pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

March 21, 2019

Mr. Matthew Gordon
Sunoco Pipeline, L.P.
535 Fritztown Road
Sinking Spring, PA 19608

Re: Hydrogeological HDD Re-Evaluation Report
Campbell Cr./George Cr. Crossing 16" Horizontal Directional Drill Location (S2-0155-16)
Permit No. E31-234
Tell Township, Huntingdon County

Dear Mr. Gordon:

The Pennsylvania Department of Environmental Protection (DEP) is requesting more information from Sunoco Pipeline, L.P. (SPLP) related to the HDD Re-Evaluation for the Campbell Cr./George Cr. site, HDD# S2-0155-16 and permitted under Permit E31-234, posted on the DEP Mariner East II pipeline portal webpage on February 12, 2019.

1. As required by Paragraph 4 and 5 of the Environmental Hearing Board's August 10, 2017 Corrected Stipulated Order, SPLP failed to fully utilize information gathered during the HDD of the 20-inch bore as part of the HDD Re-evaluation for the 16-inch pipeline. Many small inadvertent returns (IRs) occurred during the HDD activities for the 20-inch bore. Please gather geologic and drilling information collected by various site personnel during the 20-inch bore which can be used to synthesize a comprehensive history of each event or groups of events. The HDD re-evaluation report should discuss the operational or geologic cause of each inadvertent return, the magnitude of the inadvertent return(s) and associated loss of circulation, the best management practice used to contain and minimize the inadvertent return, and the drilling procedure or technique used to progress the boring.

   This information should then be used to describe why the chosen bore path for the 16-inch pipeline was determined and how such information has been used to minimize the potential for IRs to occur and as part of the discussion of construction alternatives, including why HDD activity is still the preferred and chosen methodology for pipeline construction at this location.

2. Rettew states on p. 10 "The proposed 16-inch HDD ... redesigned 16-inch western HDD entry/exit point is at a surface elevation of approximately 736 feet above mean sea level (AMSL) and the redesigned eastern entry/exit is at a surface elevation of approximately 692 feet AMSL." This is in conflict with Rettew's Figure 1 Topographic Base map on p. 19 showing an elevation of approximately 880 and 850 ft. AML (entry points west and east respectively) and Tetra Tech's Figure 2 on p. 122 of 886 and 852 ft, respectively. Please clarify the correct elevations for the entry and exit points and revise the report accordingly.

3. Entry/Exit of HDD takes place in the Hamilton Formation (shale/sandstone); yet there are repeated references by Rettew and SPLP in the report regarding the Onondaga Formation (Doo); a limestone and calcareous shale. There is no information on strike and dip, so the multiple statements seem to imply that Doo underlies the site at a shallow depth. If true, this would require additional borings into bedrock and a suitable geophysical survey to identify depth to bedrock. Please provide clarification of how these issues were considered as part of the re-evaluation report and provide further explanation of the underlying geology, including whether or not SPLP will conduct additional geotechnical borings at the HDD site.

4. Karst geology is mentioned prominently in the reports by SPLP and Rettew, including the following locations within the report: p. 3 – HYDROGEOLOGY, GROUND WATER, AND WELL PRODUCTION ZONES; p. 9 – EXECUTIVE SUMMARY; p. 11 – HYDROGEOLOGY; P. 15 – CONCEPTUAL HYDROGEOLOGIC MODEL AND CONCLUSION. However, SPLP states on p. 15 GEOPHYSICAL SURVEY CONSIDERATIONS there is no need for a geophysical survey. Further, Section 6.0 appears to contradict Section 8.0 regarding the potential for karst geology. Section 6 on p. 15 states "No karst geology was observed during the field reconnaissance, mapped as being present at this HDD location, no carbonate bedrock was observed in the geotechnical borings ..." Whereas Section 8.0 also on p. 15 states "... the George Creek HDD location is underlain by carbonate and clastic sedimentary rocks of the Onondaga Formation and Hamilton Group. The hydrogeologic setting is dominated by groundwater flow that occurs in secondary openings formed long geologic features that include bedding planes, joints, and fractures. These secondary openings may be enlarged or enhanced to some degree by dissolution of any carbonate rocks." Given these aforementioned conflicts, it appears that karst geology is present and geophysical surveys should be conducted for the length of HDD and the borehole profile should be evaluated accordingly. If SPLP determines that additional geophysical surveys are not necessary, SPLP needs to provide a thorough evaluation and justification of why such surveys are not necessary.

5. The 16-inch line profile (p. 23 Preliminary Design Only; p. 122 Figure 2. Revised 16-inch HDD Plan and Profile) shows the "APPROXIMATE BEDROCK" depth at only one location. This appears to be based upon Geotech SB-02 boring, only and this is projected approximately 150 ft. SPLP needs to provide additional information to depth of bedrock. This can be done by utilizing data collected during the drilling of the 20-inch borehole, additional vertical borings, and appropriate geophysical surveys; the latter two within 10- 20-ft of the proposed 16-inch HDD boring. DEP requests that you provide additional information regarding depth to bedrock or provide a detailed explanation of how this information was considered as part of the re-evaluation and in choosing the proposed 16" bore profile.

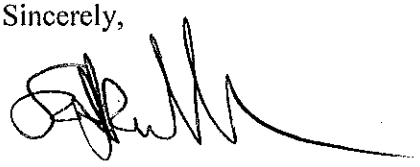
6. The Geology and Hydrogeological Evaluation Report identifies that two "punch out" IRs to uplands occurred during construction of the 20-inch bore hole. However, the HDD Re-evaluation Analysis summary only identifies one IR that occurred on Nov. 8, 2017. DEP only has documentation from SPLP of this single IR on Nov. 8, 2017. Please provide an explanation of the differing numbers of reported IRs in the various reports. If any other IR occurred outside of the Nov. 8, 2017 incident, revise the HDD Re-evaluation Analysis to include the additional IR(s) in the discussion and as applicable, into appropriate sections of the re-evaluation analysis. Further, please provide the full, required documentation for any IR—including punch-out returns—outside of the Nov 8, 2017 incident.

7. As part of the hydrogeologic and well production zone discussion in the HDD re-evaluation, DEP recommends that SPLP acknowledges and incorporates into the re-evaluation that there were no water supply complaints or water supply impacts observed at this HDD site during construction of the 20" bore hole or partial construction of the 16" bore hole.

Upon receipt, DEP will post SPLP's response to this letter on the DEP pipeline portal webpage for public comment. The public will have 5 additional business days from the date of posting on the website to provide DEP any additional comment.

If you have any questions or would like to discuss this letter, please contact me at scwilliams@pa.gov or 717.705.4799.

Sincerely,



Scott R. Williamson
Program Manager
Waterways & Wetlands Program

cc: Larry Gremminger, Energy Transfer Partners/Sunoco Pipeline, L.P. (pdf copy)
Monica Styles, Sunoco Pipeline, L.P. (pdf copy)
Doug Hess, P.G., Skelly and Loy
Huntingdon County Conservation District (pdf copy)