

Appendix C

INADVERTENT RETURN PLAN

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HDD Inadvertent Return Contingency Plan

Pennsylvania Pipeline Project

February 29, 2016

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Sunoco Pipeline, L.P. HDD Inadvertent Return Contingency Plan -Pennsylvania Pipeline Project-

Revision – February 29, 2016

Introduction

This document has been prepared to minimize potential for impacts to sensitive environmental resources from inadvertent releases associated with the horizontal directional drill (HDD) method. This plan will be followed during construction of Sunoco Pipeline, L.P.'s (SPLP's) Pennsylvania Pipeline Project where the HDD construction method is planned under streams, rivers, wetlands, special areas, and transportation features. A listing of HDD sites is provided in Attachment A. Construction personnel will be provided detailed constructions plans for each HDD, and will be required to implement all erosion and sedimentation control and this contingency plan.

Horizontal directional drilling is used to install pipeline crossings on construction projects, depending on site-specific conditions. HDD is a widely used trenchless construction method which accomplishes the installation of pipelines and buried utilities with minimal disturbance to the ground surface, including streams and wetlands. The primary potential environmental impact associated with HDD revolves around the use of drilling fluids. An inadvertent return of drilling lubricant is a potential concern when the HDD method is used. The purpose of this document is to present SPLP's plan for minimizing the risk for inadvertent returns and potential environmental impacts associated with drilling fluids that do inadvertently escape to the ground surface.

The purpose of this contingency plan is to:

- Provide an overview of the HDD process;
- Minimize the potential for inadvertent returns associated with horizontal drilling activities;
- Provide for the timely detection of inadvertent returns;
- Protect areas that are considered environmentally sensitive (streams, wetlands, other biological resources, cultural resources);
- Ensure an organized and timely response in the unlikely event an inadvertent release of drilling mud would occur; and,
- Ensure that all appropriate notifications are made to SPLP's Environmental Compliance Coordinator, the U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), Pennsylvania Department of Environmental Protection (PADEP), and other applicable regulatory agencies in a timely manner, and that all required documentation is completed as identified in this document.

Background

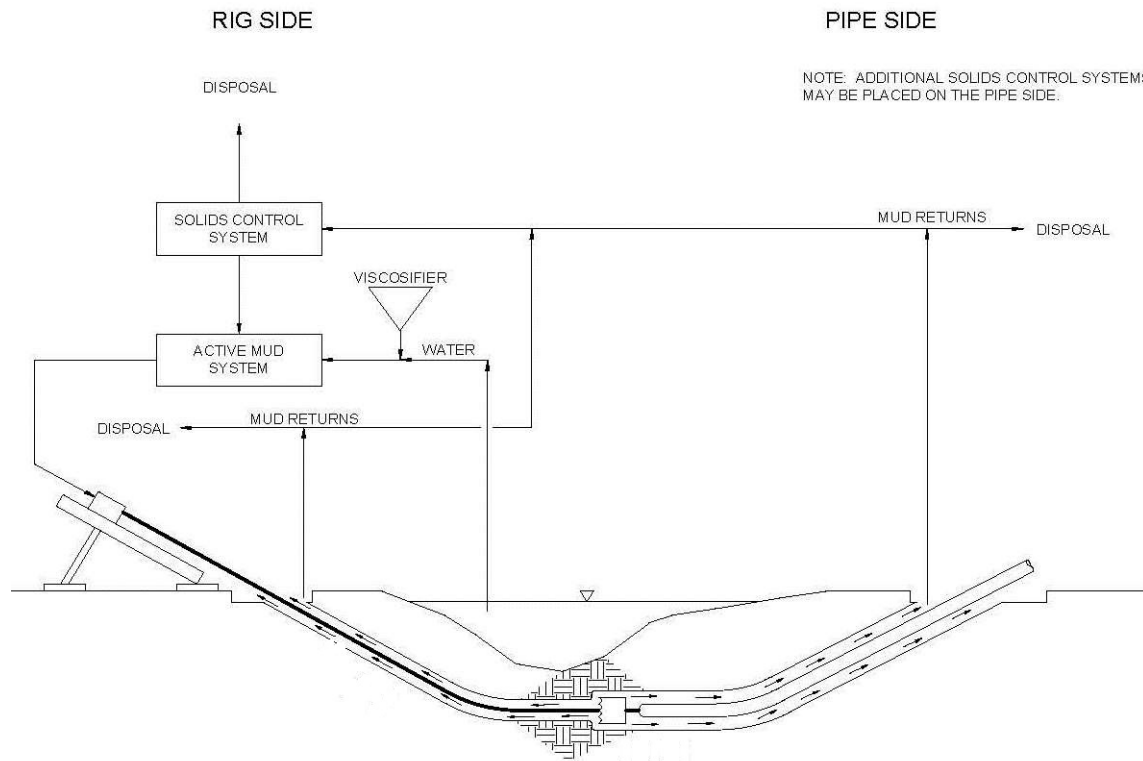
An awareness of the function and composition of HDD drilling fluids (also referred to as drilling mud) is imperative in producing a permittable and constructable HDD crossing design. The principal functions of drilling fluid in HDD pipeline installation are listed below.

- **Transportation of Spoil.** Drilled spoil, consisting of excavated soil or rock cuttings, is suspended in the fluid and carried to the surface by the fluid stream flowing in the annulus between the bore hole and the pipe.

- **Cooling and Cleaning of Cutters.** Build-up of drilled spoils on bit or reamer cutters is removed by high velocity fluid streams directed at the cutters. Cutters are also cooled by the fluid.
- **Reduction of Friction.** Friction between the pipe and the hole wall is reduced by the lubricating properties of the drilling fluid.
- **Hole Stabilization.** Stabilization of the drilled hole is accomplished by the drilling fluid building up a "wall cake" which seals pores and holds soil particles in place. This is critical in HDD pipeline installation as holes are often in soft soil formations and are uncased.
- **Transmission of Hydraulic Power.** Power required to turn a bit and mechanically drill a hole is transmitted to a downhole motor by the drilling fluid.
- **Hydraulic Excavation.** Soil is excavated by erosion from high velocity fluid streams directed from jet nozzles on bits or reaming tools.
- **Soil Modification.** Mixing of the drilling fluid with the soil along the drilled path facilitates installation of a pipeline by reducing the shear strength of the soil to a near fluid condition. The resulting soil mixture can then be displaced as a pipeline is pulled into this formation.

The major component of drilling fluid used in HDD pipeline installation is fresh water, typically obtained at the crossing location. To increase the hydraulic properties of the water, it is generally necessary to modify it by adding a viscosifier. The viscosifier used almost exclusively in HDD drilling fluids is naturally occurring bentonite clay, which is principally sodium montmorillonite. It is not a listed hazardous material/substance as defined by the U.S. Environmental Protection Agency's (USEPA) Emergency Planning and Community Right-to-know Act (EPCRA) or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulatory criteria. If the product becomes a waste, it does not meet the criteria of a hazardous waste, as defined by the USEPA. Bentonite is non-toxic and commonly used in farming practices, but has the potential to impact plants, fish and their eggs if discharged to waterways in significant quantities.

All stages of HDD involve circulating drilling fluid from equipment on the surface, through a drill pipe, and back to the surface through a drilled annulus. Drilling fluid returns collected at the entry and exit points are stored in a steel tank and processed through a solids control system which removes spoil from the drilling fluid, allowing the fluid to be recycled. The cleaned fluid is trucked back to the entrance point for reuse. The basic method used by the solids control system is mechanical separation using shakers, desanders, and desilters. The excess spoil and drilling fluid are transported to, and disposed of, at an approved and permitted solid waste landfill. A typical HDD drilling fluid flow circuit is illustrated schematically below.



Drilling fluid expended downhole will flow in the path of least resistance. In the drilled annulus, the path of least resistance may be an existing fracture or fissure in the soil or rock substrate. When this happens, circulation can be lost or reduced. This is a common occurrence in the HDD process, but does not prevent completion. However, the environment may be impacted if the fluid inadvertently returns to the surface at a location on a waterway's banks or within a waterway or wetland.

Inadvertent Return Minimization Practices

The risk of an inadvertent return can be mitigated through profile design and implementation of specific measures throughout the installation process.

The HDD profile is designed to minimize the potential for the release of drilling fluid in sensitive areas. Cohesive soils, such as clays, dense sands, and competent rock are considered ideal materials for containment of drilling fluids. Case by case analysis of the overburden will be conducted to determine the depth of the bore necessary to provide a margin of safety against returns in a sensitive area. In non-cohesive soils, such as gravel, a greater depth of cover will be used. If substrate test bores are required during the design phase, they should be a minimum of 20 feet from the HDD centerline where practical. The bore holes should be properly sealed by filling with concrete prior to the HDD process.

Key preventive measures implemented during installation are geared toward keeping the drill fluid contained in the borehole and preventing its escape to the surface. This is accomplished through monitoring and management of drill fluid pressures and drill fluid volumes. The most effective

ways of containing and controlling an inadvertent return are early detection and quick response by the HDD crew.

Minimization of Environmental Impact

The major key to minimize environmental impacts associated with HDD drilling fluids is to maintain fluid circulation to the extent practical. Maintenance of fluid circulation is the responsibility of the HDD contractor. Monitoring of drilling mud volumes, pressures, and pump rates/returns will be monitored to assist in determining if significant drill mud loss occurs signaling a possible inadvertent return.

It should be recognized that restoration of circulation may not be practical or possible, and that environmental impact will be minimized by completing construction as soon as possible.

Drilling fluid is easily contained by standard erosion and sedimentation control measures. Drilling fluid is controlled within the boundaries of the worksite through the use of pits at the crossing entry and exit points and typical fluid handling equipment such as vac trucks.

The environmental impacts of a release of drilling fluid into a water body include a temporary increase in local turbidity until drilling fluid dissipates with the current and/or settles to the bottom. In the immediate vicinity of a release, benthic organisms may be impacted if sufficient quantities of bentonite settle upon them.

SPLP will ensure that the HDD contractor will closely monitor fluid circulation to detect potential inadvertent returns at the earliest possible time.

SPLP does not expect that HDD will alter, disturb, or otherwise impact subsurface hydrology of associated streams and wetlands, including subsurface pressurized waters. As such, the surfacing of groundwater is not expected. The HDD engineer is able to monitor pressure releases which would signify a potential return or the surfacing of ground water. Such pressure releases would result in the inspection of the HDD alignment and adjacent areas for releases. If a groundwater discharge is identified, it will be photographed, characterized (i.e., location, size, limits, flow rate, flow direction, clarity, etc.) and reported to the chain of command which will follow the proper agency notification procedures. The inspection and early detection of any discharge will allow the HDD engineer to stop or adjust the HDD to reduce the potential for secondary impacts.

Response to Inadvertent Returns

The HDD contractor shall immediately notify the lead Construction Inspector (CI) and Environmental Inspector (EI) of any sudden losses in returns or any inadvertent return to the surface. If a return is observed, the HDD contractor will take reasonable measures to eliminate, reduce, or control the release. The actions to be taken will depend on the location and time of release, site specific geologic conditions, and the volume of the release. The EI or CI will notify the SPLP's Environmental Compliance Coordinator (ECC) with the initial details of the return upon discovery.

Inadvertent Returns in Uplands

If a release is identified within or nearby the HDD alignment, but outside of wetland areas and within the adjacent uplands, notification, containment, and clean-up will be carried out as necessary. The EI will be required to be present as these activities may need to be conducted outside of pre-approved limits of disturbance. The CI and EI will work closely to determine the best course of action for inadvertent returns occurring within upland areas. The EI will be responsible for notification of the return to SPLP's ECC. The PADEP/USACE/USFWS will not be notified in these cases. The HDD contractor will take appropriate reasonable actions to reduce, eliminate, or control the release. The actions may include:

- Constructing a small pit or sandbag coffer around the release point, installing a section of silt fence and/or straw bales to trap as much drilling fluids as possible, and placing a pump hose in the pit to pump the drilling fluid back to the bore site or temporary holding area or vessels (i.e.: vac truck);
- Reducing drilling fluid pressures;
- Thickening drilling fluid mixture; and/or
- Adding pre-approved loss circulation materials to the fluid mixture, such as wood fibers or shredded paper.

Drilling fluid may be recovered, recycled, and reused to the extent practical. All waste drilling fluid will be properly managed.

Inadvertent Returns in Wetlands/Streams

If the release is identified within wetlands and/or streams, drilling operations will be temporarily suspended to allow the EI to appropriately quantify the release, document its location, photograph the release, assess the potential to impact to the resource(s), and report the incident to SPLP's ECC. Information about the return will be recorded and updated as necessary as a running report on the data form provided in Attachment B. SPLP's ECC is responsible for completion of the data form with the assistance of the EI and environmental compliance contractor. Each form will be updated as new information is learned about the return and as activities to restore the area occur. The general reporting will be "Initial", "Interim", and then "Final". The initial, interim, and final reports will comprehensively document the return from initial discovery/notification through final restoration. **ALL inadvertent returns in wetlands and streams, regardless of size, are to be reported to the appropriate agencies in accordance with the notification section below.**

Containment, clean-up, and restoration activities that would require the installation of construction matting or the entry of construction vehicles and equipment are not allowed without PADEP/USACE approval. If upon reporting the incident, and under further consultation with the agencies, the return is determined to be significant enough to warrant containment, clean-up, and restoration via mechanical methods, then the following procedures will be followed:

- Draft containment and restoration plan, outlining the limits, types, and duration of disturbances, will be submitted to the PADEP/USACE for review and approval.
- Appropriate aquatic resource encroachment permits will be applied for depending on levels and types of disturbances required to clean up the material.
- Approved activities would only be implemented under the close, full-time supervision of the assigned EI.

- Drilling operations will resume when the return is contained and successfully remediated. The return area will continue to be monitored during the daily inspection.

One exception to ceasing drilling operations would be a release of drilling fluids during the pipe pullback process. Ceasing operations would pose significant risk of causing the pulled pipe to be stuck and not able to resume.

Containment & Clean-up Material and Equipment

The HDD contractor will be required to have the necessary containment and clean-up equipment on-site and/or readily available for use. At a minimum, a combination of some or all of the following material and equipment should be on site and in ample supply depending on the extent of sensitive areas:

- Spill sorbent pads and booms
- Compost filter socks
- Straw bales (certified weed-free)
- Wood stakes
- Sand bags
- Silt fence
- Plastic sheeting
- Corrugated plastic pipe
- Shovels
- Push brooms
- Centrifugal, trash and sump pumps
- Vacuum truck
- Rubber tired or wide track back hoe
- Bobcat (if needed)
- Storage tanks (if needed)
- Floating turbidity curtain (may be considered for use on large streams) Timber (enough to cross 50% of the wetland length need to be readily available)

If necessary, a 24-hour outside emergency response company may be called in for assistance (such as Enviroserve – 1-800-642-1311).

Notifications

No agency notifications are required for returns occurring in and contained in upland areas. SPLP's ECC will be responsible for notifying the PADEP/USACE of all returns occurring in or flowing into aquatic resources. SPLP's ECCs are identified as Chris Embry (610-670-3237) and Matt Gordon (610-670-3284). The notifications will initially be via phone to the PADEP Emergency Response numbers listed below and then to the appropriate agency personnel via submittal of an initial inadvertent return data form located in Attachment B.

The Pennsylvania Clean Streams Law regulations require that when any pollutant is discharged into surface or groundwater, including sewers, drains and ditches, the person spilling the substance or the person owning the premises from which the substance is spilled must notify PADEP

immediately. Therefore all returns in aquatic resources SPLP will notify the appropriate PADEP regional emergency number within 24 hours of return discovery:

- PADEP Southwest Regional Office: 412-442-4000;
- PADEP Southcentral Regional Office: 717-705-4802
- PADEP Southeast Regional Office: 484-250-5900
- Other agencies that will be notified include;
 - U.S. Army Corps of Engineers
Pittsburgh District: 412-395-7155
Baltimore District: 410-962-3670
Philadelphia District: 215-656-6728
 - Local agencies and municipalities who are downstream users of water, as applicable.

Following notification to the appropriate emergency/regulatory numbers, SPLP's ECC will notify the following individuals via e-mail submittal of the inadvertent return form located in Attachment B. This will consist of the initial reporting of the return and open consultation and further reporting to the PADEP/USACE in regards the return. The further consultations will be regards to remediation approval, restoration approval, and the need for appropriate approval/permits. The inadvertent return data form will be used to document the consultation and approvals and report final remediation/restoration.

- PADEP Southwest Regional Permit Reviewer (Michael Engelhardt)
- PADEP Southcentral Regional Permit Reviewer (Andrew McDonald)
- PADEP Southeast Regional Permit Reviewer (Donald Knorr)
- PADEP Pittsburgh District Permit Reviewer (Jared Pritts)
- USACE Baltimore District Permit Reviewer (Patricia Strong)
- USACE Philadelphia District Permit Reviewer (David Caplan)

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ATTACHMENT A

HDD Table

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HDD Name	Aquatic Resources Crossed	County	PADEP Region	Notes	BT HDD
PA-BL-0001.0021-RD	W- BB120	Blair	Southcentral	Drive Through - Travel Only	
PA-BL-0001.0021-RD-16	W- BB120	Blair	Southcentral	Drive Through - Travel Only	
PA-BL-0001.0027-RD	S-M69, W- M49, W- M79	Blair	Southcentral		
PA-BL-0001.0027-RD-16	S-M69, W- M49, W- M79	Blair	Southcentral		
PA-BL-0001.0032-RD	No Aquatic Resource Crossed	Blair	Southcentral	Drive Through - Clearing Only	
PA-BL-0001.0032-RD-16	No Aquatic Resource Crossed	Blair	Southcentral	Drive Through - Clearing Only	
PA-BL-0001.0048-RR	S-BB48, W- BB58	Blair	Southcentral	Drive Through - Clearing Only	
PA-BL-0001.0048-RR-16	S-BB48, W- BB58	Blair	Southcentral	Drive Through - Clearing Only	
PA-BL-0001.0094-WX	S-L76, S-L77, S-BB92, S-BB95, W- L54, W- L55, W- L56	Blair	Southcentral		
PA-BL-0001.0094-WX-16	S-L76, S-L77, S-BB92, S-BB95, W- BB125, W- L54, W- L56	Blair	Southcentral		
PA-BL-0122.0000-WX	S-M38, S-M32, S-M31, W- M24, W- M29	Blair	Southcentral	Drive Through - Clearing Only	
PA-BL-0122.0000-WX-16	S-M38, S-M32, S-M31, W- M24, W- M29	Blair	Southcentral	Drive Through - Clearing Only	
PA-BL-0126.0000-RD	S-M30, S-M33, W- M26	Blair	Southcentral		
PA-BL-0126.0000-RD-16	S-M30, S-M33	Blair	Southcentral		
PA-BR-0032.0000-RD	No Aquatic Resource Crossed	Berks	Southcentral	Drive Through - Travel Only	
PA-BR-0032.0000-RD-16	No Aquatic Resource Crossed	Berks	Southcentral	Drive Through - Travel Only	
PA-BR-0075.0000-RD	No Aquatic Resource Crossed	Berks	Southcentral		
PA-BR-0075.0000-RD-16	No Aquatic Resource Crossed	Berks	Southcentral		
PA-BR-0079.0000-RD	No Aquatic Resource Crossed	Berks	Southcentral		
PA-BR-0079.0000-RD-16	No Aquatic Resource Crossed	Berks	Southcentral		
PA-BR-0138.0001-RD	Pond-B3PuB	Berks	Southcentral	Drive Through - Clearing Only	
PA-BR-0138.0001-RD-16	Pond-B3PuB	Berks	Southcentral	Drive Through - Clearing Only	
PA-BR-0181.0000-RD	S-A57, S-A58, S-J51, W- J48	Berks	Southcentral		
PA-BR-0181.0000-RD-16	S-A57, S-A58, S-J51, W- A37, W- J48	Berks	Southcentral		
PA-CU-0015.0000-RD	S-I89, W- I63, W- J40	Cumberland	Southcentral		
PA-CU-0015.0000-RD-16	S-I89, W- I63, W- J40	Cumberland	Southcentral		
PA-CU-0053.0000-RD	S-BB120, W177	Cumberland	Southcentral		
PA-CU-0053.0000-RD-16	S-BB120, W177	Cumberland	Southcentral		
PA-CU-0062.0000-WX	S-J41, S-J37, S-J36, W- J35	Cumberland	Southcentral		
PA-CU-0062.0000-WX-16	S-J41, S-J37, S-J36, W- J35	Cumberland	Southcentral		
PA-CU-0067.0000-RD	S-J34, W- J31, W- J31	Cumberland	Southcentral		
PA-CU-0067.0000-RD-16	S-J34, W- J31-1	Cumberland	Southcentral		
PA-CU-0128.0000-WX	S-K45, S-I54, S-I53, W- J10, W- J9, W- K44	Cumberland	Southcentral		
PA-CU-0128.0000-WX-16	S-K45, S-I54, S-I53, W- I36, W- J10, W- J9, W- K44	Cumberland	Southcentral		
PA-CU-0136.0000-RD	No Aquatic Resource Crossed	Cumberland	Southcentral		
PA-CU-0136.0000-RD-16	No Aquatic Resource Crossed	Cumberland	Southcentral		
PA-CU-0136.0003-RD	S-I47, W- I30	Cumberland	Southcentral		
PA-CU-0136.0003-RD-16	S-I47, W- I30	Cumberland	Southcentral		
PA-CU-0136.0012-RD	No Aquatic Resource Crossed	Cumberland	Southcentral		
PA-CU-0136.0012-RD-16	No Aquatic Resource Crossed	Cumberland	Southcentral		
PA-CU-0136.0020-RR	No Aquatic Resource Crossed	Cumberland	Southcentral		
PA-CU-0136.0020-RR-16	No Aquatic Resource Crossed	Cumberland	Southcentral		
PA-CU-0136.0002-WX	S-I50, S-I48, W- I31, W- I32	Cumberland	Southcentral		
PA-CU-0136.0002-WX-16	S-I48, W- I31, W- I32	Cumberland	Southcentral		
PA-CU-0176.0014-RD	No Aquatic Resource Crossed	Cumberland	Southcentral		
PA-CU-0176.0014-RD-16	No Aquatic Resource Crossed	Cumberland	Southcentral		
PA-CU-0176.0019-RD	No Aquatic Resource Crossed	Cumberland	Southcentral		
PA-CU-0176.0019-RD-16	No Aquatic Resource Crossed	Cumberland	Southcentral		
PA-CU-0189.0000-RD	S-I40, S-I41, S-I43, W- I25, W- I26, W- I27	Cumberland	Southcentral		
PA-CU-0189.0000-RD-16	S-I40, S-I41, S-I43, W- I25, W- I26, W- I27	Cumberland	Southcentral		
PA-CU-0203.0000-WX	S-I34, S-I36, W- I24	Cumberland	Southcentral		
PA-CU-0203.0000-WX-16	S-I34, S-I36, W- I24	Cumberland	Southcentral		
PA-DA-0005.0000-RD	No Aquatic Resource Crossed	Dauphin	Southcentral		
PA-DA-0005.0000-RD-16	No Aquatic Resource Crossed	Dauphin	Southcentral		
PA-DA-0019.0000-RD	No Aquatic Resource Crossed	Dauphin	Southcentral		
PA-DA-0019.0000-RD-16	No Aquatic Resource Crossed	Dauphin	Southcentral		
PA-DA-0020.0000-RD	No Aquatic Resource Crossed	Dauphin	Southcentral		
PA-DA-0020.0000-RD-16	No Aquatic Resource Crossed	Dauphin	Southcentral		
PA-DA-0030.0000-RR	S-B70, S-C54	Dauphin	Southcentral		
PA-DA-0030.0000-RR-16	S-B70, S-C54	Dauphin	Southcentral		
PA-DA-0039.0000-RD	S-A75, W- CC22	Dauphin	Southcentral		
PA-DA-0039.0000-RD-16	S-A75, W- CC22	Dauphin	Southcentral		
PA-DA-0056.0000-RD	S-B60, S-B61, S-B62, S-B63, W- B57, W- B58, W- C26	Dauphin	Southcentral		
PA-DA-0056.0000-RD-16	S-B60, S-B61, S-B62, S-B63, W- B57, W- B58, W- C26	Dauphin	Southcentral		
PA-DA-0063.0000-RD	No Aquatic Resource Crossed	Dauphin	Southcentral		

HDD Name	Aquatic Resources Crossed	County	PADEP Region	Notes	BT HDD
PA-DA-0063.0000-RD-16	No Aquatic Resource Crossed	Dauphin	Southcentral		
PA-HU-0019.0002-RD	S-Y5, S-Y6, S-Y7, W- Y6, W- Y7-1	Huntingdon	Southcentral	Drive Through - Travel Only	
PA-HU-0019.0002-RD-16	S-Y5, S-Y6, W- Y6, W- Y7-1	Huntingdon	Southcentral		
PA-HU-0020.0008-SS2	S-Y1, S-Y2, S-Y3, W- Y1, W- Y2, W- Y3, W- Y4	Huntingdon	Southcentral	Drive Through - Clearing Only	
PA-HU-0020.0008-SS2-16	S-Y1, S-Y2, S-Y3, W- Y1, W- Y2, W- Y3, W- Y4	Huntingdon	Southcentral	Drive Through - Clearing Only	
PA-HU-0020.0008-WX	LK-2PuB	Huntingdon	Southcentral		
PA-HU-0020.0008-WX-16	LK-2PuB	Huntingdon	Southcentral		
PA-HU-0047.0000-RD	S-L46, W- L27-1	Huntingdon	Southcentral		
PA-HU-0047.0000-RD-16	S-L45, S-L46, Pond-I4PuB, W- L27-1	Huntingdon	Southcentral		
PA-HU-0078.0000-WX	S-L29, S-L28, W46b	Huntingdon	Southcentral		
PA-HU-0078.0000-WX-16	S-L29, S-L28, W46b	Huntingdon	Southcentral		
PA-HU-0106.0000-RD	S-K94, W- K69, W- K69, W- K70-2	Huntingdon	Southcentral		
PA-HU-0106.0000-RD-16	S-K94, W- K69, W- K69, W- K70-2	Huntingdon	Southcentral		
PA-HU-0110.0000-SR	S-K93, S-K91, W- K68	Huntingdon	Southcentral		
PA-HU-0110.0000-SR-16	S-K93, S-K91, W- K68	Huntingdon	Southcentral		
PA-JU-0004.0000-WX	S-K74, W- K59, W- K60-1	Juniata	Southcentral		
PA-JU-0004.0000-WX-16	S-K74, W- K59, W- K60-1	Juniata	Southcentral		
PA-LA-0004.0000-SR	S-K34, S-K35, W- K32	Lancaster	Southcentral		
PA-LA-0004.0000-SR-16	S-K34, S-K35, W- K32	Lancaster	Southcentral		
PA-LA-0014.0000-SR	S-A77, S-A78, S-A79, S-A82, S-A83, W- A54, W-A55	Lancaster	Southcentral		Yes
PA-LA-0014.0000-SR-16	S-A77, S-A78, S-A79, S-A82, S-A83, W- A54, W-A55	Lancaster	Southcentral		Yes
PA-LE-0005.0000-RD	S-A49, S-A51	Lebanon	Southcentral		
PA-LE-0005.0000-RD-16	S-A49	Lebanon	Southcentral		
PA-LE-0001.0000-SR	S-A47, S-K18, W- J47	Lebanon	Southcentral		
PA-LE-0001.0000-SR-16	S-A47, S-K18, W- J47	Lebanon	Southcentral		
PA-LE-0009.0000-RD	No Aquatic Resource Crossed	Lebanon	Southcentral	Drive Through - Travel Only	
PA-LE-0009.0000-RD-16	No Aquatic Resource Crossed	Lebanon	Southcentral		
PA-LE-0055.0000-RD	S-A17	Lebanon	Southcentral		
PA-LE-0055.0000-RD-16	S-A17	Lebanon	Southcentral		
PA-LE-0117.0000-WX	S-C86, W- H13, W- H14	Lebanon	Southcentral		
PA-LE-0117.0000-WX-16	S-C86, W- H13, W- H14	Lebanon	Southcentral		
PA-PE-0002.0000-RD	S-L6, W- L1-1, W- L2	Perry	Southcentral		
PA-PE-0002.0000-RD-16	S-L6, W- L1-1, W- L2	Perry	Southcentral		
PA-YO-0016.0000-RD	No Aquatic Resource Crossed	York	Southcentral	Drive Through - Travel Only	
PA-YO-0016.0000-RD-16	No Aquatic Resource Crossed	York	Southcentral	Drive Through - Travel Only	
PA-YO-0040.0002-RD	No Aquatic Resource Crossed	York	Southcentral		
PA-YO-0040.0002-RD-16	No Aquatic Resource Crossed	York	Southcentral		
PA-YO-0063.0000-RR-16	S-A22, W- A18, W- BB1	York	Southcentral	Drive Through - Clearing Only	
PA-YO-0063.0000-RRb	S-A22, W- A18, W- BB1	York	Southcentral	Drive Through - Clearing Only	
PA-CH-0088.0000-RD	S-Q83, S-Q88, W- Q76, W- Q77, W- Q79	Chester	Southeast		
PA-CH-0088.0000-RD-16	S-Q83, S-Q86, S-Q88, W- Q77, W- Q79	Chester	Southeast		
PA-CH-0100.0000-RD	S-H10, W- H17-1	Chester	Southeast	Drive Through - Travel Only	
PA-CH-0100.0000-RD-16	S-H10, S-H11, W- H17-1	Chester	Southeast	Drive Through - Travel Only	
PA-CH-0111.0000-RD	S-C92, S-C91, S-C87, S-C90, S-C89, W- C43	Chester	Southeast		Yes
PA-CH-0111.0000-RD-16	S-C92, S-C87, S-C90, S-C89, W- C43-1	Chester	Southeast		Yes
PA-CH-0124.0000-RD	S-H4, S-C67, S-C68, S-C69, S-H3, W- C37	Chester	Southeast	BT wetlands H1 and C36 in vicinity	Yes
PA-CH-0124.0000-RD-16	S-H4, S-C67, S-C68, S-C69, S-H3, W- C37	Chester	Southeast	BT wetlands H1 and C36 in vicinity	Yes
PA-CH-0127.0000-RD	S-H5	Chester	Southeast		
PA-CH-0127.0000-RD-16	S-H5	Chester	Southeast		
PA-CH-0138.0000-RD	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0138.0000-RD-16	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0167.0000-RD	S-C64, S-C63	Chester	Southeast		
PA-CH-0167.0000-RD-16	S-C64, S-C63	Chester	Southeast		
PA-CH-0199.0000-RD	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0199.0000-RD-16	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0212.0000-RD	S-C61, S-C59, S-C60	Chester	Southeast		
PA-CH-0212.0000-RD-16	S-C61, S-C61, S-C59, S-C59, S-C60, S-C60	Chester	Southeast		
PA-CH-0219.0000-RD	S-B79, S-B81, W- B71	Chester	Southeast		
PA-CH-0219.0000-RD-16	S-B79, S-B81, W- B71	Chester	Southeast		
PA-CH-0227.0003-RD	S-BB27, S-BB28	Chester	Southcentral		
PA-CH-0227.0007-RD	No Aquatic Resource Crossed	Chester	Southcentral		
PA-CH-0227.0010-RD	No Aquatic Resource Crossed	Chester	Southcentral		
PA-CH-0256.0000-RR	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0256.0000-RR-16	No Aquatic Resource Crossed	Chester	Southeast		

HDD Name	Aquatic Resources Crossed	County	PADEP Region	Notes	BT HDD
PA-CH-0277.0000-RD	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0277.0000-RD-16	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0290.0000-RD	S-H30	Chester	Southeast		
PA-CH-0290.0000-RD-16	S-H30	Chester	Southeast		
PA-CH-0326.0000-RD	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0326.0000-RD-16	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0326.0004-SR	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0326.0004-SR-16	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0326.0006-RD	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0326.0006-RD-16	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0355.0000-RD	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0355.0000-RD-16	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0370.0000-RD	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0370.0000-RD-16	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0383.0003-ABTE	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0383.0003-ABTE-16	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0413.0000-RD	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0413.0000-RD-16	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0420.0000-RD	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0420.0000-RD-16	No Aquatic Resource Crossed	Chester	Southeast		
PA-CH-0421.0000-RD	S-B35	Chester	Southeast		
PA-CH-0421.0000-RD-16	S-B35	Chester	Southeast		
PA-DE-0008.0000-RD	No Aquatic Resource Crossed	Delaware	Southeast		
PA-DE-0008.0000-RD-16	S-B36	Delaware	Southeast		
PA-DE-0016.0000-RD	S-B54, S-B52	Delaware	Southeast		
PA-DE-0016.0000-RD-16	S-B54, S-B55	Delaware	Southeast		
PA-DE-0032.0000-RD	No Aquatic Resource Crossed	Delaware	Southeast		
PA-DE-0032.0000-RD-16	No Aquatic Resource Crossed	Delaware	Southeast		
PA-DE-0046.0000-RD	S-C42, S-C40	Delaware	Southeast		
PA-DE-0046.0000-RD-16	S-C42, S-C40, W- C21	Delaware	Southeast		
PA-DE-0074.0000-RD	S-C24, S-C25, S-C23, S-C26, W- C10-1	Delaware	Southeast		
PA-DE-0074.0000-RD-16	S-C24, S-C25, S-C23, S-C26, W- C10	Delaware	Southeast		
PA-DE-0100.0000-RR-16	W- I1	Delaware	Southeast	Drive Through - Travel Only	
PA-DE-0100.0000-RR-16	S-I2, W- I1	Delaware	Southeast	Drive Through - Travel Only	
PA-DE-0104.0008-WX	S-H39, S-H41, S-H37	Delaware	Southeast		
PA-DE-0104.0008-WX-16	S-H39, S-H41, S-H37	Delaware	Southeast		
PA-DE-0104.0023-RR	S-I18, W- BA5, W- BA6, W- I16	Delaware	Southeast		
PA-DE-0104.0023-RR-16	S-I18, W- BA5, W- BA6, W- I16	Delaware	Southeast		
PA-DE-0104.0025-RD	S-H44, S-H43	Delaware	Southeast		
PA-DE-0104.0025-RD-16	S-H44, S-H43	Delaware	Southeast		
PA-AL-0001.0000-RR	No Aquatic Resource Crossed	Allegheny	Southeast		
PA-AL-0033.0000-RD	S163	Allegheny	Southwest	Drive Through - Clearing Only	
PA-CA-0016.0000-RD	S-N41, S-N42 ,W- N27 ,W- N26 , W- N25	Cambria	Southwest		
PA-CA-0016.0000-RD-16	S-N41 ,W- N27 ,W- N26 ,W- N25, S-N42	Cambria	Southwest		
PA-CA-0023.0000-RD	S-N39, S-O44, S-N36, S-O43 ,W- N24 ,W- N20	Cambria	Southwest		
PA-CA-0023.0000-RD-16	S-N39, S-O44, S-N36, S-O43 ,W- O35 ,W- N24 ,W- N20	Cambria	Southwest		
PA-CA-0047.0000-SR	S-CC8 ,W- CC17 ,W- CC19 ,W- CC16	Cambria	Southwest		
PA-CA-0047.0000-SR-16	S-CC8 ,W- CC17 ,W- CC19 ,W- CC16	Cambria	Southwest	Drive Through - Travel Only	
PA-CA-0069.0000-RD	S-N34, S-N17 ,W- N18	Cambria	Southwest	Drive Through - Clearing Only	
PA-CA-0069.0000-RD-16	S-N34, S-N17 ,W- N18	Cambria	Southwest	Drive Through - Clearing Only	
PA-CA-0089.0000-RR	S-K33 ,W- K31	Cambria	Southwest		
PA-CA-0089.0000-RR-16	S-K33 ,W- K31	Cambria	Southwest		
PA-CA-0091.0016-RD	W- L62 ,W- M59 ,	Cambria	Southwest		
PA-CA-0091.0016-RD-16	W- L62 ,W- M59	Cambria	Southwest		
PA-IN-0000.0001-WX	S-J55 ,W- J52 ,W- N28	Indiana	Southwest		
PA-IN-0000.0001-WX-16	S-J56, S-J55 ,W- N28	Indiana	Southwest		
PA-IN-0002.0000-RR	S-J57	Indiana	Southwest	Drive Through - Clearing Only	
PA-IN-0002.0000-RR-16	S-J57, S-J54 ,W- P1	Indiana	Southwest	Drive Through - Clearing Only	
PA-IN-0019.0000-RR	S-J58 ,W- J53	Indiana	Southwest		
PA-IN-0019.0000-RR-16	S-J58 ,W- J53	Indiana	Southwest		
PA-IN-0022.0000-RD	S-O113 ,W- O77	Indiana	Southwest		
PA-IN-0022.0000-RD-16	S-O113 ,W- N61 ,W- O77	Indiana	Southwest		
PA-IN-0025.0000-RD	No Aquatic Resource Crossed	Indiana	Southwest		
PA-IN-0025.0000-RD-16	No Aquatic Resource Crossed	Indiana	Southwest		
PA-IN-0048.0000-RD	W- N56 ,W- N57	Indiana	Southwest		
PA-IN-0048.0000-RD-16	W- N56 ,W- N57	Indiana	Southwest		

HDD Name	Aquatic Resources Crossed	County	PADEP Region	Notes	BT HDD
PA-IN-0086.0000-RD	S-N66 ,W- N34	Indiana	Southwest	Drive Through - Clearing Only	
PA-IN-0086.0000-RD-16	S-N66, S-N65 ,W- N35 ,W- N34	Indiana	Southwest	Drive Through - Clearing Only	
PA-WA-0072.0000-SR	No Aquatic Resource Crossed	Washington	Southwest		
PA-WA-0074.0000-RR	S7	Washington	Southwest		
PA-WA-0102.0000-SR	No Aquatic Resource Crossed	Washington	Southwest		
PA-WA-0103.0000-RD	S16, S250	Washington	Southwest	Drive Through - Clearing Only	
PA-WA-0106.0000-SR	No Aquatic Resource Crossed	Washington	Southwest	Drive Through - Travel Only	
PA-WA-0111.0000-SR	No Aquatic Resource Crossed	Washington	Southwest	Drive Through - Travel Only	
PA-WA-0119.0000-RD	S129, S280	Washington	Southwest		
PA-WA-0119.0003-RD	No Aquatic Resource Crossed	Washington	Southwest		
PA-WA-0127.0000-RR	S130, S131 ,W- W43	Washington	Southwest		
PA-WA-0164.0000-RD	No Aquatic Resource Crossed	Washington	Southwest	Drive Through - Travel Only	
PA-WA-0171.0000-RR	S142, S27, S28	Washington	Southwest	Drive Through - Clearing Only	
PA-WA-0172.0000-RD	S29	Washington	Southwest		
PA-WA-0176.0000-RR	S121	Washington	Southwest		
PA-WM1-0012.0000-RR	S222, S122	Westmoreland	Southwest	Drive Through - Clearing Only	
PA-WM1-0020.0000-WX	S224	Westmoreland	Southwest	Drive Through - Clearing Only	
PA-WM1-0023.0000-RD	S172	Westmoreland	Southwest		
PA-WM1-0039.0000-RD	S226, S181	Westmoreland	Southwest	Drive Through - Clearing Only	
PA-WM1-0042.0000-WX	S182	Westmoreland	Southwest		
PA-WM1-0044.0000-RD	S184	Westmoreland	Southwest	Drive Through - Clearing Only	
PA-WM1-0054.0000-RD	S227, S228 ,W68	Westmoreland	Southwest		
PA-WM1-0072.0000-RD	S198	Westmoreland	Southwest	Drive Through - Clearing Only	
PA-WM1-0088.0000-RR	S199	Westmoreland	Southwest	Drive Through - Clearing Only	
PA-WM1-0111.0000-RD	S201, S202	Westmoreland	Southwest		
PA-WM1-0144.0000-RD	S215 ,W61	Westmoreland	Southwest	Drive Through - Clearing Only	
PA-WM1-0157.0000-RD	No Aquatic Resource Crossed	Westmoreland	Southwest		
PA-WM2-0021.0000-RD	S-Q8, S-Q5, S-Q7 ,W- Q8 ,W- Q7 ,W- Q6	Westmoreland	Southwest		
PA-WM2-0021.0000-RD-16	S-Q8, S-Q5, S-Q7 ,W- Q4 ,W- Q8 ,W- Q7 ,W- Q6	Westmoreland	Southwest		
PA-WM2-0064.0000-WX	Pond-O4	Westmoreland	Southwest	Drive Through - Clearing Only	
PA-WM2-0064.0000-WX-16	Pond-O4	Westmoreland	Southwest	Drive Through - Clearing Only	
PA-WM2-0090.0000-RD	S-P20 ,W- P14 ,W- P13 ,Pond-P3	Westmoreland	Southwest		
PA-WM2-0090.0000-RD-16	S-P20 ,Pond-P3	Westmoreland	Southwest		
PA-WM2-0093.0000-RD	S-O61 ,W- O45	Westmoreland	Southwest	Drive Through - Clearing Only	
PA-WM2-0093.0000-RD-16	S-O61 ,W- O45	Westmoreland	Southwest	Drive Through - Clearing Only	

ATTACHMENT B

Inadvertent Return Data Form

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SPLP PENNSYLVANIA PIPELINE PROJECT

HORIZONTAL DIRECTIONAL DRILLING – INADVERTENT RETURN REPORT FORM

IR TRACKING ID	
REPORT DATE:	
REPORT INITIAL/UPDATE/FINAL:	
PADEP PERMIT NO:	
USACE PERMIT NO:	
RESOURCE(S):	
LOCATION COORDINATES:	
LOCATION DESCRIPTION:	
MATERIAL(s) RELEASED:	
DESCRIPTION OF THE RELEASE:	
QUANTITY:	
AERIAL EXTENT:	
T&E / BOG TURTLE SUMMARY:	
TROUT STREAM / EV WATER:	
PADEP EMERGENCY NOTIFICATION:	
NUMBER:	
DATE:	
TIME:	
PERSON:	
CASE NO:	
NOTES:	
PADEP WATERWAYS NOTIFICATION:	
PHONE / EMAIL:	
DATE:	
TIME:	
PERSON:	
NOTES:	
USACE REGULATORY NOTIFICATION:	
PHONE / EMAIL:	
DATE:	
TIME:	

PERSON:	
NOTES:	
USFWS NOTIFICATION:	
PHONE / EMAIL:	
DATE:	
TIME:	
PERSON:	
NOTES:	
IMMEDIATE ACTION:	
CORRECTIVE MEASURES SUMMARY:	
MONITORING PLAN:	
RESTORATION PLAN:	
MAP:	See attached
PHOTOGRAPH(S):	See attached
SPLP POC:	
RESTORATION STATUS:	
ROOT CAUSE:	
IR PLAN REVISIONS:	

MAP:

PHOTOS: