



MEMORANDUM

TO: Monica Styles - ETP and Nick Bryan - ETP
FROM: Richard Wardrop, P.G., GES
CC: Dave Demko, P.G., GES
DATE: August 17, 2020
SUBJECT: Restart Report – Mariner East 2 HDD S3-0290
Milford Road / Little Connestoga Road
Upper Uwchlan Township, Chester County,
Pennsylvania

Groundwater and Environmental Services Inc. (GES) is providing the following HDD Restart Report on behalf of Sunoco Pipeline L.P. (SPLP) in response to the August 10, 2020, Inadvertent Return (IR) at ME II horizontal direction drill (HDD) S3-0290, the 20-inch HDD at Milford Road / Little Connestoga Road, Upper Uwchlan Township, Chester County, Pennsylvania. The location of the HDD is shown on **Figure 1**.

Introduction

On August 10, 2020, at approximately time 1530, drilling fluid emerged within wetland WL-H17, and entered streams S-H11 and S-H10 (see **Attachment A**). The drilling fluid continued to flow down S-H10 and entered pond H3 (Marsh Creek Reservoir). The drill was in the ream phase at the time of the IR, with a reported maximum volume of 8,163 gallons of drilling fluid released. Drilling was immediately stopped upon discovery of the IR. Two turbidity curtains were installed at the confluence of S-H10 (UNT to Marsh Creek) and pond H3. Twelve sand bags and silt fence dams were constructed within S-H10. Crew members began clean up and recovery of the drilling fluid starting near pond H3 (Marsh Creek Reservoir) working their way east to the location of the IR release point. Crew members used pumps and hand tools to recover the drilling fluid and transport it to onsite storage tanks. Stream water was pumped and used to spray remaining bentonite pockets within stream S-H10.

IR remediation efforts continue to present. On August 12, 2020, 26 yards of flowable fill were placed in the approximate three-foot deep circular depression created by pumping drilling fluid from the IR, to seal the IR.

The information presented herein is a synthesis of information collected from professionals familiar with the design and work performed to date on HDD S2-0290 and includes information from professional geologists (PGs), professional engineers, experts in HDD construction, environmental inspectors, utility inspectors, the drilling contractor, the overall spread pipeline construction contractor, and construction managers. GES relied on the information provided by these parties in developing this Restart Report.



Figure 1. HDD Location Map (modified from USGS, rev.1999)

Overview of HDD Activities

As shown on **Attachment A**, HDD S3-0290 spans a horizontal distance of approximately 2,642 feet with stationing running northwest to southeast. Moving southeast from Station 0+00 and elevation 495 feet above mean sea level (amsl), the HDD profile runs under Milford Road, residential properties, Highview Road, and water resources S-H10, S-H11 and W-H17, to the east entry/exit at elevation 381 ft amsl. Drilling associated with HDD to date has consisted of pilot drilling and reaming. The hole spudded in on 2/2/2020 and the following observations were made regarding HDD activities leading up to and including the IR on August 10, 2020:

- 2/2/20 to 3/2/20 – Normal pilot drilling activity from Station 26+42 to 25+90.
- 3/3/20 to 3/7/30 - Loss of returns near Station 20+52, resolved by grouting.
- 3/8/20 to 3/12/20 - Normal pilot drilling activity from Station 20+52 to 20+21
- 3/13/20 to 3/19/20 - Loss of returns between Stations 20+21 and 19+98, resolved by grouting.
- 3/20/20 to 5/21/20 – COVID-19 shut-down of operations
- 5/22/2 to 6/1/20 – Normal pilot drilling from Station 19+98 to 19+47.
- 6/2/20 to 6/6/20 – Loss of returns drilling from 19+47 to 17+05.
- 6/7/20 to 6/27/20 – Normal pilot drilling from Station 17+04 to 9+39. End of downstream pilot drilling. Upstream intercept pilot boring advanced without incident from Station 0+00 to 12+76.



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- 6/29/20 to 7/31/20 – Normal 30-inch reaming of completed pilot hole from southeast to northwest, from approximately Station 26+41 to 11+26.
- 8/1/20 – Difficulty tripping out and temporary loss of returns.
- 8/3/20 to 8/8/20 - Reestablished returns, tripped back to cutting face and continued reaming from approximately Station 11+26 to 10+62.
- 8/10/20 – Used wash over tool to clean hole, circulation appears normal. At time 15:36 PG discovers IR in wetland W-H17 at approximately Station 22+35, as described above. HDD activities suspended, pending restart.

Note: A relatively constant groundwater discharge was observed at the southeast entry/exit from approximately 2/29/ 20 to present. A similar discharge was observed during construction of the 16-inch HDD at S3-0290.

Per Section 6.5 of the IR PPC Plan (rev. Feb. 2018), SPLP notified PADEP – Southeast Regional Office, the Chester County Conservation District, Pennsylvania Fish and Boat Commission, U.S. Army Corp of Engineers, and Upper Uwchlan Township.

Aqua America was notified of the IR as this public water utility has a source well within 450 feet of the HDD alignment. In addition, two landowners with portions of their parcels falling within 450 feet of the alignment were notified in response to the IR. Copies of these notifications are provided in **Attachment B** and the 450-foot private water supply map is shown on **Figure 2**. The landowner notification names and address are redacted in the notifications. To date, neither Aqua America nor either landowner has reported an impact on a water supply during construction activities at HDD S3-0290.

Current Conditions Report

There has been no drilling activity at this HDD site since the IR occurred on August 10, 2020. On August 12, 2020 the drilling contractor tripped out all joints and the reamer. An initial IR report (**Attachment B**) was prepared by Tetra Tech and submitted to the PADEP. The initial IR report will be followed by submittals of IR current condition reports to PADEP. As described in the introduction, IR remediation efforts continue to present. Flowable fill has been placed to seal the IR at the land surface.

Analysis of Cause of IR

Based on published mapping the majority of the HDD bore profile passes through graphitic gneiss (referred to as the Pickering Gneiss), with the northwest end of the HDD passing through a metadiabase (PaGEODE). The depth of highly weathered bedrock gneiss in Chester County can be greater than 100 feet. The IR that occurred on August 10, 2020, was in the same general area of the HDD alignment where two IRs occurred during construction of the 16-inch line at HDD S3-0290 (see Hydrogeologic Reevaluation Report, Attachment 1, in Reanalysis of HDD S3-0290, May 2019). One of the former IRs (7/19/17) occurred during advancement of the pilot boring and the other IR (8/29/17) occurred at the start of reaming. Redesign of 20-inch HDD profile provided for greater overburden over the profile to better contain drilling fluid pressure. However, a potential bedrock fracture zone was indicated in the area of the IRs by a geophysical survey performed by Rettew / Envirosan in January of 2019 (see Attachment C, Hydrogeologic Reevaluation Report, May 2019). Overall the risk of a new IR remained given the potential fracture zone and depth of less competent subsurface material.

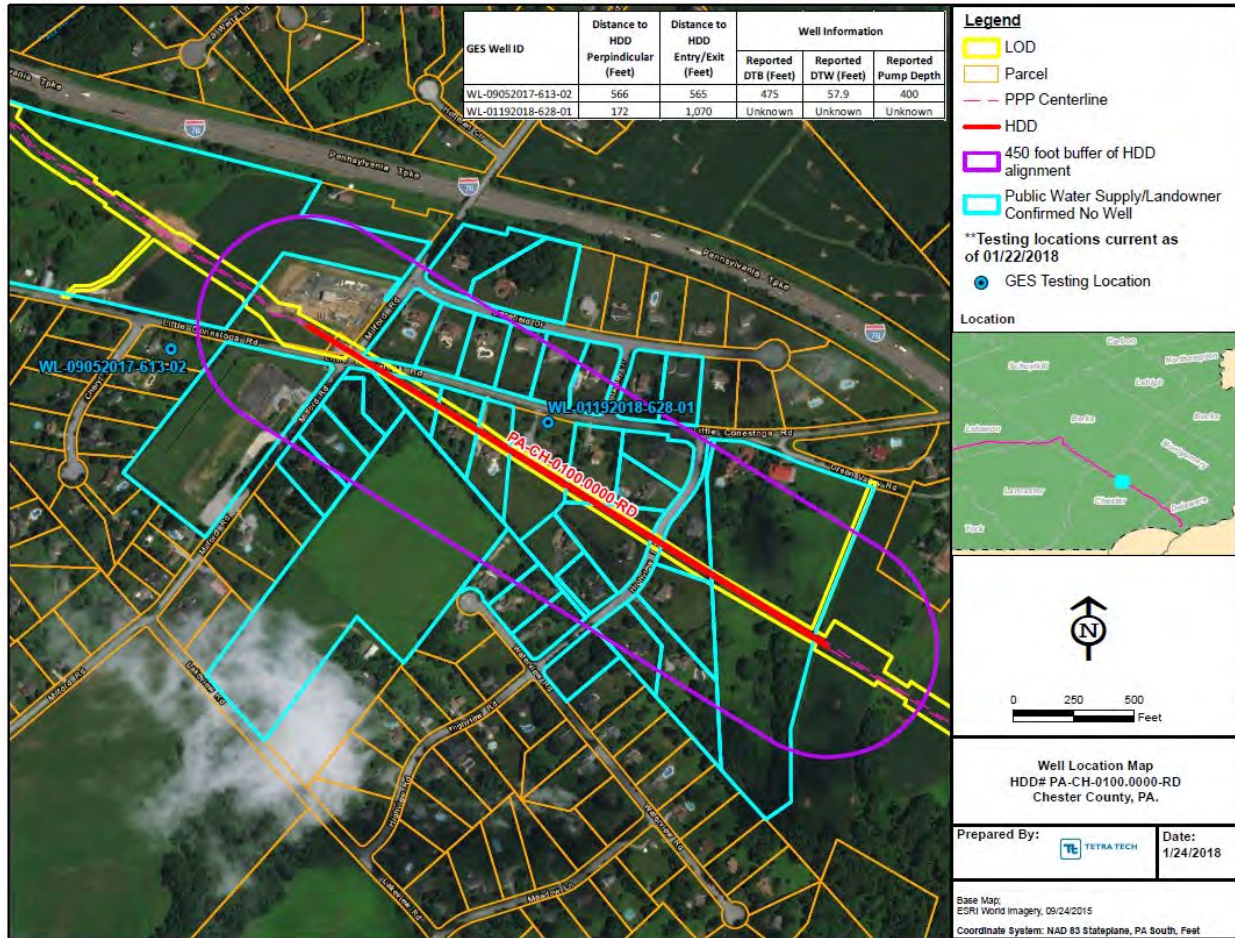


Figure 2. Well Search Map - Properties within 450 feet of HDD Alignment

As stated in the Reevaluation Report, the synthesis of regional and local geologic data (including published geologic and hydrogeologic information, geotechnical borings, field observations and geophysical surveys) together with past drilling performance during drilling for the 16-inch pipeline indicates that installation of the 20-inch line at HDD S3-0290 has a moderate to high risk of drilling fluid losses and IRs. This statement is based on the depth of the profile and strength of overburden materials within zones of saprolite, highly weathered bedrock, low RQD bedrock, and a relatively high frequency of potential bedrock fracture zones.

On August 10, 2020, the 30-inch reamer was advancing northwest and was approximately 1,170 feet northwest of the IR location, as measured along the profile, when the IR occurred. At that time, the contractor was attempting to regain lost circulation at the southeast entry/exit. They advanced a wash over tool, over the drill string, and cleared bridging in the annulus between the reamer and the southeast entry/exit. During this process, the IR occurred. HDD drilling experts on the HDD team believe the IR occurred due to a build-up of fluid northwest of the bridging, within a higher section of the borehole, that was instantaneously released back to the southeast and flowed to the surface at the IR.

Two other factors may have contributed to the most recent IR. A preferred subsurface pathway for fluid migration pathways may have developed when the two former IRs occurred in 2017. Also,



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the seals that are created by drilling fluid cake and grout plugs may be compromised by dilution from shallow groundwater. Significant shallow groundwater movement is evidenced by the relatively constant groundwater discharge at the southeast entry/exit during HDD drilling.

Depth and alignment of drill bit at time of IR

Attachment A shows the depth and position of the reaming bit when the IR was discovered on August 8, 2020. The 30-inch reamed hole had been advanced approximately 1,574 feet along the profile and was approximately 1,190 feet horizontal distance northwest of the location of the IR when the IR occurred. The depth of the bit was approximately 215 feet below ground surface.

Profile of the drill path as constructed overlain on the permitted drill profile

See **Attachment A**.

HDD S2-090 - Assessment of Alternative Approaches

Alternative entry and/or exit points

Adjustment of the entry and/or exit points is not appropriate when the HDD is in the reaming phase. The 30-inch reamed hole was 60 percent complete at the time of the IR.

Alternative entry and/or exit angles and profile depth

See above.

Alternative profile depth

As discussed in the HDD Reevaluation Report and noted above, the depth of this drill was increased beyond the depth of the prior drill to reduce the possibility of an IR .

Reduced drilling fluid pressures

As this HDD was in the ream phase at the time of the IR, excessive annular pressure was not a cause of the IR.

Use of a grout plug

Attempts have been made to grout the zone of subsurface weakness intersected by the HDD profile in the past with marginal success. Grouting attempts are complicated by the geometry of the HDD relative to the location of the zone of weakness and IRs, a partially completed ream pass, and continuous production of groundwater in the borehole. If grouting of the annulus is successful, a section of new pilot hole would be required through the grout plug and there would be a risk that the bore would drift off the established alignment. If that occurred, portions of the grout plug could be removed along the borehole wall, compromising the intended seal.

As noted above, IR has been sealed at the surface with flowable fill as part of the initial response to the IR.

Use of thickened drill mud and/or the use of pre-approved LCMs

The drilling contractor has used and will continue to use LCMs as needed following IR and/or LOC events to help regain circulation and reduce the risk of IRs and LOCs.

Use of an intercept drill

An intercept drill was used during the pilot phase of drilling to reduce annular pressure.



Use of casings

Surface casings were installed at both ends of this HDD to mitigate punch-in and punch-out IRs. The IR on August 8, 2020 occurred at a boring length over 400 feet from the southeast entry/exit and from a depth of 107 feet, which is beyond the point where casing could be installed at this site.

Use of an unconventional relief point

Unconventional pressure relief points (UPRPs) take advantage of the fact that an IR represents a preferred pathway for fluid movement in the subsurface. Future IRs will likely follow this pathway. If discharge from this pathway would be allowed to continue for the remainder of drilling, subsurface fluid pressures would be reduced, lowering the risk of an IR at another location, and IR fluids could be easily managed.

The HDD team is recommending that a UPRP be established by placing a sand-bag dam to contain any future IR that may occur in the area associated with the two former IRs and the IR of August 10, 2020. If a future IR occurs, all drilling fluids collected in the UPRP would be transported by pumping or by vac truck to either entry/exit and recycled at the mud plant, for the remainder of HDD construction.

Placement of a UPRP within wetland W-H17, on the existing Sunoco pipeline easement, will require additional environmental permitting with regulatory agencies.

Alternative Types of Pipeline Crossings

An evaluation of alternative crossing types was conducted and it was concluded that reasonable alternative crossings were not feasible at this location. This evaluation was discussed in the HDD Reevaluation Report submitted 5/28/2019 and approved by the PA DEP on 1/23/2020.

Analysis of Risk of Additional IRs and Recommendations

The August 10, 2020 IR occurred during the reaming phase of drilling when reaming was approximately 60 percent complete. Based on information provided by, and the expertise of, the HDD team, as well as our experience with the relevant hydrogeology and geology, GES believes there is a high probability that any future IR that may occur during the completion HDD S3-0290, will occur in the area of the IR of August 10, 2020 and of the two former IRs that occurred during construction of the 16-inch HDD. Implementation of an UPRP at the location of the IRs will prevent and/or minimize the risk of new IRs in other locations along this HDD. In addition, grouting and/or the use of thickened drilling fluid and LCMs should continue to be used as warranted by drilling conditions. Consistent with the IR PPC Plan, if a new IR occurs, SPLP will implement the applicable procedures of the IR PPC Plan. Materials and equipment for containing and controlling IRs are immediately available on-site, as required by permit, during all drilling activities.

Proposed Schedule for Resumption of HDD Operations & Anticipated Duration of the HDD Operations

SPLP proposes to perform the aforementioned recommended measures upon restart approval from the PADEP. The anticipated duration to complete HDD operations for the 16-inch pipe is 30 to 45 days from restart of drilling, following restart approval.

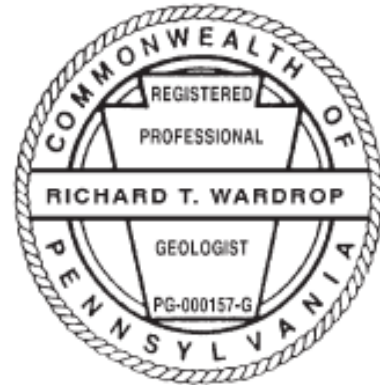


Certification

By affixing my seal to this document, I am certifying that the geologic and hydrogeologic information is true and correct. I further certify I am licensed to practice in the Commonwealth of Pennsylvania and that it is within my professional expertise to verify the correctness of the information.

A handwritten signature in blue ink that reads "Richard T. Wardrop".

August 17, 2020



Richard T. Wardrop, P. G.
Lic. No. PG000157G

Date

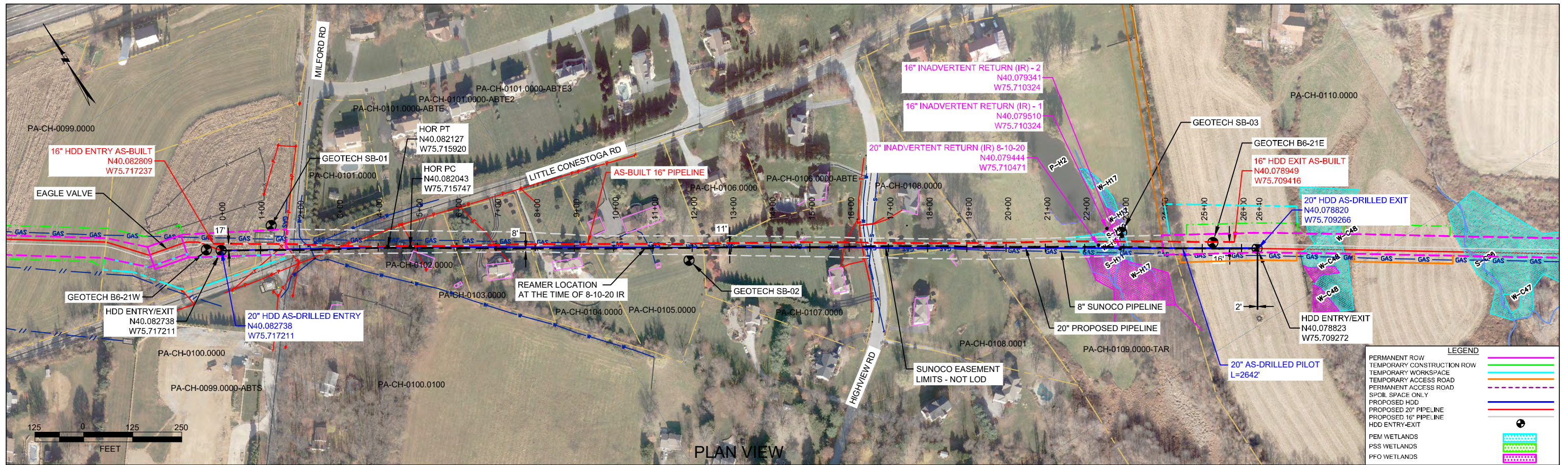
References

PAGEODE, PA Geological Survey Interactive Map, Pennsylvania Department of Conservation and Natural Resources, <https://www.gis.dcnr.state.pa.us/geology/index.html>

USGS, 1999. *USGS Downingtown, PA*, 1:24,000 Topographic 7.5-minute series Quadrangle Map, United States Geological Survey, 1999.



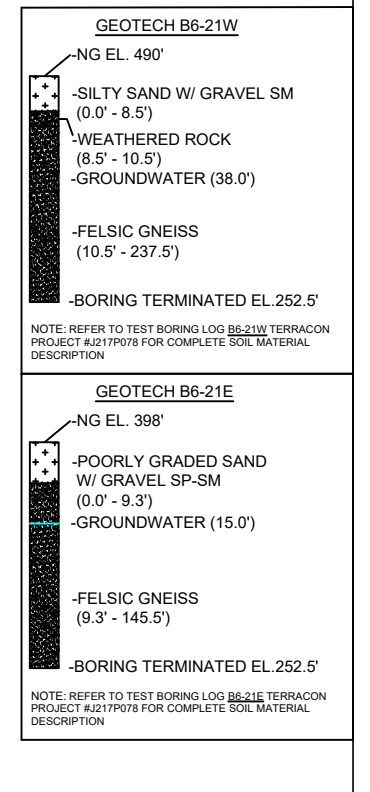
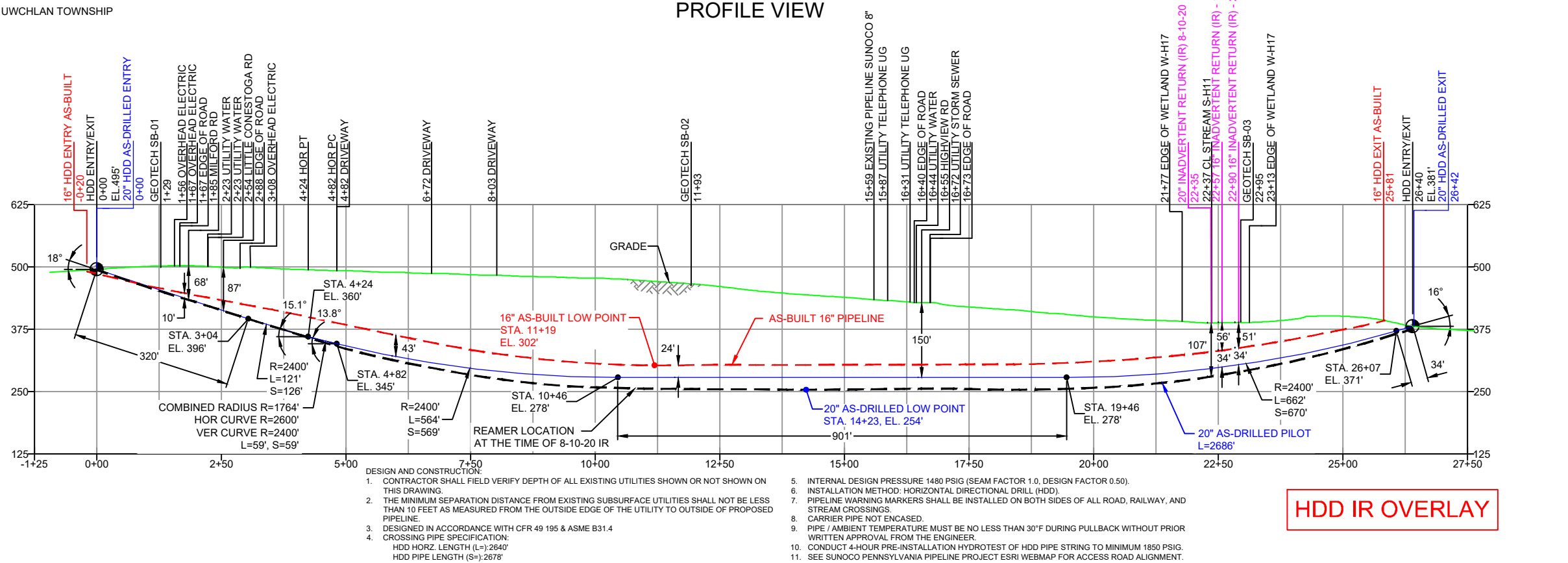
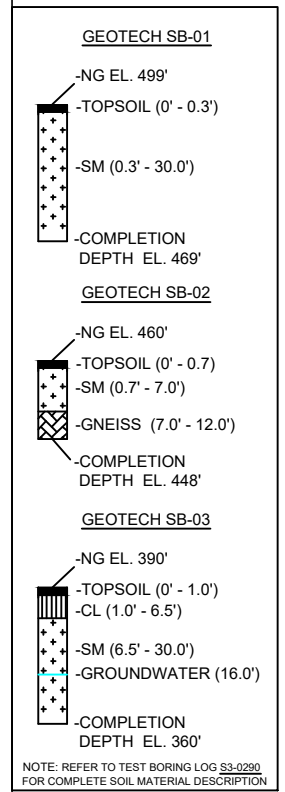
Attachment A – As-built Plan and Profile



PLAN VIEW

PROFILE VIEW

CHESTER COUNTY, PA - UPPER UWCHLAN TOWNSHIP
S3-0290



HDD IR OVERLAY

- NOTES
- ALL COORDINATES SHOWN ARE IN LATITUDE AND LONGITUDE. ALL MSL ELEVATIONS ARE NAD83
 - STATIONING IS BASED ON HORIZONTAL DISTANCES.
 - ROONEY ENGINEERING, INC. AND SUNOCO PIPELINE, LP ARE NOT RESPONSIBLE FOR LOCATION OF FOREIGN UTILITIES SHOWN IN PLOT PLAN OR PROFILE. THE INFORMATION SHOWN HEREON IS FURNISHED WITHOUT LIABILITY ON THE PART OF ROONEY ENGINEERING, INC. AND SUNOCO PIPELINE, LP. FOR ANY DAMAGES RESULTING FROM ERRORS OR OMISSIONS THEREIN.
 - CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES. CONTACT ONE CALL AT 811 PRIOR TO DIGGING.
 - SUNOCO EMERGENCY HOTLINE NUMBER IS #1-800-786-7440.

REF. DRAWING

ES-6.27	TO	ES-6.29	EROSION & SEDIMENT PLAN	EP6	ADDED 8-10-20 IR INFORMATION
SHEET 16	TO	SHEET 17	AERIAL SITE PLAN	EP5	REVISED TOWNSHIP NAME
				EP4	DESIGN CHANGE PER MICHELS
				EP3	SWITCHED 20" CENTERLINE LOCATION, INCREASED DEPTH OF DRILL AND ADDED GEOTECH INFORMATION
				EP2	REVISED PER PADEP COMMENTS RECEIVED 09-06-16
				EP1	REVISED PER PADEP COMMENTS

REVISIONS

MRS	08/12/20	RMB	08/12/20	AMC	08/12/20
MRS	04/03/20	RMB	04/03/20	AMC	04/03/20
MRS	06/11/19	RMB	06/11/19	AMC	06/11/19
MRS	03/14/19	RMB	03/14/19	AMC	03/14/19
MRS	09/30/16	RMB	09/30/16	AAW	09/30/16
JTW	05/09/16	RMB	05/09/16	AAW	05/09/16

DWG NO	DWG NO	DESCRIPTION	NO.	DESCRIPTION	BY	DATE	CHK	DATE	APP	DATE

Sunoco Logistics Partners L.P.

TETRA TECH ROONEY
(303) 792-5911

SUNOCO PIPELINE, L.P.

HORIZONTAL DIRECTIONAL DRILL
LITTLE CONESTOGA ROAD
PENNSYLVANIA PIPELINE PROJECT

SCALE: 1"=250' DWG. NO: PA-CH-0100.0000-RD



Attachment B – Initial IR Report



INITIAL REPORT
Subject to Change as Additional Information Becomes Available

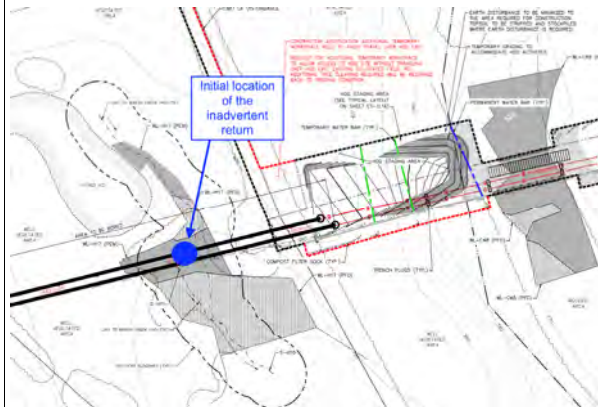
SPLP PENNSYLVANIA PIPELINE PROJECT
HORIZONTAL DIRECTIONAL DRILLING – INADVERTENT RETURN REPORT FORM

REPORT DATE:	8/11/2020	HDD ALIGNMENT #	PA-CH-0100.0000-RD		
PROJECT SITE:	PPP 6 - S3-0290 - Milford Rd./Little Conestoga Rd		HDD COMPANY:	Michels Directional Crossings	
DATE AND TIME WHEN IR WAS DISCOVERED			DATE:	Monday, August 10, 2020	TIME:
					1530
LOCATION: STREET	427-423 Green Valley Rd, Downingtown, PA 19335		MUNICIPALITY:	Upper Uwchlan	COUNTY:
					Chester
LATITUDE:	40.0794	LONGITUDE:	-75.7104	FROM STATION:	14824+00
				TO STATION:	14824+00
STREAM NAME:	S-H10 (UNT to Marsh Creek), S-H11 (UNT to Marsh Creek)		POND / LAKE NAME:	Pond H3 (Marsh Creek Reservoir)	WETLAND NAME:
					WL-H17 (PEM, PFO)
DEP PERMIT Nos. (102 AND 105)	E&S Permit # ESG0100015001, Water Obstruction Permit E15-862				
CORPS PERMIT NO.	CENAP-OP-R-2014-0306 (PASPGP-5)				
IR TRACKING ID:	PPP6_PA-CH-0100.0000-RD_IRInitial-01_08102020				
IS AUGUST 8, 2017 ORDER APPLICABLE?	YES	LISTED IN WHICH EXHIBIT?	3	DESCRIPTION IN EXHIBIT	HDDs for Reevaluation

I. BACKGROUND INFORMATION

A. NAME OF ALL PERSON(S) PROVIDING INFORMATION FOR THIS REPORT AND CONTACT INFORMATION	Josh Prosceno (CEI), Chris Cable				
B. MATERIAL(s) RELEASED	A mixture of bentonite clay and water mixed with native cuttings				
C. DESCRIPTION OF THE RELEASE (PROVIDE DATES, TIMES, AND DURATION OF IR IF KNOWN, INCLUDE ROOT CAUSE(S))	On 8/10/2020 at approximately 1530, drilling fluid emerged within wetland WL-H17, and entered streams S-H11 and S-H10. The drilling fluid continued to flow down S-H10 and entered pond H3 (Marsh Creek Reservoir). The drill was in the ream phase at the time of release, with a volume of 8,163 gallons of drilling fluid released. Drilling was immediately stopped upon discovery of the IR. Two turbidity curtains were installed at the confluence of S-H10 (UNT to Marsh Creek) and pond H3 (Marsh Creek Reservoir). Twelve sand bag and silt fence dams were constructed within S-H10 (UNT to Marsh Creek). Crew members began clean up and recovery of the drilling fluid starting near pond H3 (Marsh Creek Reservoir) working their way east to the location of the IR release point. Crew members used pumps and hand tools to recover the drilling fluid and transport it to onsite storage tanks. Stream water was pumped and used to spray remaining bentonite pockets within stream S-H10 (UNT to Marsh Creek).				
D. ESTIMATED QUANTITY OF MATERIAL RELEASED	8,163 gallons				
E. ESTIMATED AERIAL EXTENT OF MATERIAL RELEASED	Approximately 25' x 25' at initial release point				
F. HAS IR BEEN CONTAINED WITHIN THE LIMIT OF DISTURBANCE? (PROVIDE DATE AND TIME)	NO	NOTE:			
F1. WHAT REVISION(S) TO DRILLING WERE IMPLEMENTED PRIOR TO RESUMPTION OF DRILLING? (PROVIDE DATE AND TIME)					
G. T & E / BOG TURTLE AREA?	NO	NOTE:			
H. TROUT STREAM?	YES	NOTE:			
I. EV WATER	NO	NOTE:			
J. EV WETLAND	NO	NOTE:			
K. ANY DOWNSTREAM IMPACTS? (PROVIDE DESCRIPTION, DATES, TIMES, AND DURATION)	YES	NOTE:	Bentonite drilling fluid flowed down stream S-H10 (UNT to Marsh Creek) and enter pond H3 (Marsh Creek Reservoir) on 8/10/20.		
K1. Did a Fish Kill Occur? (PROVIDE DATES AND TIMES)	NO	NOTE:			
K2. Has the Substrate Been Coated?	YES	NOTE:			
K3. Where any Water Supplies Impacted? (PROVIDE DATES AND TIMES)	NO	NOTE:			
K4. If water supplies were impacted, were the owners of the water supplies notified? Has anything been provided to the owners of the impacted water supplies? (Provide dates and times)	N/A	NOTE:			

MAP:



II. VERBAL NOTIFICATIONS									
PADEP EMERGENCY NOTIFICATION:		YES	WHO MADE THE CALL ON BEHALF OF SPLP?		Chris Embry				
PHONE NUMBER CALLED:		484-250-5999	DATE:		Monday, August 10, 2020	TIME:	1557		
PERSON CALLED:		Hanna							
NOTES:		Spoke with Hanna and gave her the information. Rex Miller called back at 1610, updated him and gave him coordinates							
V/M?		NO	NOTE:						
LIST ANY NOTIFICATIONS OF INCIDENT MADE TO WATER INTAKES, WATER WELL OWNERS AND LANDOWNERS, INCLUDING DATE AND TIME WHEN EACH NOTIFICATION OCCURRED:									
NAME:	2 Private Well Owners	DATE:	8/11/2020	TIME:		PUBLIC OR PRIVATE:	Private	NOTE:	Letters sent
NAME:	1 Public Water Supply	DATE:	8/10/2020	TIME:	1625	PUBLIC OR PRIVATE:	Public	NOTE:	Informed of release on 8/10, letter sent 8/11
NAME:		DATE:		TIME:		PUBLIC OR PRIVATE:		NOTE:	
NAME:		DATE:		TIME:		PUBLIC OR PRIVATE:		NOTE:	
COUNTY CONSERVATION DISTRICT NOTIFICATION:		Chester CCD	WHO MADE THE CALL ON BEHALF OF SPLP?		Josh Prosceno (CEI)				
PHONE NUMBER CALLED:		610-925-4920 ext. 107	DATE:		Monday, August 10, 2020	TIME:	1643		
PERSON CALLED:		Joe Sofranko							
NOTES:		Spoke with Mr. Sofranko and provided information.							
V/M?		NO	NOTE:						
USACE REGULATORY NOTIFICATION:		YES	WHO MADE THE CALL ON BEHALF OF SPLP?		Chris Embry				
PHONE NUMBER CALLED:		215-656-6731	DATE:		Monday, August 10, 2020	TIME:	1604		
PERSON CALLED:		Dave Caplan							
NOTES:									
V/M?		YES	NOTE:		Left voicemail about the release.				
FISH AND BOAT COMMISSION NOTIFICATION:		YES	WHO MADE THE CALL ON BEHALF OF SPLP?		Chris Embry				
PHONE NUMBER CALLED:		610-637-6398	DATE:		Monday, August 10, 2020	TIME:	1601		
PERSON CALLED:		Officer Robert Bonney							
NOTES:		Spoke with him and gave him information about the release.							
V/M?		NO	NOTE:		Officer Bonney arrived onsite at approximately 1730.				
TOWNSHIP NOTIFICATION:		Upper Uwchlan	WHO MADE THE CALL ON BEHALF OF SPLP?		Joe Massaro				
PHONE NUMBER CALLED:		610-646-7018	DATE:		Monday, August 10, 2020	TIME:	1700		
PERSON CALLED:		Shanna Lodge, Township Manager							
NOTES:		Township Manager returned call shortly after message was left and was notified of the release.							
V/M?		YES	NOTE:		Left message about the release.				
OTHER NOTIFICATION:		SERO PADEP	WHO MADE THE CALL ON BEHALF OF SPLP?		Chris Embry				
PHONE NUMBER CALLED:		Multiple	DATE:		Saturday, August 8, 2020	TIME:	Multiple		
PERSON CALLED:		Frank Defrancesco, Desiree Dudley, John Hohenstein							
NOTES:									
V/M?		YES	NOTE:		Called Frank Defrancesco at 1551 and left voicemail about the release. Called Desiree Dudley at 1552 and left voicemail her office phone since her cell phone is not working. Called John Hohenstein at 1554 and his voicemail box was full.				
III. ACTIONS TAKEN/FOLLOW UP									
IMMEDIATE ACTION TAKEN:									
A. WHEN DID THE RELEASE OCCUR?		8/10/2020							
B. DATE AND TIME OF CESSATION OF DRILLING.		DATE:	8/10/2020	TIME:	1530	NOTE:	Drilling was immediately stopped following the discovery of the IR on 8/10/20 at 1530.		
C. WAS DRILLING RESUMED?		NO	IF SO, HAS THE RELEASE CONTINUED OR ANOTHER RELEASE OCCURRED?				NOTE:		
CORRECTIVE MEASURES SUMMARY:									
A. WAS THE IR CEASED?		YES	HOW AND WHEN?		IR ceased following the cessation of drilling activities on 8/10/20 at 1530.				
B. WAS THE IR CONTAINED?		YES	HOW AND WHEN?		Drilling fluid was contained using two turbidity curtains and twelve sand bag and silt fence dams.				
C. WAS THE IR/DRILLING FLUID RECOVERED?		YES	HOW AND WHEN?		Hand tools and a pumps were used to recover drilling fluid beginning on 8/10/20.				
D. WAS DRILLING RESUMED?		NO	IF SO, WHAT MODIFICATIONS TO THE HDD PROCESS WERE USED?				IF SO, HAS ANOTHER RELEASE OCCURRED?		

**SPLP PENNSYLVANIA PIPELINE PROJECT
HORIZONTAL DIRECTIONAL DRILLING – INADVERTENT RETURN REPORT FORM**

IV. PHOTO DOCUMENTATION



Notes:

View of drilling fluid within WL-H17 at location of IR release point.

8/10/2020



Notes:

View of drilling fluid flowing downstream within stream S-H10 (UNT to Marsh Creek).

8/10/2020



Notes:

View of drilling fluid within stream S-H10 (UNT to Marsh Creek).

8/10/2020



Notes:

View of contractor crew members installing two turbidity curtains at the confluence of stream S-H10 (UNT to Marsh Creek) and pond H3 (Marsh Creek Reservoir).

8/10/2020

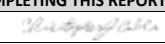


Notes:

View of sand bag and silt fence dam constructed within stream S-H10 (UNT to Marsh Creek).

8/10/2020

Notes:

PRINTED NAME, TITLE AND SIGNATURE OF PERSON(S) COMPLETING THIS REPORT			
NAME:	Chris Cable	TITLE:	Environmental Inspection Manager
SIGNATURE:			DATE: 8/11/2020



P.O. Box 10814
Lancaster, PA 17605

August 11, 2020

BY CERTIFIED AND FIRST CLASS MAIL

[REDACTED]
[REDACTED]
[REDACTED]

Re: Mariner East 2 - Pennsylvania Pipeline Project
Horizontal Directional Drilling Construction - Notification of Inadvertent Return

[REDACTED]

We are reaching out to you because we are conducting construction activity on our Mariner East 2 pipeline, also known as the Pennsylvania Pipeline Project, that is being constructed near your residence by Sunoco Pipeline, L.P., an affiliate of Energy Transfer. This communication is part of Sunoco Pipeline L.P.'s ongoing efforts to remain transparent and available to address any questions or concerns you may have about our project.

Our previous communication described one of our methods of construction, Horizontal Directional Drilling (HDD), in which we drill below the surface in order to reduce land disturbance and bypass cultural and/or environmentally sensitive areas. HDDs are sometimes accompanied by inadvertent returns or loss of drilling fluid. This means that the mixture of water and naturally occurring bentonite clay finds its way into underground crevices, away from our drill hole.

On August 10, 2020, we experienced an inadvertent return. We are notifying you because your property boundary is within 450 feet of the HDD location from which the inadvertent return occurred.

These incidents are not unexpected as the permit applications approved by the Department of Environmental Protection (DEP) include, among other requirements, compliance with an Inadvertent Return Contingency Plan, which we have followed by responding to and containing the inadvertent return to avoid any adverse impacts, and by reporting them to the DEP. We are working in coordination with the DEP to ensure that the environment is protected and will continue to do so.

It is possible that the drilling fluid from an inadvertent return can travel away from our site through the underground crevices. As a precautionary measure, our team member Kelly Gough is available if you have any concerns that drilling fluid may have reached your water supply/well. We can provide you with bottled drinking water as well as a temporary alternative water supply, such as a water buffalo, which we would install and maintain at our expense for the entire period of HDD operations. You can reach Kelly Gough at (717) 208-7735.

We apologize for any inconvenience you may be experiencing during our construction operations and we sincerely appreciate your patience. We are 99% complete on Mariner East 2 mainline construction, and 94% of our HDDs have either been completed, are in-progress, or have been released for construction.

Thank you,

A handwritten signature in blue ink, appearing to read "Mark McConnell".

Mark McConnell – Land Project Manager, Representing Sunoco Pipeline L.P. | Office: (814) 204-0450

Percheron Field Services
 Representing Sunoco Pipeline
 P.O. Box 10814
 Lancaster PA 17605

CERTIFIED MAIL



9407 1118 9956 3070 7126 20

PS Form 3800 6/02

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Total Postage & Fees:	\$4.050

ARTICLE ADDRESS TO:

[Redacted Address]

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SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> ■ Ensure items 1, 2, and 3 are completed. ■ Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Signature: (<input type="checkbox"/> Addressee or <input type="checkbox"/> Agent) X	
	B. Received By: (Printed Name)	C. Date of Delivery
1. Article Addressed to: [Redacted Address]	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
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P.O. Box 10814
Lancaster, PA 17605

August 11, 2020

BY CERTIFIED AND FIRST CLASS MAIL

[REDACTED]
[REDACTED]
[REDACTED]

Re: Mariner East 2 - Pennsylvania Pipeline Project
Horizontal Directional Drilling Construction - Notification of Inadvertent Return

[REDACTED]

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Mark McConnell – Land Project Manager, Representing Sunoco Pipeline L.P. | Office: (814) 204-0450

Percheron Field Services
 Representing Sunoco Pipeline
 P.O. Box 10814
 Lancaster PA 17605

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OUTBOUND TRACKING NUMBER 9407 1118 9956 3070 7431 36	FEES Postage per piece \$0.500 Certified Fee \$3.550 Total Postage & Fees: \$4.050
ARTICLE ADDRESS TO: [Redacted]	Postmark Here

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Ensure items 1, 2, and 3 are completed. Attach this card to the back of the mailpiece, or on the front if space permits. 		A. Signature: (<input type="checkbox"/> Addressee or <input type="checkbox"/> Agent) X	
		B. Received By: (Printed Name)	C. Date of Delivery
1. Article Addressed to: 		D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, enter delivery address below:	
		3. Service Type 	
2. Article Number (Transfer from service label)			

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 8,046,823; 8,103,647; 8,195,579; 8,301,572; 8,392,391; 8,498,943 and 8,843,464.

U.S. Postal Service Certified Mail Receipt

ARTICLE NUMBER: 9414 8118 9956 3073 1777 53

ARTICLE ADDRESSED TO:

Curt Steffy
Aqua America
762 W Lancaster Avenue
Bryn Mawr PA 19010-3402

FEES

Postage Per Piece	\$5.50
Certified Fee	3.55
Total Postage & Fees:	9.05

Postmark
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AUG 1 1 2020



August 11, 2020

BY CERTIFIED AND FIRST CLASS MAIL

Curt Steffy
Aqua America
762 Lancaster Avenue
Bryn Mawr, PA 19010

Re: Mariner East 2 – Pennsylvania Pipeline Project
Horizontal Directional Drilling Construction – Notification of Inadvertent Return

Dear Mr. Steffy:

Sunoco Pipeline L.P. (“SPLP”) previously contacted you to inform you of the start of construction of Mariner East 2, also known as the Pennsylvania Pipeline Project, which is located in proximity to your identified public water source. Certain construction activity known as Horizontal Directional Drilling (“HDD”) is located as close as 450 feet from your identified public water supply source.

Under the applicable permits and plans, SPLP is required to notify all identified public water suppliers with a source located within 450 feet of the HDD alignment that an inadvertent return of drilling mud has occurred as part of HDD operations. On 08/10/20, SPLP representatives notified you via telephone call that an IR occurred on 08/10/20. This letter serves as a written confirmation and follow-up to SPLP’s prior telephone call.

If you believe your public water source has been impacted by the inadvertent return, please contact our office by calling Joshua Baird at 716-849-9419.

Thank you for your cooperation.

Joshua S. Baird
Environmental Project Manager – Tetra Tech
Representing Sunoco Pipeline L.P.
Office: (716) 849-9419