

DEP Permit # E23-524
DEP Permit HDD Reference # PA-DE-0046.0000-RD
DEP HDD # S3-0591
Township – Middletown
County - Delaware
HDD Site Name – Valley Road Crossing

2nd Public Comment Period

| Commentator ID # | Name and Address | Affiliation |
|-------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------|
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| 3 | Linda Yu Edgmont Township Home Owner | |
| 4 | George Alexander Media, PA | |
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| 13 | Catherine Moran | |

1. Comment

1. Sunoco needs to do surface geophysical tests not just take core samples.
2. Sunoco needs to monitor wells when they do HDD on a regulated schedule.
3. Potential weak spots in bedrock and soil needs to be identified prior to drilling.
4. Drillers need to use low pressure when drilling mud to accommodate weak soil.
5. Groundwater coming from the HDD site Questions: How will Sunoco deal with this? What if the grouting plan for plugging the HDD hole does not work? A plan must be in place prior to drilling! This was and is a big problem for Shoen Rd in West Whiteland Chester County. The water is still running there for 10 months! Sunoco must Assure that this Will Not Happen again.
6. DEP must insist that staff be present Incase ground water flows back into the borehole.
7. DEP must insist on casing in the pilot hole at the entry and exit points to prevent frack-out problems.
8. A water survey for the 32 private wells must be done prior to drilling! We don't want a repeat of the West Whiteland incident where people lost their wells and had to be hooked up to Aqua!
9. DEP must insist on 20 feet of grouting when plugging to stop ground water flow, not just recommend it. (1)

2. Comment

I am a homeowner in the very near vicinity of this proposed HDD site at Valley Road Crossing (S3-0591) DEP PERMIT # E23-524. I have grave concerns with HDD drilling at this site due to the following factors:

1. This HDD proposed drilling area is in a very large wetland area. Any IR return of "industrial waste" would spread contamination to all wells and waterways in the area. This HDD site would greatly impact the ROCKY RUN stream which runs through the WAWA ROCKY RUN preserve area adjacent to drilling area. ALL homeowners in this drilling area are on private wells for water supply.
2. The geology of this area allows high risk for sinkholes due to "weak soil" regions etc. This shifting of the soil and changes in the soil erosion will place stress to current ME1 pipeline which is currently transporting the explosive NGL materials. We do not need a repeat of the sinkholes that occurred in West Whiteland to occur in this wetland area nor a catastrophic explosion from ME 1 pipeline.

Sunoco has recommended numerous shortcuts to DEP requests, or ignored DEP requests outright. DEP must make Sunoco adhere to best practice procedures and not just the least expensive and convenient for Sunoco!

The following should be insisted on by DEP before approving permits:

1. The DEP should insist on further geophysic testing in this area. Sunoco has only completed several core samples and says it does not need any more! Areas of fracture points and weak soil areas need to be determined due to the sensitive wetlands in area.

2. The DEP should be notified of all critical phases of drilling in advance and be present with inspectors during these “critical periods”.
3. Sunoco states they will be monitoring our wells routinely. What does this mean routinely? One a week, bi monthly, monthly???? Please demand a written time schedule.
4. A large percent of homeowner’s wells (30 people) have well depths and water level UNKNOWN. ALL wells should have water levels surveyed before starting drilling.
5. Sunoco has declined to grout 20 feet deep that DEP recommended. This should be insisted on instead of Sunoco’s proposed 15 feet of grout plug.
6. Sunoco should be required to use a casing (pipe liner) in the pilot hole at entry and exit points due to the severe threat of harming wetlands and wells. (2)

3. Comment

I am a homeowner who lives in close proximity to the Valley Road Crossing and continue to be outraged at the lack of professionalism employed by a company in 2018, in performing proper due diligence in the understanding of the proposed “digging” risks as adopted by Sunoco/ETP.

For that reason I am requesting the DEP insist on the following actions to be adhered to by Sunoco/ETP, with more explicit and severe terms of penalty for all infractions and non-compliance actions, of which I outline a proposed model for employing an incremental and perpetually accruable fine, subject to missing deadlines and the continuation of missed deadlines. Implementation of such a fine will make clearer that adherence to such requested actions by Sunoco/ETP are serious requests for compliance.

- 1) Failure by Sunoco/ETP for proper due diligence using basic in assessment of likely impacts of both surface and sub-surface geophysical analysis:

The proper and thorough due diligence of a thorough analysis of the likely impact of surface and subsurface should be required to be completed and approved **PRIOR TO DIGGING**, for the safety and well-being of all people who live so close to the proposed digging. We request such study be made available **PUBLICALLY**, given the proximity to our properties of such proposed digging.

We request the DEP to enforce Sunoco/ETP to perform a full and thorough study utilizing rationally available techniques that are consistent with technical capabilities adherent to some measure of quality of thoughtful impact be employed, and shared with the public prior to initiating any further digging. It is outrageous that in the year 2018, Sunoco/ETP utilizes antiquated, “guesswork” based scientific analyses (as in nothing logical is performed to a minimal set of industry standards) and operational processes as their approach for analysis, particularly as it relates to the highly density populations which surround the proposed sloppy work.

As a home owner who lives in close proximity to such digging, I request that DEP insist on proof of adherence to some minimal set of scientific and engineering standards of assessment such that our close proximity community of people to the pipeline can have basic peace of mind that a reasonable level of due diligence, assessment and mitigation strategies are in place “before” digging.

Please set a high monetary fine associated with non-compliance and timely sharing of any results of such study, and please do not limit the time associated with a “one-time” fine levied as a results of, but please institute a continually and perpetually accruable fine assessed for each and every day Sunoco/ETP does not provide a report that shows the diligence was met to a reasonable quality. Please add a 4X monetary multiplier to the daily delay of the return of a “meets the mark” assessment if Sunoco/ETP initiates the digging without returning an approved and reviewed study.

- 2) Re-construction of the fine based system to create an incentive for compliance is recommended in order to demonstrate lack of compliance has "teeth". Lack of substance in penalty based deadlines does not provide sufficient incentive for compliance. A sample model is proposed below (of which I am happy to provide additional ideas for how to employ a logical penalty system)

Example: Sunoco/ETP fails to provide a reasonable, due diligence assessment and approach of the impact of digging “by” stated due date (with no exceptions):

\$200,000 fine for each occurrence of a given "missed" milestone or event based criteria.

Each and every day after the “due date” Sunoco/ETP is charged 20% of the fine, or \$40,000 per day, for each day past the due date

Net effect (example 7 days late): \$200,000 plus 7 X \$40K, or \$480,000.

Sunoco/ETP initiates digging without providing any such report (at any date) – utilize a “times 4” multiplier, or

\$200,000 X 4, or \$800,000

Plus each and every day no report is filed for review that meets with approval (the clock rolls if a report is reviewed and not approved) example 7 days=

7 times 40,000 = \$280,000 X 4, or \$1,120,000 (that continues to increment by \$160,000 per day until a report is submitted that is met with approval by the DEP. Again, each penalty structure should be applied against each and every infraction element (not a global one time event) such that the accumulation of penalty is substantial (but easily avoidable by Sunoco/ETP with proper adherence to tenets of the requested compliance elements).

- 2) Within such study as reference above, please request that Sunoco/ETP identify the likely impact of any sink holes that may occur and that have recently occurred in Edgmont Township not far from the proposed study

It is an already known fact that sinkholes were discovered on properties not far from this proposed site within Edgmont Township, which were likely caused by such weak bedrock soils (not the Karst rock but Saprolite rock) materials already noted to be prevalent in this area.

No explanation of the occurrences of such sinkholes were provided to residents of Edgmont township (identified in a previous open letter to DEP which subsequently in fact did produce sinkholes which to this date may not be rectified other than a fence around such holes), nor is there any attempt to again identify or mitigate any potential future impact of the unstable nature of those places where known saprolite materials may exist. This is no longer an “unknown” impact potential and as such, it is plain silly that there is not proper due diligence to occur such that dangerous sink holes do not occur, affecting the safety of residents and another exposure (from any new sinkholes) of other dangerously antiquated and likely compromised existing pipelines with exposure.

- 3) Monitoring of wells for safety and in consideration that residents use well water for drinking

Please insist that Sunoco/ETP publish an explicit, publically available plan for monitoring wells along the HDD and that such plan be available for commentary on the proposed frequency of monitoring to insure such schedule meets local resident and township criteria.

- 4) Request that explicit notification and schedules of “When” drilling is to take place so that residents can be ready to anticipate impacts on water supplies, ground impacts, and any other events (simple things such as traffic impact) that could go wrong. to allow DEP regional staff will be provided with adequate advance notice to allow DEP staff to be present in case there is groundwater flowing back to the borehole.
- 5) Explicit monitoring of water table levels and the impact of such proposed drilling

While there has been substantial rain in the past, from prior digging efforts nearby, the impact of digging and water levels that affect both wells and natural water bodies (my pond which was dry for 3 months due to a prior digging effort). This should simply be a meets minimum criteria as part of an operational safety plan when digging, such that proper mitigation techniques can take place.

These are simple, professional standards that would be insisted upon by any simple construction project of much lesser impact. We request the DEP work hard to enforce Sunoco/ETP live up to basic quality standards in the construction of any infrastructure, as the consequences of their failure to comply affects the safety and

health of our communities given the unprecedented high risk nature of the intended materials to flow through these pipelines in such a highly densely populated area (should never have been approved in the first place - totally unnecessary risks). (3)

4. Comment

This is a response to Sunoco's plan for HDD drilling on Valley Road in Middletown, PA.

Sunoco's document angers me. It is arrogant and it takes the position that Sunoco is the expert at HDD so the DEP should stop interfering. In many cases, it simply refuses to take the actions the DEP is asking for.

If the DEP is to do its duty to preserve the environment and the health of Pennsylvania citizens, Sunoco must be required to do as it is told. Sunoco cannot be allowed to push the DEP around.

Here are some examples of Sunoco's refusals:

At two different points, the DEP says that surface geophysics should be employed to provide evidence of the top of bedrock, to locate fractures, and to identify soft soils. Sunoco refuses to do these tests, saying "the five geotechnical bores provide more than adequate information" and these studies "will provide no functional data" at this location. But a few bore holes are not enough. The DEP should insist on the geophysical study.

The DEP requests a plan for monitoring wells along the HDD. The response is that Sunoco "implements regular monitoring of adjacent water wells". But what does "regular" mean? What is the schedule, and what monitoring would be done? The DEP needs to receive a real plan from Sunoco before it is allowed to drill.

The DEP asks Sunoco to address the possibility of IRs where there is weak soil. Sunoco talks about the possibility that drillers could use minimum drilling-mud pressure in such locations, but does not commit to requiring its drillers to do that. Insist that Sunoco identify those areas and to require its drillers to follow guidelines to minimize mud pressure there.

When the DEP asks how Sunoco will deal with groundwater emerging at the HDD site if its grouting plan for plugging the HDD hole is inadequate, Sunoco responds that it has "not had a failure" of this kind on the ME2 project. But Sunoco has failed to contain groundwater as its Shoen Road site in Chester County. When Sunoco plugged that site last summer, the water continued to flow; instead of coming out the bore hole, it began emerging on private property across the road. It continues flowing to this day. That is clearly a failure. The DEP should insist on a plan for dealing with such situations.

The DEP asks Sunoco to notify the Department during critical drilling phases so that "DEP regional staff will be provided with adequate advance notice to allow DEP staff to be present" in case there is groundwater flowing back to the borehole. That is a

reasonable request, but Sunoco refuses, saying only that it will provide the DEP with “advance notice of commencing all HDDs, project wide”. The DEP should insist on this notification.

When the DEP says that, given the frac-out problems in the past, drilling contractors should be required to use a casing in the pilot hole at the entry and exit points of this HDD, Sunoco refuses, saying that its HDD plan for this site doesn’t require it. What Sunoco’s plan says is not relevant. The DEP should insist on the casing.

The DEP asks Sunoco for “well depths, casing depths, and water-level depths (based on a water-level survey)”. Sunoco claims to have done this, but no water-level survey was apparently done. As far as I can see, the water levels shown in the cross sections are only those encountered in Sunoco’s five boreholes, not in local wells. And in the list of 32 private wells given in Attachment 1, 30 of them have a water level of “unknown”. The DEP needs to require a proper water-level survey.

When the DEP recommends that Sunoco use 20 feet of grouting (instead of the 15 feet in its plan) when plugging to stop groundwater flow, Sunoco’s response is that “SPLP appreciates the Department’s recommendation.” It will clearly be ignored. This is typical of Sunoco’s arrogant attitude. The recommendation is dismissed without any reason being given.

Sunoco has obviously decided it is fine to ignore the DEP’s requests. The company thinks it can just do as it pleases.

This needs to stop. The DEP has a responsibility to protect the environment and the citizens, and it can only do so if Sunoco follows its recommendations. Do not let Sunoco continue to bully the DEP! (4)

5. Comment

On May 21, 2018, Sunoco submitted a letter to the Department in response to the Department’s March 23, 2018 request for additional information regarding horizontal directional drilling (“HDD”) Site PA-DE-0046.0000-RD (“Site”). 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”), we respectfully submit these comments in reply. Our comments mirror point by point (for most points) the requests and responses from the Department and Sunoco.

Points 1 and 2 (surface geophysics and borehole geophysics)

Sunoco argues that it need not determine the bedrock depth at locations besides the specific points where it performed geotechnical bores because “the five geotechnical bores demonstrate that both profiles will be located significantly below the top of bedrock across the entire run of this HDD.” This conclusory statement is speculative. The composition of the rock sampled across the five sites differed both in composition and depth. The distance between some of the bores amounted to around

a thousand feet. Substantial changes in geology can occur between points a thousand feet from each other.

Sunoco similarly dismisses the Department's recommendation to employ additional geophysical and geotechnical testing to gather information on local fracture sets and preferential pathways. Sunoco argues that drilling additional bores would create new preferential pathways, but ignores the possibility of downhole geophysical methods that might be able to gather additional information from existing boreholes. Sunoco's argument also ignores the fact that surface geophysics can be employed to better understand these features without presenting the risk of creating additional pathways for fluid migration.

The Department should continue to require surface geophysics to determine depth to bedrock and the use of downhole geophysics and surface geophysics to evaluate fractures and preferential pathways.

Points 4 and 5 (Sunoco's consideration of recommendations from GES Report)

The GES Report accompanying Sunoco's re-evaluation report ("First Report") sets forth a set of recommendations made by the Professional Geologist for moving forward with HDD at the Site. The Department has asked Sunoco to follow these recommendations. Sunoco has taken the Department's instruction as mere suggestion.

With respect to subpoint 4.d, in which the Department requests detailed, site-specific monitoring plans, Sunoco writes, "the location of the drilling tools when an IR event occurs has not had a direct correlation to date." Sunoco appears to be suggesting that the entrance of the drill bit into an area of concern is not a concern. Clearly, however, it is. Moreover, Sunoco's statement does not respond to the Department's concern. Sunoco should follow this instruction.

With respect to subpoint 4.e, the Department should require the requested analysis to be performed. Sunoco does not identify the specific points of potential weak bedrock and soils that the Department requests Sunoco identify. It says it will discuss those "ahead of drilling, with a plan devised to address such zones." But it wants approval to start the HDD before it does so, for a reason it fails to explain. If Sunoco can do this now, it should do this now. Otherwise, Sunoco is merely dangling the carrot in front of the Department without any commitment.

Sunoco's responses to the Professional Geologists' recommendations are in some instances dismissive. Sunoco's response to recommendation 1 is that it has a different plan for controlling excess groundwater. That plan does not do some of what the Professional Geologist recommended. Sunoco makes no attempt to explain why ignoring its PG's advice is wise.

Sunoco says recommendation 6 is "addressed by multiple HDD best management practices. Part of it is, part of it is not. No BMP identified in the First Report addressed identification of "unconsolidated horizons characterized with low cohesive overburden." Sunoco makes no commitment to do anything about that.

The Department should require Sunoco to actually commit to following the recommendations, which are sensible, as it originally requested.

Point 7 (150-foot “impact area”)

Sunoco claims that its “previous statement concerning the potential effects within 150 ft is now moot” due to the Consent Order & Agreement. This is both incorrect and troubling because Sunoco is failing to provide documentation to confirm questionable statements it has made to the Department, and is failing to conduct an actual hydrogeological analysis of the Site, as required by the Order. Sunoco’s statement is incorrect because the provision of a temporary water supply does nothing to protect the private water supplies. It may stave off harm to landowners’ health during the course of the drilling, but still leave them with damaged or destroyed water supplies. Further, damage to a well affects the value and livability of the home, no matter the temporary band-aid provided.

There is no sound hydrogeological basis for claiming that water supplies are only at risk within 150 feet of the HDD alignment. But because it was convenient here, Sunoco made that representation to the Department. Having been called on its misrepresentation, Sunoco wants to brush it aside rather than own up to the fact that it made statements to the Department for which there is no justification. Appellants believe it is important for the integrity of the administrative process that the Department not let Sunoco get away with submitting falsehoods to the Department as truths.

As importantly, Sunoco needs to have done a scientifically valid hydrogeological evaluation of the Site. Sunoco withdrawing its very specific conclusion related to the critical issue of which wells might be impacted raises serious questions about the validity of its other scientific and hydrogeologic conclusions. The Order is not moot regardless of the Consent Order and Agreement. The Order requires scientific analysis including “analysis of well production zones.” These analyses need to be accurate and scientifically defensible. As it stands, neither the Department nor the public has any way of knowing how many wells may be impacted.

Point 10 (onsite presence during critical drilling phases)

Sunoco has not addressed the recommendation that “DEP regional staff will be provided with adequate advance notice to allow DEP staff to be present” during “critical drilling phases.” Advance notice of commencing the HDD is quite different than advance notice of commencing a critical drilling phase. DEP staff cannot be expected to be onsite during the 95 to 120 days Sunoco expects to be conducting this HDD. The Department’s request for more specific notification regarding critical drilling phases is reasonable and the Department should require Sunoco provide such notice for this site.

Point 13 (casing)

The Department wrote, “Based on the occurrence of at least four (4) recent IRs in nearby HDDs, the use of casing in the pilot hole at the entry and exit points should be mandated by Sunoco.” Sunoco has simply disregarded this instruction. The use of casing is perhaps the best measure to mitigate the risk of IRs during entry and exit. Sunoco has provided no explanation for why casing would be inappropriate here. The Department should require Sunoco to comply.

Point 14 (Terracon Report)

As a report which is an integral part of the report is not yet in final form, the Department does not yet have the full set of information on which to base a decision to approve the start of this HDD. The Department should review the Terracon Report in final form when it is available before making a decision.

Point 15 (soil testing)

Sunoco claims that “Laboratory test results for soils above bedrock do not affect the design of an HDD.” If that is Sunoco’s practice, that is a problem, because soil structure can affect the likelihood of IRs where the pipe is above bedrock or in fractured bedrock. The Department should not allow Sunoco to disregard tests it commissioned.

Point 17 (geophysical testing)

Sunoco claims that surface geophysics will not be useful in determining bedrock depth, soft soils, or fractures because at five karst locations, usable data was provided to a depth of 15 feet to 60 feet below ground surface, and that the “averaged horizontal depth” of the HDD profiles is deeper.

Sunoco is cherry-picking. It is unclear what geophysics Sunoco has performed outside the five Mariner East 2 karst locations, or what methodology it has used at those five sites. Sunoco has made no claim (and cannot) that geophysics is useless below 60 feet underground. Sunoco Pipeline has installed a lot more pipe than just for Mariner East 2 and has done a lot more geophysics than just at five sites.

Depending on the methodology you use, it can provide effective information much deeper than 60 feet below ground surface. For example, at the following link, Spectrum Geophysics describes a study it conducted to determine depth to bedrock including as deep as 130 feet below ground surface. <https://spectrum-geophysics.com/bedrock.html>.

Sunoco’s response appears intended to deceive the Department; it is a weak attempt, the Department request is on point.

Point 24 (plan for groundwater handling)

Sunoco's response to Point 24 is inadequate. Sunoco may not predict the rate of groundwater production in advance, but it can certainly state its plan for handling groundwater if the rate is high, low, or medium. Sunoco has not even made an effort to do so here.

Point 25 (bentonite plug length)

Sunoco's response to Point 25—"SPLP appreciates the Departments [sic] recommendation"—is emblematic of its attitude throughout the development of Mariner East 2. DEP cannot let Sunoco continue to flout the Department's regulatory authority and make a mockery of the law.

Points 28, 29, and 30 (water supply contamination response plan)

Sunoco writes:

both the Inadvertent Return Assessment, Preparedness, Prevention and Contingency Plan ('IR Plan') and the Operations Plan require SPLP to offer alternative water supplies to landowners with water supply wells within 450 ft of the drill profile. Obviously, to the extent a landowner accepts this offer, their water supply should not be adversely affected during HDD activities.

This is not obvious—in fact, it is not at all the case. Water well contamination and impairment is not a temporary matter that always resolves, leaving the supply owners free to start using their water supply good as new. The Department should reject the false presumption that offering a temporary water supply is a solution to property damage to third parties.

It should be stressed that Sunoco took most of the land for its pipeline from landowners under the threat of condemnation using eminent domain, or the actual use of eminent domain. These are third parties many of whom do not want this company tearing up their land to build these pipelines. The inability to use their own water supplies due to a Texas company's forceful entry onto their property is an extreme circumstance. When Sunoco writes, "The best means to protect water well quality or quantity during the HDD is non-use," Sunoco is attempting to normalize the theft of a third-party's property rights—their ability to use their water supplies— for the purposes of Sunoco's profits.

The best means to protect a water supply is to not violate the rights of the third parties in the first instance.

Sunoco states that two landowners have agreed to accept temporary water supply during the HDD process. Sunoco should provide proof of the agreements entered with landowners regarding temporary water supplies. Until this process is complete and the requested documentation has been provided to the Department, this plan should not be approved.

Thank you for considering these comments. Please keep us apprised of your next steps on this HDD Site. (5-9)

Letter – [Clean Air Council – 5-26-18 – Valley Road Crossing](#)

6. Comments

The following is my opinion on Sunoco's unsatisfactory response to the DEP's recent pointed questions regarding possible drilling on Valley Road, near Media, Pennsylvania. In this letter, I would like to focus on the issue of whether it is appropriate for Sunoco to ignore DEP requests, as it does in many instances in their recently-filed document.

As you know there were 30 specific questions posed to Sunoco by the DEP.

- On page 1, the DEP says that “surface geophysics should be employed to provide evidence of the top of bedrock along the whole run...”. Sunoco basically refuses to do these tests.

- On page 3, the DEP requests a plan for monitoring wells along the HDD. The response is that Sunoco “implements regular monitoring of adjacent water wells”, but it does not say what “regular” means nor does it agree to provide a plan.

- On page 6, the DEP asks Sunoco to address the possibility of frac-outs where there is weak soil. Sunoco talks about the possibility that drillers could use minimum drilling-mud pressure in such locations, but does not commit to requiring drillers to do that.

- On page 7, the DEP asks how Sunoco will deal with groundwater emerging at the HDD site if its grouting plan for plugging the HDD hole is inadequate. Sunoco responds that it has “not had a failure” of this kind. But there was such a failure at the Shoen Road site last summer, and it has yet to be fixed. The grouting did not work! Their lack of a solution is vexatiously unacceptable!!

- Continuing on the subject of grouting, on page 16, the DEP recommends that Sunoco use 20 feet of grouting (instead of the 15 feet in its plan) when plugging to stop groundwater flow. Sunoco’s response is a rude “[Sunoco] appreciates the Department’s recommendation.” This sounds to me like the request will clearly be ignored. I would like to ask the DEP to require at least 20 feet of grouting in such a case.

There are many, many more examples of Sunoco's despotic hubris in how the company has responded to the very serious questions posed by the DEP, regarding the Valley Road drilling. Above are just a few excerpts.

To sum up, obviously Sunoco has become more defiant in its answers, basically challenging DEP’s expertise in asking the questions at all. In essence, Sunoco is saying “we are the HDD experts, not you, so stop trying to tell us what to do”. The DEP must insist that Sunoco comply with its requests. Please do not put up with, nor accept, their deplorably uncaring and disgraceful response.

The DEP has the power to revoke Sunoco's drilling permits, and now is the time to begin applying that leverage.

I live in the state of Delaware, but only 5 miles from the Mariner pipelines' endpoint, Marcus Hook. This is why I care deeply about what happens in nearby Pennsylvania. Thank you very much for reading and considering my views. (10)

7. Comment

I want to encourage the DEP to INSIST that Sunoco follow its stipulations for safety, not simply acknowledge them. Sunoco has played fast & loose with the safety and environment in our neighborhoods. Once our environment is ruined, it is not easily restored. It is clear that Sunoco, in its greed will do as little as possible to save money. Our neighborhoods demand more than that! Please defend our environment-insist on thorough geophysical studies, 20 foot pipe liners and constant monitoring of water purity. Bentonite drilling mud is often contaminated with lead. PLEASE PROTECT US, OUR CHILDREN AND OUR ENVIRONMENT. NEVER assume that Sunoco has the best interest of our environments at heart. Past experience teaches us NOT to trust them! (11)

8. Comment

I am submitting our comments in response to Sunoco's letter to you, dated May 21, 2018, in response to your March 23, 2018 letter, requesting further information from Sunoco on the above-referenced horizontal directional drilling.

First, I would like to express our disappointment that, in the spirit of transparency and cooperation, this letter from Sunoco was not sent out to all the residents impacted by Sunoco's HDD along Valley Road. Had it not been for an accidental glance at the DEP's website, we would never have known this letter had been sent out to you, thereby losing the opportunity – as those directly impacted by this drilling – to express our comments on Sunoco's responses. It also only gives a 5-day period to respond which is not enough time. We all received the original Reevaluation Report so why not the second? This change in communication means Sunoco can make comments to the DEP without giving residents adequate chance to counter-respond. In other words, this part of the reevaluation process gives Sunoco an advantage.

After reading Sunoco's responses to your March 23 letter, it becomes immediately apparent that Sunoco is attempting to ignore the Department's requests on a variety of issues using the argument that what they are doing is "more than adequate", that the DEP's requests are "not needed" or Sunoco simply does not commit to the request. This leaves the residents watching this process wondering who the regulatory authority is ... Sunoco or the Department of Protection? Surely the requests made by the DEP have some purpose that needs to be met, otherwise the requests would not have been made in the first place? For Sunoco to simply not agree to those requests is tantamount to non-compliance which should result in the DEP revoking the drilling permits. The DEP has been tasked with overseeing this construction in the manner it deems necessary in agreement with its mission. It has the authority to insist on those

standards of construction being carried out. It has the authority to revoke permits if those standards and requirements are not met.

These are some examples of Sunoco's non-compliance with the DEP's requests:

1. On page 1, the DEP says that "surface geophysics should be employed to provide evidence of the top of bedrock along the whole run...". Sunoco refuses to do these tests, saying "the five geotechnical bores provide more than adequate information."

I disagree with Sunoco and agree with the DEP for the following reasons:

Typically, pipeline engineers and horizontal drillers will have the same four questions:

- At what depth is the top of bedrock?
- What lithology is the overburden?
- What lithology is the bedrock?
- Is bedrock fractured?

Irregular bedrock relief may lead to the horizontal drill intersecting overburden. Should bedrock be too deep, horizontal drilling may be impractical. Granular overburden creates challenges for mud containment. Highly permeable bedrock may offer no better containment than granular overburden. Similarly, highly fractured or karsted bedrock may create high permeability zones in lithologies that normally have very low hydraulic conductivities.

While most geophysical methods may offer some insight into answering the above four questions, four methods are particularly useful, and are routinely applied. These include electrical resistivity tomography (ERT), seismic refraction, ground penetrating radar (GPR), in addition to borehole geophysics.

In view of all the problems with Sunoco's drilling to date, we, as residents who will be directly impacted by Sunoco's HDD, also insist, along with the DEP, that complete and comprehensive surface and near-surface geophysics be applied to this construction to prevent the negative incidents of the past being repeated.

2. On page 3, the DEP requests a plan for monitoring wells along the HDD. The response is that Sunoco "implements regular monitoring of adjacent water wells", but it does not say what "regular" means nor does it agree to provide a plan.

On the subject of monitoring water wells along the HDD I am saddened and, quite honestly, astounded at Sunoco's response. That wells will be "regularly monitored" tells us nothing!

The history of Sunoco contaminating water wells along the 350-mile path of ME2 is there for all to see. I would have thought they would want to do everything in their power to monitor well contamination continuously. Sunoco states it implements

“regular” monitoring. It was only the end of 2017 that it became apparent to us that there truly was a risk to our private water well being contaminated. Our sole source of water. We have a child with an incurable auto-immune disease. We cannot take even the slightest risk of water contamination.

At this point I contacted Percheron Field Services to discuss my concerns. Despite numerous promises to get back to me “asap” after speaking with “upper management” my concerns were never addressed. I never heard back from Sunoco until 6 months later (in the form of an email), when I was informed that there was no contract or agreement to sign for the “temporary” water supply they were offering. My actual fears were never addressed. No-one ever picked up the phone to talk to me. Is that the behavior of a company that has been granted public utility status? I don’t believe so. Sunoco should have that status removed.

So, of ALL the areas that should have a plan for monitoring wells, this should be it. Why? Because in 2015, a gasoline pipeline leak was discovered at the junction of Valley Road and Gradyville Road which we were never informed of. Sunoco’s sophisticated “leak detection system” which they promise will keep us safe with these highly volatile NGL’s, had failed to detect the leak. It was a passerby that noticed it and no-one knows how long it had been leaking. The result was that the gasoline additive, MTBE, leaked into local water wells – again, something Sunoco never told us. MTBE is water soluble so it can travel through an aquifer and affect other areas. It’s not clear what the health implications are but my family is not prepared to take that risk. For these reasons alone, I say NO to further HDD by Sunoco. This area is still highly contaminated (according to PHMSA) and HDD along Valley Road will only serve to spread Sunoco’s previous contamination of our water.

Reasons why pre-drilling, during drilling and post-drilling water monitoring are important:

- Soils can be excavated or eroded, disturbed and compacted, or contaminated, which can impact water quality or flow patterns.
- Geology and topography can be altered, leading to landslides and increased sedimentation.
- Water quality and quantity can be impacted by sedimentation from erosion and excavation.
- Herbicides used to manage vegetation growth on the pipeline right-of-way may contaminate water resources.
- Fish and macroinvertebrate habitat quality may be diminished by removal of vegetation, disturbance of substrate, grading of the channel, and placement of structures.
- Grading could alter surface and groundwater flow due to an increase in fractures.
- Exposed geology could erode and leach acid, poisons such as arsenic, metals and previous pipeline leak products such as MBTE (near us) and others.

And it all affect us, the residents living on their private properties along the line of Sunoco’s pipeline construction.

For all these reasons, we need to know EXACTLY what form of well monitoring Sunoco proposes to use and what EXACTLY Sunoco's plan is. "Regularly" means nothing.

3. On page 4, the DEP says that "specific points of potential weak bedrock and soils were not individually identified. This should be done." Sunoco responds that this is not needed because the driller will know when weak spots are encountered by monitoring the pressure of the drilling mud.

This response by Sunoco is totally unacceptable and leaves me wondering if they really know what they're doing. In fact, the wake of destruction, devastation and damage Sunoco has left behind for homeowners in the form of contaminated wells, sink holes, house evacuations, flooding in basements due to compacted soil around the pipeline and a multitude of negative impact incidents only serves to convince me they don't.

Pipeline design, pipe jacking, directional drilling and foundation studies require detailed subsurface soil and bedrock testing. To properly identify specific points of potential weak bedrock and soils, Sunoco needs to fill in the gaps between borings with geophysical seismic refraction, electrical resistivity and GPR data to provide a continuous soil and bedrock profile between borings and minimizing the risk of missing a costly subsurface anomaly. How is it that Sunoco is unwilling to do this? Permits should be declined.

4. On page 6, the DEP asks Sunoco to address the possibility of IRs ("inadvertent returns", or frac-outs) where there is weak soil. Sunoco talks about the possibility that drillers could use minimum drilling-mud pressure in such locations, but does not commit to requiring drillers to do that.

Well, they should. The drilling fluid usually escapes the borehole due to a fissure in the soil. The drilling fluid is under some pressure produced by an injection pump at the HDD rig as well as head pressure from the weight of the fluid itself in the borehole. In addition to potential negative impacts on the wetland (opposite us and further down Valley Road adjacent to Wawa University) the drilling fluid is considered a contaminant or a "dredged or fill material" as defined by Section 404(b)(1) of the United States Federal Clean Water Act. Deposition of the drilling fluid in the wetland is a violation of the wetland-crossing permit. As such, every effort must be made to minimize the release of drilling fluid. Furthermore, when drilling fluid is released a great deal of effort must be put into evaluating the situation, containing the released drilling fluid and ultimately remediating the location, if appropriate. Frac-outs are more common in soil types that contain preferential liquid flow paths, such as gravel or cobble deposits, and are less common in soils that are homogeneous, such as pure sand or clay deposits. Another factor in frac-outs is the depth of the HDD. The deeper the crossing the lower the likelihood of experiencing frac-outs. The likelihood of a frac-out is also increased if either the entry or exit point is significantly different in elevation. In this case, the head pressure is increased at the lowest elevation - usually the wetland or other sensitive receptor you are attempting

to avoid. Another major factor in some frac-outs is the pressure exerted on the drilling fluid by the HDD rigs hydraulic system (Reid et al, 1998.). If the pressure produced by the HDD rig is excessive it may force fluid through the soil profile, even consolidated or homogeneous soils, eventually breaking through to the ground surface. The importance of having a regulatory approved contingency plan is imperative. While no plan can foresee all contingencies the mere fact that a plan exists will provide the regulators, contractor and the company with assurances that the possibility of a frac-out has been considered and response actions considered, to the extent possible. For this reason, Sunoco must commit to requiring drillers using minimum drilling mud pressure in such locations and, if necessary, have the drilling overseen by the regulatory agency.

5. On page 7, the DEP asks how Sunoco will deal with groundwater emerging at the HDD site if its grouting plan for plugging the HDD hole is inadequate. Sunoco responds that it has “not had a failure” of this kind on the ME2 project.

But there was such a failure at the Shoen Road site last summer, and it has yet to be fixed. The groundwater is not emerging through the bore hole, but it is emerging on a property across the road. Sunoco needs a better answer.

6. On page 8, the DEP asks Sunoco to notify the Department during critical drilling phases so that “DEP regional staff will be provided with adequate advance notice to allow DEP staff to be present” in case there is groundwater following back to the borehole. Sunoco refuses, saying only that it will provide the DEP with “advance notice of commencing all HDDs, project wide”.

Sunoco once again, being non-compliant with the DEP’s requests. Sunoco **MUST** allow DEP inspectors to be present during critical drilling phases. In view of the long list of drilling catastrophes, Sunoco’s refusal is once again tantamount to non-compliance and therefore permits should be revoked.

7. On page 11, the DEP says that, given the frac-out problems in the past, drilling contractors should be required to use a casing (i.e. a pipe liner) in the pilot hole at the entry and exit points. Sunoco refuses, saying that its HDD plan for this site doesn’t require it.

I wonder why. Contractors often use a short section of casing that is ‘dug in’ at the start of construction. This casing is intended to prevent inadvertent near-surface returns, and allows for easy monitoring of drilling mud return levels. Where unconsolidated deposits represent a risk of inadvertent returns on the entry side, the casing may need to be more extensive. Wouldn’t you think Sunoco would want to take the ultimate precautions to avoid any more future problems? It seems to me that Sunoco is taking shortcuts wherever it can at our expense. Non-compliance must result in revoking permits.

On page 13, the DEP again requests geophysical studies to determine where the bedrock is, to identify soft soils, and finding rock fractures. Sunoco refuses, saying these studies “will provide no functional data” at this location.

How can they possibly refuse when we know that Sunoco's statement is simply not true. As stated previously, pipeline engineers and horizontal drillers will have the same four questions:

- At what depth is the top of bedrock?
- What lithology is the overburden?
- What lithology is the bedrock?
- Is bedrock fractured?

Irregular bedrock relief may lead to the horizontal drill intersecting overburden. Should bedrock be too deep, horizontal drilling may be impractical. Granular overburden creates challenges for mud containment. Highly permeable bedrock may offer no better containment than granular overburden. Similarly, highly fractured or karsted bedrock may create high permeability zones in lithologies that normally have very low hydraulic conductivities.

While most geophysical methods may offer some insight into answering the above four questions, four methods are particularly useful, and are routinely applied. These include electrical resistivity tomography (ERT), seismic refraction, ground penetrating radar (GPR), in addition to borehole geophysics.

In view of all the problems with Sunoco's drilling to date, we, as residents who will be directly impacted by Sunoco's HDD, also insist, along with the DEP, that complete and comprehensive surface and near-surface geophysics be applied to this construction to prevent the negative incidents of the past being repeated.

8. On page 13, the DEP asks Sunoco for "well depths, casing depths, and water-level depths (based on a water-level survey)" on the cross-section diagrams of the HDD. Sunoco claims to have done this, but no water-level survey was apparently done. As far as I can see, the water levels shown in the cross sections are only those encountered in Sunoco's five boreholes, not in local wells. And in the list of 32 private wells given in Attachment 1, 30 of them have a water level of "unknown".

Sunoco's incorrect and insufficient data for private wells once again highlights the company's incompetence.

Sunoco had our well tested and measured. The measurement from the proposed HDD was totally and startlingly incorrect. They measure 490 ft instead of 150 ft from the proposed HDD. Mention of this correction is mentioned as item 27 in Sunoco's letter to which we are responding. I also informed them of the depth of the well and the depth of the well pump. Why are they not recording the correct information and how can they be allowed to proceed with simple mistakes like this and insufficient data of private wells? This also totally highlights the lack of interest or concern for people's private water wells which are mostly their sole water sources, as in our case. Our wells do not appear to be a high priority on their data collection list. This HAS to change.

9. On page 16, the DEP recommends that Sunoco use 20 feet of grouting (instead of the 15 feet in its plan) when plugging to stop groundwater flow. Sunoco's response is a curt "[Sunoco] appreciates the Department's recommendation." It will clearly be ignored.

We do not need Sunoco to appreciate a recommendation. We need Sunoco to commit to it, as required by the DEP and to be compliant. The DEP is not a consultancy agency, it is a regulatory agency and Sunoco needs to start respecting that.

10. On page 17, we once again address the issue of water supplies. I have commented on this several times now and am still not satisfied with Sunoco's replies or provisions. I ask the DEP to please **ONLY ALLOW SUNOCO TO PROVIDE PERMANENT ALTERNATIVES** so that private wells **HAVE NO CHANCE OF BEING IMPACTED**. They need to hook all those with private wells up to public water. If public water lines do not exist, then they can lay the infrastructure.

After hearing of contaminated and negatively-impacted water wells and the consequences my family has decided that Sunoco's offer of a "temporary" water buffalo is totally unacceptable. Sunoco obviously realizes that their drilling has caused many problems and, by offering these so-called water buffalo's, residents will be perfectly happy with this solution.

As I have repeated many times, this is **NOT** a solution for us. First of all, Sunoco does not define "temporary". Days, weeks, months ... years? Secondly, I have spoken with residents in Edgmont Township who suffered numerous problems with these water buffalo's. Please refer to the comments on the original Reevaluation Report for Edgmont Township to understand the numerous problems residents encountered. We will **NOT** be allowing our property to be put to that risk. I asked Sunoco if I could see a water buffalo contract or agreement and Stephen Sanders of Percheron Field Services emailed me that there was no contract or agreement (I have that email) so how on earth can they be offering "agreements" as specified in Item 29? And what protection does "no agreement" offer the homeowner in the event of Sunoco damaging the private well, the homeowner's internal filtration system, pinhole leaks in pipes and damage to appliances in the event of sediment or contamination? **EVERYTHING IS GEARED TOWARDS SUNOCO DRILLING ON WITHOUT ANY REGARD FOR THE SAFETY, WELLBEING OR HEALTH OF THE PROPERTY OWNERS OR RESPECTING THE PROPERTY OF THOSE HOMEOWNERS. NOTHING IS GEARED TOWARDS PROTECTING THE HOMEOWNER FROM DAMAGE OR HAVING SOMETHING IN PLACE TO PROVIDE COMPENSATION OR REMEDIATION IN THE CASE OF DAMAGE CAUSED BY SUNOCO.** How many times and how many dollars do impacted homeowners have to spend on lawyers to fight for their right to clean water? I thought this was in Pennsylvania's Constitution?!

It is, in short, disgraceful that a company making billions is putting the residents of these townships through all this when THESE RESIDENTS DON'T EVEN WANT THE PIPELINE.

I was assured by our Percheron Field Agent, Lance Vaught, that Sunoco would supply the qualified contractors to install the water buffalo and would see to all the required paperwork and permits. But an email from Edgmont Township's zoning officer told me this, again, WAS NOT TRUE. This is the email from Edgmont Township's Zoning Officer on April 18, 2018:

Ms. Fuller: What I know is this:

- Edgmont discovered, during this fall, that Sunoco had installed alternative water supplies to properties near its Mariner East II HDD drill easement area without first contacting authorities for advice, permits, or regulations
- Edgmont researched the matter fully with code officials, electricians, building officials, property owners and water scientists and Aqua public water company to become educated on the topic
- Edgmont's staff developed a protocol to provide for the permitting of temporary water supply facilities, commonly called water buffalos in an effort to protect the safety, health and welfare of its residents
- Edgmont has struggled with Sunoco to gain compliance and get permits issued and safety inspections completed for the temporary water facilities already installed
- Edgmont has discovered improperly installed electric line in at least one of the temporary water supply systems, once it was able to get the work inspected
- Edgmont has learned that Sunoco has now disconnected some of these alternate water supplies and reconnected households to previously abandoned wells, again without first contacting the authorities for advice, permits or regulations
- Edgmont researched the matter and developed a series of dormant well testing criteria that it required Sunoco to perform, with satisfactory results, prior to any future reconnecting of residences to their previously abandoned wells and has requested this testing from Sunoco
- Sunoco is resisting furnishing the township with the well testing results it requires and continues to re-connect residences to their former drinking water well supplies

This is very concerning to your elected officials, the Township Manager and administrative staff, who will continue to try to gain compliance from Sunoco. I have copied this e-mail to your state representatives, the PaDEP and the Public Utility Commission for their information. If you have any questions or concerns, you may also direct them there.

Samantha Reiner
Zoning Officer
Edgmont Township

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Gradyville, PA 19039
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The penalty for Sunoco behaving like this? Twice the cost of the permit! That is not a deterrent.

So, to summarize, Sunoco has chosen the route for the ME2 and ME2X to run down Valley Road. We know that this is a bad route for three important reasons:

1. Most of the homes in this residential area are on Valley Road and the pipeline will be within a few feet of them, as is the case with us.
2. It endangers most of the wells in the area which are near these homes, as is the case with us (150 ft).
3. It sends the drill directly through an area where the ground is known to be polluted with the chemical MBTE from a previous undetected Sunoco leak, thus further spreading the pollution throughout the area.

Here is the issue. Sunoco was required, by the August 9, 2017 agreement, to consider alternative routes for many sections of the pipeline. The potential problems with this route, compared to any other, are huge. There is much more open space on either side of this route where the environmental consequences of construction, or the risks from a leak or rupture, would be far less. Sunoco's response to this legal requirement set forth in the August 9 agreement is simply to respond that other routes were "impracticable". We all know that Sunoco favors this route for its own convenience since the easement already exists for Mariner East 1. We must remember, however, that when ME1 was constructed along this route there were no homes here. It was a rural area. That is not the case now. This is now a highly-populated residential area which should not be used for industrial pipelines. The fact that ME1 – an 87-year old pipeline – was repurposed to carry these highly volatile NGL's without any notification to residents (non-compliance with Title 49, Part 195 of the Code of Federal Regulations for Pipeline Safety) 150 ft from my home already fills me with horror.

The DEP must insist on proof from Sunoco that it did, in compliance with the August 9, 2017 agreement, analyze alternative routes and exactly why this route was preferable. For it to be more "convenient" to Sunoco is simply not sufficient justification.

One last point I wish to make – an important point – is that since Sunoco has been given public utility status, the Mariner project is subject to Title 49, Part 195 of the Code of Federal Regulations regarding Pipeline Safety. Why, therefore, in keeping with Part 195.440 regarding Public Awareness, were the residents of Middletown Township:

- not informed of the dangers, the risk or any kind of Emergency Evacuation or Safety Plan that would protect us?
- not informed that the ancient 87-year old Mariner East 1 had been re-purposed?

- not informed by Sunoco that this 87-year old and narrow 8" pipe was now transmitting highly volatile NGL's at high pressure - namely propane, ethane and butane - in the opposite direction to the original flow of petroleum product it used to transport, through our densely populated areas - the areas that were more or less uninhabited back in 1931?

Non-compliance by Sunoco means that we were:
not informed of the possible hazards, associated with unintended releases from a hazardous liquid pipeline facility.

- not informed of the physical indications that such a release may have occurred
- not informed of the steps that should be taken for public safety in the event of a hazardous liquid pipeline release
- not informed about the procedures to report such an event

<https://www.gpo.gov/fdsys/pkg/CFR-2010-title49-vol3/pdf/CFR-2010-title49-vol3-sec195-440.pdf>

According to the Code of Federal Regulations, the program and the media used must be as comprehensive as necessary to reach all areas in which the operator transports hazardous liquid. There is absolutely nothing on the Delaware County Emergency Preparedness Guide for NGL Pipeline leaks/ruptures -
<http://www.co.delaware.pa.us/depts/2016emergencyPlanningGuide.pdf>

Overall, Sunoco's responses in this document suggest to me that Sunoco has decided it is fine to ignore the DEP's requests, it is fine to ignore the rules and regulations of a Township, it is fine to ignore the requirements of Title 49, Part 195.440 of the Code of Federal Regulations for Pipeline Safety with respect to Public Awareness and it is fine to collect incorrect or insufficient data with respect to people's properties – especially private wells – which will be directly impacted by the proposed HDD along the already contaminated Valley Road... contaminated by Sunoco by an “undetected leak” back in 2015.

The company is determined to do as it pleases and it will continue to do so unless it is stopped. It is the duty and the mission of the regulatory agencies, the public officials and Governor Wolf himself to ensure that it doesn't continue. Only they have the authority and the power to stop this. (12)

Letter – [Rosemary Fuller](#)

9. Comment

Please protect the water supply at all costs. The existing drilling damage as well as future risk, to Aqua's and to private wells, is too much for residents, to pay in costs. Contamination risk and loss of this precious resource is very concerning. Threats to the environment and human life provoke this comment as well.

Following the numerous detriments to West Whiteland homeowners and their water, for example, DEP is justified in demanding detailed answers regarding Valley Road

HDD drilling. Based on Mr. Hohenstein's March 23, 2018 DEP letter and Sunoco's May 21 response, here are my comments using the same numbering system:

1. Geophysical studies should be completed. DEP's attempt to ensure the integrity of the project, given its large environmental impact, is correct. The five sampled bores are not enough; since the DEP declared that the whole run should be examined, that should be done with no other option.

2. SPLP's comment that a geophysical suite of boreholes adds risk of new fluid pathways is a perplexing question for a nonscientist like myself, but also highlights the risk of this project. If new pathways can be created that easily, and this is so close to homeowner wells, is it a good idea to even consider this work at all?

4. d. Sunoco did not answer either question posed by the DEP.

4. e. Sunoco did not identify weaknesses, nor show their approach. Waiting for a problem is too late.

5. 3. Doesn't address well testing

5.4. Should resolve the groundwater monitoring with the two remaining well owners.

13. b. Inadvertent return risk needs to be explored.

17. The more information the better.

18. a. Does this address the well casing depths?

24. Would there be time to send plan in that situation? More grouting, 20 feet, should be used.

Please protect the trees, green space, wetlands and waterways. Children deserve clean, green playing spaces. Seniors, adults and children deserve clean air, land and water, near their homes, workplaces, places of worship, frequented businesses and medical facilities and not just memories of a healthy environment. Habitat for wildlife and environmental stability are both irreplaceable.

Finally, the human safety aspect needs mention. The plan to transport these odorless, volatile substances through our state, through and past homes as well as public accommodations, is very frightening and feels like a violation of our rights as citizens to a safe environment. The history of accidents in less populated areas supports that fear and frustration.

As much information as possible is needed for DEP's attempt to fulfill its responsibility to the environment, and consequentially to us citizens. Thank you for demanding more information about this proposal. (13)