacity has been spent or not. Shallow Gas& Oil wells that were drilled years ago still exist and many that have been left unplugged and abandoned. (158a)

Response: Sections 78.52a and 78a.52a of the regulation address the need for operators to identify and assess the condition of abandoned wells requiring monitoring during hydraulic fracturing activities. These sections of the regulation are specifically designed to prevent legacy issues from resulting in water supply impacts during present-day development.

The Department currently uses allotted funds in its Plugging Program to permanently plug and abandon as many wells as possible each year. All known abandoned wells are assigned a rank based on potential to result in environmental impacts and this ranking is used to prioritize state-funded plugging projects. Plugging projects executed by both the industry and the agency must employ materials that are subject to both regulatory requirements and other material specifications.

The Department believes the requirements of Chapter 78 and the provisions of Act 13 of 2012 establish an appropriate framework for identifying and mitigating stray gas migration incidents in situations when wells leak and affect waters of the commonwealth.

3038. Comment: The Environment is far more important than royalties. (430)

Response: The Department acknowledges the comment.

3039. Comment: The public hearing held in Warren on 12 February 2014 was clearly to facilitate the direct involvement of the oil and gas operators and their political allies, namely State Rep. Kathy Rapp, State Rep Martin Causer, State Senator Scott Hutchison and Former U.S. Rep. John E. Peterson. Representative Rapp's testimony at the hearing clearly shows that that the aforementioned politicians who spoke at the hearing were clearly concerned only with the oil and gas exploration operators and not environmental/public health issues and that the subsequent state supreme court decisions that ruled parts of Act 13 un-constitutional and thus forced the DEP/EQB to review regulatory changes leading to this hearing placed Rep. Rapp, Rep. Causer and Sen. Hutchinson into the uncomfortable position of having to testify before their oil and gas operator friends that they never intended this regulation to happen, even though they all voted for it. All of the speaking politicians at this EQB hearing clearly want it to be known that the oil and gas operators can do no wrong in their eyes. (1168)

Response: The Department acknowledges the comment.

- 3040.** Comment: Why am I so concerned about environmental risks of gas drilling? Because Pennsylvania has great natural resources, which sadly got spoiled by extractive industries in the 19th and 20th centuries (timber, coal, and gas), and which have been making a slow comeback since about 1960. But more recently, that progress has been replaced by a reckless gold rush mentality facilitated by Corbett and the DEP as they have become too cozy with the fossil fuel industries. This shift of priorities from restoration and conservation to hasty extraction is causing Pennsylvania to again spoil our land, air, and water yet again. This endangers our future and makes Pennsylvania less attractive as a place to live. On top of that, we have the problem of global warming, and the folly of investing heavily in continued fossil fuel industries, particularly considering that gas extraction causes more overall global warming than coal extraction (see note above about methane potency). (156)

Response: The Department acknowledges the comment.

- 3041.** Comment: A topic not discussed that requires DEP involvement is "Pipeline Stream Crossing". The gas pipe line crossing arguments in Chester County at the Brandywine Creek were totally wrong, really wrong. The gas pipeline company wanted to dig a trench across the creek, however the uninformed environmentalist insisted the trench would affect the environment and the quality of water entering Downingtown Water Treatment Plant. And finally affecting the Brewery from making quality beer. The Gas Company gave in and agreed to drill under the Creek at a cost at about \$1,000,000.00 additional. We as consumers pay extra for this.

No one analyzed what happens when we get a long, several days of heavy rain. All the small streams are cleaned and the creek becomes loaded with suspended solids and related high turbidity. I have treated clarifiers with 10 NTUS to as high as 400 NTUS, while meeting drinking water standards. This type of rainy weather took place several months ago, and the Brandywine Creek was dark brown in color. The turbidity should have been in the 300 NTUS -400 NTUS range. No complaints from the Water Plant or the Brewery. Digging a ditch across the Brandywine Creek, say ¼ to ½ way across the creek, per day, would definitely not upset the water quality. I would estimate the clarity would be less than 100 NTUS-200 NTUS about 200 FT from the ditch. This a far, far, less than found during heavy rains. Why did no one explain the facts about this waste of money to appease some people totally unfamiliar with the Creek Crossing Process?

I am an environmentalist with 50 years plus water treatment experience . I have contacted the DER and DEP 3 times regarding illegal dumping which resulted in clean up and fines.

I am concerned about the Oil and Gas Industries adopting latest technology methods and using the best Standards. We have to define them and inspect to ensure regulations, 100%. Most companies will comply with rules and laws, as long, as they are not constantly changing. Any shortcuts can and do cause pollution issues and accidents.

Many people are concerned about wells burning off gas. The flare stacks are made to serve as safety valves to prevent pressure build up and potential explosions. Flaring should be controlled to avoid long periods of potential atmosphere problems and waste of well products.

Who is responsible for proving the source and or cause of domestic well and stream contamination?

A mandate that all well drillers include a nontoxic fluoresce type dye in their millions of gallons of water used to drill a well would help pin down the source. A bright reddish colored water in my sink

would be easily traced to the specific well as the source. This would be a fast and less costly way to identify the source. I have worked in Philadelphia Refineries for 25 years and I am aware of safety concerns at all times. Proper designed systems with ongoing inspections will definitely improve well and gas line safety. Taking risks to control costs is probably the single most cause of accidents and pollution issues. (27)

Response: The Department has considered this comment and declines to make the suggested changes to this rulemaking. The revisions to Chapters 78 and 78a are comprehensive and enforceable, consistent with applicable statutes and provide appropriate protections for public health and safety and the environment.

- 3042.** Comment: This transcript is in reference to Subchapter B of Section 3211 Page 61, Item 17G/Posting. Requiring a drilling permit before construction of roads and well sites is not a reasonable approach to minimizing surface disturbance.

Choosing weather conditions that an operator engages in during ground disturbance is a more sound practice than pushing them into a one year window to construct, stabilize, and commencing to drill.

Allowing constructed roads and well sites to go through a freeze/thaw cycle before drilling allows the disturbed area to settle. This minimizes mud run off, rutting, and less surfacing materials.

The hurry up approach has never been an environmentally sound practice in the past. Why now? By allowing more time, it will allow us to choose the best weather conditions for stabilizing and construction resulting in less impact, naturally creating a better safeguard for the ground disturbance to occur. This is not rocket science, just common sense.

I strongly urge the board to reconsider this part of the regulation. (198)

Response: The Department acknowledges the comment. As the commenter notes, this requirement is established by the 2012 Oil and Gas Act and not the rulemaking. The Department notes that a two-year permit renewal has been added to sections 78.17 and 78a.17 to allow operators to retain operational flexibility regarding commencement and completion of drilling.

- 3043.** Comment: My name is John Silla and I live in Muncy Valley Pa. Clean earth LLC Williamsport has developed a technology which they claim can safely recycle the well drillings. I think as with any new technology, this should be considered and tested and if it performs according to expectations be permitted. Ultimately, it is the responsibility of PA DEP to regulate the O&G Industry and they possess the expertise and personnel to do this without prejudice or political motivations. (194)

Response: The Department acknowledges the comment; however it is beyond the scope of this rulemaking. The Department's Waste Management program reviews and approves any requests for beneficial reuse of drill cuttings.

- 3044.** Comment: 1. Issues relative to locations where there are no local ordinances to protect nearby residents in order that they may be comfortable within their homes.

Since it is not uncommon to have sites within hundreds of feet of homes it is important to provide

for a common sense approach to such situations that will create appropriate guidelines when there is no local planning or zoning in place. Our Northern Tier Region, primarily as a cultural aspect of our rural population does not have an abundance of zoning and planning in the communities where much of this development is occurring. Are the concerns and impacts of those whom live so very close any less important than their counterparts in zoned communities? We would say no. What we see is that generally, there is enough wide open space here in our Region that a good operator is more often than not able to site the edge of a well pad easily beyond 750 feet from the nearest occupied dwelling. With the advent of horizontal drilling, there is much flexibility whereby the operator may make better siting choices. Landowners generally have an opportunity to discuss the well site location with the operator when it is located within their property boundary and may advocate moving the well site location within parameters that are acceptable to the operator. Those that are often not included in this conversation are the nearby neighbors whom on occasion have the well site location sited closer to their home than the location landowner and at times may suffer tremendous and unnecessary impacts. Often such poor sitings may have been avoided. Operator's land men advised folks during the leasing period that these were temporary events. We've learned they are anything but temporary as they return again and again. These events can be described as nothing short of intermittent at best. We've also learned they are not temporary events as they do not occur for a two week interval at the maximum. Rather, they can very well last for several months as some operators now spud holes for anywhere between 3 and 9 or even 12 wells and move the rig on-site to just keep drilling and later fracturing. Consider for example, the Plushanski Well Pad located in Lemon Township, Wyoming County. There are 13 wells permitted for this location. Lemon Township lacks local planning, zoning and ordinances.

This is an example of when drilling multiple wells in succession may work well. There were no serious violations or spills, which only makes sense really. The more stationary an industrial location is, the better opportunity for effective controls. Also, it works well for the Department's inspectors having continual opportunity to inspect the same operation for compliance. This type of operation may work well when the neighbors are sufficiently in the distance and do not experienced intolerable, tremendous noise levels. The nearest neighbor at this location is roughly 650' while most are beyond 750' and even a 1,000' or more. The Department needs to consider cases where extended drilling and fracturing events occur such as this and the neighbors are within 750' of the well pad edge that may need noise abatement measures such as temporary, portable sound barriers or sound curtains. The neighbors need to be able to be comfortable within their homes when site activity continues beyond 30 continual day's duration. Due to local topography and other factors, it may not be necessary at every site for the operator to provide noise mitigation measures during drilling and fracturing. However, for those few neighbors that do need such protective measures, there needs to be a reasonable mechanism to provide them. This is the pathway to reaching the delicate balance where all may thrive.

We also want to be clear on this aspect. We certainly are not opposed to multi-well pads. In fact, we are encouraged to see a well site with a 13 well plan. More wells equate to less land disturbance and all issues that may relate to that. Where our concerns lie are noise, light, increasing air emissions and water quality issues in an area just a few years ago was primarily family living environs and not industrial resource extraction locations. Therefore, it is necessary to consider and implement mitigations in order for operations such as these to be Marcellus Shale success stories.

While successive drilling and fracturing saves operators considerable money through a one rig transport event, it is an undue hardship on those that live too close and have to endure tremendous and intolerable noise with industrial activity 24/7 for months and months on end. Certainly with the cost savings they reap in such an event, there is a reasonable opportunity to apply a portion of savings to the installation of temporary, portable sound barriers or sound curtains.

Small, rural municipalities fail to act and create local planning and zoning for a number of reasons. One, they have a small population and perhaps even a smaller number of their residents are affected by these situations. It is a matter of economics that they choose not to spend either tax dollars or impact fee revenue on creating such ordinances that may only benefit a small minority of residents. Secondly, they lack sufficient support staff to administer the necessary ordinances as they have been advised to not use impact fee monies to pay salaries and benefits. Third, they may lack enough interested residents to complete the complement of a municipal planning commission and zoning hearing board. In rural areas, it is not uncommon to have a lack of positions filled for basic municipal positions such township auditor, constable or committee person for example. Fourth, it is not uncommon for municipalities to be concerned about reprisals should they implement ordinances that the gas industry may challenge and further impact their township financial considerations with expenses related to litigation which they may ill afford. While it may be said that small municipalities may join together and create multi-municipal plans, due to rural culture again that is not always feasible as their neighboring municipality's residents may not be similarly impacted where they may be interested in forming a multi-muni plan alliance.

It is because of these situations, and the fact that all residents regardless whether they live in a zoned municipality or not, need to be availed of basic and reasonable mitigation measures that provide for them to be comfortable within their homes during well site drilling and fracturing activities while simultaneously assuring them of their safety. A family's worth and the value of their home must not be dictated by whether or not they live in a responsive zoned community. All families contribute to the social framework of our Commonwealth and need to be similarly regarded as having such value. It is also because of topography and personal preferences that we suggest that nearby residents have an option to sign a waiver and decline such mitigation measures. There is no need to require mitigation measures when clearly they are not needed. Not all residents may be equally affected by noise or lighting due to seasonal variations, tree buffers, elevation as compared to the site location, having young children, school age children, chronically ill or infirmed family members in the home. Unreasonable, intolerable noise levels for example in such situations may be extremely hard to bear. Care of an infant with such noise, children needing to do homework and be well rested for the next day of school, adults needing to have a good night sleep for the next day of work or those suffering from chronic and infirmed health issues need to have the benefit of mitigation measures. Others may not have such an experience or need, and they may very well, and rightly so, choose to sign a waiver for mitigation measures. Had the gas industry made good choices in sitings in regards to proximity to homes, it would not be necessary to deal with this situation. The sad fact is they have not in some cases chosen to site well pads and other facilities in a responsible manner or voluntarily utilize available mitigation technologies. When they fail to operate in such a manner, they have effectively chosen to be regulated to do so. That is where local planning and zoning are appropriate. The Commonwealth needs to recognize the short falls to local planning and zoning and step in where that local planning is nonexistent in order to aid those residents living nearby well sites and facilities. When there is no available entity available to assist those with impacts from neighboring properties where they had or have no avenue available to them it is only reasonable that the Commonwealth provide reasonable and adequate measures to assist. (660a)

Response: The Department acknowledges the comment. Regarding noise, see response to comment 2913. The Department does have authority to address public nuisances under Section 1917-A of the Administrator Code of 1929 and the public nuisance analysis is by its nature intensely fact and site-specific. The extent that high-intensity activity is occurring at a particular well site over a significant period of time would certainly factor into that analysis.

3045. Comment: Setbacks – We recommend that all setback distances related to occupied dwellings be

measured from either the edge of the well site or the limit of disturbance. Noise is not specifically contained at the wellbore; rather noise is generated at every location on the well site from the access road to the actual well site. It is more reasonable that all setbacks related to the noise issue are measured from the edge of the activity. We prefer a 750' setback from the edge of the well site to all occupied dwellings. This distance provides the operator with an opportunity to avoid noise abatement measures in many instances. This measure provides for further dispersion of VOCs and HAPs generated on the well site which is of benefit to the nearby residents. This distance also provides for a better safety buffer. With consideration to incidents such as that have occurred with ATGAS, POWERS, YARASAVAGE, MAZZARA and now LANCO, the Department is gathering further information concerning the effects beyond the well site towards what distances are affected in the case of an unexpected incident. While in contrast to the number of wells drilled these may not be considered frequent occurrences, they are nevertheless lessons learned in how close is too close to site dangerous industrial operations that may have blowouts, fires, explosions and large spills affecting nearby resident's public health and safety. The Department needs to continue to accumulate this data and create measures that will provide that safe distances are determined and residents will be safe. (660a)

Response: To the extent that the commentator suggests extending the setbacks, in Section 3215(a) the General Assembly established setbacks prohibiting the drilling of oil and gas wells within certain distances from buildings and drinking water wells. For a conventional well, this distance is 200 feet; for an unconventional well, this distance is 500 feet. Additionally, unconventional wells may not be drilled within 1000 feet of a public water supply. Any change to these provision should be a legislative change to the 2012 Oil and Gas Act.

- 3046.** Comment: Well Permits – The requirements in Act 13 § 3211. Well Permits. We recommend these be added to the rulemaking due to the uncertain present status of Act 13 of 2012 and the Commonwealth Court. Specifically, these provisions, including the documentation of water supplies within 1,000 feet of a conventional bore and 3,000 feet of an unconventional bore become part of the regulatory language herein. We also advocate for amending the conventional bore given recent consideration to conventional drillers commencing with the use of horizontal drilling within shallower formations. It is necessary for the provision to also include the requirement for mailing of the plats to landowners as specified in the Act, the various 24 hour notices, and all other requirements as specified in Act 13 § 3211. (660a)

Response: The Department disagrees that the validity of the setbacks for buildings and water supplies to wells in Section 3215(a) of the 2012 Oil and Gas Act is uncertain. On December 19, 2013, the Pennsylvania Supreme Court issued its opinion relating to the constitutionality of the 2012 Oil and Gas Act in *Robinson Twp. v. Commonwealth*, 83 A.3d 901 (Pa. 2013) (*Robinson Twp.*). The Pennsylvania Supreme Court's decision in *Robinson Twp.* invalidated Sections 3215(b)(4), 3215 (d), 3303 and 3304. Accordingly, the remaining provisions in 3215 remain valid, including Section 3215(a). Please also see response to comment 265. For that reason, the Department declines to make the suggested amendment to add the statutory setbacks in Section 3215(a) of the 2012 Oil and Gas Act to this rulemaking.

- 3047.** Comment: Conventional Horizontal Drilling - Penneco and other conventional drillers are exploring the use of horizontal drilling as a new method within the conventional oil and gas fields. Since this is a relatively new variation of conventional drilling, we caution the Department in regards to the manner in which the proposed rulemaking may be revised in relation to conventional drillers. We urge the Department to err on the side of more stringent not less in order to be adequately prepared for the manner in which horizontal drilling may affect environmental protection within shallower depths closer to our water resources. (660a)

Response: The Department acknowledges the comment. The Department will continue to monitor developments in the conventional industry and make appropriate changes to Chapter 78 or recommend changes to the Oil and Gas Act to the General Assembly to properly address those developments.

3048. Comment: I wonder if the government will ever learn about protecting earth? people?, animals?, plants?, etc?.... We all cannot live without water and you want to risk contamination of it???? (686)

Response: The Department acknowledges the comment.

3049. Comment: Please make protecting our water and air your #1 priority-- not money!!(708)

Response: The Department acknowledges the comment.

3050. Comment: Accidents, spills, and equipment failures occur even during routine operations and at properly permitted facilities. It is imperative that the agency responsible for protecting the environment be up to the complex and vital task of enforcing its own rules.

Yet the vast majority of active wells go uninspected. Operators violate the same rules at different locations. The rate of enforcement actions per violation has gone down in recent years. It is tragically clear that at current funding and staffing levels, DEP is not able to keep pace with the expansion of drilling and facilities.

The Board and the DEP have a lot of work ahead to develop and adopt strong regulations- you must also do whatever it takes to ensure the regulations are followed. Pennsylvania's citizens deserve no less. (853)

Response: The Department has developed a compliance and enforcement strategy to address issues with inspection frequency and compliance (Department Document No. 820-4000-001, *Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations*).

3051. Comment: Good evening. My name is John Peters. I am a resident of Ross Township in the North Hills area of Allegheny County. I have been a Pennsylvania resident since 1966. My wife Patty and I have three adult children. All were born, raised and reside in Allegheny County. We have a 6 year old grandson and 3 year old granddaughter, both born in and residing in the North Hills of Pittsburgh.

I am a sales representative for BioBlend Renewable Resources, a leading manufacturer of biodegradable lubricants for commercial and industrial use. BioBlend products are made with environmentally-safe vegetable oils and additives, contain no regulated substances and are no more toxic than cooking oils. The oil and natural gas industry is an important market for BioBlend, and we are supporters of exploration and production in Pennsylvania and throughout the USA. I am also a member of PIOGA, but I have not been asked by nor am I speaking on behalf of PIOGA or any of its other members.

I also support protecting our environment. I live here; my children and grandchildren live here. I believe protecting the environment is the right thing for all of us to do. I believe the oil and gas industry, and a healthy, environment can coexist.

My observation is that the oil and gas producers are working hard to comply with regulations, and

most take steps above and beyond state requirements in order to minimize environmental impact. Why? They and their wives and children and friends live here, too! Many have moved here from other states and brought their families. And they want to be good corporate citizens.

One example is rock drill lubricant which is used in drilling portions of the well bore. Traditional rock drill lubes are made from petroleum oil and chemical additives, some of which are potentially harmful. However, most producers drilling in Pennsylvania choose vegetable oil-type rock drill lubricant such as made by the company I work for. The state does not mandate this; rather the producers choose it to protect the groundwater ... an example of good corporate citizenship, wouldn't we all agree? There are other such examples.

There are more opportunities to replace potentially harmful products with biodegradable, non-toxic alternatives, but there is a significant obstacle: PA DEP does not formally recognize such products as different or less of an environmental hazard and no reduction of civil penalties is granted, at least not officially. I'll cite an example: A drilling contractor decided to switch a drill rig from petroleum oil-type hydraulic fluid to vegetable oil-type, biodegradable non-toxic hydraulic fluid. When they informed the DEP field representative of the change, they were told it doesn't make any difference. If you spill it, your fine will be the same.

These are two quite different substances: Petroleum hydraulic fluid meets the definition of "hazardous substance" as found in The Storage Tank and Spill Prevention Act (Act 32). Most of these contain zinc dialkyl dithiophosphate (ZDDP), which is a hazardous substance deemed toxic to fish. On the other hand, vegetable oil is not a hazardous substance, and vegetable oil based hydraulic fluid (at least those produced by BioBlend) contains no ZDDP or any other toxic substance. So I ask the following questions:

1. Which of these poses an environmental risk, the petroleum oil or vegetable oil product?
2. Then wouldn't it support the mission of PA DEP to encourage the use of biodegradable products, rather than discourage their use?

Why don't people simply switch to biodegradable products anyway? Because it requires making a change (we all resist change) and they are often priced higher. There are really two potential incentives: one, "doing the right thing" and two, "reducing my liability". The state has I believe unintentionally eliminated the second of these incentives.

For the benefit of the audience, I'll read the DEP Mission Statement as it appears on the website:

"The Department of Environmental Protection's mission is to protect Pennsylvania's air, land and water from pollution and to provide for the health and safety of its citizens through a cleaner environment. We will work as partners with individuals, organizations, governments and businesses to prevent pollution and restore our natural resources."

I am not advocating the state REQUIRE the use of biodegradable products, whether lubricants or any other product type. And to be sure, I am not seeking any special recognition of our brand or products. My request is for DEP to draft a rule classifying environmentally-safe substances along with reduction or relief from civil penalty in the event of their reported spills, leaks or discharges. To manage this I suggest the following conditions be met:

1. Reporting of the spill remains a requirement.
2. Proof that the spilled substance has been correctly identified.

3. The substance must meet standards of biodegradability and toxicity limits as defined by the state.
4. The biodegradability and toxicity of the substance must be certified through independent testing.
5. The amount of the spill must not exceed the state established limit.

This is a pragmatic opportunity for DEP to indeed partner with the oil and gas industry by enlivening the incentives to choose environmentally responsible products, and what better time to do so than right now while regulations are being revised?

Thank you for your attention and the opportunity to give testimony at this public hearing. (854)

Response: The Department acknowledges the comment and believes that the requirements contained in sections 78.66 and 78a.66, as well as the Act 2 and the implementing regulations in 25 Chapter 250, should be adequate to address the commenter's concerns.

- 3052.** Comment: As a private citizen, I have no specific numbers for DEP regulations to mention. I need to mention that as far as the local, families and farmers, the topography of Cumberland County is an unbelievably gorgeous. It sits between two mountain ranges. Therefore, if any accident were happen, it would go directly into the Susquehanna, and then in turn, directly into the Chesapeake.

My main topic is to make you aware of the current water usage of Cumberland County. I think the people would be really, really surprised to learn the amount of water that is taken in, or let's say used by the county currently. I'll say that shortly. number one, I must say that the average water drilling permit, though, for commercial use is 25 years. Did I vote for that? I don't think so.

Number two, gas already has left Utah and Wyoming. They're owned by large corporations, and this is the price of doing business. They go into corporations they go into cities, they go into towns, they go, they do their thing, they're gone. That's the price of doing business. They wreck things. The financial resource is based on speculation. Something like the price of gold and silver.

Now to bring it home. There's five million gallons of water used per well. Five million gallons per well. Now, if we can comprehend that a little bit here, just to take it home here, so you guys know. Hopewell Township, there's eight wells that produce right, now in Hopewell Township. This is private wells. This is just private, corporate wells. This is in Hopewell Township. They have just millions of gallons per day is what they use.

Hopewell Township, 0.05 for the Solid Waste Landfill. 0.145 million gallons per clay in Shippensburg Township. North Newton Township, 0.144 million gallons per day for their supply and irrigational systems. North Newton Township again, 1.292 million gallons per day. And again, 2.16 million gallons per day. The quarry outside there at Dickinson Township, 0.102 million gallons per day. South Middleton, 0.624. Are we starting to get the picture yet? North Middleton Township, golf course, .25 million. Another golf course there, we got .5 million gallons. Carlisle borough, a paving corporation, .05 million gallons. South Middleton Township, PPG, 0.35 million gallons. We have Carlisle Barracks Golf Course. They use 0.35 million gallons per day.

Now sometimes we have a little water shortage and we have to turn our taps off. Isn't that kind of strange? I think so. 1.45 in Middlesex Township. Then again, White Rock Acres, they use 0.37.

Once again, this is speculation. Somewhat like the price of gold and silver, like I said. And I'm listening to this gentleman here talk about crude oil and the testimony that's been made and brought

to my attention its use in plastics. And the people that just kind of skated over that plastic. In 1880s, the discovery of plastics promoted the beginning of carelessness. No one cared if things broke. Just replace it with another, some things need to be plastic, but unfortunately they're thickness and their middle can be adjusted to the consumer. In other words, plastic has become the downfall of Made in the USA. And we cannot afford to use water speculatively. It will become the most important resource in the world. And the PA economy is highly based on water for recreation and for other purpose. (881)

Response: The Department acknowledges the comment. The regulations do address the use of surface and ground water for hydraulic fracturing of unconventional wells in § 78a.69.

- 3053.** Comment: This industry has a 5-14% failure rate in the first year! Any other industry with a 5-14% failure rate in the first year would be out of business. A recent document uncovered by the ABC Dallas affiliate, shows that Range Resources completely failed to cement their drilling operation despite being required to do so by the industry's own standards. DEP should make the industry fix this. (1003)

Response: The Department has developed a compliance and enforcement strategy to address issues with inspection frequency and compliance (Department Document No. 820-4000-001, *Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations*).

- 3054.** Comment: The use of mine-influenced water (MIW) is an interesting concept that has some apparent environmental advantages. PADEP's White Paper (2013) outlines their rationale in great detail, but leaves several issues still to be determined. The DEP factsheet referenced below details that Acid Mine Drainage (AMD) is the primary cause of § 303(d) water quality impairments in the State. Therefore the use and storage of MIW might pose potential significant risks to State waters.

Two issues remain to be addressed regarding the storage of MIW in freshwater impoundments. Does the pumping of water from abandoned mine pools create a point source discharge requiring MIW to be treated to discharge standards mandated by the PA Clean Streams Law before storage is permitted? If so, is the State-offering operators extended liability via the Environmental Good Samaritan Act should the practice result in significant unforeseen environmental damage? We have seen the criticism of the federal Energy Policy Act of 2005 that offers the energy sector reduced liability with respect to many current environmental laws. This law has not been well received by the environmental community, because it suggests a policy of permissiveness when environmental risks are increased without regulatory controls in place. Does this proposal imply, if and when accidents occur, that PA taxpayers bear the burden of clean-up costs if AMD discharges contaminate Waters of the State? These proposed provisions with respect to MIW storage in freshwater impoundments clash with the core concept of "protection of public resources" that these amendments are promoting if loopholes are encouraged with at-risk practices. (1063)

Response: The section addresses well development impoundments standards only and does not speak to the taking of or liability for mine influenced water. This comment is beyond the scope of the rulemaking.

- 3055.** Comment: The audio equipment utilized at the public hearing on the regulations in Warren was of insufficient quality for such an important event. (1168)

Response: The Department acknowledges the comment; however this comment is beyond the scope of the rulemaking.

3056. Comment: 78.104 – We recommend this section be amended to limit the maximum term for an inactive well for a period of 5 years, without the opportunity for unlimited numbers of annual extensions. (BLM requires that no well be temporarily abandoned for more than 30 days without BLM approval, and then BLM grants only 12-month temporary abandonment approvals. 43 CFR § 3162.3-4(c). Alabama Rule 400-2-4-.14 limits temporary abandonment or well shut-in to one-year periods.) This limit will ensure that inactive wells that do not have a beneficial use after five years are properly plugged and abandoned to reduce environmental risk, while the operator is actively working in the well area and is solvent. If the EAB [sic] does not support a 5-year limit, it should explain why unlimited numbers of annual extensions are appropriate.

We also recommend that the PADEP's approval of inactive wells be made publically available on the PADEP website, with an explanation of why the PADEP granted the approval and a copy of the application.

We recommend that § 78.104 be revised as follows:

§ 78.104. Term of inactive status.

Approval of inactive status for a well is valid for 5 years unless revoked. After 5 years, the owner or operator shall plug or return to active status a well granted inactive status.

A copy of the Department's approval shall be made publically available on the Department website within 15 days of approval, with an explanation of why the Department granted the approval and a copy of the application. (1143)

Response: The revisions to the inactive status sections of Chapter 78 were intended only to update citations to the 2012 Oil and Gas Act. No additional substantive changes to inactive status regulations were proposed as part of the rulemaking, therefore this comment is beyond the scope of the rulemaking.

3057. Comment: Section 78.57(a)'s prohibition against using open top structures must be extended to transported fluids. (869, 869a)

Response: This comment is outside the scope of this rulemaking.

3058. Comment: Even with local zoning rights retained, the commenter applauds the use of conferences and panels as a means to allow surface landowners to object to well locations and/or misinformation within the application. Provisions for objectivity and accountability of decision makers should be delineated, monitored, and enforced with safety, health and economic impact to landowners given priority. [78.25] All time lines should be extended, given cause, to promote adequate consideration. [78.29-78.33] (855,1098)

Response: The Department acknowledges the comment; however, the revisions to the objection sections of Chapter 78 were intended only to update citations to the 2012 Oil and Gas Act. No additional substantive changes to the objections were part of the rulemaking, therefore this comment is beyond the scope of the rulemaking.

3059. Comment: 78.91 – We recommend that the general plugging provisions at § 78.91 be expanded to clarify both the PADEP's and the Oil and Gas Operator's obligations for permanently plugging and

abandoning wells and monitoring wells for subsurface contamination and surface gas leaks until the well can be permanently plugged and abandoned to meet the PADEP plugging standards at §§ 78.91 - 78.98.

The highest risk of subsurface contamination and surface gas leaks are wells that:

- (1) Were improperly plugged and abandoned, where the procedure used did not comply with the improved, current the PADEP plugging requirements at §§ 78.91 - 78.98. This could include wells that were plugged and abandoned using older methods, or wells that were not plugged in compliance with the PADEP regulations;
- (2) Are currently inactive, and have not been plugged; and,
- (3) Are orphaned and have not been plugged.

Operating wells (§ 78.88) and inactive wells (§ 78.103) are both subject to monitoring requirements; however, improperly plugged and abandoned wells and orphan wells are not.

First, we recommend that the PADEP complete an audit of all the wells in the state, and make that audit available to the public, to verify exactly which wells are currently:

- (1) Operating wells subject the ongoing mechanical integrity monitoring requirements of § 78.88;
- (2) Inactive wells that meet the criteria of §§ 78.101 - 78.105, subject to the monitoring requirements of § 78.103;
- (3) Wells that have been previously plugged and abandoned, and the methods used meet the current PADEP plugging requirements at §§ 78.91 - 78.98, or provide equivalent or better protection;
- (4) Wells that have been previously plugged and abandoned, and do not meet the current PADEP plugging requirements at §§ 78.91 - 78.98, or do not provide equivalent or better protection; or,
- (5) Orphaned wells that have not been plugged at all.

Second, we recommend that the EQB request additional legislative funding appropriation to immediately remedy the existing back-log of unplugged orphaned wells and plug those wells to the PADEP's plugging standards at §§ 78.91 - 78.98. The PADEP's orphaned well funding is insufficient to complete this work for all wells in Pennsylvania on a timely basis.

We recognize that plugging all the orphaned wells in Pennsylvania could take a period of a few years; therefore, we recommend that the EQB also request a legislative funding appropriation to conduct surface and subsurface monitoring of the orphaned wells in the interim until they are plugged. Monitoring will aid the PADEP in identifying and prioritizing the plugging order of the wells based on the wells with the highest subsurface contamination and surface gas leak risk.

Third, for wells that have been previously plugged and abandoned, and do not meet the current PADEP plugging requirements at §§ 78.91 - 78.98, or do not provide equivalent or better protection, we recommend that the regulations require these wells to be re-entered and plugged to meet the current PADEP plugging requirements at §§ 78.91 - 78.98. During the interim, before the well is plugged to the current standard, the regulation should require surface gas monitoring for

leaks on at least a quarterly basis, and annual subsurface monitoring (if the well was left in a condition where monitoring equipment re-entry is feasible).

Fourth, for all wells (even those plugged to the requirements of §§ 78.91 - 78.98), we recommend periodic monitoring for surface leaks, at least once every five years.

We recommend that four new subsections be added to § 78.91. Because all of the following text is new, we have used regular font to enhance readability.

§ 78.91. General provisions

(i) By December 31, 2015, the Department will complete an audit of all the oil and gas wells in the state, and make that audit available to the public within 30 days of completion, to verify the status of each oil and gas well in Pennsylvania. The Department will produce a list containing the name of each well, and the status of each well. The well status for each well will fall into one of the following categories:

(1) An operating well subject the ongoing mechanical integrity monitoring requirements of § 78.88;

(2) An inactive well that meets the criteria of §§ 78.101 - 78.105, subject to the monitoring requirements of § 78.103;

(3) A well that has been previously plugged and abandoned that meets the current Department plugging requirements at §§ 78.91 - 78.98;

(4) A well that has been previously plugged and abandoned and does not meet the current Department plugging requirements at §§ 78.91 - 78.98, or does not provide equivalent or better protection; or,

(5) An orphaned well that has not been plugged at all.

(j) By December 31, 2017, the Department will plug all existing orphaned oil and gas wells in Pennsylvania to meet the PADEP plugging requirements of §§ 78.91 - 78.98. During the period from ____ (Editor's note: enter effective date of regulations) to December 31, 2015, the Department will prioritize the orphaned wells risk based on the potential for subsurface or surface leaks and contamination and issue the prioritized list to the public by January 31, 2016. Surface and subsurface monitoring will be conducted by the Department at orphaned wells to assess the risk, and to continue to monitor the risk of these wells and reprioritize the plugging order, to ensure the highest risk wells are plugged first.

(k) By January 31, 2016, the Department will notify each operator of a well that was previously plugged and abandoned, but does not meet the current Department plugging requirements at §§ 78.91 - 78.98 or provide equivalent or better protection, to re-enter the well and plug and abandon the well to meet the current Department plugging requirements at §§ 78.91 - 78.98 by no later than December 31, 2017. During the interim, before the well is re-plugged, quarterly surface gas monitoring for leaks and annual subsurface monitoring of the well must be completed must be performed by the operator, (if the well was left in a condition where monitoring equipment re-entry is feasible), and the results must be reported to the Department within 30 days of collection. The Department will require immediate plugging and abandonment of wells where monitoring data shows leakage, potential contamination, or actual contamination.

(l) Effective ____ (Editor's note: enter effective date of regulations) each well plugged to the requirements of §§ 78.91 - 78.98, must be periodically monitored for surface leaks. Monitoring must consist of a physical on-site visit to the well to examine for any surface leaks of oil or gas,

including hydrocarbon testing of any contaminated soil around the well and for gas leaks. Testing at each well must be conducted by the Oil and Gas Operator, or for orphaned wells by the Department, at least once every five years. All monitoring and testing results must be reported to the Department within 30 days of collection. The Department will require immediate action to re-enter the well and remedy any well where monitoring data indicates leakage or contamination. (1143)

Response: The revisions to the plugging sections of Chapter 78 were intended only to update citations to the 2012 Oil and Gas Act. No additional substantive changes to plugging regulations were part of the rulemaking, therefore this comment is beyond the scope of the rulemaking.

3060. Comment: DEP's investigation should extend to all oil and gas activities. I am deeply concerned about the proposed Shell Cracker Plant in Potter Township, Beaver, Pennsylvania. It will be built directly on the Ohio River and I demand to see an environmental impact study before it is built! (429a)

Response: The rulemaking only addresses conditions at oil and gas well sites, therefore this comment is beyond the scope of this rulemaking.

3061. Comment: Induced Seismicity – The proposed regulations do not address the potential for induced seismicity related to well stimulation, including hydraulic fracturing, or include requirements that the operator examine and mitigate the potential impact. Hydraulic fracturing has been confirmed or is suspected as the cause of induced seismicity strong enough to be felt at the surface in a number of incidents.

- In a report commissioned by United Kingdom-based Cuadrilla Resources, researchers concluded that a series of earthquakes in Lancashire, UK were likely caused by hydraulic fracturing. Shortly after several stages of the Preese Hall 1 well were fracture stimulated, 50 seismic events were observed with a maximum magnitude of 2.3 ML. (C.J. de Pater & S. Baisch, *Geomechanical Study of Bowland Shale Seismicity: Synthesis Report 71* (2011) (prepared for Cuadrilla Resources Ltd))
- A report written by a seismologist at the Oklahoma Geological Survey concluded that a swarm of about 50 earthquakes in Garvin County, Oklahoma, ranging in magnitude from 1.0 to 2.8 MD, could have been induced by hydraulic fracturing. (A. Holland, *Examination of Possibly Induced Seismicity from Hydraulic Fracturing in the Eola Field, Garvin County, Oklahoma* 31 (2011) (Oklahoma Geological Survey, Open-File Report OF1-2011)).
- A total of 38 seismic events were recorded by the Canadian National Seismograph Network (CNSN) in the Etsho and Tattoo areas of the Horn River Basin between 2009 and 2011, ranging in magnitude from 2.2 to 3.8 ML. After reviewing the locations, depths, and magnitudes of the earthquakes and comparing them to the timing and location of hydraulic fracturing, the researchers concluded that fracturing resulted in slippage along pre-existing faults, which caused the earthquakes. In all but one case, the earthquakes occurred along faults that had not previously been mapped. (105 BC Oil and Gas Comm'n, *Investigation of Observed Seismicity in the Horn River Basin* 29 (2012)).

Induced seismicity can result in environmental and human health impacts identical to those caused by natural earthquakes of similar intensity, including the potential for property damage and injury.

Earthquakes may also result in changes to groundwater or surface water level or quality. (See, e.g., G.M. Fleeger, et al., USDO, USGS, *Hydrologic Effects of the Pymatuning Earthquake of September 25, 1998, in Northwestern Pennsylvania* (1999); C.Y. King, et al., Earthquake-induced groundwater and gas changes, 163 *Pure and Applied Geophysics* 633-45 (2006)). Seismicity can also compromise wellbore integrity by damaging the cement sheath and metal casing installed as pressure control and ground water protection barriers. The induced seismicity event in the UK caused ovalization of the production casing over hundreds of feet, with more than a half-inch of ovalization occurring over an approximately 250-foot length. (Id. n. 1). Deformation of the metal casing wall may crack inflexible cement that is placed in the annulus between the metal casing and the wellbore. Damage to the cement bond could allow fluids (gas and liquids) to migrate upwards and potentially contaminate the groundwater it was intended to protect. Even in the absence of actual damage, induced seismic events can be a nuisance to communities and a source of anxiety; they also may have financial and manpower costs associated with the investigation of the causes and effects of the earthquake and from the suspension of operations until such studies are completed.

We recommend that the EQB, in consultation with the Pennsylvania Geological Survey, develop regulations to address induced seismicity. Operators should be required to evaluate seismic risk and the potential for induced seismicity at a proposed well site. This evaluation should include an analysis of background seismicity, local geology (including faults and tectonically active features), local and regional stress state, proposed stimulation practices, and nearby instances of induced seismicity. The evaluation also should include: an evaluation of the maximum magnitude of an earthquake that could be induced based on anticipated injection volume; (See, e.g., A. McGarr, *Maximum Magnitude Earthquakes Induced by Fluid Injection*, *J. of Geophysical Research: Solid Earth* (2014); M. Hallo, *Prediction of Magnitude of the Largest Potentially Induced Seismic Event*, *J. of Seismology* 1-11 (2014)) the probability that such an earthquake may occur, based on site-specific geologic and geophysical parameters such as fault and fracture density, lithology, minimum horizontal stress; and anticipated pore pressure as a result of fluid injection. (See, e.g., S.A. Shapiro, et al., *Probability of a Given-Magnitude Earthquake Induced by a Fluid Injection*, 34 *Geophysical Research Letters* 22 (2007)). The results of this evaluation should be provided with the permit application.

Researchers at Lawrence Berkeley National Laboratory (See, e.g., E. Majer, et al., *Protocol for Addressing Induced Seismicity Associated with Enhanced Geothermal Systems*. U.S. Dep't of Energy. (2012); E. Majer, et al., *Best Practices for Addressing Induced Seismicity Associated With Enhanced Geothermal Systems (EGS)*, U.S. Dep't of Energy (2013)) and the National Academy of Sciences (D. Clarke, et al., *Induced Seismicity Potential in Energy Technologies*, National Academies Press (2012)) have published detailed information on the elements that should be considered for inclusion in a protocol for addressing induced seismicity, including but not limited to:

- Plans for outreach and communication with the public, regulators, and other stakeholders about seismic hazard, mitigation, and any incidents of induced seismicity. This includes involving stakeholders at all phases of the project, providing meaningful opportunities for input, and being responsive to stakeholder questions and concerns.
- Selecting criteria for damage, vibration, and noise to assess the potential impact of induced seismicity on the built environment and human activity. This includes identifying thresholds for damage to structures, ground shaking, and noise, below which no impact would occur. At a minimum, impact criteria should be evaluated for: buildings; civil

structures, such as bridges, highways, tunnels, etc.; buried structures, such as wells, pipelines, and basement walls; landslides; human response to vibration and noise; and laboratory and manufacturing facilities, particularly those with equipment that may be sensitive to ground vibration.

- An assessment of site-specific natural and induced seismic hazard. This study may include both probabilistic and deterministic seismic hazard assessments. The analysis of natural seismicity hazard will serve as a baseline against which to compare induced seismicity hazard and should include an evaluation of the seismic history of the region, fault identification and characterization, geologic site characterization, ground motion models, and the generation of hazard curves and maps. The induced seismicity hazard assessment may include an evaluation of local geology and existing seismic monitoring data, review of known instances of induced seismicity, available predictive models for induced seismicity maximum magnitude, ground motion models, and the generation of hazard curves and maps. Limited data may be available to evaluate induced seismic hazard and therefore it is critical that these assessments be updated as additional data become available.
- Probabilistic and scenario risk assessments. Several different scenario assessments may be appropriate but, at a minimum, the assessments should include a “worst case” scenario analysis. These analyses should include: vulnerability assessments for possible receptors including residential and community buildings; commercial, industrial, research, and medical facilities; infrastructure; socioeconomic impacts, including business disruptions; and, nuisance due to vibration or noise. Particular attention should be paid to older structures, and plugged and abandoned wells. The costs of consequences should also be evaluated, including monetary costs due to physical damage or loss as well as non-physical damages such as nuisance. Risk should be assessed for both natural and induced seismicity to enable comparisons.
- Seismic monitoring. This includes real-time seismic monitoring before, during, and after stimulation activities. The design and placement of the monitoring array should at a minimum take into account the location of potential seismic sources and background seismicity, the location of sensitive receptors, depth and seismic properties of the formation that will be fractured, necessary sensitivity, and predicted size of the fracture network.
- A mitigation plan based on the hazard and risk assessments. If necessary, based on the results of the hazard and risk assessments, the proposed hydraulic fracture design should be revised to control the level and impact of induced seismicity. Operators should also develop an appropriate “traffic light” control system for responding to an instance of induced seismicity. Under a traffic light system, increases in induced seismic activity beyond predetermined thresholds trigger actions by the operator, which may include additional monitoring, reducing injection volume or pressure, or ceasing operations completely. Thresholds may be based on earthquake magnitude, intensity of ground motion, or other measures. The threshold levels and required actions by operators when those thresholds are exceeded must be developed based on site-specific conditions.

Subsurface waste water injection also has been documented to cause induced seismicity. (112 See, e.g., D.F. Sumy, et al., Observations of Static Coulomb Stress Triggering of the November 2011 M5.7 *Oklahoma Earthquake Sequence*, J. of Geophysical Research: Solid Earth (2014); W.L.

Ellsworth, Injection-Induced Earthquakes, 341 Science 6142 (2013)). While recognizing that the PADEP does not have primacy to implement the Underground Injection Control (UIC) program, we encourage the PADEP to coordinate with EPA Region 3 on addressing the risk of induced seismicity from Class II disposal wells. The same elements listed above should be considered for inclusion in a protocol to address induced seismicity from disposal wells.

In sum, we recommend that the EQB, in consultation with the Pennsylvania Geological Survey, develop regulations to address the risk of induced seismicity from hydraulic fracturing. The regulations should include requirements for operators to: (1) develop a stakeholder communications and outreach plan; (2) determine criteria for ground vibration and noise; (3) perform a hazard assessment; (4) perform a risk assessment; (5) conduct seismic monitoring, and; (6) develop mitigation plans. These elements should be developed using the operator's proposed hydraulic fracture design for that well along with site-specific data. Additional information and guidance on developing an appropriate protocol is available in the publications cited in the footnotes to this comment. (1143)

Response: The Department acknowledges the comment, however these issues are beyond the scope of this rulemaking.

3062. Comment: 78.102 – We recommend changes to the criteria for approval of inactive status.

First, we recommend that wells granted inactive status be required to meet the PADEP's current casing and cementing standards. We do not support exemptions for continued inactive operation of wells that do not meet the PADEP's casing and cementing standards (§§ 78.81—78.86). As evidenced by the PADEP's adoption of these regulations, these casing and cementing standards are critical to ensure groundwater protection and safety. Wells constructed with outdated technology and practices should be plugged and abandoned and should not be granted inactive status for a period of 5 years or longer (if renewed).

Second, we recommend that § 78.102(3) be revised to prohibit direct venting of greenhouse gases to the atmosphere. Gas should either be produced and sold or used as local fuel, or the well should be physically modified (temporarily plugged) to control the gas or permanently plugged and abandoned. We also we recommend that § 78.102(4) be revised, including to require that any plan for inactive status include wellbore diagrams illustrating the current and proposed mechanical configuration and condition of the well during inactive status. (Alaska requires this information to be submitted with an application to suspend a well. 20 AAC § 25.110.)

Third, we recommend that a petroleum engineer be required to complete a record review of the well's condition, conduct an on-site inspection, conduct a mechanical integrity test on the well, and certify that the requirements of § 78.102(1)-(4) have been met. (New Mexico requires the operator to demonstrate that the wells casing and cementing are mechanically and physically sound and demonstrate both internal and external mechanical integrity of the well is achieved. N.M. Code, § 19.15.25.) The petroleum engineer's report should include photographs of the wellhead, well pressure readings, a copy of the mechanical integrity test, and confirmation that there was not discoloration, fluid or sheen visible on the ground near the well or in any nearby water. (Alaska requires this information to be submitted with an application to suspend a well. 20 AAC § 25.110.)

We recommend the following revisions of § 78.102:

§ 78.102. Criteria for approval of inactive status.

To obtain inactive status, the applicant shall affirmatively demonstrate to the Department's satisfaction that:

- (1) The condition of the well is sufficient to:
 - (i) Prevent damage to the producing zone or contamination of fresh water or other natural resources or surface leakage of substances.
 - (ii) Stop the vertical flow of fluid or gas within the well bore.
 - (iii) Protect fresh groundwater.
 - (iv) Pose no threat to the health and safety of persons, property or the environment.
- (2) The well complies with the casing and cementing requirements of §§ 78.81—78.86 (relating to casing and cementing).
- (3) If gas exists at an inactive oil well, the operator may vent the gas to the atmosphere or must capture it for use or sale as fuel, equip the well to confine the gas to the producing formation, or permanently plug and abandon the well. If this gas flow is greater than 5,000 cubic feet per day, the owner or operator shall notify the Department and take remedial action approved by the Department.
- (4) The applicant shall certify that the well is of future utility and shall present a viable plan for utilizing the well within a reasonable time the five year period allowed for inactive status under §§ 78.101 and 78.104. In addition to providing information to demonstrate compliance with paragraphs (1) and (2), the application for inactive status shall include the following:
 - (i) A plan showing when the well will be used within the five-year period allowed for inactive status under §§ 78.101 and 78.104.
 - (ii) A certification identifying that one of the following applies:
 - (A) Significant reserves remain in place and the operator plans to produce the well.
 - (B) The well will be used as a disposal well.
 - (C) The well will be used as a storage well.
 - (D) The well will be used as an observation well.
 - (E) The well will be used as a secondary or tertiary recovery injection well or that the well will be used for other purposes specified by the applicant.
 - (iii) Wellbore diagrams illustrating the current and proposed mechanical configuration and condition of the well during inactive status.
 - (iv) Other information necessary for the Department to make a determination on inactive status.
- (5) A petroleum engineer must complete a record review of the well's condition, conduct an onsite inspection, conduct a mechanical integrity test, and certify that the requirements of § 78.102(1)-(4) have been met. The petroleum engineer's report must be included in the application to the Department for consideration of inactive well approval. The petroleum engineer's report must include photographs of the wellhead, well pressure readings, a copy of the mechanical integrity test, and confirmation that there was not discoloration, fluid or sheen visible on the ground near the well or in any nearby water. (1143)

Response: The revisions to the inactive status sections of Chapter 78 were intended only to update citations to the 2012 Oil and Gas Act. No additional substantive changes to inactive status regulations were part of the rulemaking, therefore this comment is beyond the scope of the rulemaking.

3063. Comment: There is a need to establish and enforce ethical standards in order to insulate regulatory agencies from political or financial influences provided by the natural gas companies and their agents. FERC has to approve any interstate pipeline. The PUC has to approve any pipelines that serve consumers directly. But few of the new gas pipelines connected to Marcellus Shale drilling fall neatly into either of the categories. TEAM 2014 PROJECT proposes an additional 600,000 dekatherms (Dthd) of liquified natural gas export in 36" diameter pipeline with horsepower upgrades. The proposed pipeline will not carry "clean"energy, this Spectra pipeline will be carrying

Marcellus Shale gas. Pipelines and fracking are inextricably linked. The Spectra pipeline would have more profound effect than most, Greenhouse gases would be emitted 24/7. There is a history of safety issues with Spectra Energy. In 2011 DOT Pipeline and PHMSA inspectors sited Spectra for 17 inadequacies in its pipeline safety operations and procedures, including problems with pipeline surveillance, emergency plans and welding procedures. Texas Eastern, the subsidiary of Spectra that proposes to build the TEAM 2014 Project, received the EPA's seventh highest Federal Penalty Assessment on record for PCB contamination. The plan is for the TEAM 2014 Project to be monitored by the builder/applicant Spectra and its subsidiaries, the DEIS states, "The applicants would operate and maintain the newly constructed pipeline facilities in the same manner as they currently operate and maintain their existing systems." Through their own efforts, the property owners of Clearville, Bedford County, PA know that the Spectra Energy two-day incident at the Steadman Ridge facility, an uncontrolled leak released 431.5 thousand cubic feet of natural gas into the atmosphere. In January 8, 2013, PHMSA sent a letter to a senior official at the Texas Eastern Transmission Co., a wholly owned subsidiary of Spectra Energy citing the company for failing to adequately protect its metal pipelines from corrosion and for failing to properly test shut-off valves meant to staunch the flow of natural gas in the event of an emergency. The complete citation can be read; PHMSA Texas Eastern Transmission Notice of Probable Violation 01082013. Public confidence in pipeline safety has been tested by a series of serious accidents. In 2010, the natural gas line explosion in San Bruno, CA., set off a 95 minute inferno that killed 8 people, destroyed 38 homes and damaged scores of others. Emergency equipment was unable to contain the destruction because of the level of heat radiating from the fire. The DOT needs to implement rulemaking to clarify the point where onshore-regulated gas gathering lines begin (49 CFR Part 192.8). This point must include all Class One gathering lines, in all states, under full requirements of the Gas Transmission Pipeline Integrity Management Program (49 CFR Part 192 Subpart O). The EPA is recommended to include requirements in permits for pipeline construction and operation that avoid and properly mitigate surface disturbances in steep inclines and declines, avoid and properly mitigate impacts to sensitive wildlife habitats, avoid forest fragmentation, prevent disruption of view-sheds, and avoid intersection with waterways. Requiring pipeline operators to install methane capture devices on all production pipelines and compressor stations and institute an EPA program of regular emissions monitoring along gathering and transmission pipelines to reduce methane leakage. There should be more direct state and local government involvement in siting of larger diameter, higher pressure Marcellus Shale gathering pipelines in Class One, rural areas of Pennsylvania, especially near schools, hospitals, and other community centers. These gathering lines should be sited with the same precautions as are paid to federal interstate transmission pipelines. Relative to Marcellus Shale natural gas development, the major concerns involve accidents at gas well sites, gathering lines and the transportation of hazardous materials. Because a pipeline failure could pose a significant risk to the people and the sensitive environment, increased public awareness of pipeline safety and appropriate regulation is imperative. Complicating the onset of a new pipeline network to meet increasing demands are problems of the existing pipeline infrastructure, it's old and deteriorating. Population shifts and economic development has transformed once rural and remote areas into areas where a pipeline incident could have profound environmental impact and loss of life. New expanding pipeline networks are placing additional demands on outmoded transmission systems that may lead to unanticipated consequences.

In 2008 PHMSA studied proximity of structures next to pipelines. The result created a coalition of local planning officials, pipeline operators, environmental organizations and public safety agencies to develop advisory standards for new development around existing pipelines. The group, called Pipeline Informed Planning Alliance (PIPA) came up with a clear message: don't build close to a pipeline! PIPA suggested that extra precautions be taken and extra planning to be done if buildings are within 660 feet to 1000 feet on either side of a pipeline. If a pipeline goes through a forested area, a clear cut of an extra 70 to 130 feet wide is needed to lay pipe and keep it available for maintenance. "Public health was not brought into discussions about shale extraction at earlier stages; in

consequence, the health system finds itself lacking critical information about environmental and public health impacts of the technologies and unable to address concerns by regulators at the federal and state levels, communities, and workers....-Institute of Medicine at the National Academies of Science. Recent and projected growth in the oil and gas production sector has underscored the need for EPA to gain a better understanding of emissions and potential risks from this industry sector. Harmful pollutants emitted from this industry include air toxics such as benzene, toluene, ethylbenzene and xylene; criteria pollutants and ozone precursors such as NO_x and VOCs; and greenhouse gases such as methane. These pollutants can result in serious health impacts. However, EPA has limited directly measured air emissions data on criteria and toxic air pollutants for several important oil and gas production processes. This limited data, coupled with poor quality and insufficient emission factors and incomplete NEI data, hamper EPA's ability to assess air quality impacts from selected oil and gas production activities. (2)

Response: Revisions to federal regulations is beyond the scope of this rulemaking. In addition, regulation of methane emissions from pipelines and gathering and transmission pipeline safety standards are also beyond the scope of this rulemaking.

- 3064.** Comment: An operator violated my rights by drilling within 250 feet of our home and water well. PA DEP determined that the operator contaminated our water well and issued an order which was not enforced. This has reduced our property value and the quiet enjoyment of where we live on land zoned "R1 Residential" in Pleasant Township, Warren County, PA. (1168)

Response: The comment relates to an individual enforcement action and is therefore beyond the scope of this rulemaking. The Department recommends that the commentator contact the Northwest District of Oil and Gas Operations.

- 3065.** Comment: There were no DEP personnel present at the November 23, 2012 hydraulic fracturing of the M-4 well. (1168)

Response: The comment relates to an individual well drilling, it does not address the regulations, therefore it is beyond the scope of this rulemaking. However, the Department has developed a compliance and enforcement strategy to address issues with inspection frequency and compliance (Department Document No. 820-4000-001, *Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations*).

- 3066.** Comment: I feel, as many other New Yorkers do, that Americans much protect our environment for others, as well as ourselves. Because there is the potential of water, air and soil contamination resulting from oil and gas well sites' problems, spills, leaks, not performing up-to-standards, etc. ... I urge Pennsylvania to have adequate certified inspectors to oversee all aspects of oil and gas well sites from their location to the disposition of their waste. Please do not put the profits of drilling companies ahead of the health and wellbeing of Pennsylvania residents. (164)

Response: The Department acknowledges the comment, however the issue of the number of Department staff available to perform site inspections is beyond the scope of this rulemaking.

- 3067.** Comment: § 78.85(f) Cement Standards the Proposed Rulemaking does not amend § 78.85(f). However, the Department should use this opportunity to require that cementing records and cement evaluation records be submitted as documentation of the quality of well construction within 30 days of completion. These records should be maintained by the Department for future review, and will be useful when evaluating Class II well conversions, recompletions, plugbacks, Class II Area of Review evaluations, or future investigations that may occur well beyond the five year retention timeframe

allowed by the proposed regulations. This information might be made part of the casing and cement report with respect to § 78.122. (997a)

Response: No substantive changes to cement standards or reporting regulations were part of the rulemaking, therefore this comment is beyond the scope of the rulemaking.

3068. Comment: Gas and oil drillers should be TAXED at at least 5 1/2% and should be taxed additionally on additional VOLUMN of gas/oil taken over a certain amount. (8)

Response: The Department acknowledges the comment, however these issues are beyond the scope of this rulemaking.

3069. Comment: As far as air quality, diesel trucks from out of state are not required to have the same pollution and exhaust standards as Pennsylvania trucks. Gas related trucks should be required to have the same standards as Pennsylvania trucks. (14)

Response: The Department acknowledges the comment, however these issues are beyond the scope of this rulemaking.

3070. Comment: I was wondering if Cabot has a policy or plan as to how they deal with a well that they would shut down and cap or seal as it had ceased production. Also, our property is located between the Lathrop and new Shields Compression Stations. The Shields station is very brightly light and rather exposed to wind etc. Planting large fast growing evergreen trees around the station would act as a wind break (a factor in a fire or explosion) and would help in sound dampening as well as the night time light. I would be willing to work with them on this. This same idea could be good for some well sites as well. (20)

Response: The Department acknowledges the comment, however it is beyond the scope of this rulemaking.

3071. Comment: I am a PA resident, and ‘concerned’ doesn’t begin to describe how I feel about the hydraulic fracking practices sprouting up all over the nation (and especially here in the Delaware River water basin, which provides clean water to millions of people in PA & NY). I have also learned recently that the process contributes a significant amount of damage to our air quality, contributing to climate change in an ever increasing way.

Why is it that we are willing to risk so much, SO MUCH for 100 years of a fuel that is not sustainable, not clean, and not at all without risk? Please help us sensible citizens understand why we wouldn’t focus on truly clean energy solutions that are NOT short-sighted? As it seems there is simply no stopping this from moving forward, at the VERY least, you simply MUST protect innocent Americans by regulating this process by the absolute strictest means possible. Every American deserves to have clean water and clean air. Natural Gas is not a long-term solution, and the risks are TOO great. 5% of all cement casings will fail immediately. This equates to thousands and wells at risk of contaminating our precious drinking water. (28)

Response: The Department acknowledges the comment, however these issues are beyond the scope of this rulemaking.

3072. Comment: I oppose fracking and all the pipeline infrastructure it requires for many reasons:

1. Water and air pollution from fracking will decrease my property value. A spill into the Beaver Run Reservoir, where my drinking water is found, may well make it impossible to sell my house.
 2. The fracked gas belongs to foreign companies who have no concern for energy in the USA. These companies will take their property, i.e. the fracked gas, turn it into Liquefied Natural Gas (LNG) and sell it to China and India. The companies get all the profits and we in Pennsylvania get nothing but risks.
 3. LNG is a prime terrorist target. If one LNG tank is detonated it can have the destructive equivalent of a low yield nuclear device. We already have LNG collection areas in populated areas, such as Philadelphia.
 4. Investing in fracked gas distracts our engineers, researchers, and especially investors from exploiting sustainable sources of energy such as solar, wind, geothermal, hydro, and energy efficiency. Fracked fossil fuel is not a “bridge” energy, it is a dead end.
 5. Fracking pollutes the air and the water. 5% of the wells fail immediately. Can you imagine NASA telling the public that 5% of our space flights will fail immediately? If it would be insane to court such a high immediate failure rate in space travel, surely it is equally insane to court environmental disasters here on earth.
 6. Natural gas pollutes long before we burn it. The drilling pollutes. The gathering of the gas pollutes. The transportation pollutes. “Cleaning” the gas pollutes. It is NOT a clean source of energy.
 7. Burning fossil fuel increases our carbon footprint which increases climate change which costs us money.
 8. Burning fossil fuel pollutes which harms our health which costs us money and suffering.
 9. Burning fossil fuels is not necessary. Even using the technology we have today, we have enough renewable energy sources to power the economy of the entire USA. Who knows what ingenious changes we will develop in the future if we get our heads out of holes in the ground and look skyward for our future energy.
 10. The bulk of fracking jobs are low pay, short term, dangerous and unhealthy. Safe and high paying jobs go to a select few and often to those not from Pennsylvania.
 11. Renewable energy technology and expertise is a growth industry, but it will grow only with help and the support for oil and gas distracts money into established companies to the detriment of renewable energy companies.
 12. Any one of the 11 points above justifies stopping fracking today. Taken together they condemn fracking for the dangerous, uneconomic, and distracting source of foreign corporate profits that it is.
- (87)

Response: The Department acknowledges the comment, however these issues are beyond the scope of this rulemaking. Also, the Department does not have the statutory authority to ban hydraulic fracking within the Commonwealth. Banning hydraulic fracturing would require an act of the Legislature. Further, amendments to the 2012 Oil and Gas Act may only be made by the Legislature, not the Department.

3073. Comment: I cannot attend this important meeting but I think it's imperative for someone to point out that Aqua America is contributing to this problem and working with the frackers when Aqua should be protecting our water (as they are always claiming they do). As a stockholder in the past I spoke at two of their stockholder meetings regarding the dangers of fracking and the company's moral responsibilities. The first year I got a round of applause from many stockholders. The next year the CEO tried to cut me off after three sentences but I stood my ground and finished. But no applause that year -- you could hear a pin drop. Some concerned stockholders pointed out to me that Aqua can make money at both ends: by supplying valuable clean water to the frackers, and then by "processing" it after it's terribly contaminated. (107)

Response: The Department acknowledges the comment, however these issues are beyond the scope of this rulemaking.

3074. Comment: Thank you for the opportunity to present comments regarding the proposed changes to the state's oil and gas regulations as a conservation specialist and land use planner, local and regional planning commission member, Township Land Trust founder. In 2012, Governor Corbett signed the 2012 Oil and Gas Act which significantly revised Pennsylvania's oil and gas laws in the Commonwealth. Act 13 requires municipalities to allow oil and gas operations except for processing plants in all zoning districts, and consequently infringes upon the rights of local governments throughout the Commonwealth to protect the health, safety, and welfare of its citizens. Act 13 removes all meaningful zoning and planning authority from local governments as to the oil & gas industry, while all other entities, be they individual, corporate or institutional, still abide by local ordinances.

The PA Supreme Court has ruled Act 13 is unconstitutional on the grounds that it violates the Environmental Rights Amendment to the Pennsylvania Constitution. Notably, the Court stated, "As the citizens illustrate, development of the natural gas industry in the Commonwealth unquestionably has and will have a tasting, and undeniably detrimental, impact on the quality of these core aspects (life, health, and liberty, surface and ground water, ambient air, etc.) of Pennsylvania's environment, which are part of the public trust." opinion at 117.

Additionally, the Court stated. "By any responsible account, the exploitation of the Marcellus Shale Formation will produce a detrimental effect on the environment, on the people, their children, and future generations, and potentially on the public purse, perhaps rivaling the environmental effects of coal extraction" Opinion at 118.

In ruling so, the Court struck down the shale gas industry's effort to force every municipality in the state to allow gas drilling and related industrial operations in every zoning district. The Court's decision upholds the ability of local governments to protect their local communities and natural resources through zoning.

The Court held that the provisions violate Article 1 Section of the Pennsylvania Constitution - the Environmental Rights Amendment. Sections 3215(b)(4) and (d), 3303, and 3304 are incompatible with the Commonwealth's duty as trustee of Pennsylvania's public natural resources. Concluding also that the Act forced some citizens to bear "heavier environmental and habitability burdens than others" in violation of Section 27's mandate that public trust resources be managed for the benefit of all the people. (110)

Response: The Department acknowledges this comment. This rulemaking carries out the constitutional mandate to protect the environment and public natural resources. Please see response to comment 265.

3075. Comment: The overall issue here is who is responsible for the cost of doing business?

What irresponsible business is seeking is to socialize their cost of doing business by encouraging republicans and conservatives to pass weak environmental laws and weaken those environmental and endangered species laws that already exist, and pass those costs of doing their business onto the people of the Commonwealth Of Pennsylvania. This is the same old adage of irresponsible businesses and crony capitalist of “Privatize the Profits, and Socialize the Losses.”

The people of Pennsylvania reject this socialism because we believe that our business community is stronger, competitive, and more responsible than this when it bears the costs of its business. Those socialist legislators and executives who say environmental and endangered species laws hurt business do not have the documentation on their side. The professional and educational documentation states that investment in infrastructure, education and job training, and laws ensuring a greater quality of life are what attract employees and employers. That also, capitalism does not just provide wealth and income for the owners, but with responsible regulation and taxation provides for an expanding and sustainable civilization.

My greatest fear is that socialist legislators and executives who aid irresponsible businesses to socialize their cost of doing business are doing damage to our capitalistic principles and threatening our democracy. It is damaging our capitalistic principles because it is flattening the risk reward ratio. It encourages irresponsible businesses to take risks it would normally not, weakening the rewards for other businesses and putting the tax payer on the line for the cost of that business risk, and the municipality in jeopardy of default. This socialism of the cost of doing business is a threat to our democracy because the profits go to the owners and the burden of debt is placed on the tax payer and the municipality, creating a disparity in income and wealth that makes the rungs of the ladder of mobility a greater distance.

This is a recipe for civil disobedience or worse!

It is my wish and all Pennsylvanians, that this board support regulations for all businesses to make them responsible for all their costs of doing business to protect all people and life with a greater quality of life, to be free of the burden of businesses socializing their cost of doing business, and maintain the strength and competitiveness of those businesses. (116)

Response: The Department acknowledges the comment. The revisions to Chapters 78 and 78a are comprehensive and enforceable, consistent with applicable statutes and provide appropriate protections for public health and safety and the environment.

3076. Comment: MOST IMPORTANT: GIVEN that oil and gas industry data clearly show that well casings (both steel and concrete) are failing at a 50% rate over 30 years’ time, AND it is predictable that many more (if not all) will fail in a 100-year time frame, AND given that these casings must hold up IN PERPETUITY to protect the groundwater aquifers under Pennsylvania from methane contamination and even migration of chemicals from below, AND given that groundwater aquifers under one-half the landmass of PA are at risk if the shale gas industry continues for the next 50 years as planned, THEREFORE, DEP should require that casings of the type and engineering that have failed over a 30-year time frame in other oil and gas applications be PROHIBITED - AND that all casings henceforth must be of a type that will have a less than 5% probability of degrading and

failing over time to contain gas and fluids and shale elements from below, AND that monitors be placed in every well that can provide evidence of such leakage over time, AND that the gas company that caused the well to be drilled, or its successors, shall pay for remediation of groundwater supplies when the wells leak methane or chemicals into the aquifers. To do anything less than this is to risk irreparable harm to the water sources of the Commonwealth and to the human, animal and plant life that depend on that water. (67)

Response: The Department acknowledges the comment. Well construction issues, including casing and cementing oil and gas wells, are beyond the scope of the current rulemaking. The Department did upgrade its well construction regulations in February 2011 and is currently considering amendments to those regulations in the upcoming year.

3077. Comment: I originally thought of coming here today with lots of scientific data to illustrate my concerns over this reckless worldwide folly called , “Fracking”, but instead I’m here to remind the DEP to not be afraid to live up to it’s full namesake, The Department of Environmental Protection. Be firm in your resolve to make it a priority to enact a strong and enforceable Environmental Protection Performance Standards at Oil and Gas Well Sites, here in Pennsylvania.

Please don’t be blinded by Dollar Signs in your decision making and don’t give into pressures to sacrifice the environment for short term monetary gain.

I am not new to environmental awareness, for 50 of my 63 years I have immersed myself into it. Growing up in California I became very aware of what happened during the Gold Rush, especially the 30 year period beginning in the 1850’s, when Hydraulic Mining spread throughout the Sierra Mountains. On a grand scale, high powered water was used to wash away whole mountain sides to get to the gold, filling the rivers with sediment all the way to the Pacific Ocean, causing massive floods.

Today, 150 years later, thousands of square miles of the devastation is still there. I’ve spent a lot of time walking thru these wastelands and around polluted catch basins. The mercury used to separate the gold still poisons many parts of the state

For all those who have any doubt of human impact on the ecology of the Planet need only look at history and the years of accumulated scientific evidence. The truth is there, all you have to do is look. Of course many will say this is a different situation, and a different time, people then were naive and didn’t know what they were doing and that we have learned from those mistakes. Have we? or will future generations a couple of hundred years from now be dealing with the mess we put upon them.

You know the truth is we really should be going the opposite direction and working to create clean energy, but so be it, sadly that’s not what this hearing is about today.

Finally, listening to all the ideas about “Fracking” I’m reminded of a few Quotes I learned as a kid, they seem appropriate and are worth remembering, and have stuck in my mind, becoming part of my everyday consciousness, helping me stay focused. The first is from John Muir the others attributed to Chief Seattle.

“When one tugs at a single thing in nature, he finds it attached to the rest of the world.”

“The Earth does not belong to man, man belongs to the Earth.”

And finally, the bottom line to me.

“We do not inherit the Earth from our ancestors; we borrow it from our children.” (122)

Response: The Department acknowledges the comment, however these issues are beyond the scope of this rulemaking. The Department believes the revisions to Chapters 78 and 78a are comprehensive and enforceable, consistent with applicable statutes and provide appropriate protections for public health and safety and the environment.

3078. Comment: I write in reference to the Department of Environmental Protection’s recommended amendments to Chapter 78 (relating to Oil and Gas Exploration and Production Activities), the subject of the Environmental Quality Board’s recent Jan. 9 public hearing at West Chester University.

I request that the proposed regulations be amended to require the use of pasteurized mushroom compost or other properly composted organic material in the restoration of well sites, pipeline projects, and other earth disturbance activities regulated within Chapter 78.

I make this proposal for environmental and economic reasons. Using mushroom compost and other properly composted organic material is an environmentally sound and competitively priced way to restore soil surfaces. Two inches of compost at a typical five-acre well site costs less than \$1,800, and applied correctly, adds natural nutrients, organic matter and oxygen to the soil, which in turn ensures deeper root growth and the 70 percent vegetation levels required by the DEP.

In addition, the more compost one uses, the less synthetic fertilizer one needs, which in turn decreases nutrient run-off into our groundwater and waterways. My quest to make site restorations rely more on mushroom compost and less on synthetic fertilizer aligns perfectly with Pennsylvania’s ongoing efforts to reduce the nitrogen, phosphorus and sediment flowing into our watersheds.

Using mushroom compost to restore fracking sites is also good for our businesses and economy. Pennsylvania is the mushroom capitol of the United States. Last year Commonwealth mushroom farms sold more than 384 million pounds of common mushrooms -approaching half the nation’s harvest. Pennsylvania’s leadership in growing mushrooms naturally makes it a leading producer of mushroom compost.

The bottom line is using pasteurized mushroom compost and other organic materials to help restore natural-gas wells and pipeline locations is good for Pennsylvanian’s natural resources and good for Pennsylvania’s businesses. I urge the most serious consideration of my request, and I am available for any questions or comments at 610-692-2112. (130, 1116)

Response: The Department acknowledges the comment, however these issues are beyond the scope of this rulemaking. The Department’s restoration requirements set general performance standards; how operators meet those performance standards is up to each operator. The Department does not typically specify the particular approach that must be used to meet the standard.

3079. Comment: My name is William Thwing. I am United Church of Christ Pastor in Johnstown, PA and past President of Pennsylvania Interfaith Power and Light. Our family has a cottage in Ogletown, PA which is one the recharge areas for the Mauch Chunk Aquifer in the Clear Shade Watershed. We draw our water from the Mauch Chunk which is one of the largest purest aquifers in

the Eastern USA. The nine thousand citizens of Windber and many more from communities who live along the Allegheny Front from Jim Thorp in the North to West Virginia in the South – tens of thousands of Pennsylvania’s citizens, draw their water directly from the Mauch Chunk Aquifer. It takes 40 years for rain water to percolate thru 800 feet of earth to recharge the Mauch Chunk. One gallon of Diesel fuel will render undrinkable 750,000 gallons of Mauch Chunk Water. We have a neighbor in Windber whose water well went bad. Over the hill from his home 2700 feet away, out of sight, a deep shale well was being put in. He went up there every day, made notes, and took photographs. He noted a tanker truck of diesel fuel, apparently going into the well. Just before the drillers packed up, he noted a flowback pit there one day and the next day it was gone.. bulldozed over. How long will it take before all that diesel and that toxic flow back leach into Mauch Chunk Aquifer and it is destroyed forever and all those people along the Allegheny Front have to move away or get from bottled water. How many truckloads of bottled water will it take daily to serve the needs of 9000 people of Windber and everybody else along the Allegheny Front. We are creating a disaster unnecessarily. The same applies to aquifers and ground water all over the state.

Both the Center for Sustainable Shale Development in their 2013 Performance standards and the International Energy Agency in their “Golden Rules for the Golden Age of Gas” report, mandate that diesel should never go into a well, and that thorough geological and hydrological baseline background studies should always be conducted on all areas of operation before any drilling is permitted. Neither of these best practices is mentioned in your regulation except briefly under the section on Centralized impoundments.

Water is essential for life. Without clean pure water, we would all die as would all of God’s creatures, as would our Earth. Pennsylvania has some of the best water in the world... What’s left of it after an unregulated Coal Industry spoiled a significant percentage of our surface waters. Why risk our aquifers too. The same applies to our soil. We depend upon good soil for agriculture which produces our food. Without food we die. Pennsylvania has some of the best soil in the world. Agriculture is the #1 industry in PA, Tourism is #2. Both depend on fresh air, clean water and good soil. These God given assets have nourished the citizens of Pennsylvania for the last 350 years and the previous native populations that for 10,000 . Why risk those God-given natural assets unnecessarily in a mad rush for wealth for a few greedy unprincipled politicians and their out-of-state wildcat driller partners, at the risk of disease, suffering & poverty for our children and all the generations that follow them. What a legacy we leave them!

We want a rule of law in Pennsylvania. We want a rule of law of the people, by the people and for the people. We want a rule of law interpreted strictly by the Constitution of Pennsylvania. Therefore I say to you “Best Practices or Nothing”. “Best Practices or Nothing”

Attached study:

http://www.worldenergyoutlook.org/media/weowebsite/2012/goldenrules/weo2012_goldenrulesreport.pdf

(138a)

Response: The Department acknowledges the comment, however these issues are beyond the scope of this rulemaking.

3080. Comment: I HOPE YOU CAN READ THIS BECAUSE NOBODY LISTENS OR HEARS WHAT WE LANDOWNERS ARE TELLING YOU! I have been patient I have been cooperative, nobody listens, I get angrier and angrier as this situation continues to grow, and I mean because NOBODY GIVES A SHIT! YOU have ALLOWED CHESAPEAKE to do whatever the “F” they

Do not tell me I have to do something Sir I have I have called everybody, the only one that does get back to me is Tina Pickett! Your meeting are a bunch of BS something should be done ASAP stopping these Companies from STEALING SIR and YOU LET IT HAPPEN!!!!!!!!!!!!!!!!!!!!

I deeply apologize Sir for my mouthy-ness but I have been nice and it has gotten me nowhere! (151)

Response: The Department acknowledges the comment; however, it is beyond the scope of this rulemaking.

- 3082.** Comment: Pennsylvania is the only state that doesn't collect a production tax. Alaska has a 25% tax on energy drawn from its areas. We should have at least a 5% tax on our energy.(176)

Response: The Department acknowledges the comment; however, it is beyond the scope of this rulemaking.

- 3083.** Comment: I have been in the natural gas industry since 1976. I was employed with National Fuel Gas from April 1976 until I retired on February 1, 2012. After retirement, I have been involved in the industry doing royalty verifications and consulting work in the natural gas industry.

From April 1976 through November 1982 I worked at several roustabout type jobs, working on wells, well tender, equipment operator, and pipeline inspector. From November 1982 to July 1992 I was a pipeline welder/fabricator. My duties included welding pipeline, building and installing meter and regulator stations, and welding taps on high pressure gas lines while the line was in service. Almost all of this welding Included 100% x-ray of the welds and hydrostatic testing to 90% yield of the pipe and fittings.

From July 1992 through January 1999 I was a Gas Measurement Technician. After three years of training and completion of two college semesters {35 credits) toward an associate degree in electronics, I was promoted to Senior Gas Measurement Specialist covering 9 counties in Northwestern Pennsylvania.

I have been D.O.T. qualified (through National Fuel) In several operation systems including odorization systems orifice meter measurement, positive displacement measurement, ultrasonic measurement, chromatographs, and several different types of regulators and relief valves. My D.O.T. qualifications are good through February of this year.

If necessary, I would be more than happy to provide references or certificates from schools upon request. (451)

Response: The Department acknowledges the comment; however, it is beyond the scope of this rulemaking.

- 3084.** Comment: if you believe in God and our Bible, Read Jeremiah 5:21-25. God controls all ocean levels and seasons. It's not Global warming we are facing; It's Gods Global Warning!!!. I pray you will see and hear. (583)

Response: The Department acknowledges the comment; however, it is beyond the scope of this rulemaking.

- 3085.** Comment: I am not only concerned with present revisions; I am also concerned about last 4 years. When my husband passed away in 2010 we received a check of over \$900.00 from one of our gas

wells for one month. In Jan 2014 I received a check for \$263.05 and this was the large check I have received in quite some time probably more than 3 years. My income has dropped devastatingly since 2010 at a time when security is vitally important to me as a widow with decreased income. Of course. My other couple wells have also decreased drastically. Please quit targeting seniors who worked very hard all our life to remain independent and self-sustaining. (585)

Response: The Department acknowledges the comment; however, it is beyond the scope of this rulemaking.

- 3086.** Comment: I have been hearing that the gas companies might start drilling in this area in approximately 2014. Reliable people have told me there are fault lines in this area similar to the area of Elk Mountain. Also, there are aquifers that eventually feed Honesdale and Fox Ledge water supply company and of course the surrounding area. Nothing seems to stop the gas companies; it is all about money as you know. My area is considered God's country. I am sure that does not mean much to the Gas companies. A of now, the air and my water (Just tested privately) is great. I hope we can keep it that way. I am a retired engineer and my family owned this property for over 50 years.

I am trying to head off a big problem if they start drilling in this area. It appears drilling permits are handed out to easy with the property owners left with the problems. The gas companies have too much power and the property owners have very little. (605)

Response: The Department acknowledges the comment; however, it is beyond the scope of this rulemaking.

- 3087.** Comment: Lighting – The lighting needs to be respectful of the neighbors. The lighting needs to be directed on the facility not a thousand feet to the neighbor's homes. Some operators are employing the use of Lunar Lighting while many are not. Lunar Lighting is an emerging technology in the oil and gas fields, in fact, as you can see here, <http://www.texasoilgasmagazine.com/conferences-expos> The Texas Oil & Gas "Emerging Technologies" Conference & Expo will bring together industry experts who will discuss the emerging technologies, processes, and applications utilized in the Oilfield in Texas. The Conference Experts will speak about the developments that are evolving in the Mid-Stream, Up-Stream, & Down-Stream areas of the Oil & Gas Industry. Some of the topics covered will be Lunar Lighting, CNG Fleet & Commercial Vehicles, LNG: A Sustainable Energy Resource, HSE Training, and many more to come. Learn about the Challenges and How Effective Utilization of these Technologies can result in being more profitable and effective in the Industry. Visit the Expo to talk to Experts that are bringing in their latest echnological advances to showcase for attendees. Network and build lasting relationships that will expand your marketplace and bring businesses together! You will want to be here at the Epic Conference and Expo of the Year!

Other resources on Lunar Lighting:

1. <http://www.lunarlighting.com/>
2. Youtube: <http://www.youtube.com/watch?v=DmxWapYVuKs>
3. <http://www.azomining.com/equipment-details.aspx?EquipID=135>
4. <http://www.forconstructionpros.com/product/10764486/lunar-lighting-pty-ltd-lunar-lighting-tower>

When operators choose to establish sites in close proximity to homes, within 750' they are simultaneously choosing to mitigate their impacts in every possible way to ensure that the neighbors are comfortable within their homes and that our rural and agricultural integrity remain in

place. The fact is that operators have determined most often to comply with local ordinances at a minimum, or have not taken any steps towards mitigation regarding either lighting or noise issues in communities where there are no local ordinances. If the Commonwealth of Pennsylvania is going to be a leader in a world class shale gas play, then the operators need to be functioning as world class, appreciating and respecting the communities where they operate regardless of local ordinances.

Since we know from experience that we are not able to be effective with every operator ‘doing it right’ every time, the Department needs to create a basic floor of regulations that provide that those that now dwell within 750’ of well pads and facilities [edge of site locations] have issues such as lighting and noise regulated with a basic floor of regulations. The zoned communities may choose to build upon these mitigation regulations, but nevertheless, those that dwell in non-zoned communities are still deserving of these basic and reasonable mitigations whether or not their municipality or county fail to act upon doing so. (660a)

Response: The Department acknowledges the comment, however it is beyond the scope of this rulemaking. Lighting impacts may be considered as part of the public resource screening process under §§ 78.15(f) and 78a.15(f). General lighting impacts in areas without zoning should be addressed by the General Assembly through amendment of the 2012 Oil and Gas Act. The Department does have authority to address public nuisances under Section 1917-A of the Administrator Code of 1929 and the public nuisance analysis is by its nature intensely fact and site-specific. The extent that high-intensity activity is occurring at a particular well site over a significant period of time would certainly factor into that analysis.

- 3088.** Comment: Contact – On occasion, those nearby well sites are affected by operations during drilling and fracturing events. The operator needs to be required to provide residents within 750’ of the well pad edge a key contact person when necessary. Such impacts may be the accumulation of diesel fumes within their home that may easily be corrected by the proper queuing of sand trucks for example. The operator may not be aware that the residents are having this problem lacking that phone call. We do not want to see the neighbors approaching a busy well site in order to gain assistance; they need a point of contact. Not all operators are responding to residents’ inquiries now that all their agreements have been signed. Well sites also change ownership and the residents may not be aware of the new contact that may be able to assist them.

Mitigations for noise and lighting can be very helpful to creating that delicate balance where all may thrive. Not every well site is going to need these mitigations and not every neighbor will desire them. They need to be offered to all those living within 750’ of the well pad edge whom can benefit from them should they feel they need them to be comfortable within their homes, or they can sign a waiver. Some residents may desire only noise mitigation and not lighting mitigations, some may desire both. Therefore, the waiver needs to be a two-step process, as we see no need to for mitigation measures not desired by the neighbors within 750’ of the well pad edge.

It is imperative that the Commonwealth approach this issue in such a manner that we experience a Marcellus Shale success story. Ideally, we are seeking a balance where all may thrive. When an operator effectively chooses not to do reasonable and adequate mitigations that provide their neighbors to be comfortable within their homes during site activity; the result is not a Marcellus Shale success story.

When operators advertise or state at meetings they will comply with all local ordinances, knowing full well there are none, that is not a Marcellus Shale success story. There is a delicate balance that may be reached where all may thrive. There are opportunities for well sites and facilities to be

located near homes and essentially within the shadows of each other and the residents are not inconvenienced and uncomfortable. This is possible. Unfortunately, when operators refuse to return calls from their neighbors to discuss legitimate site specific situations, residents have no avenues to advocate for reasonable mitigation measures when there are no local ordinances in place. Lacking regulations, there is no way to ensure that every time a family's request will be considered or acted upon. Thus, it is imperative that the Department fully consider the welfare of the well site's and facility's neighbors and institute common sense guidelines in regulatory language to ensure the Commonwealth does have a Marcellus Shale success story and we reach that delicate balance where all may thrive, public health and safety, environment, community, industry, all balanced with respect, consideration and the needs of each other. Therefore, we recommend that the Department consider this information we have provided along with its reasonable nature and establish provisions in this rulemaking we are so strongly advocating. (660a)

Response: Negative impacts to landowners by a well site or other oil and gas operations should be referred to the District Oil and Gas Office for follow-up. The Department notes that the emergency response regulations adopted in January 2013 added a requirement to § 78.55 (§ 78a.55 in the final-form rulemaking) that requires operators of unconventional wells to post a sign with a 24-hour company contact number at the entrance to the access road to the well site. To the extent that an operator has not done so, or that the number is not functioning as a point of contact for the operator, the non-compliance with this requirement should be brought to the District Oil and Gas Office for follow-up.

3089. Comment: Well location restrictions – The requirements of Act 13 § 3215. Well location restrictions. We recommend these be added in their entirety to the rulemaking due to the uncertain present status of Act 13 of 2012 and the Commonwealth Court. Of special concern to us are those provisions relating to 100/300' distance to blue-lined stream, spring or body of water; including the edge of the disturbed area 100' setback to any blue-lined stream, spring or body of water; within 300' of a wetland and maintaining the 100' setback from wetlands. We also recommend the provisions related to the protective waiver be included in the regulatory language of this rulemaking. Additionally, the 750' additional protective measures need to be included. And all provisions related to floodplain activity need to be included in the regulatory language as well. (660a)

Response: The Department disagrees that the validity of the setbacks for buildings and water supplies to wells in Section 3215(a) of the 2012 Oil and Gas Act is uncertain. On December 19, 2013, the Pennsylvania Supreme Court issued its opinion relating to the constitutionality of the 2012 Oil and Gas Act in *Robinson Twp. v. Commonwealth*, 83 A.3d 901 (Pa. 2013) (Robinson Twp.). The Pennsylvania Supreme Court's decision in Robinson Twp. invalidated Sections 3215(b)(4), 3215 (d), 3303 and 3304. Accordingly, the remaining provisions in 3215 remain valid, including Section 3215(a). Please also see response to comment 265. For that reason, the Department declines to make the suggested amendment to add the statutory setbacks in Section 3215(a) of the 2012 Oil and Gas Act to this rulemaking. The Department has added a definition for "floodplain" and language related to floodplain activity to several sections of the final-form rulemaking.

3090. Comment: Presumption – The requirements of Act 13 § 3218. Protection of Water Supplies. We recommend these be added in their entirety to the rulemaking due to the uncertain present status of Act 13 of 2012 and the Commonwealth Court. We are especially concerned about our not having these hard fought protections as a result of court decisions to which our Region was not even considered a party. These protections are very important to our region and they all, especially the presumption, need to be adequately and sufficiently detailed within the regulatory language of the rulemaking. (660a)

Response: The Department disagrees that the validity of the presumption of liability in Section 3218(c) of the 2012 Oil and Gas Act is uncertain. On December 19, 2013, the Pennsylvania Supreme Court issued its opinion relating to the constitutionality of the 2012 Oil and Gas Act in *Robinson Twp. v. Commonwealth*, 83 A.3d 901 (Pa. 2013) (*Robinson Twp.*). The Pennsylvania Supreme Court's decision in *Robinson Twp.* invalidated Sections 3215(b)(4), 3215 (d), 3303 and 3304. Accordingly, the remaining provisions in Section 3218 remain valid, including Section 3218(c). Please also see response to comment 936. For that reason, the Department declines to make the suggested amendment to add the statutory setbacks in Section 3215(a) of the 2012 Oil and Gas Act to this rulemaking. The Department has added language clarifying the applicability of the presumption to §§ 78.51(c) and 78a.51(c) of the final-form rulemaking.

- 3091.** Comment: Air emissions – The requirements of Act 13 § 3227. Air contaminant emissions. We recommend these be added in their entirety to the rulemaking due to the uncertain present status of Act 13 of 2012 and the Commonwealth Court. It has taken several years to move forward with the unconventional air emissions inventory. We need this regulatory language in effect regardless of the status of Act 13 of 2012. (660a)

Response: Air emissions from oil and gas operations are regulated by the Department under Article III of Title 25. Changes to Article III are beyond the scope of this rulemaking.

- 3092.** Comment: Act 13 of 2012, Subchapter E - We recommend these provisions be added in their entirety to the rulemaking due to the uncertain present status of Act 13 of 2012 and the Commonwealth Court. These are very needful tools for the DEP to utilize with respect to environmental protection. We therefore recommend that these provisions be included in the rulemaking's regulatory language. (660a)

Response: The Department disagrees that the validity of Subchapter E (relating to enforcement and remedies, Sections 3251 - 3262 of the 2012 Oil and Gas Act) is uncertain. On December 19, 2013, the Pennsylvania Supreme Court issued its opinion relating to the constitutionality of the 2012 Oil and Gas Act in *Robinson Twp. v. Commonwealth*, 83 A.3d 901 (Pa. 2013) (*Robinson Twp.*). The Pennsylvania Supreme Court's decision in *Robinson Twp.* invalidated Sections 3215(b)(4), 3215 (d), 3303 and 3304. Accordingly, the remaining provisions in Subchapter E remain valid. Please also see response to comment 936. In addition, it is not typical practice for the Department to repeat enforcement and remedy provisions in the environmental statutes when developing regulations. For those reasons, the Department declines to make the suggested amendment to add the statutory setbacks in Section 3215(a) of the 2012 Oil and Gas Act to this rulemaking.

- 3093.** Comment: Act 13 of 2012 Setbacks - The 2012 Oil and Gas Act extended the setback distance for unconventional wells from 200 feet to 500 feet from existing buildings or water wells, unless consent is provided by the owner of the building or water well. 58 Pa.C.S. § 3215(a).

The Act established a 1,000-foot setback for an unconventional well from a water supply extraction point used by a water purveyor, unless written consent is provided by the water purveyor. 58 Pa.C.S. § 3215(a).

We recommend these provisions be added in their entirety to the rulemaking due to the uncertain present status of Act 13 of 2012 and the Commonwealth Court. These are very needful, protective public health and safety measures for the DEP to utilize with respect to environmental protection.

As previously discussed in our comment, we'd even prefer to see the 500' measure modified to 750' as measured from either the pad edge or limit of disturbance; at least in rural locations where there are no existing local ordinances. We therefore request consideration for our preference, but nevertheless recommend that these provisions at a minimum as written be included in the rulemaking's regulatory language. (660a)

Response: The Department disagrees that the validity of the setbacks for buildings and water supplies to wells in Section 3215(a) of the 2012 Oil and Gas Act is uncertain. On December 19, 2013, the Pennsylvania Supreme Court issued its opinion relating to the constitutionality of the 2012 Oil and Gas Act in *Robinson Twp. v. Commonwealth*, 83 A.3d 901 (Pa. 2013) (*Robinson Twp.*). The Pennsylvania Supreme Court's decision in *Robinson Twp.* invalidated Sections 3215(b)(4), 3215 (d), 3303 and 3304. Accordingly, the remaining provisions in 3215 remain valid, including Section 3215(a). Please also see response to comment 265. For that reason, the Department declines to make the suggested amendment to add the statutory setbacks in Section 3215(a) of the 2012 Oil and Gas Act to this rulemaking.

To the extent that the commentator suggests extending the setbacks, in Section 3215(a) the General Assembly established setbacks prohibiting the drilling of oil and gas wells within certain distances from buildings and drinking water wells. For a conventional well, this distance is 200 feet; for an unconventional well, this distance is 500 feet. Additionally, unconventional wells may not be drilled within 1000 feet of a public water supply. Any change to these provisions should be a legislative change to the 2012 Oil and Gas Act.

3094. Comment: Well Plugging Funds - § 3271 Well plugging funds. Recent events brought to light in both Pennsylvania and Wyoming necessitate in our comment regarding the stipulated surcharge. Pennsylvania has a long legacy inventory of wells needing attention. This is the direct result of the historical conventional drilling operations in Pennsylvania for well over one hundred years. The costs associated with plugging every abandoned and orphaned well can not even be adequately calculated. We are now in the Grand Era of Marcellus Shale. Exploitation in earnest will continue within our Commonwealth for decades to come. There have been events where these old wells have created problems with the new unconventional drilling. They have the potential to be serious environmental problems and at times, already are. We therefore, recognize that while this is a huge problem, we are not sufficiently attacking it with the current fee surcharge structure. We recommend therefore, that the \$50 abandon well surcharge specified in Act 13 of 2012 be revised to \$100. We recommend that the \$100 surcharge for wells to be drilled for oil production be revised to \$200. We recommend that the \$200 surcharge for wells to be drilled for gas production be revised to \$400. While these amounts are increased 100%, in reference to the cost of a drilling permit and these surcharges as compared to the entire expense of drilling a well, these are really modest expenses. However, they will provide a much greater basis for the Department to increase emphasis on this environmental problem. Additionally, it was recently noted that the state of Wyoming is having serious problems with abandoned wells, and they are not from a hundred years gone by. They are in fact, from a more recent history, from 1995-2004, Wyoming's recent boom years. The boom years have left the state with 1,200 abandoned wells that require plugging. Companies are not taking responsibility. Therefore, we are concerned about our old inventory of wells being augmented with a new batch of abandoned wells as we are experiencing a drilling renaissance. The Department needs to take advantage of this renaissance opportunity through a modestly increased surcharge to work towards cleaning up the legacy of the past generations of Pennsylvania drillers. (660a)

Response: The surcharges on permits that fund the Department's orphan and abandoned well are fixed by section 3271(b) (abandoned) and (c) (orphan) of the 2012 Oil and Gas Act. Any changes to those surcharges must be made through legislation passed by the General

Assembly. The Department is preparing an analysis of the historical cost of plugging orphan and abandoned wells along with projected future costs and revenues with the goal of developing a report to the General Assembly with suggested changes to the surcharge levels.

As for bonds, those amounts are set by section 3225 of the Oil and Gas Act, Section 1606-E of the Fiscal Code and Section 1934-A of the Administrative Code. Section 3225(a) of the 2012 Oil and Gas Act does grant the Environmental Quality Board the authority to adjust bond amounts every two years. That analysis is ongoing and such changes may be the subject of a future rulemaking. Such changes are beyond the scope of this rulemaking, however, as the proposed rulemaking did not contain any substantive bonding amount changes.

- 3095. Comment:** Non-zoned locations may be waived by landowner. Many of our rural municipalities' lack planning and zoning that would adequately provide for reasonable setbacks related to sites located near homes. It is becoming plainer with each dangerous incident that has occurred whether it be the ATGAS [Bradford Co.], YARASAVAGE, MAZZARRA [Wyoming Co.] and most recently, LANCO [Greene Co.] indicate that when there is a problem, there is an area much too close. In the case of ATGAS and YARASAVAGE a blowout occurred where flowback water was flowing too near homes. In the case of MAZZARRA, treated flowback water flowed until it was contained in the basement of a nearby home. And, LANCO, thank goodness there were no homes within 1,000 feet, but if there had been within 500', we are concerned how the intense heat would've affected a home within 500' and the safety, health and welfare of the residents. There are many benefits to horizontal drilling, and one which has not been adequately realized is that these sites do not have to be so very close to adjacent homes. There can be adequate setbacks adopted. We recognize the right of the subsurface owner to exercise their gas rights, so, we advocate that in situations where future well pads and impoundments are proposed that a minimum setback to occupied dwellings be designated that may be waived by the homeowner. The homeowner may choose to live closer should they determine to make that informed choice. Reasonable and appropriate setbacks provide a measure of protection for public health, safety and the environment, that presently some folks have been neither adequately nor currently provided. We recommend 1,000' setback for a well pad and 500' for an impoundment facility. We would also be inclined to agree with a 750' setback, however, that distance would involve appropriate mitigations that may be needful in some cases to provide for residents to be comfortable within their homes. We recommend 1,200' setback from the nearest occupied dwelling or 200' from the nearest lot line, whichever is greater, for compressor stations, gas processing facilities, dehydration facilities, and natural gas distributed energy facilities. These measures are based on experience with incidents as mentioned and by Northern Tier folk's experiences where sites have been permitted too close to their homes for basic living comfort. We need to be serious with reaching that delicate balance where all may thrive. Folks need and deserve to be comfortable within their homes and safe. When the local governing body fails to act regarding these basic protections, the Commonwealth needs to have a simplistic approach that will provide for these basic and most needful protections. (660a)

Response: In Section 3215(a) of the 2012 Oil and Gas Act, the General Assembly established setbacks prohibiting the drilling of oil and gas wells within certain distances from buildings and drinking water wells. For a conventional well, this distance is 200 feet; for an unconventional well, this distance is 500 feet. Additionally, unconventional wells may not be drilled within 1000 feet of a public water supply. To the extent the commentator suggests that the General Assembly should extend these setbacks or provide setbacks for particular facilities or resources, that change should be made through an amendment to the 2012 Oil and Gas Act.

- 3096. Comment:** New Provision - Well Pad Spacing. Well pad spacing – not addressed in this

rulemaking is a minimum distance for well pad spacing. Horizontal drilling provides the advantage of more wells per pad, and thus better spacing. Our communities are more impacted with more pads than otherwise is needful.

Our region is not an arid, flat, unpopulated area. Well pad spacing patterns of the past are not reasonable operations here. Operators must utilize appropriate well spacing development plans, ideally with a minimum 3,000' spacing between pads. Operators advised landowners of 3,000' spacing when the development commenced. Minimum 3,000' well pad spacing is workable. When the industry first arrived here in the Northern Tier Region, some operators advised that they would have 3,000' well pad spacing, [between pads on that particular row]. While that spacing is workable within our communities, many pads are spaced much closer, and some that are much too close. Effective fracture propagation provides for a certain reasonable distance and thus spacing. Not all operators are adhering to such a practice, and not all the time. Below are examples of a few Northern Tier sites that are much too close, these are perhaps the worst of the well pad inventory. There are many more pads that are spaced with less than 2,000' spacing and more with less than 3,000' spacing. Ideally, the technology is available, that our communities can be pretty much guaranteed with a minimum 3,000' well pad spacing and the distance between well rows, can be an effective 3 miles. The lengths of horizontal bores have created this placement equation. However, not all operators are proceeding with responsible pad placement strategies. We therefore, recommend that the rulemaking be revised to incorporate such a strategy floor that will protect the integrity of our rural, farmland and forested communities and with that, future land use options for landowners. Please note that the development in Sullivan County is proceeding at a much slower pace and thus, we are not yet aware of such instances there. Creating a provision now, may result in preventing future poor pad placements in Sullivan County and all our counties from such that the rest of our region has experienced.

- Susquehanna County, Springville Township, MOGRIDGE PAD, permits 115-20654, 115-20655, and 115-20653 all are unconventional horizontal wells and CHUDLEIGH PAD, permit 115- 20189 an unconventional horizontal well; from well bore to well bore the distance is less than 850'. Notably, the well pad edge to well pad edge measure is considerably less.
- Wyoming County, Meshoppen Township, BREWER PAD, permits 131-20376, 131-20341, and 131-20340 are all unconventional horizontal wells and REIMILLER PAD, permits 131-20214, 131-20215, 131-20255 and 131-20256 are all unconventional horizontal wells. The distance from well bore to well bore is less than 500', and for all intents and purposes, these well pads are essentially back to back.
- Bradford County, Springfield Township, HARKNESS 3H PAD, permit 015-20278, is an unconventional horizontal well and HARKNESS 2H PAD, permit 015-20277 is an unconventional horizontal well. The distance from well bore to well bore is approximately 674'. Notably, the well pad edge to well pad edge measure is considerably less, approximately 367'.
- Tioga County, Sullivan Township, EMSPON R 235 1H PAD, permit 117-20278 and HEPLER D 235, permits 117-21534, 117-21533. All permits are unconventional horizontal bores and the distance between the individual pad well bores are approximately 1,134'. Notably, the distance, well pad edge to well pad to edge is much closer.
- Another item we have noticed is in locations where the Susquehanna River bed has not been leased. In such locations, the laterals are much shorter and the well sites are also closer. An examination of well sites and wells of Citrus Energy in Washington Township, Wyoming County

clearly indicates what may happen in such situations. We end up with more disturbed land, more earth disturbance issues, more well sites and more gathering lines. One well site has even been built practically on the river bank, save the location of the adjacent railroad track. This is not good planning if protecting the river is the ideal. The well sites in this area, especially, 131-20158, 131-20143, 131-20024, 131-20315, 131-20313, 131-20316, 131-20025, 131-20255, 131-20215, 131-20214, 131-20222, 131-20256, 131-20032 need to be reviewed with the laterals and determine how likely it is that there may have wells than may be necessary due to the been more well sites and location of the river and inadequate or absent guidelines on the manner of development in relationship to non-leased riverbed locations. The Department needs to review this area along with the development of other near river locations and determine the manner in which a regulation or other mechanism may create better outcomes. We need to do this better. There needs to be a mechanism in place that creates that avenue. (660a)

Response: Establishing requirements for well pad spacing is beyond the scope of the this rulemaking.

- 3097.** Comment: Waste Hauling Certification – We draw your attention to the STRONGER Review, September 2013, page 30.

RECOMMENDATION II.10.A. The review team recommends that DEP consider whether a program for certification of commercial waste haulers is appropriate. (STRONGER 2013 Guidelines Section 4.2.5.)

RECOMMENDATION II.10.b. The review team recommends that DEP develop a training program to ensure E&P waste hauler compliance with regulations under the Solid Waste Management Act. (STRONGER 2013 Guidelines Section 4.2.5.)

The purpose of the STRONGER Review is to offer recommendations for program improvement. When a STRONGER Review provides such recommendations, it is necessary for the Department to advance with those improvements that will add additional measures to protect public health and safety and the environment. Therefore, we recommend that the Department follow through with these recommendations and create any regulatory language and corresponding guidance documents that may be necessary. (660a)

Response: This comment is beyond the scope of this rulemaking. This rulemaking does not address licensure of waste haulers. Licensure of waste haulers is regulated by Chapter 299, Subchapter B (relating to standards for collecting and transporting of residual waste), 25 §§ 299.201 – 299.232. The commentator’s concerns should be directed to the Department’s Bureau of Waste Management.

- 3098.** Comment: This is an outrage, these parks belong to the citizens of this state, not this governor or the drilling companies of Texas! I swear I will do all I can to show Corbett the door this Nov. This is nothing more then election ploy for “jobs”! (662)

Response: The Department acknowledges the comment; however, it is beyond the scope of this rulemaking.

- 3099.** Comment: Thank you for taking all necessary steps to protect our heritage and our water. Clean water is kind of a big deal, being essential to life. “Donations” from lobbyists won’t buy enough clean water when it’s all poisoned by this currently unsafe process of obtaining the dregs of fossil

fuels from the earth. It's long past time we kick our addiction to fossil fuels, so please stop giving the fossil fuel industry carte blanche to destroy not just Pennsylvania, but the planet. (671)

Response: The Department acknowledges the comment; however, it is beyond the scope of this rulemaking.

3100. Comment: A driller and myself and my attorney, which have spent a good deal of money over a period of a year or two, went back and forth couple of times never getting a lease satisfactorily. Now we have a new driller who is going to drill a test well. If it turns out that we have gas under our land, we are going to be subject to more negotiations. After what I've heard tonight, do I really want to do that? I'm not sure. So the more I hear, the more I wonder. Maybe it's fortunate we didn't do anything. We now have the problem that the driller is exploiting the net back, which wipes out your royalty and you don't get it, because the poor drillers need that 1/8th guaranteed minimum royalty to cover their overhead. The poor fellows don't have enough overhead to drill. So they need to take your royalty back. The Supreme Court was very sympathetic to the driller's problems. They overlooked a lot of things, but we're stuck with that now. And I don't know how it will be settled. I hope it settled well. I don't want you folks to do anything. The oil and gas industry is powerful. They've got everybody completely outclassed. I tried my best. I'm nowhere. Neither is my daughter. (1224)

Response: The Department acknowledges the comment, however it is beyond the scope of this rulemaking.

3101. Comment: In response to your letter of February 28, 2014 regarding the use of Mushroom Compost as a soil amendment to refurbish land at well sites at Marcellus Shale locations, I would like to offer some information. I am the President of Laurel Valley Farms Inc. which is a multi-faceted company that provides the substrate that we refer to as Phase I & II compost that is used in the process of growing mushrooms at the six family farms that are the owners of Laurel Valley Farms Inc. After the substrate is used for the mushroom growing process, all of that material that we then refer to as Spent Mushroom Substrate(SMS) is returned to Laurel Valley's Soils Division where it is processed into many different horticultural and soil amendment products. The price that we receive for our premium SMS material that is processed and aged is \$15.00 per cubic yard. The material is sold FOB from our site at that price or delivered to customer with the added shipping costs. One cubic yard of SMS weighs approximately 700 lbs. with about an average of 17 cubic yards per truck load. In all due respect, this explanation is only to inform of real numbers in regard to what you represented in your letter. If a five acre site were to be applied with two inches of SMS, it would take approximately 1,235 cubic yards of material and if that material were to cost only the \$15.00 per yard FOB at our site without considering the transportation cost to deliver that material to the well sites the price for the project per well site would be \$18,525.00 which is ten times the cost that was mentioned in your letter.

I think that the concept of using a Pennsylvania agricultural product for this purpose is a fantastic idea that would allow the gas companies to be better stewards of the land and also show the state and its citizens that they are willing to show a spirit of cooperation with other aspects of Pennsylvania commerce however, the real numbers may make this concept unrealistic. Laurel Valley Farms Inc. is one of just a few companies in the mushroom industry in southeast Pennsylvania that would have the resources to supply such a project and would be happy to participate if it became a reality. (677)

Response: The Department acknowledges the comment, however it is beyond the scope of this rulemaking. The Department's restoration requirements set general performance standards;

how operators meet those performance standards is up to each operator. The Department does not typically specify the particular approach that must be used to meet the standard.

- 3102.** Comment: We already have some of the highest leukemia, lupus and autoimmune disease rates of any state. It's time to clean up our Pennsylvania lands and stop pollution. A few more jobs is not worth less years of life expectancy! (696)

Response: The Department acknowledges the comment; however, it is beyond the scope of this rulemaking.

- 3103.** Comment: The parks are a gift to our children. Give it to them unblemished. (698)

Response: The Department acknowledges the comment; however it is beyond the scope of this rulemaking.

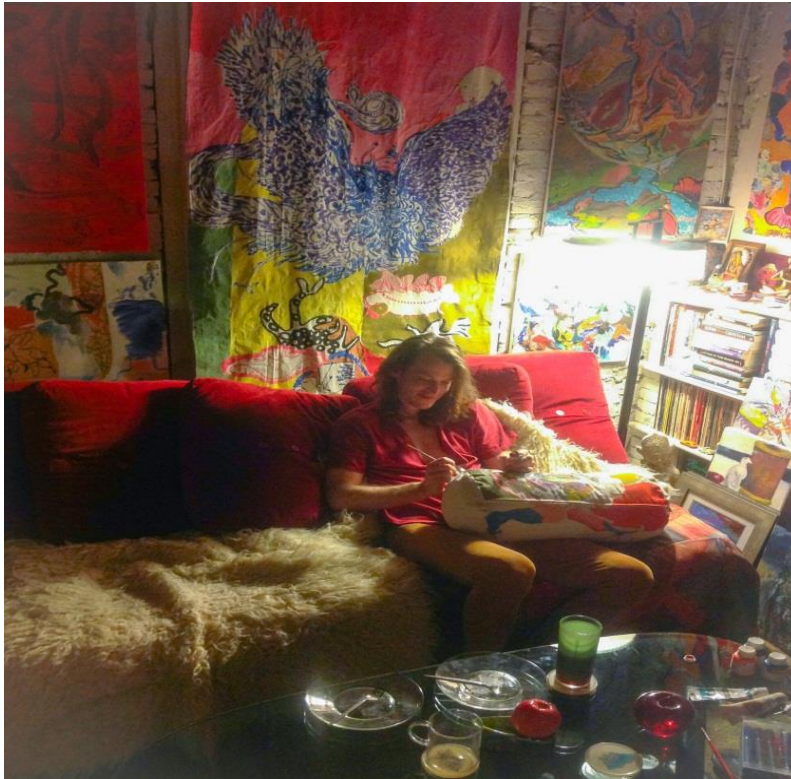
- 3104.** Comment: Make that "Commenters" not "Commentators". (700)

Response: The Department acknowledges the comment.

- 3105.** Comment: It is criminal that the oil and gas industry, with the assistance of our paid off with campaign contributions officials, are destroying Pennsylvania's wilderness and WATER for the sake of profit. I AM DISGUSTED with the actions of our governor who is destroying our children's future for the sake of oil and gas industry profits. Our state parks should be OFF LiMITS to any industrial activity, PERIOD. (707)

Response: The Department acknowledges the comment, however it is beyond the scope of this rulemaking.

- 3106.** Comment:



(758)

Response: The Department acknowledges the comment.

3107. Comment: On November 18, 2008, I attended the Senate Majority Policy Committee hearing held at College Misericordia in Dallas, PA. It was advertised as a public hearing to better understand and manage the opportunities and challenges posed by the development of the Marcellus Shale Play. Industry, elected officials, representatives of DEP and DCNR as well as others were slated to speak. It seemed like an opportunity for citizens to learn more. I was particularly interested since we already had over a dozen unconventional gas wells drilled near my home.

To summarize that first hearing, the gas industry representatives complained about the burdensome paperwork PA required (demonstrating- with a huge pile of papers) and the delays it cost in obtaining permits. One by one, industry reps warned of “ominous” consequences if DEP did not become more welcoming! They would move drilling rigs to West Virginia and delay transfer of a “significant number” of employees into PA because permitting delays were worse than any other state. Texas was quoted as having a 7-day permit at the time PA had a 45-day process in place.

With new wells going in monthly, in my neighborhood in 2008, I wondered what delays had occurred there.

The GOP senators were very sympathetic, nodding their heads, and went further to expound on the importance of thousands and thousands of jobs and even denounced the danger of killing the “Golden Goose”.

When the newly appointed Secretary of DEP, John Hanger concluded his remarks with the emphasis on the need to protect Pennsylvania’s environment, he was directed to streamline the process.

Fast forward to January 27, 2014, 6 years later and here we are! That “Goose” has been very busy (laid a lot of eggs!) in the past 6 years: \$800 million plus ATW (at the wellhead) and over \$4 billion and some change for residential price. And that is from just one Goose in a 4 mile radius of Dimock!

I’d say we are well past the point of worry that the industry will not set up drills or bring their workers to PA. In fact I would say we know a lot more of what they will bring...a lot more. Our train has left the station and it is loaded. WHERE that train is heading remains the challenge.

Reading the regulations and the proposed revisions to Chapter 78 is almost as difficult to get through as the Affordable Health Care Act. Try as I may to be a participant and not a victim, in the process of submitting suggestions, I focused on the section on pits. I know a little about pits. There are pages of requirements and directions on how to do the pit. The idea of disallowing any pits to be buried on a landowner’s property, without having to obtain his or her consent was dropped because the industry protested and DEP “determined such restrictions were not practical”.

Each morning, faithful to my commitment to never again be ignorant or uninformed regarding natural gas, I read the “gas news”. Invariably, the morning headlines proclaim yet another ban on natural gas extraction aka “fracking”. Some city, community, even country has decreed “NO FRACKING”. Other headlines announce the liquification and exportation of our resource: “Exclusive: World buyers line up to buy U.S. natural gas. (China, Japan, India) Even Forbes magazine published an article with the lead in “Billionaire Father of Fracking (George Mitchell) Says Government Must step Up Regulation” and another “The Fracking Solution Is A Good Cement Job”.

We know, all too well, that the necessary sacrifice will be allocated to areas of poor, rural, non-zoned communities. Certain areas, areas with AFFLUENCE AND INFLUENCE will be exempt from the massive industrialization of their backyards, front yards and even their school yards. DEP, DEPARTMENT OF ENVIRONMENTAL PROTECTION, I suggest you no longer regulate or mitigate the harm that is allowed but do everything in your power to prevent it and if you do not have the ways and means to do so, then stop issuing new permits. You are the foot soldiers, boots in the field. You were hired to protect Penn’s Woods, to uphold Article I Section 27 of the Pennsylvania constitution that states:

Those elected officials that presided over that hearing in 2008 and those subsequently elected have that same duty.

DEP, hit the pause, there is no rewind for this, only a fast forward into a disastrous future for the children, your children, our children. (856)

Response: The Department acknowledges the comment, however in large measure it is beyond the scope of this rulemaking. The Department notes that the final-form rulemaking eliminates the use of pits for temporary storage at unconventional sites (§ 78a.56) and the use of pits and open-topped structures for storage of production fluids at both conventional and unconventional sites (§§ 78.57 and 78a.57). This rulemaking effectively carries out the mandate of Article I, Section 27 of the Pennsylvania Constitution. Please see response to comment 265.

3108. Comment: I do not believe the Clean Streams law of 1937 has ever been re-written-so I am in no need of telling you neither what it is nor that it should be up for sale to the highest political

contribution. (970)

Response: The Department acknowledges the comment; however it is beyond the scope of the rulemaking.

3109. Comment: With the recent discovery of high levels of radiation in Black Lick Creek from the Josephine treatment plant in Indiana County, PA, we (IWLA) are requesting that the mine discharges from Emerald Mine 001,004 and 016, Cumberland Mine 014, and 029 Greene County and the Clyde Mine in Washington County be checked for radiation. The requests comes from the fact that high levels of salt, bromides, strontium, osmotic pressures and sodium have been found in these discharges. It is a known fact that bromides are not associated with coal mining especially in the concentrations that have been discovered. It is our fear that if the mine pools have been compromised with drilling wastes that it is a good possibility that radiation from Radium 226 may be present in these mine discharges also. We (IWLA) would like a copy of the results of the testing for radiation, a water test of these discharges (DEP Code 046), and a request that the testing be given high priority.

With these new amendments in place, one must also consider the enforcement of these regulations. In October/November 2013, *Source Watch* released a study entitled, "Pennsylvania and Fracking". The study was compiled from DEP reports and other sources, and showed that the number of new wells increased from 36,000 in year 2000 to 71,000 in 2010 - an average of 3,500 new wells yearly. In response to this gas drilling upsurge, DEP increased its staff by 130 new employees, 65 of which were inspectors. Each of these new inspectors would be responsible for approximately 538 new wells. This number seems monumental for one person. The investigative group *ProPublica* reviewed records of 48 wells in 2011. They found that of these 48 wells, most were inspected (42) at least once. Six of the 48 wells, or 12.5%, were never inspected. None, (0%) of the wells were inspected during the "fracking process." If these numbers are projected to include the number of new wells since 2000 to 2010, it would mean that over 729 wells were never inspected. This does not include the wells drilled before the year 2000, or after 2010. With these facts, one must conclude that more employees are needed to protect humans and the environment. Since 2009 the number of deaths to the gas field workers has increased by over 100%. There is an obvious need for both better regulations and better enforcement of these regulations.

One other important factor is that when violations occur or are suspected by the public, the DEP must respond immediately. Too often, the response is either not forthcoming or is investigated days after the event. Enclosed are several requests made by the League's Harry Enstrom Chapter (Greene County, PA.) that have fallen on "deaf ears."

The League stands ready and capable of aiding the regulatory agencies in any way. The Harry Enstrom Chapter of the League has developed a water quality monitoring program and has 3 years of water testing data available upon request.

Finally, in support of the rulemaking process and the importance of the proposed new changes in the regulations, we recognize that the general public needs more time to be able to participate in a more meaningful way. (492a)

Response: The Department acknowledges the comment, however it is beyond the scope of this rulemaking. The Washington County incident has been the subject of ongoing investigations during the pendency of the Surface Activities rulemaking. The Department has significantly increased its staff since 2011 and conducted more than 75,000 inspections from 2012 through 2014.

3110. Comment: Remind me again, why you have your job. (1015)

Response: The Department acknowledges the comment; however it is beyond the scope of this rulemaking.

3111. Comment: These cranes need all the help that we can give them so that our grandchildren can enjoy them. Those who wantonly kill these animals need to be prosecuted fully so that everyone knows that such behavior will not be tolerated. We owe it to those who will be following us on this amazing planet. (1018)

Response: The Department acknowledges the comment; however, it is beyond the scope of this rulemaking.

3112. Comment: I'm not sure if you heard that some states are losing their water supply due to many reasons including gas drilling. My major concern is soil pollution. Soil pollution has major consequences to our health. Gas drilling had so much effect on different states in US, including Texas, Ohio, West Virginia and others. Pittsburgh, PA also received hundreds of complains against gas drilling. Don't add Philadelphia and other parts of PA to this list and keep our land clean. I would choose our water over gas. We could burn coal and used to keep warm. There is also a quote that says "man can live about 40 days without food, 3 days without water and 8 minutes without air...but only for a second without hope." It doesn't say anything about gas. Protect our land. Please let PA burn coal and wood. It will not damage the environment and will only be burned in the cold time of the year and only for heating purposes. Only time we should use commercial heat is for the elderly, sick and disabled. This is a household opinion and/or anyone at this household will be responsible for any & all facts written. (1042)

Response: The Department acknowledges the comment; however, it is beyond the scope of this rulemaking.

3113. Comment: A huge issue here is the proposal by natural gas companies to transport fracked waste water in barges down the Delaware River. This is where safety is critical when you are dealing with the water supply of seventeen million people from the Delaware Water Gap to the state of Delaware. The problem is that once a river is breached by chemical spills from the waste water, how can it be restored to its former integrity? I don't believe that most people know about the hundreds of dangerous chemicals used in the fracking process. Let me enumerate just a few of them: Ethylene Glycol, Formaldehyde, Benzene, Arsenic, methane gas, barium, and strontium. There are *radioactive* components in the fracked waste water, dislodged from the earth due to the depth of the drilling.

The chemist Theo Colborn analyzed the potential health effects of these chemicals- 75% of the chemicals could affect the skin, eyes, and the respiratory and gastrointestinal system. 40-50% could affect the nervous system and brain, immune, cardiovascular system and kidneys. 25% of these chemicals can cause Cancer and Mutations. Colborn recommend that in order to protect public health, there must be full disclosure of the contents of all products, extensive air and water monitoring, and coordinated environmental human health studies. The U.S. Safe Drinking Water Act must be enforced I might add that one huge problem is that physicians, I believe, still are not free to disclose to their patients the chemicals that may have caused their injuries involving fluids from fracking.

Stray gas migration may be a problem in the proposed barge transport of fracked wastes. This has not been addressed by the proposed rules (Section 78.52A and Section 78.73) -other parts of Pennsylvania have experienced explosions from methane escaping from gas product wastes and

storage sites. It is well to keep in mind the earthquake that occurred in Youngstown, Ohio which was related to fracked waste water storage. I imagine it is possible that once an area has had an earthquake, others could follow. The exposure of large numbers of people in densely settled cities and towns in this area to an industrialized process like hydraulic fracturing is a risky one. Let us hope that those who carry this out here will be more skillful than those who played a part in the creation of the severely damaged 700 square miles of land in upstate Pennsylvania. (111)

Response: The Department acknowledges the comment, however it is beyond the scope of this rulemaking.

- 3114.** Comment: Drilling Operations: Drilling companies should be required to disclose the chemicals used in their production processes. Pennsylvanians have a right to know what chemicals are being injected into the earth, waterways, and air via the entire fracking process. The oil industry making claims about the proprietary nature of the chemicals is not acceptable justification for this practice when the health of our citizens and the environment is at risk. Repeal the ‘medical gag order’ on doctors in the Commonwealth. (140)

Response: Well operators are already required to provide full disclosure to the Department under sections 3222 and 3222.1 of the 2012 Oil and Gas Act (58 P.S. §§ 3222-3222.1). As for the restrictions on release of the information, the Department acknowledges the comment, however it is beyond the scope of this rulemaking.

- 3115.** Comment: This industry, though it is needed for the area employment is quite a concern to me. The lack of regulations incorporated is disheartening. This industry needs to have rules and regulations such as any other industry to ensure the safety of the nearby residents, the environment and the workers that are employed at these sites. As a resident of Pennsylvania, I by law cannot pour toxic chemicals into my lawn such as bleach, antifreeze and various types of acid. By doing so would be reported (I would hope) by onlookers and neighbors. This industry should have the same rules and regulations that the residents of the spoken of area would have.

Pennsylvania is currently the only state anticipating a hydraulic Fracking boom, yet we are the only state NOT taxing the company for taking up our clean air, water and resources. Air should not cause cancer. Water should not catch on fire. Our food in our gardens should not be toxic.

If this plant is built at the Horsehead location, the economy in that area will flourish for a little while. The problem where I experience an issue is where they are doing “forced pooling”. Buyers do not want to purchase a home that has a gas lease on the lot; especially if the mineral and gas rights are not transferring to the new buyer. If you have a holding tank of gas anywhere within eye shot of your home, your home price drops over 20%.

Property owners will not be able to finance due to the mechanical liens that could potentially reach \$5M being placed on homes by the gas companies to protect their investment, pay the employees before the well begins producing. (1065)

Response: The Department acknowledges the comment, however it is beyond the scope of this rulemaking.

- 3116.** Comment: Ordinary citizens need the power to come together to make decisions about their communities even when municipal authorities, in pursuit of economic gain are inclined to favor the aggressive policies of the oil and gas industry. (1069)

Response: The Department acknowledges the comment, however it is beyond the scope of this rulemaking.

3117. Comment: The entire idea of an unregulated industry of any kind is bad for PA and stressful for the commonwealth. The environmental costs and impacts of the practice of fracking is ruining this great state. I have lived in PA now since 2001 and have watched perfectly good parts of the state that were fun to visit now nearly unrecognizable. I've watched the public become divided, municipalities become corrupted and people disenfranchised with the representation of their government officials who are sworn to uphold the constitution of the commonwealth. The very nature of the practice of fracking lends itself to outside foreign investment through hedge fund backed operations. Hedge fund based companies are not representative of a democratic process, nor do they play fair once they move into your area. I am currently living in an area where the law is being dismissed for profit. And who does it profit? The stock holders? The contractors? The massive amount of workers from other states? Pennsylvania relaxes restrictions and tax obligations of these giant corporate efforts and encourages citizens to forfeit their rights to participate in a free market economy by letting those with far more political and financial capital to control the playing field.

In my own township, a distressed former steel mill town, the wealthiest of the residents are making all of the decisions and have placed their own people in key positions of the municipality in order to insure that they will make the most amount of money in this densely populated neighborhood with little to no regard for the rights of the majority of the citizens. My city is corrupted by factions of people who see this as a way to accumulate more wealth while not being accountable to the citizens or being able to make any guarantees of public health and safety let alone honoring citizens property rights. I believe people should be allowed a way to make an honest living. And nothing about this practice allows for that.

It should be noted that while the gas advocates claim this is perfectly safe, they don't seem to have proof. The proof is far more on the side of the violations of the land and the painfully obvious problem this presents for stress on the watershed for generations to come. It would be a shame to poison such a beautiful landscape for the sake of making it possible for investment groups to make untold Trillions of dollars that never make it to the state coffers or benefit the communities. And that is exactly the path this carbon boom has set PA on. This behavior of fast action surveying and pushing for 6,000 new wells per year is fueled by speculations and not science or sound economics.

If Pennsylvania does not begin to strictly regulate and tax this industry and begin to study the environmental issues already imposed on the state, you will see more civil unrest and far more attention cast upon those in leadership who are simply unfit to lead the commonwealth in a constitutionally legal manner. I plan on making it a top priority to protect my land by studying the laws, economics and social problems associated with this situation and organizing an effort to educate more of the public to become aware of their rights as citizens. Because apparently this state does not have the leadership deserving to be the stewards of the land it needs to be.

Halt all fracking until it can be done in a safe manner. (1124)

Response: The Department acknowledges the comment. The Department is not authorized to issue a moratorium on oil and gas operations. Issuing a moratorium would require an act of the Legislature.

Well drilling can be done in a safe and environmentally sound way, provided applicable laws are adhered to. The regulatory changes included in Chapters 78 and 78a are intended to

further strengthen these standards to ensure the Commonwealth's environment and the health of its citizens is properly protected. The Department will continue to study the efficacy of its regulatory programs and make improvements to the rules as necessary.

The Department is not authorized to assess taxes on oil and gas operations except to the extent specifically authorized by the Legislature.

3118. Comment: Enclosed copies that could harm me and anyone on Gas and Oil in PA. I was Pres. Of Sterling Energy Inc with 156 wells in the Warren Area and retired in 92. Receiving ORR on certain leases. Decided to develop and lease that I've held since 1990 with 3 permits I received last month, and received the enclosed. Since I was in the O&G, I have found out that this state has incorporated foolish rules on leases and the developers. With this notice I am hesitating on developing the Warren lease. Think about this letter should you be involved in deciding. (1130)

Response: The Department acknowledges the comment, however it is beyond the scope of this rulemaking.

3119. Comment: I have several concerns about the regulations in SB 411. I feel that they are not stringent enough to ensure the safety of air and water resources for the residents of Pennsylvania. Not only is this detrimental to the health and welfare of residents, but will negatively affect the "livability" of the affected areas where hydraulic fracturing occurs.

To begin with, the history of regulation of hydraulic fracturing (fracking) gives me pause. The Federal Energy Policy Act of 2005 stripped the EPA of authority to regulate fracking despite the growing number of water pollution cases across the country at that time. Specifically, it exempted fracking from the Clean Water Drinking Act. We know this was a political decision influenced by then President Bush and Vice-President Cheney. Fracking has also been exempted from the federal Clean Air and Clean Water Acts. If fracking is so safe, why has it been exempted from regulations which other industries are subject to?

Because of the oil and gas industry's fear of regulation and due to the many environmental problems which have resulted from fracking in Pennsylvania and many other states, I would like to see very stringent regulations implemented in PA. (1146)

Response: Well drilling can be done in a safe and environmentally sound way, provided applicable laws are adhered to. The regulatory changes included in Chapters 78 and 78a are intended to further strengthen these standards to ensure the Commonwealth's environment and the health of its citizens is properly protected.

3120. Comment: Create a public online zoomable map of all wells (plugged, abandoned, in production, being fracked, being drilled, and planned) showing depth, and all laterals, with information about underground strata, and a history of drilling, fracking, and extraction activities, with statistics about the production history, and ownership information. (156)

Response: The Department acknowledges the comment, however the creation of such a map is beyond the scope of this rulemaking.

3121. Comment: Create a public online zoomable map showing all truck and barge routes used for the transport of fracking chemicals and fracking waste, and their daily traffic. (156)

Response: The Department acknowledges the comment, however the creation of such a map is beyond the scope of this rulemaking.

3122. Comment: I am writing this in lieu of attending the meeting being held this evening in Washington, PA, which I am unable to attend. I just want to be sure that you realize that not all of those PA residents who are concerned (VERY) as to the potential effects from fracking on both people's health and on the environment, two not so separate matters, are able to attend one of the meetings scattered thru out the State and that we are concerned enough to be watching what you are doing hopefully for the benefit of we citizens and not only for the benefit of the corporations.

First I want to say that I have not over the past half dozen years or so been at all impressed that you are doing the job as it should be done. Let me qualify that statement with the fact that I am one of the pediatricians for the Hallowich family, (I would imagine that name is familiar to you). I learned of the many times they called upon you, i.e. the DEP, for help when their well water was poisoned, when they would have to leave their home when wells were being flared and the wind was blowing toward them, have to leave with tearing eyes, eyes, noses and throats burning, and when the area lost electricity during a fierce thunder storm and black clouds of smoke were billowing from the compressor plant behind their home. And I know the kind of help that was provided. The most I could say you did was to pay a visit to them and then go together to the perpetrator of the problem. But then you would always accept the poor excuses given, the promises to fix the "problem" and leave. There were no reprimands, no fines, and no checking back to see if the problem(s) had indeed been resolved. Also due to two of my fellow docs and one of my office nurses living in South Fayette, and what I'd already seen that can occur with fracking, I attended a "town hall meeting" that was held there to discuss fracking in their area and more specifically fracking in/under some park land there. Speaking at the meeting were some gas company people, one of which was from the Marcellus Shale Coalition, the South Fayette county "commissioner" (I can't recall his title/job), a lawyer and last but not least, a gentleman from the DEP. I arrived at the meeting after it had already started, due to my work as well as my unfamiliarity with the area and difficulty in finding the meeting place. When I walked in there were many people in the audience, at least some of which were farmers whose land I'm sure the gas companies were interested in. In the back of the room were many copies of a paper proclaiming "GASLAND DE-BUNKED!" I missed one of the people speaking for the gas company as well as the Township Supervisor or Commissioner, or whatever his title. But I did not miss the DEP rep. (Oh, one little qualifying fact I didn't mention, is that this meeting was held on a Thursday evening. And on Tuesday of that same week, there had been a large headline article in the Pittsburgh Post-Gazette about how the DEP had placed the largest fine ever given to one of the gas companies' fracking in the State, the fine given to Cabot Oil and Gas for contaminating the well water of a number of people in Dimock, PA.) Well, I then thought I was hearing things when YOUR rep got up to speak and started talking about how fracking for gas would be such a benefit to the region, and how all this talk about possible water contamination was just BS, "Why there has been no record of any water contaminated in the State of Pennsylvania, in fact none in the entire United States"! They weren't taking questions from the floor, but I was dying to raise my hand and say, "Excuse me. I arrived a little late, and I thought they had introduced you as being from the DEP. Which of the gas companies is it that you work for?"

Now as I stated, I am a medical doctor and not an environmental engineer or geologist. So I cannot give specific recommendations. But I can definitively state that you need to be doing a much better and tighter job on monitoring the companies doing the fracking, as well as the companies working with the separation, storage and transport of the methane, the byproducts and the waste. They wells should be a safe distance from homes, schools as well as hospitals, nursing homes, etc. OSHA should be called in to check on the safety of the workers. Wells should not be flared, letting methane and other substances escape into the atmosphere. I know there are ways to capture things,

just probably a lot more trouble and expense to do so. There should be checks before and during and even after fracking of any wells or aquifers or ponds within a specified distance as well as first mapping out that there are no likely easy paths to contaminate said water supplies due to structural aberrations of the ground, such as coal mines, etc., which could make it easier for contaminated fluids to shift about. The air quality should be monitored, as well. Track should be kept of any people living close to fracking sites who develop new illnesses, in particular dermatologic, pulmonary and neurologic, not contagious illnesses, and also malignancies, whether thought to be related or not. There should not be this practice of the gas companies paying off people, giving them money to move, etc., but in return demanding Non-disclosure contracts signed. If you've nothing to hide, why worry about what a few people say? I absolutely do not trust the majority of the gas companies; do not believe all their concerned words and promises. And I really can't say that I trust your department, due to the things I've seen and heard as I wrote above. I hope I'm wrong. I hope this new year will mark a turning point, and I will come to believe that our State government really does care about the people who elected them and not just the big corporations and the \$\$\$ they provide. I will be watching. (128)

Response: Air emissions are regulated under Article III and are beyond the scope of this rulemaking.

In Section 3215(a) of the 2012 Oil and Gas Act, the General Assembly established setbacks prohibiting the drilling of oil and gas wells within certain distances from buildings and drinking water wells. For a conventional well, this distance is 200 feet; for an unconventional well, this distance is 500 feet. Additionally, unconventional wells may not be drilled within 1000 feet of a public water supply. To the extent the commentator suggests that the General Assembly should extend these setbacks or provide setbacks for particular facilities or resources that change should be made through an amendment to the 2012 Oil and Gas Act. To the extent that the commentator suggests that the distances in §§ 78.15(f)(1) and 78a.15(f)(1) should be expanded, please see response to comment 273.

Well construction standards and monitoring are beyond the scope of this rulemaking.

Property rights issues are beyond the scope of this rulemaking.

- 3123.** Comment: The chemical spill that contaminated the drinking water of 300,000 residents of Charleston, West Virginia tragically demonstrates what happens when a polluting industry is not adequately regulated. Will the northern half of Westmoreland County become another scene of a mass water contamination crisis to be laid at the cold feet of a regulatory agency? Must 80,000 MAWC customers rely on CONSOL Energy *voluntarily* to institute the enhanced standards called for in these comments to safeguard their drinking water source? (402)

Response: Well drilling can be done in a safe and environmentally sound way, provided applicable laws are adhered to. The regulatory changes included in Chapters 78 and 78a are intended to further strengthen these standards to ensure the Commonwealth's environment and the health of its citizens is properly protected.

The existing regulations and final-form rulemaking contain many elements that should ensure the situation described by the commenter will not happen in Pennsylvania. First, all operators are required to develop and implement Preparedness, Prevention and Contingency plans (PPC plans) to address the threat of spills and releases. Unconventional operators are required to develop a broader emergency response plan as well. The regulations also include strict standards that, if complied with, should limit the risk of such spills and releases. Finally,

the operator is required to immediately notify the Department and implement the PPC plan and take interim remedial action steps to limit the impact of spills and releases.

- 3124.** Comment: My family in Connecticut faces a pipeline expansion that would bring radon-carrying fracked gas through Connecticut, cancer causing gas. As we think about these regulations which would require permit applications within a thousand feet of a water well, I urge you to consider a Duke University study that says methane concentration for any water well within a whole mile of fracking site has six times higher methane concentrations and the health risks associated with that.

As we hear people talk about the uncertainty of what would happen to the bedrock when all of this hundreds of thousands of gallons of water is injected. As we think about the economic impact of imposing these regulations, and we hear these numbers of jobs the industry can bring in may be misleading. I also urge you to consider a study reported in The Economist that looked at 19,000 properties in Washington County, PA. It showed a net decrease of 13% in value for homes within 1.25 miles of a fracking site that get their water from the groundwater, 13% decrease in value.

As we think about the possible costs that government regulation can have on the economy, just consider that you could tax these homes 10% of their value, you could burn that money and they'd still be better off than they would be being within 1.25 miles of the fracking site. (1221)

Response: The Department acknowledges the comment, however it is beyond the scope of this rulemaking. Gas migration issues are addressed under Subchapter D (relating to well drilling, operation and plugging). With the exception of area of review requirements in sections 78.52 and 78a.52a, and monitoring plan requirements in sections 78.73 and 78a.73, this rulemaking only makes minor corrections to Subchapter D.

- 3125.** Comment: As per 78.51 section C, within 10 calendar days of the receipt of the investigation request, the department will investigate the claim and will, within 45 days of receipt of the request make a determination if the department finds the pollution or diminution was caused by the drilling activities or if it presumes the well operator responsible for polluting the water supply of the landowner or water purveyor.

Listed are some examples showing DEP's conduct:

1. Mr. Brown files a complaint # 274088,274465, Tuscarora Township, Bradford County. Compliant filed on 9/7/2010 and again on 9/21/2010. Samples Collected on 11/4/2010—two months delay. It took six month for determination.
2. Mr. Laws filed a complaint # 275833, Monroe Township, Bradford County. He filed the complaint on 8/6/2010; samples collected on 8/24/2010; determination letter was gotten after four months. In that analysis, it was determined that there was a high level of barium, manganese, iron and turbidity.
3. Mr. Bowman filed a complaint # 273868, Orwell Township, Bradford County. Complaint was filed on 8/31/2010. Samples collected on 10/13/2010 and then 7/7/2011. Determination letter was gotten after a year. High levels of manganese and iron were found.

I filed a complaint on 12/11/2011 and followed by a request on the next day. There was to be no third party allowed on my property. I was also requiring that PADEP show the names of certified labs and tests performed on my water. I also required audio and video during the sampling. I also

required the PA DEP, as required by law that I just read to you, to make a determination within 45 days on the status of our drinking water supplied under Chapter 78 of the Oil and gas Act, Chapter 25 PA Code Section 78.51.

Mark Coot, DEP, on 12/28/2011 reviewed both legalities and adherence to the standards procedure. This went back and forth until January 2012. They agreed to four requests. The sixth condition was that all DEP results must be forwarded to provide mailing addresses within four weeks of sampling. The department is not able to agree to the final condition because results of some of the samples, which the department may take and will not be returned to the Department within the period. In June, 2012 PA Department of regional Counsel advised that the department may be unable to meet the 45 day deadline set by 25 PA Code 78.51. (1227)

Response: The Department acknowledges the comment, however, to the extent that the commenter is concerned about the implementation of the final-form rulemaking, the comment is beyond the scope of the rulemaking. While the Department strives to resolve complaints as quickly as possible, in many cases, 45 days or more is required to complete the investigation and make an accurate determination regarding a water supply complaint.

3126. Comment: OTHER ISSUES not included in this rulemaking C.O.G.E.N.T. recommends be addressed in the future:

1. Recommendation – Staffing – Sept 2013 STRONGER page 19 – While not necessarily part of a rulemaking, we do want to encourage the Department to continue to evaluate staffing needs regularly. We are aware that subject to the pending fee increase, the Department does intend to add a complement of new staff positions.

2. Prohibit the use of diesel or similar substances in drilling and fracturing –
On February 5, 2014 the EPA issued a memorandum, guidance document and other materials relative to the use of diesel fuel and similar substances in hydraulic fracturing. The EPA is permitting the use of diesel fuel and similar substances in both drilling and hydraulic fracturing. This is a primary example of where Pennsylvania can do better. Pennsylvania needs to do better. The Commonwealth has an obligation to balance the needs of industry with public health and safety, community, and the environment. Pennsylvania’s unconventional shale gas resources lie largely beneath much of rural Pennsylvania, where many residents rely on private water wells and springs for their drinking water sources. The Department needs to consider all available technologies and the manner in which diesel fuel and similar substances may be utilized in the extraction of shale gas resources in rural Pennsylvania. The Department needs to create a regulatory framework that prohibits the use of diesel fuel and thus encourages the use of water resource friendly, non-toxic alternatives that will enable our water resources to be adequately protected.

During 2011, Tioga County, a county in our region had at least nine wells which have been hydraulically fractured using the CAS 8008-20-6 which is one of the five diesel CAS’s noted by EPA on their Fact Sheet.

<http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/upload/epa816f14001.pdf>
Attached please find the associated Hydraulic Fracturing Fluid Product Component Information Disclosures as posted on FracFocus.

The use of diesel is a concern recently noted in the February 2014 EPA Fact Sheet, “Diesel fuels may contain a number of chemicals of concern including benzene, toluene, ethylbenzene, and xylene compounds (BTEX). BTEX compounds are highly mobile in ground water and are regulated under the SDWA national primary drinking water regulations (NPDWRs) because of the risks they

pose to human health.”

<http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/upload/epa816f14001.pdf>

Diesel and other toxic chemicals may be avoided in drilling and fracturing as a result of environmentally friendly technological advances. Diesel alternatives such as hydro-carbon based fluids and synthetic fluids are available. These diesel alternatives are optimized to have properties similar to have properties similar to diesel to function as: fluid-loss additives, carrier fluid (for gelling additives) and winterizing agents for extreme cold/winter treatments. Both alternatives are said to be more environmentally and toxicologically benign than conventional diesel fuels. Several oil/gas producers and oilfield services companies currently employ or produce diesel-free substitutes in their chemicals. [http://www.gwpc.org/sites/default/files/event-sessions/Bergman_Ron_0.pdf slide 12]

As an example, Halliburton has the three Halliburton proprietary cleanSuite production enhancement technologies for both hydraulic fracturing and water treatment. \

http://www.halliburton.com/public/news/pubsdata/press_release/2011/corpnws_050211_1.html?SRC=ElPasoandHalliburton

In August of 2013, The Pennsylvania based Center for Sustainable Shale Development issued 14 performance standards. In part, Performance Standard No. 7 states “Operators will not use diesel fuel in their hydraulic fracturing fluids.” Thus, there is reason that at least some operators are concerned about the use of diesel fuel in their subsurface operations.

Carrizo Oil & Gas Inc., operates within the Northern Tier Region. In February, 2012 Carrizo had a blowout at the MARCELLUS BAKER 4H WELL located in Forest Lake Township, Susquehanna County. As noted in the NOV, The department “strongly” recommended that Carrizo halt all fracturing operations in the state “until the cause of this problem and a solution are identified.” Carrizo had a blowout March 15, 2013 on the YARASAVAGE well pad located in Washington Township, Wyoming County. On March 1, 2013 their MAZZARRA pad spilled 9,000 gallons of treated flowback of which some was contained in the basement of a nearby home. A home’s basement is not a proper containment structure. We are still awaiting news of the final investigation results and the consent order agreement regarding these last two events.

Thus, we were very interested in Carrizo’s representative’s perspective when asked about CSSD’s performance based standards. In response to the issuance of these performance based standards, Richard Hunter, vice president of investor relations for Carrizo Oil & Gas Inc., stated, “We’re a pretty small company,” Hunter said Tuesday. “If this becomes industry standard, then, of course, we’ll consider it. But we’re already a licensed operator. Government agencies certify operators”. <http://www.naturalgasintel.com/articles/print/4614-cssd-says-membership-will-grow-slowly-but-producers-cautious>

In other words it is clear that some operators require a regulatory framework to move towards modern methods otherwise, they will be complacent.

This is another example where despite better practices an operator determines to do it ‘their own way’. The purpose of regulations at times is to create a level playing field where public health and safety and the environment, thus our community at large are adequately protected. This is especially important when so many well pads and other facilities are located in close proximity to homes, schools and even our local hospitals. Industry trade groups, industry suggestions, and even industry peer pressure at times have had insufficient results with all operators ceasing to utilize less than modern standards. However, unfortunate, the only recourse is to create regulation that eliminates poor choices of operations and provides a better pathway towards those that are of a higher quality. This is the manner in which we walk together towards reaching that delicate balance where all may thrive. Therefore, we recommend that the Department create the necessary regulatory framework

that prohibits the use of diesel fuel and similar substances for drilling and hydraulic fracturing subsurface operations.

We appreciate the Department moving forward to codify Act 13's environmental protections. The codification of policies will strengthen the Department's ability to enforce compliance. The addition of new provisions will provide for more stringent regulations and environmental protections for operations located within and around our rural, farmland and forested communities which many times are in close proximity to our homes and schools. We strongly urge the Department to refrain from a two-tiered approach when creating a regulatory framework for both conventional and unconventional operations. This is a world class play; Pennsylvania is now expected to be the number two gas producing state in the nation. With a world class play, come world class obligations, first to the Department to ensure that our public health and safety, environment and communities are adequately protected with consideration to the needs of industry. Secondly, there is an ever increasing obligation upon the industry to be considerate and respectful of all our resources including environmental resources of air, water and soil, our communities and public health and safety. By working together, by working towards the center ground, we are confident that we can reach that delicate balance where all may thrive. This rulemaking process is one step in the right direction to make this world class play an example of how that delicate balance may be reached. We request that all provisions apply to all existing and future well sites, wells and other facilities, as that is imperative to creating a better development plan, for providing measures that ensure our public health and safety, environment and communities are adequately protected, and it is an important step towards achieving the delicate balance where we all may thrive, including industry. We appreciate the opportunity to submit comments on this most important rulemaking which directly affects our region. (660a)

Response: The Department acknowledges the comment. The Department does not believe that it is necessary to ban the use of diesel fuel and similar substances in hydraulic fracturing for the very reason noted by the commentator – the use of such substances subjects an operator to the requirement to obtain an Underground Injection Control permit from the United States Environmental Protection Agency, Region III and the Department in addition to the permit to drill or operate the well.

3127. Comment: You have a gorgeous picture on the web site promoting your department.



However, you need to be more truthful in advertising.
This would be more appropriate.



(1203)

Response: The Department acknowledges the comment.