

June 16, 2019



By Email

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Re: Sunoco's response to the Department's request for information on PA-CU-0136.0020-RD-16 (HDD# S2-0240-16)

Dear Mr. Williamson,

On April 23, 2019, the Department requested additional information from Sunoco regarding its reevaluation ("Report") of the horizontal directional drilling ("HDD") indicated by drawing number PA-CU-0136.0020-RD-16 (the "HDD Site"). Sunoco responded to the April 23, 2019 letter on June 10, 2019, supplementing the Report. 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 regarding Sunoco's June 10, 2019 supplemental response ("June Response"). The comments are numbered to correspond to the numbering in the Department's April 23, 2019 requests and the June Response.

1. Relating to the overall Geologic and Hydrogeologic Summary and Report:

a. Justification for shallower depth of guided bore

The Department reasonably required Sunoco to provide further explanation regarding how the proposed guided bore at a shallower profile depth will minimize the potential for inadvertent returns (IRs), sinkhole formation, and impacts to water supplies. Sunoco's response is inaccurate and incomplete.

In what appears to be an attempt to downplay the significance of the Department's inquiry, Sunoco claims "the 20-inch HDD had no issues in this section of the profile during completion of the HDD." Based on what Appellants can discern from the Report, that is simply untrue. Sunoco experienced loss of drilling returns numerous times during the installation of the 20-inch line at the Site, and those incidents are likely to have stemmed from the same kind of geologic conditions that led to sinkholes, inadvertent returns, and destruction of water supplies. As Appellants have pointed out previously, it is difficult to discern exactly where along the 20-inch HDD alignment incidents occurred because Sunoco has provided only limited information in the Report. However, based on the information Sunoco did provide, it appears at least two of the LOR incidents occurred in the same portion of the alignment where Sunoco is now boring at a shallower depth. Moreover, the reason that fewer incidents occurred on the southern portion of

the drill is likely because the occurrence of the incidents led Sunoco to “utilize[e] air rotary drilling techniques with minimal usage of water” there. It was not because the geology was safer.

In order to effectively mitigate risks with its redesign and to provide a starting point for analysis, Sunoco should map all of incidents that occurred while installing the 20-inch pipe on its diagram of the redesigned profile. So far Sunoco has provided no such mapping as part of this reevaluation, despite having at least mapped out IRs for previous sites. Sunoco then needs to discuss the root cause of each incident, including the LOR incidents as well as subsidence, IRs, and other geology-related problems. Only then will it be in a position to justify its new plan and the shallow bore in particular.

Sunoco also needs to expand upon the discussion it started to provide in the June Response regarding the quality of the rock where it intends to drill. Sunoco explains that the RQD of the bore path ranges from “fair to excellent.” This information is not specific enough to be useful. What is the actual RQD at the depth of the drill path? How does it compare to the RQD at other depths? A large portion of the drill path appears to potentially lie within the clay seam. Without this information, the Department cannot verify that the depth Sunoco has chosen is the best option. In addition to a discussion of RQDs, Sunoco must also evaluate the presence of karst anomalies along the portion of the alignment where it intends to bore. While RQD is a helpful measure, it is not sufficient in karst terrain; RQD is not designed to identify or measure voids and does not rule out the possibility of voids and other low-density anomalies that can serve as preferential pathways for drilling fluid or destabilize the Site when drilled through. Geophysical surveys need to be utilized for this portion of the alignment, as discussed further below.

c. Mud rotary tooling

As Appellants explained in their initial comments for the HDD Site, Sunoco appears to have had the best results with the least harm done by using air rotary tooling at the Site. Now it plans to use mud rotary tooling, which has been problematic. Sunoco has never articulated a reason for its use of the technique that has created the most problems. This is unacceptable for a Site where so many people are at risk and have already been harmed.

d. The importance of the Pinesburg Station Formation as a source of water

In the Report, Sunoco twice refers to the Pinesburg Station Formation as an “unimportant” source of water. Upon being called out on this by the Department, Sunoco now acknowledges that this formation is an important source of water for residential wells, and claims it had “no intention to imply that the Pinesburg Station Formation is not an important source of water for residential water wells.” There was no implication. Sunoco clearly stated, without qualification, that the Pinesburg Station Formation was unimportant. More importantly though, Sunoco’s actions have demonstrated that it believes the water supplies in the area are unimportant. That has not changed with its recent mea culpa. Sunoco has contaminated multiple wells at the Site and has still not provided a plan for protecting them. The Department was right to call Sunoco’s attention to this issue and should continue pressing for appropriate protections.

2. Geophysical investigations:

a. Study area

The Department strongly recommends that Sunoco conduct geophysical studies for the portion of the pipeline path where the guided bore will take place. Appellants agree this is a necessary step and encourage the Department to require these additional studies before moving forward with any plans for the Site. As discussed above, the series of problems that arose during the installation of the 20-inch line very likely were not limited to the portion of the path that is now being open-trenched. The repeated loss of drilling returns suggests geologic conditions that could contribute to subsidence, additional IRs, or other problems during the guided bore for the 16-inch line. Sunoco's claim that the results of the test bore it conducted in 2017 are sufficient to show it is safe to proceed ignores the obvious limitations of that test. The test bore is a pinpoint study; by its very nature, it cannot rule out the presence of voids or other anomalies except for the exact spot where the test bore was drilled. The geophysical studies that were conducted show anomalies throughout the survey area. The results of the microgravity survey, which reveal numerous low-density areas, are particularly concerning. Sunoco seems to be suggesting that despite these results, the anomalies suddenly cease to exist outside the area it surveyed. This defies logic. In fact, even the test bore Sunoco is relying on to try to justify its refusal to conduct additional geophysics revealed a void, albeit not at the exact depth where Sunoco intends to drill. Sunoco has failed to provide any satisfactory explanation for not finishing the geophysical surveying of the area. The Department should ensure the studies are conducted.

b. Geophysical results

The results of the geophysical studies should have been included in the Report. The fact that the Department had to specifically request the survey results at this juncture, when Sunoco has completed dozens of reevaluations and is well aware that it needs to include its geophysical survey results, demonstrates its careless approach to this process. Sunoco is also aware that simply including the results is not enough. Despite providing the results as part of the June Response, Sunoco has still not incorporated them into its analysis. In the previous section, the Department told Sunoco to do exactly that. It still needs to.

3. Water Supplies

The Department asked Sunoco to evaluate and discuss how the proposal for the 16-inch profile will "minimize the potential for IR's and impacts to water supplies," as well as provide other information. Sunoco provides no such evaluation or discussion of minimization. It has admitted to four water supply complaints, only two of which were disclosed in the Report, but it has no plan for protecting wells going forward.

The information Sunoco has provided about the well complaints raises additional concerns. The HDD for the 20-inch line was completed a year ago, June 7, 2018. It seems Sunoco is still in the process of removing water buffalos provided to two of the homes. Why has this taken so long? One well was replaced completely. These are not indications of mere temporary impacts. Not only was the damage to these wells long-term or permanent, but the contamination could

also pose a threat to the health of the residents. All of the water test results Sunoco has now provided show some level of bacterial contamination. Sunoco does not discuss this.

According to Sunoco, there are 24 wells within half a mile of the Site and nine wells with 450 feet of it. This history of the Site suggests these wells would be in danger as the 16-inch line is installed. Sunoco needs to provide a plan to ensure these water supplies are safe.

Thank you for considering these comments. Please keep Appellants apprised of any next steps.

Sincerely,

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