

Citizens Advisory Council
Comments on
The Effects of Subsidence Resulting from
Underground Bituminous Coal Mining, 2008-2013

ACT 54:

- An independent, technical committee should be convened through an Executive Order of the Governor to study whether a water supply impacted by underground coal mining can be restored to pre-mining conditions in both water quality chemistry and biological characteristics. The findings of that study should be assembled into a final report to be presented to the Governor and the General Assembly and should recommend, if appropriate, amendments to the Bituminous Mine Subsidence and Land Conservation Act (commonly referred to as Act 54) to increase the efficacy of the legislation in preventing or restoring damage from mining subsidence impacts to waters of the Commonwealth of Pennsylvania (Commonwealth). With this recommendation, the CAC notes that 8 of the 55 streams determined to be affected in the previous report (2003-2008) have yet to recover to pre-mining conditions. The CAC also reinforces this point by directing attention to the conclusions in the report that affirm that while mining companies are generally either able to repair, replace or financially compensate for damages to structures, the ability to repair damage to streams remains largely undetermined.
- The CAC recommends Act 54 be amended to direct underground coal mine owners to disclose to DEP how water supplies and other features impacted by underground coal mining operations were restored, repaired or replaced through private landowner agreements. While the CAC recognizes the importance of such private agreements and does not discourage their use as authorized under Act 54, the Commonwealth cannot adequately assess if the intent and purpose of Act 54 are being fulfilled without obtaining data on how or to what extent water supplies and other features are being restored after being impacted by underground coal mining operations. With this recommendation, the CAC recognizes that the content of a private agreement between private parties cannot be publicly disclosed without the consent of the parties involved, but does not view this as a limitation for disclosing the nature of a general environmental impact or contract associated with the restoration of water supplies and other features impacted by underground coal mining operations. By offering this recommendation, the CAC notes that most of the mine-liable structure and water supply damages reported in this 4th Act 54 Report were resolved by either (a) some type of private agreement, or (b) the mine operator purchasing the damaged property.
- The 35⁰ Rebuttable Presumption Zone, as provided in Section 5.2(c) of Act 54, should be reassessed by DEP through consultation with appropriate technical professionals. With this recommendation, the CAC notes that 25% of mine-liable water supply effects were identified in the most recent Act 54 Report to lie outside the Rebuttable Presumption Zone, including as much as 85⁰ outward and upward from the edge of mining. While these occurrences may be anomalies, the CAC recommends that DEP evaluate data provided from the Act 54 Report and other sources to determine, using appropriate

statistical analysis, if the current rebuttable presumption zone encompasses the appropriate range or whether different presumption values should be established to account for differing geologic conditions.

- The CAC recommends the General Assembly revisit the provisions included in Act 54 that limit a mine operator's liability to restore or replace a water supply if claims concerning water contamination, diminution or interruption are made more than 2 years after the water supply was adversely affected. While the CAC recognizes the need to have a limit on the duration of liability to encourage landowners to make timely claims, there may be situations where the initial impact, although adverse, is not sufficiently significant or noticeable to trigger a landowner to bring such a claim. With this recommendation, the CAC notes the importance and deference that should be placed on the results of a DEP investigation of water supply impacts and that water supply restoration or replacement should be directed and completed in accordance with DEP's final findings. As support for this recommendation, the CAC also notes that the two year timeframe associated with Energy Policy Act water supplies was removed by regulation at 25 Pa Code § 89.152(a).
- Section 5.1(g) of Act 54 specifies that compensation shall be provided to the landowner if an affected water supply is not restored or reestablished or a permanent alternate source is not provided within three years. The CAC received comments and testimony from the public that claim resolutions are taking longer than statutorily prescribed. In the fourth assessment of the Act 54 report, it was reported that 55 stream investigations were initiated in the 3rd assessment period and that 51 of those cases reached a final resolution by the end of the 4th assessment period, resulting in an average resolution time of 1,313 days or just over three and a half years. Of the remaining 4 stream investigations initiated during the 3rd assessment period, these cases remain unresolved and have been open for 7 to 8 years. Given these reports, the CAC recommends the General Assembly investigate the resolution timeframes included in Act 54, why those timeframes are not being upheld, and whether those timeframes need to be amended or more clearly defined in Act 54 to promote more expeditious resolutions.
- Section 5.2 of Act 54 requires a landowner or water user to notify the mine operator when water supply contamination, diminution or interruption has occurred. The CAC recommends the General Assembly reassess the adequacy of this requirement, including whether it is appropriate that DEP be notified at the same time a mine operator is notified, so that DEP, if necessary, can initiate an independent analysis of impacts on water supplies, consistent with its obligations under the Clean Streams Law.

DEP Regulations:

- The CAC recommends DEP – in consultation with an independent technical committee– reexamine the Commonwealth's bituminous underground mining regulations, through a comprehensive technical review of mining methods and geographical data, to assess the adequacy of those regulations in preventing or mitigating subsidence damage from underground mining operations, in particular the impacts to Pennsylvania's water resources. The CAC notes that during 2008-2013, 77% of the total 50.59 miles of

streams undermined by longwall mining methods experienced flow loss, pooling or both. In response to this finding, the CAC recommends the MRAB focus its examination on the techniques associated with longwall mining, and the review of the following factors:

- measures to ensure that subsidence damage is limited through the regulation of appropriate overburden rates;
 - advancements in technology and modeling that better predict the likelihood of subsidence and measures to prevent such subsidence;
 - trend analysis data collected by DEP to compare actual occurrences of mine subsidence damage with impact predictions;
 - locational and other technical data that provides evidence of the likelihood of mine subsidence damage in certain areas of the Commonwealth;
 - data assessing the impacts of mining subsidence to water quality, including the degradation of the Commonwealth's Exceptional Value (EV) and High Quality (HQ) streams to lower designations based upon the effects of mining subsidence;
 - historical data that compares impacts that were predicted vs. impacts that were not predicted;
 - current modeling to aid in the prediction of stream flow loss, and impacts to wetlands and groundwater
- Since Technical Guidance issued by DEP does not have the full force or effect of law or regulations, the CAC recommends DEP analyze what elements of *TG#563-2000-655: Surface Water Protection – Underground Bituminous Coal Mining Operations* need to be incorporated into regulations so that those standards and provisions required of the underground coal mining industry can be enforced uniformly by DEP.
 - It is recommended that DEP review *TG#363-0300-001: Design Criteria – Wetlands Replacement/Monitoring* to determine what provisions in the guidance should be updated and incorporated into regulations so that proper monitoring and data collection can occur to assist DEP in evaluating mine subsidence impacts on wetlands, including the collection and review of stream chemistry and biological habitat data.

DEP Permitting Procedures:

- In response to the documentation provided in the report which identifies the irreparable dewatering of at least six streams, the CAC recommends that DEP re-examine its permitting procedures for opportunities to collect additional information and independent analyses to assess pre-mining conditions and the probability of subsidence. This should include measures to compel permit applicants to conduct more comprehensive pre-mining inventories and to more frequently monitor pre-mining flow rates of water resources so that appropriate avoidance and minimization measures can be incorporated into permits.
- It is recommended that DEP revise its permitting processes to ensure a permit applicant provides sufficient and detailed information on wetlands located within the projected scope of the permit area, including verifying the presence of wetlands in the permitted area through consultation and coordination with the U.S. Army Corps of Engineers and incorporating the appropriate measures into the permit to avoid impacts to wetlands.

- Given the collective documentation available through the study of mine subsidence incidents over the past 20 years since the enactment of Act 54, it is logical to conclude that certain conditions or characteristics can be identified as key factors that contribute to mine subsidence. Moreover, it is a fair conclusion to note that these key factors are likely to change over time as mining technology advances. While changes in the Commonwealth's underground coal mining regulations are recommended and preferred to account and keep pace with these key factors and technological advancements, it is also recommended that DEP permitting procedures be revised to ensure appropriate conditions are included in permits that require proper planning and implementation measures to prevent or minimize mine subsidence.
- The CAC recommends DEP revise its permitting procedures that allow mining companies to expand existing operations without updating the baseline hydrological information associated with the cumulative permit area.
- Upon the identification of opportunities for improvement in the permitting process, the CAC recommends DEP re-examine the Permit Decision Guarantee Policy to ensure the policy provides adequate review time to DEP staff to conduct a thorough and independent analysis of the information contained in an underground mining permit application.

DEP Resources:

- The CAC notes the recommendations of the University of Pittsburgh with respect to improvements to the Bituminous Underground Mining Information System (BUMIS) Database. Such issues as data management, data uniformity, the reconciliation of features in BUMIS to features labelled on the six-month mine maps, as well as the lack of geographical coordinates in BUMIS supported by GIS software are particularly noteworthy and highlight areas that should be prioritized for action by DEP. The CAC acknowledges the resources that will be necessary to implement changes necessary to BUMIS. As DEP begins its development of adjustments to the coal mining permit fees, the CAC recommends that such permit fee amendments reflect the additional resources necessary for DEP to adequately implement improvements to BUMIS or other data systems, including personnel and other administrative resources necessary for DEP to fulfill its obligations under Act 54 and other relevant statutes.
- The CAC recommends as part of its program evaluation on the adequacy of the coal mining permit fees that the Active and Abandoned Mining Program assess the need for additional staff within its District Mining Offices.
- The CAC recommends DEP, in consultation with underground coal mining professionals and other experienced technicians, identify and define the specific datasets and data reporting requirements necessary for meaningful analysis of underground coal mining-related subsidence in the Commonwealth, including parameters addressing uniform electronic submission of data to DEP, the public availability of this data, and the frequency of such reporting by mining operators.

- The CAC refers to the observations in the Act 54 Report that highlight the lack of data entry protocols and quality control and quality checking protocols associated with the administration and management of BUMIS, as well as the poor utilization of DEP to use BUMIS as a means to track and analyze subsidence effects. The CAC recommends that data entry protocols be established and training and other assistance be offered to help DEP staff adhere to such protocols.
- The CAC notes the observations in the Act 54 Report which indicate improvements are necessary in how DEP assesses the hydrologic effects of underground coal mining. The CAC recommends that addressing this issue be a top priority to DEP, including that DEP's Active and Abandoned Mining Program work in coordination with DEP's Water Management Program in developing appropriate metrics and protocols to facilitate these assessments.
- The CAC notes the extensive data collected by the University of Pittsburgh to supplement BUMIS, including its creation of a new information management system to assist in its efforts of assessing and evaluating data on underground coal mining-related impacts. The CAC questions whether the information management system developed by the University of Pittsburgh may be purchased or licensed by the Commonwealth to expedite DEP's efforts to address the deficiencies with BUMIS.

DEP Policies:

- The CAC, along with the University of Pittsburgh, recommends that DEP develop a written policy that identifies the Department's responsibilities for tracking water supply impacts from underground coal mining through the use of BUMIS or another relevant database system. Such responsibilities should be clearly identified and explained in sufficient detail to illustrate the protocols the Department will adhere to assure the proper collection and analysis of data associated with water supplies impacted by underground coal mining operations.

DEP Public Engagement and Transparency:

- Given the level of skepticism that pervaded comments received by the CAC on DEP's responsibilities under Act 54, the CAC recommends attention be focused by DEP on implementing or enhancing public information dissemination measures that focus on transparency. Such measures could include public accessibility to the information tracked in BUMIS and other DEP databases through secure internet sites so that all parties affected – DEP, mine operators, land owners, and others – are held accountable to their responsibilities under Act 54.
- The CAC applauds recent efforts by DEP to enhance public information on the rights and responsibilities of landowners under Act 54 and encourages dissemination of those materials and other public documents to educate landowners about their rights and responsibilities under Act 54.
- The CAC recommends cooperative approaches among multiple partners at the federal, state and local levels to better identify and assess the impacts of underground coal

mining on structures and water supplies and the appropriate measures to predict, avoid and minimize such impacts. For example, other state agencies – including the PA Fish and Boat Commission – should be used as resources to DEP in assessing the hydrologic effects of underground mining and the efficacy of mitigation methods.

Questions:

1. Two of the five stream investigations conducted by DEP during the assessment period were found to have relied on inadequate data and observations before reaching determinations that impacts were not due to underground mining. When will DEP reassess these streams and provide the results of the reassessment to the public?
2. What additional resources or data are needed by DEP to perform a comprehensive Cumulative Hydrologic Impact Analysis?
3. What are DEP's protocols for the timeliness and frequency of inspections of underground mining operations?
4. What are the consequences to mine operators who do not accurately predict or plan for impacts from their operations?
5. When a company is determined liable for water contamination, diminution or interruption, does DEP issue an order compelling the company to resolve the issue promptly or does DEP initially rely on voluntary compliance by the operator to address the situation?
6. Is DEP independently tracking impacts to streams and wetlands on state-owned land or is that information being tracked solely on data reported to DEP by the mine operator?
7. When mine operators own property that has experienced impacts to aquatic resources or water supplies, is the mine operator required to report and repair those impacts?
8. Aside from information provided by a mine operator, what information or analysis does DEP use to determine whether stream restoration measures successfully return those streams to their full hydrologic function?
9. What is DEP's position on the statement included in the report that new/replacement wetlands do not functionally replace the complexity and resources that were provided by the original wetlands? Is further research warranted by DEP on the functionality and complexity of wetlands?
10. The 3rd Act 54 Report included a list of all 50 active mines and identified the number of structures, water supplies, and properties undermined by each, as well as the number of stream miles undermined by each. The 4th Act 54 Report identified only

the number of stream miles undermined by each mine, but not the number of structures, water supplies, or properties.

- a) Why were similar data not included in the 4th Report as in the 3rd?
- b) Was that information collected but not reported, and if so, why?

- 11. 8 of the 55 streams determined to be affected in the previous Act 54 report (2003-2008) have yet to recover to pre-mining conditions. Does DEP anticipate initiating a detailed study of these streams to determine why they have yet to recover to pre-mining conditions?