

Povlik #1 Comment-Response

Pennsylvania Department of Environmental Protection

May 23, 2017

Introduction:

On June 28, 2016, the Department held a public hearing in Penfield, PA to solicit comments related to Sammy-Mar, LLC's permit application for a proposed Povlik #1 injection disposal well. This Comment and Response Document summarizes the comments submitted to the Department by seventeen (17) commentators before, during, and after the public hearing. Where multiple commentators made a similar comment, the comment is paraphrased. Each public comment is listed with the identifying number for each commentator that made the comment to the Department. A list of the commentators, including names and affiliations/places of residence (if any) is provided as follows:

Commenters:

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|-------------------------------|-----------------------------------|
| 1. Shawn Agosti | Penfield, PA |
| 2. Karl Kimmich | Wexford, PA |
| 3. Charlie Rio & Cindy Bender | |
| 4. Molly & Scott Gnan | Penfield, PA |
| 5. Darlene Marshall | DuBois, PA |
| 6. Timothy Keister, CWT FIAC | Pro Chem Tech International, Inc. |
| 7. Grace Bergin | DuBois, PA |
| 8. Homer Stotler | Penfield, PA |
| 9. Kimberly Donovan | Elwood City, PA |
| 10. Lance Casaday | Punxsutawney, PA |
| 11. Todd Beers | Reynoldsville, PA |
| 12. Richard Atkinson | DuBois, PA |
| 13. Marianne Atkinson | DuBois, PA |
| 14. Mike Kamandulis | Kersey, PA |
| 15. Mr. Kozminski | |
| 16. Mike Simpson | |
| 17. Darryl Patton | DuBois, PA |

- A. Other wells, including older wells that were not plugged properly may provide a pathway for fluid migration (1, 5, 7, 9)
- o RESPONSE: There are no active wells that penetrate the injection formation within the ¼ mi. radius of the proposed well location, referred to as the Area of Review (AOR) in this document and in the application documents. There are two wells immediately outside the AOR that penetrate the injection formation which the EPA permit requires to be converted into monitoring wells. The fluid levels in these wells are to be monitored and recorded quarterly, with the data submitted in an annual report to the EPA. Therefore, EPA would be alerted if fluid were to migrate outside of the AOR.
- B. Coal mines may provide a pathway for the migration of fluid and acid mine drainage may deteriorate the well casing. (1, 7, 16)
- o RESPONSE: Based on available mine maps, there is no evidence to suggest that the proposed well will be drilled directly through an operating or abandoned mine, however abandoned coal mines in the Lower Kittanning coal seam may be present within 1 mi. of the proposed well. As protection to any potential threats at this depth, 25 Pa Code 578.83 requires well operators to set and cement a coal protective string of casing through workable coal seams. Sammy-Mar is subject to this requirement. The EPA permit also requires continuous monitoring of the well for injection pressure and annular pressure, and mechanical integrity testing. Further, the well will be equipped with an automatic shut-off device which would be activated in the event of a

mechanical integrity failure, with notification requirements listed in the EPA and Department permits. Oil and gas wells are regularly constructed through coal seams, active and abandoned coal mines in Pennsylvania, and are safely operated. Nearby acid mine drainage surface activities would not have an effect on the well.

- C. COMMENT: Who is financially responsible if something goes wrong? (2, 4, 7, 9, 14, 16)
- RESPONSE: Sammy Mar is responsible. The EPA permit requires Sammy-Mar to maintain financial resources to close, plug and abandon the proposed disposal well in the amount of \$26,000.00 in the event Sammy-Mar cannot provide the financial resources necessary to carry out their responsibilities. In addition, a \$2500.00 bond has been filed with the Department and is conditioned upon the operator's faithful performance of all drilling, water supply replacement, restoration and plugging requirements of the 2012 Pennsylvania Oil & Gas Act.
- D. COMMENT: Truck traffic, road deterioration, emergency services/responses, air pollution, and diesel fumes will increase with a disposal well in the community. (1, 2, 4, 8, 14)
- RESPONSE: The Department acknowledges these comments. However, unless the activity is likely to create a nuisance, road maintenance, traffic, emergency response services, and vehicle emissions are not regulated by the well permitting process. With regard to truck traffic, the 2008 Pennsylvania Diesel-Powered Motor Vehicle Idling Act prohibits the owners and drivers of any diesel-powered motor vehicle with a gross weight of 10,001 lbs. or more engaged in commerce from causing the engine of the vehicle to idle for more than five minutes in any continuous 60-minute period, except as provided in the Act, and 25 Pa Code. §123.1 permits emissions from the use of roads or streets.
- E. COMMENT: How will the fluids be brought to the site? (8)
- RESPONSE: Fluids will be brought to the site by truck by way of Bark Camp Road, however the permit does not address traffic patterns and this could change.
- F. COMMENT: Where did the waste originate and what are some of the waste water details? (4, 8)
- RESPONSE: The EPA permit limits injection to produced fluids from oil and gas production activities into the Huntersville Chert and Oriskany Formations at a maximum of 30,000 barrels per month. Sammy-Mar shall monitor/sample the fluid and retain records in accordance with the EPA and Department permits. The Department permit is conditioned upon the existence of the EPA permit.
- G. COMMENT: Information in the EPA application is incorrect or incomplete (7, 17)
- RESPONSE: The 2012 Pennsylvania Oil & Gas Act and 25 Pa Code Ch. 78 require a disposal well applicant to submit to the Department, a well permit application, control and disposal plan (C&D plan), erosion and sediment control plan (E&S plan), the

approved EPA UIC permit application and the EPA UIC permit. Along with its review of the well permit application, C&D plan, and E&S plan, the Department conducted a geological assessment and a mechanical integrity review of the well utilizing, among other resources, the information that was contained in Sammy-Mar's UIC application to the EPA. The above-referenced documents contain sufficient information to allow the Department to adequately assess the suitability of the proposed project.

- H. COMMENT: How does the Department inspect and oversee operations? (4, 8)
- RESPONSE: The EPA permit requires a demonstration of mechanical integrity initially and at least once every 5 years. Surface injection pressure, annular pressure, flow rate and cumulative volume are required to be recorded continuously beginning on the date on which the well commences operation and concluding when the well is plugged and abandoned. The Department will monitor drilling and casing and cementing activities as needed, as well as conduct routine inspections and review of records throughout the life of the well. Pursuant to 25 Pa Code §78.125, the Department will require Sammy-Mar to submit the annual monitoring report submitted to the EPA that includes at a minimum, monthly records of major changes in characteristics or sources of injected fluids, reports of volumes and pressures of injected fluids, reports of mechanical integrity testing and other information or reports required to be submitted to the EPA under 40 CFR Part 146.
- I. COMMENT: What is Sammy-Mar's operation and violation history? (4, 7)
- RESPONSE: Sammy-Mar is a new operator in Pennsylvania, and therefore does not have an operation or violation history in Pennsylvania. Sammy-Mar is registered and bonded to drill and operate oil and gas wells in Pennsylvania.
- J. COMMENT: What are the plugging requirements? (4)
- RESPONSE: Upon abandoning the well, Sammy-Mar will be required to plug pursuant to Section 3220 of the 2012 Pennsylvania Oil & Gas Act, 58 Pa.C.S. §3220, and 25 Pa Code §78.91-78.98.
- K. COMMENT: What are the site restoration requirements? (4)
- RESPONSE: Sammy-Mar will be required to restore the well site pursuant to Section 3216 of the 2012 Pennsylvania Oil & Gas Act, 58 Pa.C.S. §3216, which includes timeliness and standards for restoration.
- L. COMMENT: A disposal well could result in decreased property values and the noise will bother residents in the community. (4)
- RESPONSE: The Department acknowledges this comment. The impact of an activity on property values is not a factor that the Department may consider when evaluating a permit application and concerns in that regard may be directed to local officials that can consider zoning and land use concerns. The site is located in a rural wooded area, and

the Departments review did not identify any buildings with the exception of the property owner's building within 3500 ft. of the proposed Povlik well. The Department's approval of a permit to operate a well does not limit its ability to respond to future complaints from a citizen alleging a nuisance condition.

M. COMMENT: Does DEP deny permit applications? (3)

- RESPONSE: The Department does deny applications when legal requirements have not been met.

N. COMMENT: The proposed well location is within an elk herd's habitat. (1)

- RESPONSE: Sammy-Mar conducted a Pennsylvania Natural Diversity Index (PNDI) search at the proposed well location to search for flora and fauna that are potentially threatened, endangered or of special concern. The results of the search indicate no known impacts to threatened and endangered species and/or special concern species and resources in the project area.

O. COMMENT: What are the proposed well construction and operation details, injection pressure and volume, when will drilling occur, and where is the well located? (4, 5, 8)

- RESPONSE: The proposed well will be constructed with six layers of casing and cement, each designed to protect different zones. Additional construction details can be located in Attachments L-M in the EPA application and Part III(A) of the EPA permit. The proposed well is permitted to inject into the Huntersville Chert and Oriskany Sand Formations at approximately 7029 ft. and 7098 ft. respectively below the surface, with a maximum surface injection pressure of 2598 psi and maximum bottom-hole injection pressure of 6194 psi. Injection volume is limited to 30,000 barrels per month. Sammy-Mar may begin drilling at any time between the drilling permit's issuance date and expiration date (1 year from the issuance date). The proposed well location is N 41° 10' 58.29", W 78° 34' 59.80".

P. COMMENT: Will any monitoring or water testing be conducted? (4, 9)

- RESPONSE: Monitoring requirements are listed in Part II(B) of the EPA UIC permit, and include parameters such as surface injection pressure, annular pressure, flow rate, cumulative volume, specific gravity, the nature and composition of the injected fluid and fluid levels in other wells that penetrate the injection zone. Enforcement of these monitoring requirements is handled by the EPA. A copy of the annual monitoring report submitted to the EPA shall also be submitted to the Department in accordance with 25 Pa Code §78.125.

Water testing of public or private water supplies may be conducted at the discretion of Sammy-Mar. It is typical practice that well operators sample water supplies to establish baseline water quality prior to drilling a new well. Owners of public or private water supplies may also choose to collect baseline samples of their supplies. Establishing

baseline water quality is important to verify if a post-drilling impact has occurred. If a water supply is affected, Section 3218 of the 2012 Pennsylvania Oil & Gas Act requires a well operator who affects a public or private water supply by pollution or diminution to restore or replace the affected supply with an alternate source of water adequate in quantity or quality for the purposes served by the supply.

- Q. There are better ways to dispose of brine, frac water should be recycled. (6, 16)
- RESPONSE: Although the Department promotes recycling as a first option when it is feasible, liquid waste may be lawfully disposed of, and deep underground injection is one way to manage such wastes.
- R. COMMENT: Natural gas development is a good thing for Pennsylvania, it is good for economic development, and the resource & production are here so the responsibility for the full cycle should be here also. (10, 11)
- RESPONSE: The Department acknowledges this comment.
- S. Spills could occur that may affect surface waters or the Dubois Reservoir, which is approximately 2 mi away. What about emergencies? (1, 2, 4, 13, 14, 15)
- RESPONSE: Sammy-Mar's E&S Plan must meet the requirements of 25 PA Code Ch. 102 and 25 PA Code Ch. 105, and its Control and Disposal Plan (C&D Plan) should follow the Department's "Guidelines for the Development and Implementation of Environmental Emergence Response Plans" document. DEP reviewed the E&S and C&D Plans during its review of the permit application. These plans are appropriate for this site and contain measures to protect the watershed and its wildlife.
- T. COMMENT: Injection into the Povlik well could pollute private or public water supplies by insufficient formation integrity or mechanical integrity/leaks, or by faults/fractures acting as pathways. (1, 2, 3, 4, 7, 9, 12, 13, 14, 16)
- RESPONSE: The Department's review did not show that injection into the Povlik well would likely pollute public or private water supplies. No public water supplies exist within the ¼ mile Area of Review and one private water supply exists within the ¼ mile Area of Review, owned by the surface property owner. This well is approximately 100 ft. deep, and driller's logs for existing gas wells in the area show the deepest fresh groundwater to be approximately 500 ft. deep. The depth of the injection formation is approximately 7000 ft., which provides 6500 ft. of protective isolation between the injection formation and deepest fresh groundwater.

The well is proposed to be drilled within a fault block, sealed off by two localized non-transmissive faults that captured the natural gas deposit which has since been produced, and is interpreted to be the structural seal that will contain any fluids injected for disposal. Stratigraphic confining layers exist above (Onondaga Limestone) and below (Helderberg Limestone) the injection zone. The 6500 ft. of rock combined with the

structural and stratigraphic seals would likely retard migration of injected fluid from the injection formation or into any underground sources of drinking water. The EPA UIC permit also prohibits the injection of fluid which initiates fractures in the confining zone, adjacent to underground sources of drinking water, or causes the movement of injection or formation fluids into an underground source of drinking water.

A mechanical integrity assessment of the proposed wellbore concluded that the casing and cementing requirements of 25 PA Code Ch. 78 will be met which would demonstrate structural integrity that is adequate to protect deepest fresh groundwater. The EPA UIC permit also requires Sammy-Mar to demonstrate mechanical integrity at least once every five years, and to cease operations if a loss of mechanical integrity occurs or if mechanical integrity cannot be demonstrated.

Finally, if a water supply is affected by injection fluids, Section 3218 of the 2012 Pennsylvania Oil & Gas Act would oblige the well operator to restore or replace the affected supply with an alternate source of water adequate in quantity or quality for the purposes served by the supply.

- U. COMMENT: Earthquakes could occur as a result of the injection. (1, 2, 3, 4, 5, 6, 7, 9, 14, 17)
 - o RESPONSE: The Department's analysis does not show the likelihood that the operation of this proposed well would cause earthquakes. The majority of disposal wells in the United States do not pose a hazard for induced seismicity, however faults in the Precambrian basement are believed by some experts to have generated seismic events in other states. As discussed in the previous response, the well is proposed to be drilled within a fault block, sealed off by two localized non-transmissive faults that captured the natural gas deposit which has since been produced, and is interpreted to be the structural seal that will contain any fluids injected for disposal. There is no geologic evidence to suggest that these faults extend to the Precambrian basement. Additionally, the location is within the relatively seismically stable interior of the state of Pennsylvania, and the Department's review did not identify any known seismic events within the ¼ mi. AOR or historic earthquakes (since 1970) of magnitude two (2M) or greater within Clearfield County.