

DEP Permit # E65-973
DEP Permit HDD Reference # PA-WM2-0064.0000
DEP HDD # S2-0010
Township – Loyalhanna
County - Westmoreland
HDD Site Name – Loyalhanna Lake Crossing

1st Public Comment Period

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1. Comment

Pursuant to the Corrected Stipulated Order entered on EHB Docket No. 2017-009-L on August 10, 2017 (“Order”), and on behalf of Clean Air Council, Mountain Watershed Association, Inc., and the Delaware Riverkeeper Network (“Appellants”), please accept these comments on Sunoco Pipeline L.P.’s (“Sunoco”) re-evaluation report (“Report”) for the horizontal directional drilling (“HDD”) indicated by drawing number PA-WM2-0064.0000-WX -16 (the “Site”).

Sunoco’s plans for the Site pose an unacceptable threat to the public and the environment and it would be irresponsible for the Department to approve them. As the Department is well aware, to date, construction at the Site has been fraught with numerous inadvertent returns, spills into waters of the Commonwealth, a loss of returns that even Sunoco describes as “continuous,” and contamination of drinking water supplies that is yet to be remediated. The Report makes clear that those threats have not been resolved with the latest plans for the Site. That alone is reason enough for the Department to withhold approval. But the Report also reveals additional threats that have not been fully assessed or accounted for in the plans for the Site: the HDD profile passes over an abandoned coal mine. Subsidence under the pipeline and mine pools endanger the public and the environment.

1. Sunoco's operations at the Site have and continue to endanger water supplies.

Sunoco has already contaminated two wells at the site. The 20-inch line was pulled into place at the Site on July 20, 2017. In the Report, Sunoco admits that one of the residents whose well Sunoco contaminated during the construction of the 20-inch line has been on a temporary water supply ever since; i.e., for over a year since construction ceased. Now Sunoco asserts it will continue providing temporary water for the duration of the construction of the 16-inch line. It is unclear why, if the damage Sunoco has caused to the well was only associated with the period of active construction, temporary water was needed for over a year after construction ceased. It also seems doubtful, given this context, that the contamination will now stop after a second pipeline is installed and the geology is further disrupted. Sunoco's plan to merely provide temporary water going forward is unacceptable.

And the danger to nearby wells persists. As Sunoco's Professional Geologist explained:

Losses of circulation during the installation of the 16-inch line could add pressure on the interconnected network of drilling fluid filled fractures, causing IRs from the 20-inch line installation to reactivate and/or the quality of water produced from local supply wells to be affected.

According to the Report, the profile for the 16-inch line could intersect production zones for two wells. That is only counting wells within 450 feet of the drilling profile. However, inadvertent returns have occurred to 1,000 feet from the 20-inch line. Given the irrefutable geologic connectivity at the Site, Sunoco should be required to identify, offer testing to, and monitor wells at least as far out as 1,000 feet from the drill alignment. It appears from the history of this site, that impacts to water supplies are not merely temporary. It is thus all the more important that all residents whose water supplies are potentially at risk be protected. Sunoco's plans fail to do this.

2. Sunoco's plans for the Site will result in inadvertent returns.

There have already been numerous spills at the Site and a loss of returns that was continuous through the completion of the 20-inch line. The 16-inch line will intersect seven fractures that could create serve as additional preferential pathways in already porous geology. Despite improvements in the plans for the 16-inch line, Sunoco admits "[t]he redesign of the HDD will not prevent all IRs." A spill of drilling fluid into the waters of the Commonwealth is a violation of the Clean Streams Law. Given what is known about the history and geology of this location and the guarantee of additional inadvertent returns, Sunoco's planned use of HDD is simply inappropriate for this location.

3. Sunoco's plans do not adequately address the risk of mine pools.

Not enough is understood about the gradient of groundwater movement around the area that has been mined and the potential for mine pool discharge. Sunoco asserts: "If the lake stage is representative of the mine pool elevation, the geometry of the revised profile would not create a new mine pool discharge." Sunoco's assumptions

appear to be based on the results of a single test bore and lake level data. It is unclear whether these inputs fully account for the possible conditions at the Site. Moreover, Sunoco's Professional Geologist has indicated variability in the groundwater flow gradient: "As lake stage is managed, local groundwater flow gradient will vary from radially outward from the bluff to relatively flat, to radially inward. Steep water table gradients, both inward and outward, may occur proximal to shorelines as lake stage goes up and down." Even a small risk of creating a new mine pool discharge is of grave concern and demands thorough study.

3. Abandoned mine maps are not, by themselves, sufficient to verify existing mine structure, and supporting data has not been provided.

There is substantial uncertainty about the risks from mine subsidence at the western end of the Site. In its "Subsidence Potential" discussion in the main Report, Sunoco writes, "As presented and discussed in the TetraTech report provided as Attachment 2 of the Reevaluation Report, the mine maps are generally a reliable indication of the extent of what was mined." This is actually contradicted by the referenced TetraTech report, which states "Maps of abandoned mines are used by mining engineers to verify the mine layout and to estimate the size of remaining voids and pillars. These maps often lack complete details of the mining and are sometimes inaccurate. Incomplete or inaccurate knowledge of mine configuration can introduce additional errors into any future subsidence prediction."

It is well known that it is difficult to discover exact information about older abandoned mines. Many of the mines were constructed in an era with little to no regulation and spotty record-keeping practices. This is why supplemental methods, such as annual coal production data for the mine, are often used to understand the size of an abandoned mine. The inadequacy of mapping abandoned mines has been acknowledged by the Department as a problem that leads to dangerous results.

In 2002, it was discovered that the deadly disaster at the Que Creek Mine in Somerset County was the result of a permittee's having inadequately mapped the adjacent abandoned mine barriers. This prompted the Department to issue new policy that enumerates the ways in which abandoned mines can be mapped. Although this guidance is directed towards mining permittees, it should be taken into consideration for all underground projects that can result in dangerous outcomes due to inadequately locating abandoned mines.

The guidance, titled "Validating Abandoned Underground Mine Maps and Establishing Barrier Pillars" sets forth at pages 4-5 the following instructions for adequately identifying mine barriers:

The applicant should summarize in narrative form all of the information relied upon to accurately ascertain the full extent and location of adjacent abandoned mine workings, and the steps taken to obtain that information. The narrative will demonstrate, to the Department's satisfaction, that the location and extent of adjacent abandoned mine workings has been accurately determined based upon the information obtained by the permittee. The permittee's burden of demonstration will not be met if, for example, there is irreconcilable conflicting information about the location and extent of the abandoned mine workings, or where there are significant data gaps in the information used to confirm the location and extent of the abandoned workings. The narrative should address the following types of information:

- Identification of all data sources used to verify and validate mine maps;
- listing of all mine map repositories searched during the research process;
- procedures used to orient and locate nearby abandoned mine workings with respect to the proposed mine;
- a description of and results of field reconnaissance used to delineate mine workings;
- identification of all maps found in the search and relied upon to map abandoned mine working, including ID or catalog numbers, archive location, scale, and condition;
- site-specific information from local residents including names and addresses of persons providing information;
- local gas well or water well drill logs that may indicate the presence or absence of mine voids;
- underground mine inspection records;
- **annual coal production report data, including mine opening date and last coal extraction;**
- permit information cross-checks with the Bureau of Mining and Reclamation;
- mechanical, geologic, or geophysical testing used to verify the mine workings, such as vertical or horizontal drilling or geophysical surveying, an operational history of each adjacent abandoned mine including all ownership changes, dates of operation, dates when the mine was idle, date of mine closure, mine name changes, coal company name changes, and all permit identification numbers including an explanation showing that the map corresponds to the data found in the history;
- an explanation of how mine pool elevation data for each abandoned mine was determined;
- a discussion of how and why any disparities between sources of information were reconciled.

(Emphasis added).

In its Subsidence Potential Review, Tetra Tech does not give nearly such an in-depth narrative but does state that maps were reviewed and “georeferenced by PA DEP” but it is not clear what that entails.

The Subsidence Potential Review also says that “Tetra Tech employed 3D seismic technology to gain a better understanding of the strata fracturing and anomalies at mine level. The subsidence model was run to reflect this information.” But the reader is not privy to the 3D seismic data that was gathered, nor the analysis for arriving at such an interpretation.

In order to understand whether the subsidence risk has been accurately assessed, Sunoco must submit additional data and explanation of its findings.

4. The risk of subsidence is uncertain but significant.

The predominant mining technique used in the vicinity of the Site relies on pillars collapsing as mining is completed and progresses to new portions of the mine. It is highly uncertain whether subsidence has occurred in most of the mining area the HDD lies atop. However, the Subsidence Potential Review notes that “To our

knowledge there have been no subsidence incidents reported to PA DEP since 1977 anywhere near the planned HDDP.”

Sunoco should do further analysis of these “Category 3” areas to determine whether pillar collapse and subsidence has indeed occurred, and the actual extent of mining. Sunoco could use geophysical methods to gather more information.

5. The analysis of stress on the pipeline ignores pipeline integrity issues

Sunoco’s stress analysis from the potential subsidence also does not take into account the possible reduced strength of the pipe due to deficiencies in pipeline integrity. Earlier this year, PHMSA notified Sunoco that for Mariner East 2, “Sunoco failed to provide inspection that ensured that the installation of pipe or pipeline systems was in accordance with the requirements of Subpart D of Part 195. Specifically, Sunoco failed to adequately inspect pipe bending during the ME2 project to ensure it was in accordance with § 195.212(b).” *See* Exhibit A.

PHMSA found that Sunoco was setting up to install segments of pipe with “severe coating damage, and at least one joint of pipe had a gouge that extended into the wall of the pipe.” PHMSA found that the damage was done months prior and the damaged pipe had passed Sunoco’s inspection.

The Department has significant reason to be concerned that the pipes cannot take the stress Sunoco says they can, and that Sunoco’s stress analysis is not conservative enough.

Conclusion

For the foregoing reasons, Sunoco’s plans for the Site cannot be approved consistent with the safety of the public and the environment.

Thank you for considering these comments. Please keep us apprised of your next steps on the HDD Site. (1-5)

Letter – [Clean Air Council – 8-31-18 - Loyalhanna Lake Crossing](#)

Exhibit A - [Pipeline and Hazardous Materials Safety Administration – 1-11-18](#)

2. Comment

I am writing in behalf of our clients, Edward E. Mioduski and Alice Marie Mioduski. Our clients wish to make comment upon HDD reevaluation of the Pa DEP for the Loyalhanna Lake Crossing. Our clients are identified in the reevaluation report as well – WL-08172017-499-01. Our clients' comments are as follows:

The subject well has been deemed contaminated by drilling fluid since the drilling and installation of the 20-inch pipeline. A water buffalo, together with drinking water delivery, has been supplied by Sunoco. Our clients do not consider this a "temporary inconvenience." A period in excess of two years without consistent supply of on-demand water to the residence has impacted our clients' quality of life. Throughout the winter months, our clients have experienced a freezing of water pipes and loss of water to the residence (but for Culligan drinking water). This affects toilet facilities, laundry, and incidental uses that go with daily living. Our clients have been advised that this "temporary" situation would be cured

by Sunoco many times in the past.

Our clients have requested that Sunoco drill a placement water well away from the bore in the area of higher ground to the rear of the property with the hopes that residential water can be resupplied. Winter is upon us. Our clients have further requested that the household appliances corroded by bentonite be replaced. There has been no effective response from Sunoco to cure what our clients consider a long-term profound effect upon their quality of life. Our clients are retired. They are of modest income. The simple maintenance of the status quo while Sunoco seeks a solution is not acceptable. We believe that the HDD reevaluation report does not adequately account for the profound effect new drilling will have upon our clients: We settled with Sunoco being assured that operations would not last in excess of two years. On the contrary, all temporary work space and reclamation was to be completed within two years. The impact of new drilling will prolong the processes. There has been no effective consideration for the profound effect upon our clients. (2)

Letter – [Edward and Alice Mioduski](#)