

The Blacksmith Group

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RESUME' OF JOHN S. ZURCHER

FORMAL EDUCATION

Associate of Arts in Engineering Technology
University of Southern Colorado - 1975

Bachelor of Science in Electrical Engineering
University of Colorado - 1977

Master of Science in Business Administration
University of Northern Colorado - 1981

PROFESSIONAL AFFILIATION

Department of Transportation, Technical Pipeline Safety Standards Committee,
1995 to 2001
(Advisory Committee to DOT, appointed by the Secretary of Transportation)

American Society of Mechanical Engineers, B31.8 Section Committee,
1980 to present

NACE International
1993 to present

Gas Piping Technology Committee,
1980 to 2000
(Chairman of Transmission Division, 1986 to 1994)

American Gas Association, Operations Safety Regulatory Action Committee,
1984 to 2001

Interstate Natural Gas Association of America,
1980 to 2001
(Chairman of Pipeline Safety Committee, 1992 to 2001)

Gas Technology Institute, 1993 to 2001
(Chairman of Integrity Maintenance & Systems Operations, 1993 to 2001)

Pipeline Research Committee, International
1993 to 2001
(Co-Chairman of Design and Integrity Management, 1999 to 2000)

Department of Transportation, Mapping Quality Action Team
1994 to 2000

Department of Transportation, Risk Management Quality Action Team
1994 to 2000

MILITARY BACKGROUND

United States Navy Submarine Service - 1970 to 1974
Engineering Department, Auxiliary Division

CONGRESSIONAL TESTIMONY GIVEN

Testified before the Committee on Transportation and Infrastructure, Congress of the United States in 1999 concerning the Reauthorization of the Natural Gas and Hazardous Liquid Pipeline Safety Program.

Testified before the U.S. House of Representatives Committee on Commerce in 1999 concerning the Reauthorization of the Natural Gas and Hazardous Liquid Pipeline Safety Program.

HONORS AND AWARDS RELATED TO PIPELINE SAFETY

Pipeline Research Council International, Inc., Distinguished Service Award - 2002

Office of Pipeline Safety Certificate of Appreciation, Mapping Quality Action Team – 1998

U. S. Department of Transportation Certificate of Special Achievement, Risk Management – 1997

Appointed by Secretary of State to represent the United States at the Organization for Economic Co-Operation and Development international conference on pipeline safety in Oslo, Norway, 1996

EXPERIENCE

2002 to Present – Principal at P-PIC, Managing Director at The Blacksmith Group

Principal at Process Performance Improvement Consultants, LLC (P-PIC) and Managing Director at The Blacksmith Group. Major areas of emphasis are consulting to natural gas and

hazardous liquid pipeline operators and consulting to various natural gas and hazardous liquid trade associations and research organizations.

As a consultant to pipeline operators, expertise is provided in many areas such as design, construction, pipeline integrity management, risk management, security, emergency response, operations and maintenance procedures and standards, pipeline safety regulations, operations and maintenance work processes, and process auditing.

As a consultant to trade associations and research organizations, expertise is provided in basic research, consensus standards development, pipeline safety regulations, pipeline integrity and risk management research, and communications liaison between these entities.

2001 to 2002 – Vice President, HSB Pipelines

Consultant with Hartford Steam Boiler Inspection and Insurance Company (HSB), in the Pipeline Group. Major areas of emphasis were consulting to natural gas and hazardous liquid pipeline operators. In addition, consulting to various natural gas and hazardous liquid trade associations and research organizations.

As a consultant to pipeline operators, provided expertise in many areas such as pipeline integrity management, risk management and emergency response protocols. Additionally, expertise was provided in the areas of operations and maintenance procedures and standards, pipeline safety regulations, design and construction work processes and operations and maintenance work processes.

As a consultant to trade associations and research organizations I provided expertise for the development of many consensus standards. Additionally, expertise was provided in the areas of pipeline safety regulations, pipeline integrity and risk management research, and communications liaison between these entities and all involved stakeholders. I also was the primary author of the Natural Gas Industries Security Practices Report.

1997 to 2001 - Manager, Pipeline Safety, Columbia Gas Transmission

Responsible for the products of a group of engineers and analysts in the areas of Pipeline Safety Compliance, Risk Management, Capital Maintenance Programs, Emergency Response, and the Engineer Training Program.

The Pipeline Safety Compliance Section is responsible for insuring compliance with applicable industry codes, Company standards, and Federal and State Regulations. This includes maintenance of the Operations and Maintenance Manual, incident reporting, crisis communications, code interpretations, compliance monitoring, responding to rule-makings and Pipeline Safety Re-authorizations.

The Risk Management Team is responsible for developing the Companies Risk Management Program. This includes model development for use in planning rehabilitation and other integrity programs, development of the Risk Management Plan for the Company and for developing the program to enter the Company into the DOT Risk Management Project.

The Capital Maintenance Team is responsible for insuring the integrity of the Companies pipeline facilities. This includes the management of the Companies pipeline integrity assurance program, pipeline replacements, pipeline rehabilitation, pipeline inspection including the smart pigging program, and pipeline efficiency improvement projects. The section is also responsible for setting of standards and developing procedures for pipeline operation and maintenance.

The Emergency Response Team is responsible for insuring the proper procedures are in place and that the proper training has been conducted to effectively handle a pipeline emergency. This includes making facilities safe, notification of regulatory agencies, liaison with local emergency response agencies and public officials and implementation of continuous improvement.

The Engineering Training Program provides for the recruitment of recent college graduates and their initial training and internship. This program provides for a structured two-year education of these individuals in order to provide them with a broad knowledge of company operations.

1993 to 1997 - Director, Pipeline Services, Tenneco Energy

Responsible for the products of a group of engineers, consultants, technicians, analyst, and clerical personnel in the areas of Corrosion Control, Pipeline Engineering, Codes and Standards, Risk Management, Systems Applications, and AM/FM/GIS. Corporate Companies include: Tennessee Gas Pipeline Company, Midwestern Gas Transmission Company, East Tennessee Natural Gas Company, Iroquois Gas Transmission Company, and Channel Industries Gas Company.

The Corrosion Control Section is responsible for insuring the protection of the Companies steel infrastructure. This includes setting of standards and procedures for corrosion control, training of personnel, audits of compliance, quality assurance and quality control of all corrosion control activities and records.

The Pipeline Engineering Section is responsible for insuring the integrity of the Companies pipeline facilities. This includes the management of the Companies pipeline integrity assurance program, pipeline change-outs, pipeline rehabilitation, pipeline inspection including the smart pigging program, and pipeline efficiency improvement projects. The section is also responsible for setting of standards and developing procedures for pipeline operation and maintenance.

The Codes and Standards Section is responsible for insuring compliance with applicable industry codes, Company standards, and Federal and State Regulations. This includes maintenance of the Operations and Maintenance Manual, incident reporting, crisis communications, code interpretations, responding to rule-makings and Pipeline Safety Re-authorizations.

The Risk Management Section is responsible for developing the Companies Risk Management Program. This includes model development for use in planning rehabilitation and other integrity programs, development of the Risk Management Plan for the Company and for developing the program to enter the Company into the DOT Risk Management Project.

The Systems Application Section is responsible for administration of the Companies electronic forms and databases for all as-built activities and operational records. In addition the section maintains the house count database, performs annual relief and regulator valve capacity confirmations, and establishes MAOP's for the pipeline system.

The AM/FM/GIS Section is responsible for the design, development and implementation of the Companies GIS System. This system in conjunction with a Work Management System and a Document Management System will provide the necessary platform to move to an integrated Risk Management Program as well as manage the company's as-built records and operational records. The system will be implemented in 1997.

1988 to 1993 - Manager, Engineering, Panhandle Eastern Corporation

Responsible for the products of a group of engineers, technicians, analysts, and clerical personnel to insure that all facilities are designed, constructed, operated, and maintained in accordance with applicable government regulations, industry codes, and Company standards. Corporate companies included: Algonquin Gas Transmission Company, Centana Energy Company, Panhandle Eastern Pipe Line Company, Texas Eastern Transmission Company, and Trunkline Gas Company

Worked on all Company projects involving facility additions and replacements in order to provide quality assurance. Responsible for insuring regulatory compliance with the Department of Transportation, the States in which the Corporation operates in, as well as other local municipalities. Participate in rule-making activities at the Federal and State levels writing regulations and giving testimonies on behalf of the Company, the industry, and engineering associations. Prepare and adhere to capital and operational budgets for the Company and my department.

Responsible for the Corporations AM/FM/GIS System. This system contains the facility data base and graphics elements, which comprise the Corporations mapping systems. These maps and data base are used to insure compliance with the regulations as well as to provide operating personnel with the necessary documents to perform their work.

Responsible for the As-Built Program for the Corporation. This program takes field mark-ups of construction and operating maintenance activities and as-built's the information into the appropriate permanent records.

Responsible for the Corporations Engineering Records System. These record systems contain all necessary records that document engineering activities. The records maintained include those items necessary to prove regulatory compliance as well as the retention of other business-related documents.

Responsible for the efforts of the Corporations Specialty Mapping Program. These specialty maps are used to present graphical information about the Corporations facilities for use by management and several departments within the Corporation.

1987 to 1988 – Consultant

Responsible for the pipeline safety programs for four intrastate operators. The companies were CITCO Refining and Chemical Company, Clarke Refining Company, AMOCO Gas Transmission Company, and Coastal Crude Gathering Company. These programs insure a proper compliance posture with the Texas Railroad Commission and DOT in the areas of inspections and maintenance of the pipeline systems, records and their systems, and design and construction specifications and standards.

1981 to 1987 - Manager, Engineering, Colorado Interstate Gas Company

Responsible for a group of technical personnel to insure that all facilities were designed, constructed, operated, and maintained in accordance with applicable government regulations, industry codes, and Company standards.

Worked on all Company projects involving facility additions and replacements in order to provide quality assurance. Responsible for insuring regulatory compliance with the Department of Transportation, the States in which operated in, as well as other local municipalities. Participated in rule-making activities at the Federal and State levels writing regulations and giving testimonies on behalf of the Company, the industry, and engineering associations. Prepared and adhered to capital and operational budgets for the Company and my department.

Worked on a collateral basis with the environmental group. Resources and workload was common between the two groups. Worked as an environmental analyst under the direction of the Manager, Environmental Services during periods when significant environmental work was done. Worked in areas such as spill prevention planning; environmental permitting; hazardous material handling, transportation, and disposal, and PSD surveys.

In 1982 given the additional responsibility for insuring regulatory compliance for two other subsidiaries, Wyoming Interstate Gas Company and Cody Gas Company.

In 1986 given the additional responsibility for insuring regulatory compliance for three other Coastal subsidiaries, two in hazardous liquid service, Coastal Pipeline Company and Coastal States Crude Gathering Company, and one in natural gas service, Coastal States Gas Transmission Company.

1979 to 1981 - Senior Engineer, Telecommunications, Colorado Interstate Gas Company.

Responsible for the design, installation, and maintenance of telecommunications equipment for the operational communication of data and information. This included microwave, measurement, supervisory control, telephone, and mobile radio systems. Developed state of the art electronic gas measurement systems and environmental monitoring stations.

1977 to 1979 - Field Engineer, Operations, Colorado Interstate Gas Company

Responsible for the construction of facilities for the transportation of natural gas including pipeline and compressor facilities, gas processing facilities, and auxiliary facilities such as instrumentation, automation and control, electrical, and structural/civil. Also responsible for solving operational problems as they relate to equipment and facilities.



**Emergency Response
Training Exercises**

Standard Operating Procedures

Applicable to Hazardous Liquids Pipelines and Related Facilities

Code Reference :	Procedure No.: HLA.10	
49 CFR: 195.403	Effective Date: 02/01/18	Page 1 of 8

1.0 Procedure Description This Standard Operating Procedure (SOP) describes the requirements for preparing and conducting emergency response training exercises.

2.0 Scope Emergency response exercises are conducted to provide training and to verify that company personnel are familiar with the actions needed to properly and quickly respond to an emergency. The results of the exercise may indicate that emergency procedures, practices and/or training should be modified. An effective response to an emergency should accomplish the following:

- Provide for the safety of the public and company personnel.
- Protect public and company property.
- Locate the source of any release of hazardous liquid related to an incident or potential incident and isolate as required.
- Control any accidental release of hazardous liquid or carbon dioxide and to minimize the potential for fire, explosion, toxicity, or environmental damage
- Review the potential hazards and characteristics of products transported.
- Maintain contact with all appropriate company departments.
- Provide for coordination with local emergency response agencies.
- Minimize the effect on service to affected customers.

3.0 Applicability This SOP applies to employees and supervisors that are required to respond to an emergency.

4.0 Frequency Training will be performed each calendar year not to exceed 15 months. Once training is completed, review with personnel their performance in meeting the objectives of the Emergency Response Training program

Periodically, conduct either a functional exercise, drill, or tabletop to simulate emergency situations and subsequent company response activities. This requirement can be satisfied by the occurrence of an actual emergency response event and documentation and review in accordance with this procedure.

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**5.0
Governance**

The following table describes the responsibility, accountability, and authority of the operations described in this SOP.

Function	Responsibility	Accountability	Authority
Emergency Response Exercise Plan Development	Operations Manager	Operations Manager	Director of Operations
Plan Details	Operations Manager	Operations Manager	Director of Operations
Plan Distribution	Operations Manager	Operations Manager	Director of Operations
Area Pre-Notification	Operations Manager	Operations Manager	Director of Operations
Emergency Response Exercise Procedures	Operations Personnel	Operations Manager	Director of Operations
Observations and Documentation	Simulation Coordinator / Operations Manager	Simulation Coordinator / Operations Manager	Director of Operations
Emergency Response Exercise Report	Operations Manager	Operations Manager	Director of Operations
Exercise Evaluation and Procedure Enhancement	Operations Manager	Operations Manager	Director of Operations

**6.0
Terms and
Definitions**

Terms associated with this SOP and their definitions follow in the table below. For general terms, refer to *SOP HLA.01 Glossary and Acronyms*.

Terms	Definitions
Drill	A coordinated, supervised exercise activity used to test a single specific operation or function. The role of drills in a simulation and training program is to practice and improve one element or part of the overall response plan and help prepare for functional exercises in which several response elements can be coordinated and tested.
Functional Exercise	A fully simulated interactive exercise that tests the capability of the organization to respond to a simulated emergency event. The exercise tests multiple functions of the organization’s operational plan.
Tabletop Exercise	A facilitated analysis of an emergency situation in an informal, stress-free environment. It is designed to elicit constructive discussion as participants examine and resolve problems based on existing operational plans and identify where those plans need to be refined.

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**7.0
Emergency
Response
Training
Exercises**

This SOP contains the following sections:

- Emergency response exercise plan development
- Plan details
- Plan distribution
- Area pre-notification
- Emergency response exercise procedures
- Observations and documentation
- Emergency response exercise report
- Exercise evaluation and procedure enhancement

**7.1
Emergency
Response
Exercise Plan
Development**

Operations Personnel follow the procedure below for simulated emergency plan and drill development with Operations Manager input where applicable.

Step	Activity
1	DEFINE the objective of the exercise, i.e., test a specific aspect of emergency response capability (drill), conduct a facilitated analysis of an emergency response scenario (tabletop) or conduct a fully simulated emergency (functional exercise).
2	DEVELOP an Emergency Exercise Plan that provides for an actual test or discussion of the Area’s emergency response preparedness and accomplishes the objective defined above.
3	VERIFY that the test will not affect normal pipeline operations and flow.
4	INCLUDE an Operations Manager and Simulation Participants among the personnel administering the simulated emergency.
5	INCLUDE any or all local emergency response agencies, simulated injuries and fatalities, table-top only exercises, and “what if” scenarios in the plan, when and wherever possible.
6	VERIFY a response scenario that includes one or more of the following: <ul style="list-style-type: none"> • High Consequence Area (HCA) locations • Pump stations • Breakout Tanks • Delivery points • Inaccessible locations • Interconnections with other transmission companies • Night, weekend and holidays • Single-line systems (only one pipeline is available) • River crossings • Pipelines in close proximity (includes foreign or company-owned pipelines) • Third-party access required (commercial facilities, plants)

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Step	Activity
	<ul style="list-style-type: none"> Valve sites Potential causes, types, sizes, and consequences of fire and the appropriate use of portable fire extinguishers and other on-site fire control equipment. In the case of failure of a pipeline system transporting a highly volatile liquid, use of appropriate instruments to assess the extent and coverage of the vapor cloud and determine the hazardous areas.
7	CONSIDER other significant collateral impacts and possible joint training involving responsible officials. Examples include but are not limited to power plants, refineries, public-owned utility facilities, airports, and transportation infrastructure.

**7.2
Plan Details**

Follow the procedure below for plan details. Drills and tabletop drills will be by nature a smaller scale and as such may not include as many details as a functional exercise.

Step	Task
1	Briefly DESCRIBES the details of the incident in the Simulated Emergency Plan.
2	PLACES a call to Liquid Control or an Area facility to initiate the simulation.
3	<p>VERIFIES the Operations Manager has the following information and reports information as requested:</p> <ul style="list-style-type: none"> Name of caller (fictitious) Location and phone number of caller Description of the incident Geographical location of the incident Landmark feature(s), county and state <p>Operations Manager (Coordinator) only responds to direct information requested.</p>
4	<p>VERIFIES the plan notes the expected actions to be taken by Area personnel, including:</p> <ul style="list-style-type: none"> Response time Measures to be taken to isolate the affected pipeline segment and/or facility Desired end result to complete the simulation Description of the location of isolation valves, referenced by station discharge and milepost or facility involved Special instructions
5	INCLUDES in the plan the time and date the simulated emergency will occur.
6	CONSIDERS the work schedules of the Area Office and Liquid Control in the timing of the simulated emergency. This minimizes any impact on significant work activities.

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Step	Task
7	DOES NOT DISCLOSE the date and time of the drill to those who may be responding.

**7.3
Plan
Distribution**

Operations Manager (Coordinator) follows the procedure below for simulated emergency plan distribution.

Step	Activity
1	DISTRIBUTE the Simulated Emergency Plan.
2	If the Simulated Emergency Plan involves communication with Liquid Control FORWARD the Plan to Director of Operations for review, approval, and distribution to Emergency Management Director .
3	DISTRIBUTE the Plan to the following: <ul style="list-style-type: none"> • Simulation participants: for enactment and monitoring of the simulation • Sr.Vice President, Division Operations • Liquid Control Operations Support VP • Emergency Management Director
4	PERFORM this distribution at least three (3) working days prior to the actual simulation.

**7.4
Area Pre-
Notification**

For a Senior Management-developed simulated emergency, notify the Director of Operations or designee at least one (1) hour prior to the commencement of the simulated emergency to verify that Area personnel responding to the simulation do not take any unauthorized actions that could affect the pipeline facilities.

**7.5
Emergency
Response
Exercise
Procedures**

Area Office is responsible for the procedure below.

Step	Activity
1	COORDINATE, OBSERVE, and DOCUMENT all activities relating to the simulated emergency, as applicable.
2	VERIFY that all Area personnel are familiar with the emergency response procedures and the location of all facilities in the Area.
3	PERFORM the following activities during the simulated emergency: <ul style="list-style-type: none"> • DEVELOP and COMPLETE the activities log. • NOTIFY emergency response agencies, if involved. • DISPATCH personnel to sites.

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	<ul style="list-style-type: none"> • COMMUNICATE with the appropriate Corporate offices and Liquid Control. • DETERMINE and COORDINATE appropriate isolation procedures. • LOCATE receipt and delivery points in affected pipeline segment. • COORDINATE personnel, equipment, and tools. • COMMUNICATE emergency activities with Area personnel
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**7.6
Observations
and
Documentation**

The Operations Manager follows the procedure below for observations and documentation.

Step	Activity
1	RECORD all responses and activities of the Area and Liquid Control personnel during the simulated emergency.



NOTE: The activities of Liquid Control personnel may be monitored by the Manager of Liquid Control or designee. Due to simulation timing problems, some dispatchers may be advised of the simulation in advance.

Step	Activity
2	OBSERVE and VERIFY the following activities: <ul style="list-style-type: none"> • Proper notification of emergency response agencies, if involved • Response times to the incident, location and valve sites • Proper notification of incident and communication with company personnel • Knowledge of Area personnel of their required response actions • Accessibility and proper marking of pipeline facilities • Availability of proper tools and appropriate keys • Availability of personnel and equipment to respond • Adherence to the current Area Emergency Procedures Manual • Adequacy of the current list of receipt point and delivery point contact numbers • Monitoring of pipeline pressures at nearby pump stations or other facilities • Other activities deemed significant
3	DOCUMENT participants using applicable form(s) and electronic database(s) as required.

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**7.7
Emergency
Response
Exercise Report**

The Director of Operations or designee is responsible for the emergency response report procedure below.

Step	Activity
1	DETERMINE the requirements for the Pipeline Emergency Response Report based upon the details of the simulation or actual emergency response event. INCLUDE the following in the Report: <ul style="list-style-type: none"> • A description of the emergency situation • A critique of the response • A response activity log
2	Upon final completion of the emergency response, COMPLETE all applicable sections of the report and FORWARD to Director of Operations for final completion and distribution.
3	For simulations, DISTRIBUTE the final Emergency Response Report to personnel as noted in the Simulated Emergency Plan Distribution section of this procedure. If the report results from an actual emergency event, CONSULT with Company management for distribution of the report.



NOTE: A simulation activity log is required from the Area and Liquid Control if they are involved.

**7.8
Exercise
Evaluation and
Procedure
Enhancement**

Operations Manager is responsible for the simulation evaluation and procedure enhancement procedure below.

Step	Activity
1	EVALUATE the effectiveness of the response with respect to the Area Emergency Plan, and RECOMMEND any appropriate enhancements to the Plan or to current operating practices.
2	ADVISE Area personnel in writing of the recommended enhancements to their response in the Emergency Simulation Report.

**8.0
Documentation
Requirements**

Record data in electronic database or utilize the following form(s) as applicable:

- A.10.A Simulated Emergency Drill
- A.15.A Incident Report Log

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9.0 Safety Procedure S-150
References

Appendix A: There are no Operator Qualification (OQ) tasks required for this procedure.
OQ Task
Requirements



ENERGY TRANSFER

Recognizing and Responding to Abnormal Operations

Standard Operating Procedures

Applicable to Hazardous Liquids Pipelines and Related Facilities

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1.0 Procedure Description This Standard Operating Procedure (SOP) establishes requirements for recognizing and responding to, evaluating, and correcting the cause of an Abnormal Operation (AO).

2.0 Scope An AO occurring on the system, if not properly addressed, may lead to an Emergency, Accident or Safety Related Condition. Proper and timely response to an AO is imperative to prevent escalation.

The following material provides guidance on the minimum requirements for recognizing and responding to an AO on the system. If faced with an apparent AO, personal and public safety comes first.

3.0 Applicability Applies to personnel in Liquid Control and/or field operations who have direct operational involvement in recognizing and responding to AO’s in the areas of:

- Pipeline
- Measurement
- Pump Stations Communication
- Breakout Tanks

The requirements of this procedure apply to all procedures in the Standard Operating Procedures and to those Abnormal Operations Reports documented by each operations location.

This procedure applies to all pipeline facilities jurisdictional to a pipeline safety agency.

4.0 Frequency As required - Recognizing and reacting to AO.
Periodically – Review Abnormal Operations Reports and periodically review the procedures for controlling abnormal operations.

5.0 Governance The following table describes the responsibility, accountability, and authority of the operations described in this SOP.

Function	Responsibility	Accountability	Authority
Recognizing and Responding to an AO	Operations Personnel, Area Management, Liquid Control	Operations Personnel, Area Management, Liquid Control	Operations Personnel, Area Management, Liquid Control

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Function	Responsibility	Accountability	Authority
Review of Abnormal Operations Reports	Operations Personnel, Area Management, Liquid Control	Operations Personnel, Area Management, Liquid Control	Area Management

**6.0
Terms and
Definitions**

Terms associated with this SOP and their definitions follow in the table below. For general terms, refer to *SOP HLA.01 Glossary and Acronyms*.

Terms	Definitions
Abnormal Operation (AO)	Deviation from what is considered “normal” operations, which results in an operation where design limits of the involved facilities are exceeded. Abnormal Operation is also defined as follows: <ul style="list-style-type: none"> • Unintended closure of valves or shutdowns • Increase or decrease of pressure or flow rate outside normal operating limits • Loss of Communications • Operations of any safety device • Any other foreseeable malfunction of a component, deviation from normal operation, or personnel error which may result in a hazard to persons or property.
Emergency	Refer to <i>SOP HLA.08 Field Emergency Response Procedures</i>
Accident	Refer to <i>SOP HLA.15 PHMSA – State - Accident Reporting</i>
Safety-Related Condition (SRC)	Refer to <i>SOP HLA.12 Safety Related Condition Reporting</i>



CAUTION: The use of Personal Electronic Devices (PEDs) by pipeline employees who are performing operations & maintenance activities may increase safety risks by becoming distracted. Such distractions may also hinder prompt recognition and reaction to abnormal operating conditions and emergencies. While the Company is not discouraging the use of PED’s as a part of normal business, it recognizes the increased risks associated with the use of PED’s by individuals performing activities that affect pipeline operation or integrity. Pipelines operations & maintenance tasks require a critical level of attention and skill, which may be compromised by visual, manual and cognitive distractions caused by the use of PED’s.

**7.0
Recognizing &
Responding to
an Abnormal
Operations**

Respond, evaluate, and rectify the Abnormal Operation (AO) in accordance with the following steps when a design limit has been exceeded.

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(AO)



NOTE: Do not implement this procedure in the event of an emergency. If an AO develops into an emergency, use company emergency procedures.

Step	Activity
1	NOTIFY appropriate location, regions/areas, and or Liquid Control personnel when the operation of pipeline facilities results in an operation which exceeds the design limit(s).
2	Location personnel COORDINATE return to normal operation with Liquid Control as required using appropriate applicable SOP.
3	DETERMINE the cause of the Abnormal Operation. If the performance of an OQ task was involved in the AO, follow the process as outlined in <i>SOP HLA.18 Operator Qualification Plan</i> and enter the information required in the applicable electronic database.
4	ISOLATE, REPLACE or REPAIR any failed equipment as required.
5	UTILIZE Company Technical Services to determine if the integrity of the facility must be reconfirmed as a result of the Abnormal Operation.
6	MONITOR facility operation; VERIFY normal operation with Liquid Control. COMPLETE the reporting requirements.
7	If indicated, Management may direct Subject Matter Experts (SMEs) to REVIEW Abnormal Operation reports from other locations within the company and DETERMINE if the failure impacts their equipment / locations and take appropriate action to mitigate the cause of the AO.

**7.1
Pressure or
Flow Rate
Outside Normal
Operating
Limits**

Respond, evaluate, and rectify the AO in accordance with the following steps for pressures or flow rates outside the normal operating limits.

Step	Activity
1	When the operation of pipeline facilities result in the inadvertent increase or decrease in pressure or flow rate outside the normal operating limits NOTIFY appropriate Operations Personnel, Area Management and/or Liquid Control personnel.
2	The Operations Personnel COORDINATES the return to normal operation with Liquid Control as required. Liquid Control / Operations Personnel check variations from normal operation after abnormal operation has ended at sufficient critical locations in the system to determine continuing integrity and safe operations.
3	DETERMINE the cause of the Abnormal Operation.

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Step	Activity
4	ISOLATE, REPLACE or REPAIR any failed equipment as required.
5	MONITOR facility operation; VERIFY normal operation with Liquid Control.

**7.2
Unintended
Valve
Operation**

Respond, evaluate, and rectify the AO in accordance with the following steps for unintended valve operation.

Step	Activity
1	CHECK for the unintended operation of a valve, which could include opening, closing, or partial operation considered outside the normal operating modes. Unintended operation may be the result of human error, sabotage, or equipment failure.
2	CHECK the following types of valves and any others as necessary: <ul style="list-style-type: none"> • Block • Crossovers • Tap • Meter Station • Pump Station • Interconnect • Breakout Tanks
3	NOTIFY appropriate location, Area Management and Liquid Control personnel if unintended valve operation is found.
4	COORDINATE operation of the valve with Liquid Control as required.
5	USE established SOPs appropriate to the situation.
6	DETERMINE and PROTECT line pressures upstream and downstream with whatever means is required and communicate with Liquid Control as required.
7	DETERMINE the cause of inadvertent operation.
8	ISOLATE, REPLACE or REPAIR any failed equipment as required.

**7.3
Inadvertent
Operation of
Relief Valves,
ESD/BSD
Systems &
Other Safety
Devices**

Respond, evaluate, and rectify the AO in accordance with the following steps for unintended operation of safety devices and systems.

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NOTE:
<ul style="list-style-type: none"> • Operation of these safety devices may cause the shutdown of facilities, such as a pump or the entire station itself and most will be AOs. Treat activation of any facility gas or fire detection, or pump station Emergency ShutDown (ESD) systems as an emergency. • Relief valves that open because the pipeline was above MOP is an AO (design limit was exceeded due to the failure of the primary pressure control device). • The cause of the event may be an AO and should be addressed as directed by this SOP.

Step	Activity
1	USE appropriate SOP's to get the situation under control.
2	PERFORM an analysis to determine if event was a result of malfunction.
3	ISOLATE, REPLACE or REPAIR any failed equipment as required.
4	COORDINATE with Liquid Control as required

**7.4
Loss of
Communication**

Respond, evaluate, and rectify the Abnormal Operation accordance with the following steps for loss of communication between Liquid Control and the location or within the location which affects remote control and operation of facilities, including RTU, phone line, microwave, and power, causes exceeded facility operating design limits resulting in a hazard to persons or property.

Step	Activity
1	EVALUATE each occurrence of communication loss immediately. If deemed as having the potential to exceed operating design limits, ADDRESS promptly. If communication losses have no impact on safe operation, DO NOT DECLARE as an abnormal operation.
2	NOTIFY appropriate location, Division, and Liquid Control personnel.
3	ESTABLISH temporary communication through other means available if required.
4	MANUALLY CONTROL equipment if required.
5	DETERMINE the cause of communication outage.
6	ISOLATE, REPLACE or REPAIR any failed equipment as required.
7	RE-ESTABLISH communication.

**7.5
Personnel
Error**

Respond, evaluate, and rectify the Abnormal Operation in accordance with the following steps for personnel error, if the error causes or is judged to have the potential to cause facility operating design limits to be exceeded, resulting in a hazard or potential hazard to persons or property.

Step	Activity
1	NOTIFY appropriate location, area and Liquid Control personnel.
2	CORRECT the situation created by personnel error as soon as possible, and

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Step	Activity
	COMMUNICATE the action to Liquid Control if required.
3	DETERMINE that normal operations have been restored and all facilities have been restored to the original capabilities.
4	DETERMINE if personnel are adequately knowledgeable and determine a plan to correct if required.
5	GENERATE a Near Miss Report for the AO if it is determined that the event needs to be shared across the Companies. USE all available resources to identify and clearly communicate the potential for injury or damage to occur when personnel errors occur. CREATE a IMPACT ET record if the AO is determined to be Significant.. USE all available resources to identify and clearly communicate the potential for injury or damage to occur when personnel errors occur.

7.6 Review of Abnormal Operations Reports

Operations Personnel review all of the abnormal operations reports generated by that location or that occurred elsewhere on the system and was distributed to Area Management for review and/or appropriate action.

Step	Activity
1	REVIEW the response(s) of personnel to each situation that resulted in an abnormal operation report to determine the effectiveness of the procedure.
2	REVIEW the corrective action that was taken for each report.
3	DETERMINE that all applicable AOs reviewed have been adequately addressed by the Operations Personnel.

8.0 Documentation Requirements

Record data in electronic database or utilize the following form(s) as applicable:

- A.13.A Abnormal Operation Report and Response
- A.13.B Operator Qualification Incident Review

Use the following process to report the Abnormal Operation (AO).

Activity	Pipeline Reporting
Acknowledge the requirements as outlined in the SOP have been completed.	Abnormal Operation - Form A.13.A
Location - Complete the "Location" section of the form.	Abnormal Operation - Form A.13.A
Area – Complete the "Area" section of the attached Word Document	Abnormal Operation - Form A.13.A
Corporate Management – Complete the "Corporate Management" section of the form and distribute to the other Area if applicable.	Abnormal Operation - Form A.13.A

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Activity	Pipeline Reporting
Follow-up as required concerning the disqualification, retraining, and requalification of the responsible person (Qualified Operations Personnel) as outlined in <i>SOP A.18 Operator Qualification Plan</i> .	Interface with the Qualification Program

**9.0
References**

HLA.08 Field Emergency Response Procedures
HLA.12 Safety Related Condition Reporting
HLA.15 PHMSA / States Accident Reporting
HLA.18 Operator Qualification Plan

**Appendix A:
OQ Task
Requirements**

The table below identifies the Operator Qualification (OQ) task requirements.

Task Description	OQ Task
AOs can involve any or all OQ tasks listed in Appendix A of <i>SOP HLA.18 Operator Qualification Plan</i>	ALL Applicable OQ tasks

2018 Safety Training Schedule

Type Training	Assigned Frequency	Notes
Computer Based Training (CBT)	Quarterly	CBT training is assigned quarterly for the employee to take at his/her leisure during the quarter. This training is not assigned to any safety meeting or other event in CDMS. This training must be made up if it is not completed within the quarter however, not completing the training in the assigned quarter can result in impact to variable pay. Employees that are off for an extended period of time for STD, LTD, military service or other issue may be exempted from making up the training. ** Some training CBT may be specialized to specific employees or job descriptions. In those cases, employees not required to take the training will not be penalized for not completing the training.
General Instructor Led Training (ILT)	To a specific month within a quarter or within the specified quarter as assigned	Generalized training that is required by the general employee population that cannot be adequately covered by a CBT will be assigned to a specific month within a quarter. Examples of this training include defensive driver training and hands on fire extinguisher training, etc. This will allow the training to be tied to a safety meeting as an event and will credit the training to the employee when the employee is credited with attending the associated monthly safety meeting. This training must be made up if it is not completed within the month however, not completing the training in the assigned month can result in impact to variable pay. Employees that are off for an extended period of time for STD, LTD, military service or other issue may be exempted from making up the training.
Specialized Training	Within the applicable year assigned	This training is assigned quarterly/annually and completed any time during the assigned quarter or year as designated. This training is specific to designated employees based on assignment such as Forklift, Rigger Competent Person, NORM Surveyor, Asbestos Competent Person, Excavation Competent Person, etc. This training will not be assigned to a specific event or monthly safety meeting. This training will be entered in to CDMS by the Training Specialist using training rosters (must be sent to the training department upon completing the training). This training must be made up if it is not completed within the quarter however, not completing the training in the assigned quarter can result in impact to variable pay. Employees that are off for an extended period of time for STD, LTD, military service or other issue may be exempted from making up the training however, that employee may be restricted from performing certain duties until the training and / or certification is brought up to date.

2018 Non-Field/Adm. Employee Training Schedule

Quarter	CBT	Month	General ILT	Specialized Training
January February March	1. Safe Driving Habits Driving Defensively (CBT) (VFS-0161) 2. Incident Reporting PP (to be created by ETP safety and sent to training dept.)			
April May June	1. Slips, Trip and Falls (CBT) (VFS-0197)	May	Emergency Preparation Hurricane Prep or weather related emergencies (M)	
July August September	1. Medical Records (CBT) (M)			
October November December	1. Hazard Communication / GHS (CBT) (VFS-0113) (M)			

2018 Field Employee Training Schedule

Quarter	CBT	Month	General ILT	Specialized Training - to be completed by end of 2018
January February March	<ol style="list-style-type: none"> 1. Lead Awareness (CBT) (VFS-0107) (M) 2. Hearing Conservation (CBT) (VFS-0104) (M) 3. *Incident Reporting (PP to be created by safety dept.) 	*Complete in first quarter.	*Driving Safety/SWAT (roster required to receive credit)	<ol style="list-style-type: none"> 1. HAZWOPER 24hr (CBT or ILT) as needed 2. HAZWOPER 8hr refresher (CBT or ILT)
April May June	<ol style="list-style-type: none"> 1. H2S Awareness (CBT) (VFS-0128) (M) 2. Hazard Communication / GHS (CBT) (VFS-0113) (M) 3. Respiratory Protection (CBT) (VFS-0131) (M) 4. Slips, Trip and Falls (CBT) (VFS-0197) 	<p>April</p> <p>May</p>	<ol style="list-style-type: none"> 1. General Work Permit/Hot Work Permit (PP to be created by safety dept.) 2. Emergency Preparation Hurricane Prep or weather related emergencies 	<ol style="list-style-type: none"> 3. Competent rigger (ILT) 4. Excavation Competent Person (ILT) 5. First Aid and CPR (For Electrical Basic and Advanced Workers EQW only) (VFS 7046 CBT)(M)
July August September	<ol style="list-style-type: none"> 1. Medical Records (ETP CBT) (M) 2. Benzene Awareness (CBT) (VFS-0009) (M) 3. Fire Protection (Portable Extinguishers) (CBT) (VFS-0101) M 	July	Fire Extinguisher (Hands On) *	
October November December	<ol style="list-style-type: none"> 1. Asbestos Awareness (CBT) (VFS-0146) (M) 2. LOTO Affected Employee (CBT) (VFS-0117) (M) 			

*For locations that completed Fire Extinguisher (Hands On) in 2017, all that is required is a review. (CBT or SOP Review)

** (M) - Mandatory annual training

***2018 Electrical cycle (Basic First Aid (Electrical Workers only Basic and Advanced EQW) CBT

Emergency Response Training Guidance

I. Purpose

The primary goal of this guidance is to facilitate training and qualification of emergency management personnel to NIMS/ICS concepts and principles and to maintain compliance with OSHA's HAZWOPER standard. To meet this goal, this training plan has the following three objectives:

- Support education and training for all emergency management personnel
- Adapt the functional capabilities defined by NIMS and HAZWOPER into guidelines, courses, and a curriculum that helps ETP to develop personnel training and credentialing plans that yield desired response capabilities.
- Define the minimum qualifications or training required for service on ETP's national Incident Management Team (IMT) and the Local Spill Management Teams.

II. Scope

The guidance within this training program is not absolute. Incident and/or event complexity determines emergency and incident response personnel responsibilities as well as a recommended audience for NIMS curriculum coursework delivery. ETP can use our hazard/threat analysis to determine the "types" of incidents most likely to occur and then tailor our training to meet those needs. However, ETP has identified three tiers of incidents based on complexity, as identified on Figure 1. It is ETP's policy to train emergency management personnel to meet up to a Tier 3 level of complexity.

III. Definitions

FIGURE 1. Incident Complexity

Tier 3	<ul style="list-style-type: none"> • This type of incident extends beyond the capabilities for local control and is expected to go into multiple operational periods. A Tier 3 incident requires response resources from outside of the area, including regional and/or national resources, to effectively manage the operations, command, and general staffing. • All of the Command and General Staff positions are filled. • A written IAP is required for each operational period. • Many of the functional units are needed and staffed. • Operations personnel often exceed 200 per operational period and total incident personnel may exceed 500. • Agency representatives may join the Unified Command based on incident complexity. • ETP's Incident Management Team (IMT) will likely be deployed
Tier 2	<ul style="list-style-type: none"> • When incident needs exceed capabilities, the appropriate ICS positions should be added to match the complexity of the incident. • Some or all of the command and general staff positions may be activated, as well as division/group supervisors and/or unit leader positions. • The incident may extend into multiple operational periods. • A written IAP may be required for each operational period. • Local response teams will be activated with support from regional resources as needed
Tier 1	<ul style="list-style-type: none"> • The incident can be handled with one or two single resources and up to six personnel. • Command and General Staff positions (other than the Incident Commander) are typically not activated. • No written IAP is required. • The incident is contained within the first operational period and often within an hour to a few hours after resources arrive on scene. • Examples include a vehicle fire, a flange leak, or an overflow into containment.

IV. Roles & Responsibilities

Emergency Planning and Response personnel will :

- Work with Operations personnel to schedule, design, and facilitate annual Tabletop PREP Exercises.
- Work with IMT leadership to schedule, design, and facilitate an annual IMT exercise and associated section-specific ICS training for IMT members
- Complete and Maintain PREP documentation of Tabletop exercises and IMT exercises. Provide Operations a copy of PREP documentation report.
- Ensure Quarterly QI notifications are being conducted and maintained in Everbridge for Pipelines. Terminals will continue to maintain and conduct Quarterly QI notifications and forward to ER staff.

Operations personnel will:

- Work with Emergency Planning and Response personnel to schedule, design, and facilitate annual Tabletop PREP Exercises.
- Work with Emergency Planning and Response personnel annually to schedule Emergency Response training.
- Terminal Operations will maintain all records of quarterly QI notifications. QI notification records for pipeline operations will be maintained in Everbridge.

V. Procedure/Process

Established the requirements for training in emergency response to spills or releases of hazardous substances and/or participating in the cleanup of those spills.

VI. Documentation

- Copies of all PREP records, IMT deployments, and incident critiques should be forwarded to the Emergency Planning and Response Department.
- Copies of all ICS and HAZWOPER training documentation should be forwarded to OQ/Training Department.

VII. Training

Basic ICS Training

Every employee with the potential to be involved in emergency management, regardless of discipline or level within the organization, should take the baseline ICS curriculum courses:

- **ICS-100.b Introduction to the Incident Command System:** This course introduces ICS and provides the foundation for higher level ICS training. ICS-100.b describes the history, features and principles, and organizational structure of the incident command system. This course also explains the relationship between ICS and NIMS, and is a prerequisite for ICS-300.
- **ICS-200.b ICS for Single Resources and Initial Action Incidents:** This course is designed to enable personnel to operate efficiently during an incident or event within the ICS. The course provides some very basic training and resources for personnel who may assume a supervisory position within ICS and is a prerequisite for ICS-300.
- **ICS-700.a National Incident Management System, An Introduction:** This course introduces the NIMS concept and is a prerequisite for ICS-300.

- **ICS-800.b National Response Framework (NRF), An Introduction:** This course introduces participants to the concepts and principles of the NRF, and is a prerequisite for ICS-300.

Advanced ICS Training

Since Incident Management occurs in the field, it is recommended that only individuals with a Command and General Staff role take advanced ICS courses. If an employee is identified and recommended by management to participate on the company’s national Incident Management Team, Regional Management Team, or on a list to supplement these teams, ICS-300 and some position specific training will be required.

- **ICS-300 Intermediate ICS for Expanding Incidents:** Provides training and resources for personnel who require advanced knowledge and application of the ICS and expands on concepts presented in ICS-100 and 200. In an attempt to maintain the knowledge gained, ICS- 300 should be repeated at least once every 5 years and will be coupled with a robust exercise program between training years.
- **Position Specific Training:** These courses are designed to provide participants with a robust understanding of the duties, responsibilities, and expected capabilities of personnel assigned to specific jobs on an all hazards incident management team. For example, Planning Section Chief Training will focus on managing the planning cycle and tracking resources and the incident status. Participants should expect exercises, simulations, discussions and a final exam to enable them to process and apply their new knowledge.

ICS 100	ICS 200	ICS 700	ICS 800	ICS 300
All Emergency Responders	All Emergency Responders	All Emergency Responders	All Emergency Responders	Area Pipeline Managers
Pipeliners	Pipeliners	Pipeliners	Pipeliners	Terminal Managers
Technicians	Technicians	Technicians	Technicians	Pipeline Supervisors
Electricians	Electricians	Electricians	Electricians	Line Supervisors
Terminal/Facility Operators	Terminal/Facility Operators	Terminal/Facility Operators	Terminal/Facility Operators	Materials Mgt
Equipment Operators	Equipment Operators	Equipment Operators	Equipment Operators	EHS Managers/Directors
Welders	Welders	Welders	Welders	
EHS Specialist	EHS Specialist	EHS Specialist	EHS Specialist	

Hazardous Waste Operations and Emergency Response (HAZWOPER) Training

Every employee that is involved in Emergency Response Operations must receive a minimum 24 Hr Hazmat Specialist / Hazmat Tech training in accordance with OSHA's HAZWOPER standard. This includes, but is not limited to, employees engaged in emergency response operations for releases of, or substantial threats of releases of, hazardous substances regardless of the location of the hazard.

- **First Responder Operations / Awareness– 8 hr:** This course is designed to provide personnel with the ability to recognize hazards and competency in the following areas:
 - an understanding of what hazardous substances are, and the risks associated with them in an incident
 - an understanding of the potential outcomes associated with an emergency created when hazardous substances are present
 - an ability to recognize the presence of hazardous substances
 - an ability to identify hazardous substance
 - knowledge of the basic hazard and risk assessment techniques; knowledge of how to select and use proper PPE; and knowledge of basic control, containment, and decontamination procedures
 - Ability to realize the need for additional resources and to make communications
 - Understanding of the role of the first responder in the emergency response plan, including security and control.
- This training is required for all employees who are likely to discover the release of a hazardous substance. Identify the substance involved, report the spill or release, secure the site from a safe distance, and take no further actions.
- This course is also required as an annual refresher to maintain Hazwoper 24hr certification.
- **Hazmat Tech / Hazmat Specialist – 24 hr:** This course is designed to build on the First Responder Operations – 8 hr objectives. This course also provides personnel with:
 - an understanding of the classification, identification and verification of known and unknown materials
 - knowledge of how to select and use proper specialized chemical PPE
 - knowledge of advanced control, containment, and decontamination procedures
 - an understanding of termination procedures
 - knowledge to perform effective assessments during an emergency response
 - Implementation of emergency response plan
 - Operations within the Incident Command System
- The technician's duties may include: approach the point of the release, estimate potential of the emergency, control release of products by plugging, patching , or otherwise stopping the release, assist or oversee cleanup operations, and terminate incident.
- **2 ways to obtain your 8hr or 24hr hazwoper certification are to complete a course online or participate in a class taught by a certified trainer**

ERT Position/Section	Level of Hazwoper Training Required
Finance	Awareness
JIC & Public affairs	Awareness
Legal, Documentation Unit, Situation Unit, Resource Unit	Awareness
Liaison & Community Relations	Awareness
Logistics	Awareness
Incident Commander & Deputies	Technician
Operations	Technician
Planning /Environmental	Technician
Safety	Technician
Security	Technician

Tactical Response and Equipment Deployment Training

Employees who are expected to deploy equipment, or who will directly supervise equipment deployment by contractors, should receive equipment deployment training. This training is designed to provide personnel with an understanding of: how equipment operates, how to deploy and use equipment, how to avoid hazards when using equipment, how to use equipment in all weather conditions, how to maintain equipment, how to decontaminate equipment, and when to use and not use equipment.

VIII. References

- FEMA training courses can be found at: <http://training.fema.gov/IS/NIMS.aspx>
- ICS 100 - <http://www.training.fema.gov/is/courseoverview.aspx?code=IS-100.b>
- ICS 200 - <http://www.training.fema.gov/is/courseoverview.aspx?code=IS-200.b>
- ICS 700 - <http://www.training.fema.gov/is/courseoverview.aspx?code=IS-700.a>
- ICS 800 - <http://www.training.fema.gov/is/courseoverview.aspx?code=IS-800.b>
- ICS 230 - <http://www.training.fema.gov/is/courseoverview.aspx?code=IS-230.d>
- 8 hour Hazwoper Awareness Level - <http://www.rrt6.org/TrainingRepository.aspx>

ATTACHMENT A SCOPE OF WORK

PENNSYLVANIA 20” AND 16” NGL PIPELINE PROJECT, SPREAD 6

GENERAL SCOPE OF WORK

1.0 GENERAL

Pennsylvania 20” and 16” NGL Pipeline Project, Spread 6 Work to be performed consists of all activities necessary to complete the installation of a 20-inch and 16 inch high-pressure natural gas liquid pipelines with ancillary facilities for Company. The Work includes all items set forth in this section and as detailed in the complete Scope of Work (“Attachment A”), Plans and Specifications (“Attachment B”), Company Furnished Materials (“Attachment C”), and Company furnished Drawings.

The Work shall be constructed in multiple spreads and is more fully described herein below, and includes the complete satisfactory performance of Contractor’s construction services, including all things described herein as well as any other Work not explicitly described below but reasonably inferred as being Contractor’s responsibility, including, without limitation, fabrication and installation of the following Work:

1.1 Pennsylvania 20” and 16” NGL Pipeline Project Spread 6 (“Spread 6”) commences at Mile Post 324.2 at the county line in Berks/Chester counties, Pennsylvania and ends at approximate Mile Post 359.2 at the Twin Oaks site in Delaware County, Pennsylvania.

The Work the construction and installation of the following Work:

- 1.1.1 **20-inch and 16-inch high-pressure natural gas liquid pipeline** – Installation of approximately 189,010 linear feet (35.0 miles) of a 20-inch and 16-inch diameter coated line pipe. The 20-inch pipeline will be and include appurtenances as set forth in Attachment C with a 1480 MOP design;
- 1.1.2 **Uncased Bore Crossings** - Total of thirty-eight (38) uncased bore crossings;
- 1.1.3 **HDD Crossings** - Total of thirty-five (35) horizontal directional drill (“HDD”) crossings.
- 1.1.4 **MLV Site at M.P. 324.5** – The Work involves the complete, turn-key construction and installation of one (1) pre-fabricated 20” main line valve and one (1) 16” main line valve assemblies. The Work further includes, without limitation: all associated interconnect piping systems and valves; coating and painting all above ground piping; Site Work for an approximate 125’ x 125’ Site, which includes, clearing, rough grading, fill dirt required to level Site, rocking, temporary fencing and one (1) permanent access road; and civil Work, which includes, concrete sleepers and reinforced piers in accordance with Company’s Drawings.
- 1.1.5 **MLV Site at M.P. 330.4** – The Work involves the complete, turn-key construction and installation of one (1) pre-fabricated 20” main line valve and one (1) 16” main line valve assemblies. The Work further includes, without limitation: all associated interconnect piping systems and valves; coating and painting all above ground piping; Site Work for an approximate 125’ x 125’ Site, which includes, clearing, rough grading, fill dirt required to level Site, rocking, temporary fencing and one (1) permanent access road; and civil Work, which includes, concrete sleepers and reinforced piers in accordance with Company’s Drawings.

- 1.1.6 **MLV Site at M.P. 332.8** – The Work involves the complete, turn-key construction and installation of one (1) pre-fabricated 20” main line valve and one (1) 16” main line valve assemblies. The Work further includes, without limitation: all associated interconnect piping systems and valves; coating and painting all above ground piping; Site Work for an approximate 125’ x 125’ Site, which includes, clearing, rough grading, fill dirt required to level Site, rocking, temporary fencing and one (1) permanent access road; and civil Work, which includes, concrete sleepers and reinforced piers in accordance with Company’s Drawings.
- 1.1.7 **MLV Site at M.P. 339.6** – The Work involves the complete, turn-key construction and installation of one (1) pre-fabricated 20” main line valve and one (1) 16” main line valve assemblies. The Work further includes, without limitation: all associated interconnect piping systems and valves; coating and painting all above ground piping; Site Work for an approximate 125’ x 125’ Site, which includes, clearing, rough grading, fill dirt required to level Site, rocking, temporary fencing and one (1) permanent access road; and civil Work, which includes, concrete sleepers and reinforced piers in accordance with Company’s Drawings.
- 1.1.8 **MLV Site at M.P. 342.1** – The Work involves the complete, turn-key construction and installation of one (1) pre-fabricated 20” main line valve and one (1) 16” main line valve assemblies. The Work further includes, without limitation: all associated interconnect piping systems and valves; coating and painting all above ground piping; Site Work for an approximate 125’ x 125’ Site, which includes, clearing, rough grading, fill dirt required to level Site, rocking, temporary fencing and one (1) permanent access road; and civil Work, which includes, concrete sleepers and reinforced piers in accordance with Company’s Drawings.
- 1.1.9 **MLV Site at M.P. 348.4** – The Work involves the complete, turn-key construction and installation of one (1) pre-fabricated 20” main line valve and one (1) 16” main line valve assemblies. The Work further includes, without limitation: all associated interconnect piping systems and valves; coating and painting all above ground piping; Site Work for an approximate 125’ x 125’ Site, which includes, clearing, rough grading, fill dirt required to level Site, rocking, temporary fencing and one (1) permanent access road; and civil Work, which includes, concrete sleepers and reinforced piers in accordance with Company’s Drawings.
- 1.1.10 **MLV Site at M.P. 353.1** – The Work involves the complete, turn-key construction and installation of one (1) pre-fabricated 20” main line valve and one (1) 16” main line valve assemblies. The Work further includes, without limitation: all associated interconnect piping systems and valves; coating and painting all above ground piping; Site Work for an approximate 125’ x 125’ Site, which includes, clearing, rough grading, fill dirt required to level Site, rocking, temporary fencing and one (1) permanent access road; and civil Work, which includes, concrete sleepers and reinforced piers in accordance with Company’s Drawings.

2.0 PROJECT TIMING

2.1 COMMENCEMENT OF WORK

Contractor agrees to commence Work within receipt of Notice to Proceed (“NTP”) from Company.

2.2 PROSECUTION AND COMPLETION OF WORK

The Contractor shall, after commencement of the Work, prosecute the Work with due diligence, and shall not neglect or discontinue the Work at any time. The Contractor shall perform all Work in a

thorough workmanlike and substantial manner in accordance with the terms of the Master Terms and Conditions, accepted industry and Sunoco Logistics Construction Specifications, and with the utmost regard for safety of life and property. The Work shall be conducted in such a manner and with such machinery, equipment, tools, labor, and supervision as is deemed necessary and sufficient to insure satisfactorily completion of the Work and achievement of the In-Service and Final Completion Dates referenced in Section 2.3.2.

2.3 CONSTRUCTION SCHEDULE

2.3.1 Contractor shall develop a construction schedule for the Work that provides the most efficient and cost effective installation. Contractor shall begin planning and other preparatory work upon execution by both parties of the agreement. Contractor agrees it has examined and is familiar with the project scope of Work, Web-Based GIS Map, Construction Drawings, landowner line list and restoration requirements, environmental permit requirements, and the terms and conditions and as a result, hereby certifies that it has sufficient information to prepare an accurate schedule of the timing and events required for performing the Work in an efficient and cost effective manner.

Contractor shall provide an HDD drill schedule. Company will require a 2 weeks’ notice prior to the commencement of individual HDD drilling activities.

2.3.2 Work milestone dates are as follows:

Commencement Date:	May 15, 2016
Tree Clearing Window:	October 1 st to March 31 st *
Anticipated Construction Start:	May 15, 2016
In-Service-Date:	November 1, 2016, with time being of the essence at all times
Final Completion Date:	November 15, 2016, with time being of the essence at all times

The term “Commencement Date” shall be defined as the date of mobilization to the pipeline ROW by the CONTRACTOR.

The term “In-Service Date” shall be defined as the date that all hydrostatic tests have been completed successfully, the pipeline cleaned and dried, COMPANY acceptance of a caliper tool which indicates no pipeline flaws, and the pipeline is able to commence commercial operations.

The term “Final Completion” shall be defined as complete ROW restoration (final grading, permanent waterbar installation, seeding, and land owner acceptance of restoration work. Permanent fencing and painting is excluded from this contract.

Contractor shall fully and finally complete, to the Company’s satisfaction, all Work related to coating and painting of all above ground piping prior to the achievement of the In-Service Date.

All timber cutting shall be fully and finally completed within October 1st and March 31st project-wide. If E&S permits are not issued upon notice-to-proceed hand-cutting and felling in place will be allowed between October 1st and March 31st except where noted on relevant project documents and plans.

For the purposes of this RFP, the term “Final Completion Date” shall mean that date on which the Contractor has fully and finally completed, to the Company’s satisfaction, all

Work under the agreement including, without limitation, the achievement of the In-Service Date, clean-up, reseeding, restoration, and has fully demobilized from the Site.

- 2.3.3 Contractor shall provide a construction schedule utilizing either Microsoft Excel ®, Microsoft Project ®, or similar software approved by Company, within seven days from execution of the Agreement, to complete all Work and shall include at a minimum its Work commencement date and all Work milestone dates referenced in Section 2.3.2, as well as the duration of all major tasks to perform the Work as follows:
 - 2.3.3.1 Preparation of Work plans and pre-mobilization planning, including appropriate engineering tasks such as installation and contingency procedure delivery;
 - 2.3.3.2 Contractor OQ testing;
 - 2.3.3.3 Weld procedure and welder qualification testing;
 - 2.3.3.4 Mobilization of equipment spreads, including dedicated manpower;
 - 2.3.3.5 Installation of pipeline in accordance with Company Specifications;
 - 2.3.3.6 Fabrication, as required, and installation of pre-fabricated 20" and 16" main line valves and all Site fabrications;
 - 2.3.3.7 Clearing, removal of all debris, grading, and leveling of the Site locations as shown on each appropriate Site Drawing;
 - 2.3.3.8 Hydrostatic Pipeline testing in accordance with Company specifications.
 - 2.3.3.9 Caliper pig survey;
 - 2.3.3.10 Final cleaning / drying of the completed pipeline to -40 degrees Fahrenheit specific dew point and no more than one quarter (1/4) inch penetration or less visible on a 2.5lb/ft³ density foam pig. After cleaning and drying the line it shall be purged and loaded with one hundred fifty (150) PSIG Nitrogen;
 - 2.3.3.11 Final grading to pre-construction contours that will prevent slips, washes, erosion, and ROW restoration and Site cleanup;
 - 2.3.3.12 Demobilization; and
 - 2.3.3.13 Project documentation.
- 2.3.4 Contractor's submission of any Work schedule that deviates from the Work milestone dates referenced in Section 2.3.2 is hereby rejected by Company unless accepted in writing by Company after Contractor has provided a recovery Work Plan.
- 2.3.5 Contractor shall report progress reports as listed below to Company.
 - 2.3.5.1 Daily Report Schedule
 - 2.3.5.2 Key Milestone Schedule (within 7-Days of execution of the agreement)
 - 2.3.5.3 Weekly 3 Week Look-Ahead Schedule (Weekly or as required by Company).

The Contractor shall prepare and submit to the Company a Weekly 3 Week Look-Ahead Schedule showing the activities planned, manpower requirements, and any

other special requirements including, but not limited to, permits, material receipts, material shortages, etc. for the upcoming three (3) week period. The 3 Week Look-Ahead Schedule shall be submitted on a day and time agreed upon between Company and Contractor, throughout the performance of the work.

2.3.5.4 Weekly Progress Report (Weekly as Agreed Upon)

The Contractor shall prepare and submit to the Company a Weekly Progress Report showing the scheduled progress versus actual progress from the previous week, including an itemized breakdown of the percent complete of key milestones within the execution of the Scope of Work as detailed by the initial Key Milestone Schedule. The Weekly Work Schedule shall be submitted to the Company on a day and time agreed upon between Company and Contractor, throughout the performance of the work. The Company shall use these reports for progress tracking and documentation of the project.

- 2.3.6 Within fifteen (15) days of award, the Contractor shall develop and coordinate with Company and submit to the Company for approval, a detailed network and schedule of activities for the term of the agreement that conform to the Completion Dates.

3.0 MATERIALS FURNISHED BY COMPANY

Company will supply all piping and any materials that become a permanent part of the completed pipeline unless otherwise indicated in the Specifications and Drawings. Company furnished material is generally listed in "ATTACHMENT C" MATERIALS TO BE FURNISHED BY COMPANY.

The following requirements apply to Company furnished materials:

- 3.1 Prior to starting Work, Contractor shall discuss material and supply necessities 48 hours prior to mobilizing to the Site. It is the Contractor's sole responsibility to make sure all materials and equipment are on the Site to execute the Work.
- 3.2 All materials shall be accompanied with a completed Company's B9 Form (Material Receiving / Transfer Report).
- 3.3 Materials shall be quantified and assessed as surplus or as scrap and reported accordingly by the appropriate materials person on location.
- 3.4 Any pipe or materials returned that do not have MTR's or certification shall be considered scrap. Contractor shall be responsible for returning of all "scrap" materials and shall be clearly and boldly marked as "scrap" and returned to the Company's construction storage yard to be sold from field yard. Contractor shall be responsible for acquiring invoice receipt from Company for such material.
- 3.5 All 20" pipe, valves, fittings and additional materials as listed in Attachment C shall be available for pick-up at the Company's yard located in Cornwall, PA and Contractor shall be responsible for pre-loading inspection, loading, transporting, unloading, stringing, and storing/securing of all Company supplied materials to/at the Site.
- 3.6 The Contractor shall return all surplus pipe, fittings and any other surplus materials to Company's designated storage areas near Cornwall, PA. The cost for these services shall be included in the base lay price. All legal pups 10' and longer will be placed into the pipeline, all pups (non-legal) 10' or less and 10' and longer that are not placed in the pipeline shall be charged to the contractor at the Purchase Order price. All piping negligently damaged by the Contractor (i.e. buckled, flat ends, dents) that can be contributed to the Contractor will be charged to the Contractor at the Purchase Order price.

- 3.7 Any 20” pipe less than 25 feet and greater than 10 feet shall be required to be carried forward and installed into the line as nonconsecutive pups. Any pipe less than 25 feet and greater than 10 feet that is not installed into the line shall be purchased by the Contractor at (\$xxxxx) Dollars per foot for 20” pipe.
- 3.8 Contractor shall be responsible for providing all materials not listed in Attachment C.

4.0 CUSTODY OF MATERIAL

The Contractor shall insure that all Company provided materials as listed in Attachment C are properly stored and protected from damage. Any damage to materials after Contractor’s acceptance and installation shall be the Contractor’s responsibility in accordance with the terms of the Master Construction Agreement. Any damage to materials shall be reported to the Company as soon as it is detected.

5.0 CONTRACTOR SUPPLIED ITEMS

Contractor shall furnish all machinery, tools, transportation, labor, and supervision necessary to complete the Work and all incidental and/or expendable material necessary to complete the Work (excluding materials specifically listed in Attachment C “Company Furnished Materials” herein). Cost of Contractor supplied items not identified in a specific pay item will be included in Contractor’s firm offer, Subpart A, Pay Item #1.0. Major items (described in depth within Contractor Submittal Document) to be furnished by the Contractor shall include, but may not be limited to:

- 5.1 Any additional yard deemed necessary by Contractor for staging of Company supplied materials beyond the yard space provided by Company;
- 5.2 Yard for Contractor’s equipment and personnel;
- 5.3 Three (3) double-wide office trailers (with conference room) at a Site location approved by Company, which includes but may not be limited to two (2) phone lines and one (1) fax line, a minimum of DSL or cable modem (Hi-Speed Internet), color printer and copy machines capable of printing, scanning and copying up to 11” x 17” documents, fax machines, utilities including men’s and women’s bathroom facilities with running water, office furniture and file storage cabinets, fire extinguisher, first aid kits, and dedicated parking spaces for Company’s project personnel. Cleaning services shall be done daily at office trailers.
- 5.4 All materials and supplies for forming and casting 5,000 lbs. dry saddlebags or concrete coated pipe for negative buoyance;
- 5.5 All temporary pipe for boring tubes as required for dry boring;
- 5.6 All welding electrodes and welding consumable materials;
- 5.7 Contractor shall furnish heat applied FBE powder coating (SPC 2888, Denso Protal 7125, or equivalent) as specified in Company Coating Manual or equivalent and approved by Company for coating girth welds (minimum of 14-16 MILS FBE). All girth welds to be sandblasted to near-white for coating application per Company Specifications;
- 5.8 For HDDs and bores, the field applied FBE will be overlain with a field applied Powercrete R95 (minimum of 40 MILS) per field applied Powercrete R95 specification. The Contractor shall supply all coating material, supplies and required equipment.
- 5.9 Contractor shall supply and use heat applied FBE powder coating and finalized by coating with Powercrete with the approved drying time for coating on directional drill sections, approved coating will be used for coating on fabrication and tie-ins where heat applied epoxy powder is not

appropriate. Contractor will provide coatings as specified in Company's Coating Manual;

- 5.10 Sandblasting equipment, abrasive blast media, paint, painting supplies, and all necessary equipment for painting pipe and equipment per Company Specifications, including right-of-way fences and gate posts;
- 5.11 Coating and painting color shall be a Company black color per the Company Coating Manual. Prefabricated material will be supplied with a prime coat only;
- 5.12 All fencing materials required by Company Specifications or found in "Right of Way Special Conditions" under the Landowner Line List or listed on Web-Based GIS Map, to install temporary gaps for construction, replacement of fences damaged by construction activities, and installation of permanent steel pipe H-braces and tubular gates prior to completion of construction;
- 5.13 Any crossings of wildlife/gaming fenced areas, Contractor shall be responsible for installing fence gaps equivalent to the existing fences. A game type camera is required at all cut cross fences and Contractor is required to maintain camera and data records. Gate guards maybe required at the gates of all perimeter high game fences, exterior gates bordering state highway, township roads, county roads, and public access roads and may be required on interior fences, as required by landowner stipulations.
- 5.14 All concrete, anchor bolts, forming materials, and reinforcing materials as necessary for the installation of all facilities and associated piping supports, and concrete caps across electric transmission line right-of-way as indicated on standard Drawing details and the Construction Drawings or bid documents;
- 5.15 Galvanized steel pipe culverts or concrete culverts and Safety End Sections (aprons) per requirements and/or Township, County, or State requirements as set forth in the road crossing and permanent access permits and Contractor submittal documents if required, including any asphalt approaches as required by permit;
- 5.16 If required by permits or as listed on Company Drawings, Contractor shall be responsible for permanent black top covering (asphalt) on any permanent gate entrances to State highways or major roads;
- 5.17 Backfill material shall consist of a flowable, excavatable, self-compacting and self-leveling material will be required on any open cut crossing performed;
- 5.18 All traffic control signs, barricades, flagmen, equipment, and trained or state certified personnel;
- 5.19 All material, fabrication, installation and painting of required safety bollards and posts;
- 5.20 Caliper pig for inspection run and inspection results within 24 hours of completing caliper pig run and a final report shall be submitted to Company within 21 days of completion. Tool must be a high resolution caliper tool approved by Company;
- 5.21 Geotextile material, gravel, and road base materials for all new surface Sites locations. Geotextile material, gravel, and road base materials for all ground cover and to repair and maintain all private access roads used to complete the Work;
- 5.22 Materials to run a minimum of four (4) cleaning pig runs prior to pressure testing to remove rust scale, dirt, and other contaminants from line due to normal construction activities to no more than one quarter (1/4) inch penetration or less visible on a 2.5lb/ft³ density foam pig. After cleaning and drying the line it shall be purged and loaded with one hundred fifty (150) PSIG Nitrogen, which includes, but may not be limited to, water, brush pigs, foam pigs, swabs, materials for fabricating all test heads including temporary valves and weld fittings (which will be furnished by Company);

pumps, compressors, all temporary piping, hoses, frac tanks, sock filters, hay bales, connectors to fill and dewater the pipeline, including fuel for all equipment;

- 5.23 Materials needed for pressure testing, including water, pigs, materials for fabricating all test heads including temporary valves and weld fittings (except for pipe which will be furnished by Company); pumps, compressors, deadweights, pressure and temperature chart recorders and certified gauges, all temporary piping, hoses, frac tanks, sock filters, hay bales, connectors to fill and dewater the pipeline, fuel for all equipment;
- 5.24 Materials needed for drying the pipe and cleaning the line of all water, which includes, but may not be limited to pigs, swabs, air compressors, dryers, hoses, testing equipment, fuel, etc.;
- 5.25 Contractor will furnish all miscellaneous materials as required for installation of Company supplied cathodic protection test stations, including all necessary wire for test lead and foreign pipeline crossings, excavation and shall installed at nearest fence line and road crossing. Contractor shall prepare one complete wrap of pipeline with test lead, pulling test lead "back through" wire loop for all test station connections to the pipeline and soil tubes and shall be installed or as required at locations specified by Company Drawings;
- 5.26 Materials, equipment, and labor required to install pipeline markers and aerial markers at Sites located on Web-Based GIS Map and/or specified or as directed by Company;
- 5.27 Fire Retardant Clothing (F.R.C) outer wear apparel, which shall be made of Nomex III, Kevlar, or Fire Retardant Cotton and shall be either one-piece coveralls or pants and shirt, and must be worn as the outer layer of clothing. The F.R.C shall be worn by all Contractor personnel within the in service facility Sites. Contractor personnel shall wear hard hats, safety glasses with side shields, steel toe shoes, and any approved PPE that is required;
- 5.28 All other material necessary to complete the Work as may be called for elsewhere in the RFP documents, the attached specifications, and Drawings, other than and except material to be furnished by Company as expressly stated herein in Attachment C.

6.0 GENERAL REQUIREMENTS

Contractor has included in Contractor's Firm Offer, all associated costs to furnish all labor, equipment, material, consumables and supervision necessary to complete the following Work, which includes, but may not be limited to the following:

- 6.1 Coordinating with Company Right-of-Way agents ONLY and be and compliance with all terms and conditions stated in the "Right of Way Landowner Line List". Contractor shall have no direct contact with landowners. The contractor shall ensure that there is at least one Right-of-Way agent per every 25 miles to coordinate with Company ROW agents.
- 6.2 Coordinating with permitting agencies and compliance with all permits, foreign pipeline, and utility owners during the course of the agreement;
- 6.3 Coordination with other contractors working within and near the right-of-way. Contractor agrees to cooperate with any and all other contractors.
- 6.4 Signage required by safety and permits as well as signage required to mark permissible roads and non-permissible roads to right of way;
- 6.5 Testing of all welders per Company Procedures and Specifications;
- 6.6 Clearing, grubbing, grading, and maintaining the construction right-of-way;

- 6.7 Disposal of all timber, stumps, brush, and debris from pipeline easement, Sites, and temporary work space. All materials removed from the right-of-way easement, temporary workspace and facility locations shall be chipped, burned if allowed by local permitting agencies and land owners or hauled off and properly disposed. Contractor shall not allow for debris to remain on pipeline easement, temporary workspace, and facilities and shall be handled according to the terms and conditions stated in the "Right of Way Landowner Line List";
- 6.8 All 20" pipe, valves, fittings and additional materials shall be available for pick-up at the Company's yard located in Cornwall, PA and Contractor shall be responsible for pre-loading inspection, loading, transporting, unloading, stringing, and storing/securing of all Company supplied materials to/at the Site. All pipe negligently damaged by Contractor (i.e. buckled, flat ends, dents) that can be contributed to the Contractor will be charged at the Purchase Order Price.
- 6.9 All surplus pipes greater than 25 feet long shall be beveled on both ends and all coating shall be repaired prior to returning to the Company's yard located in Cornwall, PA.
- 6.10 Any 20" pipe less than 25 feet and greater than 10 feet shall be required to be carried forward and installed into the line as nonconsecutive pups. Any pipe less than 25 feet and greater than 10 feet that is not installed into the line shall be purchased by the Contractor at (\$xxxxx) Dollars per foot for 20" pipe.
- 6.11 Field bending utilizing bending machine with qualified personnel. Company shall allow field bends in accordance with Company's construction specifications;
- 6.12 Cutting, beveling, transitioning, line-up and welding of pipe and fittings;
- 6.13 Field joint coating; The Contractor shall sand blast and field apply FBE coating (SPC 2888, Denso Protal 7125, or equivalent) to all girth welds (minimum of 14-16 MILS FBE). Utilize flocking equipment to apply the FBE. Where FBE coating of the girth welds is not practical, CONTRACTOR may use approved two part epoxy (SPC 2888 or equivalent). Surface preparation shall be to SSPC Standard SP10 for all girth weld coatings.
- 6.14 In areas of HDDs and bores, where the pipe is coated with Powercrete R95, the field applied FBE will be overlain with a field applied Powercrete R95 (minimum of 40 MILS) per field applied Powercrete R95 specification. The CONTRACTOR shall supply all coating material, supplies and required equipment.
- 6.15 Trenching and excavation to provide the specified cover;
- 6.16 Construction mats, engineered excavation boxes, shoring, weld points, etc. required for installation of pipeline;
- 6.17 Installation and lowering in of mainline pipe including all bends and segmentable fittings;
- 6.18 Holiday detection (Jeeping) shall be performed by Contractor just prior to the lowering in operation and coating shall be closely inspected for possible damage from the lowering in operation. Sections of the coated pipe may not be dragged or pulled into position. The coated pipe shall be properly protected and handled in a manner to prevent damage to the pipe. A third party inspector must witness holiday detection.
- 6.19 The Contractor shall shade and backfill the pipeline with suitable material where the native material is not suitable for use as shading material as outlined in the Construction Documents. The Contractor shall include a mechanical padding machine (Ozzie Padder or equivalent) where native backfill is deemed unsuitable. Where it is not practical to use a padding machine, the Contractor shall locate, load, haul, and place as applicable COMPANY approved shading material.

- 6.19.1 A minimum of 8 in. of dirt shading (1" minus) shall be installed as cover on top of the line as protection prior to backfilling.
 - 6.19.2 First stage of Backfill (12" above the 8" shading material) – Backfill material may include rock, 2" – 6" in diameter
 - 6.19.3 Second stage of Backfill – Backfill material may include rock – Up to 12". No rock greater than 12" diameter will be allowed back into the pipeline trench line.
 - 6.19.4 Large rock or boulders in excess of 12 in. in diameter, width or length, shall not be backfilled into the ditch. Such rock shall be disposed of properly. Rock disposal shall be in accordance with ROW Construction Line List requirements. Rock disposal in ditch line that is not specifically prohibited by the landowner (as described in the Construction Line List), shall be at the discretion of the COMPANY.
 - 6.19.5 In most cultivated areas, all surface rock in excess of 3 inch diameter shall be removed from the ROW, per the ROW Construction Line List requirements.
 - 6.19.6 Topsoil shall be restored in accordance with Clause 10.5.18.
- 6.20 Directional drilling and installation of drilled crossings;
 - 6.21 River, stream, canal, pond, and wetland crossings per permit and license requirements or as required on Company's alignment Drawings;
 - 6.22 Set-on weights as required by Company or listed on Company Drawings and shall consist of 5,000 lbs. dry saddlebags or concrete coated pipe for negative buoyance on the pipeline;
 - 6.23 Boring of highways, roads (public and private), foreign utilities, and railroad crossings as described in bid documents/permits;
 - 6.24 Contractor shall test an additional approximately 180 linear feet of each line pipe, which includes but may not be limited to test headers on any additional items to test these joints within the pipeline hydrotest with supporting documentation;
 - 6.25 Foreign pipeline and utility crossings with clearances in accordance with permits or Specifications. Contractor to locate and verify depth and location and stake all Company owned and foreign line crossings prior to excavation. Contractor will provide all construction matting materials required to cross foreign pipeline and easements;
 - 6.26 Trench dewatering, well points, trench shoring, sheet piling and construction matting required for the pipeline construction and installation of all associated piping assemblies including transportation and disposal of materials.
 - 6.27 The CONTRACTOR shall furnish adequate padding equipment to pad both bottom of ditch, side, and top of pipe. Dirt padding (1" minus) shall be installed in the bottom of the ditch to a minimum depth of 8 in., prior to lowering-in the pipeline. If rock shield is required, rock shield shall be approved by Company prior to installation.
 - 6.28 Construction and installation, which includes all Work associated with the civil and mechanical for the prefabricated pigging and valve assemblies, which includes platforms and ladders; thrust blocks, bollards posts and concrete support blocks;
 - 6.29 Facility Sites finishing including repair of existing access drives to their original condition prior to construction activities , which includes, but may not be limited to culverts, rock surfacing, fencing, and cattle guards, as required;
 - 6.30 All Site Work, which includes, clearing, grading, fill dirt required to level Site, Site compaction to 95% proctor, rocking, fencing and permanent access roads.
 - 6.31 If required by permits or as listed on Company Drawings, Contractor shall be responsible for

- permanent black top covering (Asphalt) on any permanent gate entrances to State highways or major roads;
- 6.32 Hydrostatic testing of the pipeline and facilities per Company requirements and certified by a third party PE registered in the appropriate State, then reviewed and approved by Company approved PE;
- 6.33 Company will furnish one complete set of bolts and gaskets as required, Contractor is responsible for any additional bolts and gasket sets; no bolts from China are permitted to be used.
- 6.34 Following initial dewatering operations, the Contractor shall conduct a geometry verification survey. The caliper pig will be provided by Contractor and approved by Company. Contractor shall provide all required labor and support to execute the pig run. The caliper Pig will be run after the completed sections are cleaned and hydrostatic tested. Results of the caliper Pig run will be reviewed with Company to determine possible locations for excavation and verification of any identified anomalies. Should none exist, Company will authorize Contractor to proceed with drying. Company fully intends for pipeline to be constructed free of dents, gouges, and other mechanical damage. Contractor personnel will assist Company in the visual inspection of each joint of line pipe during welding operations, coating operations, and lowering-in. Should indications of mechanical damage or excessive ovality of the line pipe be detected in the caliper pig reports, Company will determine the standards of acceptability for natural gas liquids pipelines to be applied. Company will determine the action to be taken to investigate or repair or replace the damaged areas. It is the Contractor's responsibility and obligation to complete the pipeline without any defects.
- 6.35 Support and assist Company during commissioning of Work, which includes but may not be limited to, providing torqueing crews and any equipment and labor as required in support of all commissioning activities;
- 6.36 Preparation and installation of any required transition pups;
- 6.37 Concrete support and thrust blocks;
- 6.38 Drying to -40 degrees Fahrenheit specific dew point and cleaning of the pipeline and facilities per Company requirements;
- 6.39 The Contractor shall install coupon Cathodic Protection (CP) test stations for potential, current, and resistance measurements every half mile and at the following locations: all pipeline crossings, isolating joints, waterway crossings, road crossings, stray current areas, transformer-rectifier or other power supply installations. In addition to the above, standard test stations for pipe-to-soil potential measurements shall be installed at the following locations: along the entire length of the pipeline, connections with grounding systems, all pipeline crossings, and at locations where the pipeline route is in close proximity to foreign structures. This shall include, but not be limited to, providing all wires and pipe bonded connections and cadwelds, and coating bonded connections.;
- 6.40 Pipeline warning signs and pipeline markers provided by Company including installing pipeline warning markers at each side of all public and private road crossings as well as all fence crossings;
- 6.41 The Contractor shall continuously clean up the right of way to the satisfaction of the Company, landowner or tenant, in accordance with the permits, right-of-way agreements and Company Construction Specification. The Contractor shall haul away and dispose of all trash created during construction. The Contractor may leave mats out until clean-up and re-vegetation is complete. The Contractor shall dispose of brush as specified in the "Grant of Easement" and "Land Owner Line List." The Contractor shall re-vegetate the pipeline right-of-way as soon as possible in accordance with the requirements of the Land Owner Line List and Erosion and Sediment Control Plan ;
- 6.42 All equipment furnished by Contractor shall be in sound and good working order. Any Work required to complete installation of the new pipeline but not listed as a pay item is no less included

in the scope of Work for installation of the new pipeline and is included in Contractor's Lump Sum Firm Offer;

- 6.43 Where joints of pipe are cut, it shall be the Contractor's responsibility to ensure that the pipe and heat numbers of the parent joint are transferred to the cut end or ends of the parent joint as well as to both ends of all pups resulting from the cutting;
- 6.44 The striking, cutting, damage, modification, destruction, or crushing of drain or irrigation tiles and required repairs associated with such damage in accordance with the Agricultural Mitigation Plan, Landowner requirements, and the terms of the Master Construction Agreement, whether or not such drain or irrigation tiles were known or unknown (mapped or not) at the time of execution of the Master Construction Agreement;
- 6.45 CONTRACTOR SHALL FIELD VERIFY ALL MEASUREMENTS; and
- 6.46 Items of Work that are not specifically identified, does not mean such Work is not included in Contractor's scope of Work. Any item of Work that is required for completion of the installation but not specifically identified is to be included in Contractor's Lump Sum Firm Offer.
- 6.47 The CONTRACTOR shall comply with the Company *Covered Task List for Operator Qualification Program* requirements and with all updates to the Operator Qualifications Program that is outlined in Sub Part N of 49 C.F.R. and Sub Part G of C.F.R. Part 195 where applicable. The Contractor shall utilize ISNetworld for record keeping of individual level qualifications. The Contractor shall ensure that all of its employees are operator qualified for the tasks he/she is assigned to, per the *Covered Task List*, included in Attachment B. Proof of Operator Qualifications must be submitted by Contractor and accepted by the Company prior to starting work.
- 6.48 After a contract has been awarded, the successful Contractor shall provide an Emergency Response Plan to the Company for approval. The plan shall be site specific for each Spread, and will include a response plan for medical and fire emergencies. The plan shall include the availability of an EMT in remote locations. The Contractor shall work with the local emergency response agencies when developing this plan.
- 6.49 The Contractor shall assist Company in preparing, maintaining, and filing of all documentation as required by 49 Code of Federal Regulations, Part 195 and ASME B31.4. The Contractor shall assist Company, as necessary, in the initial post construction DOT audit. All regulatory documentation shall be maintained on-site. The Contractor shall coordinate with Company representative on the assembly of documentation packages.
- 6.50 Contractor shall place orange safety fence in all necessary locations, as indicated Company plans.
- 6.51 Hydro-vac/pot holing to identify existing pipelines on the right-of-way as required by Company; the specific rules of pot holing are as follows:
- All excavations within 15 feet of an existing Sunoco pipeline must be pot holed every 50 feet and at all Points of Intersection (PIs)
 - All excavations in the common Right-of-Way with an existing Sunoco pipeline must be pot holed every 100 feet and at all Points of Intersection (PIs)

7.0 SPECIFIC REQUIREMENTS

7.1 SURVEY

7.1.1 COMPANY PROVIDED SURVEY

7.1.1.1 The pipeline route and the location of valves and other appurtenances are shown

on the Company's construction Drawings furnished by Company and shall be surveyed by Company marked by stakes. Stakes will be set at approximately 200 foot intervals to mark the centerline of the proposed pipeline, survey control monuments, the location of pipe changes, HDD's, weights, valves, the right-of-way limits, temporary work space limits and all points of intersection (P.I.'s), left or right. **Contractor is to verify the location of any and all foreign pipelines and existing Sunoco pipelines and verify the depth and location of any such pipelines and make Contractor's employees aware of the location and depth of any such pipelines prior to excavation.**

7.1.1.2 Company survey crews and/or survey consultants and survey equipment will require access to the right-of-way and established survey monuments during the pipeline construction to determine the "as-built" location of the pipeline within the right-of-way and to record the longitudinal location of each component of the pipeline.

7.1.1.3 Company shall have the right to make minor deviations in the pipeline route and such changes shall in no manner alter the terms of compensation payable under the Agreement.

7.1.2 **CONTRACTOR RESPONSIBILITY FOR SURVEY**

7.1.2.1 The Contractor shall construct the Work in accordance with the stakes set by Company and shall be charged with full responsibility for conformity and agreement of the Work with stakes.

7.1.2.2 Contractor shall be held responsible for the preservation of all stakes and marks and survey monuments. If any of the stakes or marks or legal bars are carelessly or willfully destroyed or disturbed by the Contractor, its' employees or Sub-contractors, the cost of replacing them shall be borne by the Contractor. Where stakes are removed for clearing, grading, cutting, topsoil removal, to permit equipment to move along the route, or for any other reason, the Contractor shall be responsible for re-establishing the staked line.

7.1.2.3 The Contractor shall perform necessary field surveys for the proper grading of the trench and the bending of pipe, for locating and staking existing underground facilities, and for other pipeline installations except for such field survey Work as is specified to be performed by Company.

7.1.2.4 The Contractor shall cooperate with Company's surveyor in order to provide necessary access for performing "as-built" survey functions and shall take special precautions when working after dark or during inclement weather to ensure the safety of these individuals and their equipment. Where joints of pipe are cut, it shall be the Contractor's responsibility to ensure that the pipe and heat numbers of the parent joint are transferred to the cut end or ends of the parent joint as well as to both ends of all pups resulting from the cutting. Contractor shall be responsible for cost of any unusable pipe.

8.0 REQUIRED NOTIFICATIONS

8.1 The Contractor is required to notify Company's Representative prior to commencing any phase of the Work as detailed in these Specifications and to keep Company's Representative informed regarding the location of all work crews, on a daily basis, as well as immediately notifying Company's Representative regarding Work stoppages or shutdowns. Contractor shall provide Company scatter sheets of Contractor personnel daily and submitted no later than 4:00 PM the day before Work. Company shall provide Contractor scatter sheet sample forms.

- 8.2 The Contractor shall keep Company's on-site staff informed of the location and extent of Work it proposes to attempt daily in order that Company may make arrangements to have sufficient personnel at the Work location to keep pace with the pipe installation operation. Company will not be responsible; however, for any reduction in progress due to the Contractor's failure to keep Company's Representative informed.
- 8.3 The Contractor shall notify, in writing, both Company's Representative and the authority having jurisdiction over any road, railway, canal, drainage ditch, river, foreign pipeline, or other utility, at least 72 hours (excluding Saturdays, Sundays, and Statutory Holidays), or as specified on the applicable permit(s), prior to commencement of pipeline construction, in order that the said authority may appoint an Inspector to ensure that the crossing is constructed in a satisfactory manner. Federal or State Departments of Transportation and Township/County road departments may also require a certificate of insurance from the Contractor specifying certain minimum insurance coverage for Work at road crossing Sites.
- 8.4 Prior to starting any Work in accordance with required notification, the Contractor shall notify all utilities within the area using the respective state's One Call System and by calling direct all Producers, Utilities, utility districts and municipalities not a member of the One Call System.
- 8.5 The Contractor may be required by the Railway Companies to corporately execute an Acknowledgment of Liability to the Railway, Company and to third parties for damage, injuries, and death resulting from the Contractor's operations. The Railway Companies may also require a Certificate of Insurance specifying certain minimum insurance coverage for Work at the railway crossing Sites and that the Railway and Company be named as an Insured. The Contractor shall determine the Railway and be familiar with Company's requirements in advance to avoid unnecessary delays. Contractor shall immediately notify Company's Representative of any instance of non-compliance with these specifications.
- 8.6 The Contractor shall notify Company's Representative upon contract award where ramps across railways will be required for construction access. Application procedures will differ, depending on the railway owner. At no time shall the Contractor contact Railway Companies without first notifying Company's Representative. The Contractor is responsible for all costs associated with traffic control. If Contractor requires railroad crossing ramp the Contractor will be responsible for all costs associated with said ramp.
- 8.7 Contractor shall immediately notify Company's Representative of any spill of a potentially hazardous substance. Refer to the procedures outlined in the Spill Prevention, Containment and Countermeasure Plan ("SPCC").
- 8.8 Contractor shall immediately notify Company's Representative if potentially contaminated soils are encountered.
- 8.9 Contractor shall immediately notify Company's Representative of the discovery of a previously unreported historic property, other significant cultural materials, or suspected human remains uncovered during pipeline construction activities. Contractor shall cease Work at the Site of the previously undiscovered Site until the Company's archaeological consultant had inspected the Site and the Company has determined if the pipeline must be rerouted to avoid disturbance to the Site.
- 8.10 At least 30 working days prior to commencing testing activities, Contractor shall notify Company's Representative of any changes in their detailed test plan regarding intent to appropriate water from, or discharge water to, specific water bodies for the purpose of directional drilling. Contractor will be responsible for acquiring water usage permits and discharge permits if use and discharge points are different than originally permitted.
- 8.11 Contractor shall provide written notification to Company representative 48 hours prior to scheduling

pickup of material from Company's yards.

- 8.12 Contractor shall notify all underground utilities and municipal service providers including, but not limited to, the One-Call prior to performing any excavation activities. Contractor shall be required to present one-call verification numbers to **Chief Inspector** before excavation begins. Following initial One-Call, any updates to the One-Call tickets shall be delivered to **Chief Inspector**.

9.0 USE OF DESIGNATED PUBLIC AND PRIVATE ROADS

- 9.1 All approved access roads and routes, both public and private, and ancillary Sites shall be prepared and maintained by the Contractor. The Contractor, at his sole expense, shall restore State, County, Township, private and access roads, bridges and ancillary Sites to their original condition. This Work shall meet with the approval of the Company and applicable landowner(s) and/or agencies.
- 9.2 Company shall provide the required road use permits for all affected Township, County, and State roads. Contractor shall be responsible for abiding by all road use permits requirements.
- 9.3 Company shall provide all road bonds and pay all fees associated with road bonds. Contractor shall familiarize themselves and comply with all conditions of the road bonds, including any associated restoration. Contractor shall be responsible for all costs associated with performance of the restoration.
- 9.4 Prior to commencement of any transportation activities, Contractor shall perform all transportation analyses and design activities required to ensure safe transport of all project materials.
- 9.5 The Contractor shall ensure that it is aware of all state, county, and township weight restriction by-laws in force and that these by-laws are strictly adhered to and shall procure all hauling permits required for its operation and make arrangements for the movement of pipe, other materials and all equipment on Township/County/State roads with the appropriate Township/County/State officials before hauling commences.
- 9.6 The Contractor shall repair and pay for restoration of any damage done to any road.
- 9.7 The Contractor shall provide vehicle escorts for equipment haul trucks and flag persons where required and shall supply, install and maintain all temporary signs and other devices as required for warning public and private road users of construction activities. Such signs and devices and placement thereof shall conform to the specifications and requirements of the agency having jurisdiction over the crossing. In addition, the Contractor shall comply with all Township, County, and State regulations respecting such devices for the particular Township, County, and State in which the Work is being performed.
- 9.8 The traveled surfaces of roads, streets, highways, (and railways when applicable) shall be cleaned free of mud, dirt or any debris immediately after such material has been deposited by equipment traversing these said roads or exiting from the right-of-way.
- 9.9 Parking of vehicles along public roads shall not be allowed.
- 9.10 Company has obtained permission for Contractor to access the pipeline right of way and Work Sites on some private roads. Contractor must grade and repair with like road base materials all roads damaged as a result of Contractor's use so that such roads are left in a condition as good as or better than the condition to that in which the roads were initially found and/or to the specifications listed in the road use agreements. When crossing a wildlife/gaming fenced area, Contractor will be responsible for creating fencing gap equivalent to the existing fence. Gate security may be required in accordance with the landowner stipulation. A game type camera is required at all cut cross fences; Contractor is required to maintain camera and data.

- 9.11 Contractor should be aware of cattle guards, drainage culverts, bump gates, and gates utilized during access. Contractor is responsible for repair or replacement of such items if damaged by Contractor's operations.
- 9.12 Contractor will be responsible for creating fencing gap equivalent to the existing fence and gate security may be required.
- 9.13 Some gates may require welding securely after construction, specified on landowner line list.
- 9.14 Contractor should be aware that some landowners may require cattle guards installed as specified on landowner line list.

10.0 RIGHT-OF-WAY ACTIVITIES

10.1 Standard RIGHT-OF-WAY and Temporary Work Space Width (typical)

Company will provide a permanent right-of-way and temporary workspace for Contractor's construction operations. Generally the right-of-way (ROW) width for permanent and temporary workspace is shown in the Company's construction Drawings and/or in the "Right of Way Landowner Line List" and/or Web-Based GIS Map.

10.2 Additional Temporary Workspace

Company will provide additional temporary workspace at road crossings, water body crossings, railroad crossings, wetland crossings, and foreign pipeline crossings as indicated on the alignments. The workspace that has been arranged by Company is shown on the Company's construction Drawings and/or in the "Right of Way Landowner Line List" and/or Web-Based GIS Map. Contractor must limit the additional temporary workspace to only the extent that it is needed.

10.3 Right-of-Way Limitations

The Contractor shall also note that work space may be limited wherever physical barriers exist (i.e. trees, buildings, ponds, aboveground structures) or in sensitive areas such as wetlands as described in the Contract Documents, or as shown on the Company's construction Drawings and/or in the "Right of Way Landowner Line List" and/or Web-Based GIS Map. The Contractor shall allow for such partial restrictions and plan its operations accordingly. Any additional cost Contractor anticipates it may incur as a result of reduced workspace in these areas shall be included in Contractor's Lump Sum Lay Price.

10.4 Right-of-Way "Special Conditions"

The "Right of Way Landowner Line List" provided to Contractor provides "Special Conditions" or agreements that control, or at least impact, construction activities including access, ROW, clearing and restoration on a certain tract or group of tracts. Adherence to the "Special Conditions" is a part of Contractor's Work Scope and is included in Contractor's Lump Sum Pricing under Mainline Installation of the appropriate section. The Contractor shall be controlled and bound by any and all provisions or instructions contained in the Construction Drawings and/or in the "Right of Way Landowner Line List" and/or Web-Based GIS Map. Contractor is reminded and advised to review same.

10.5 Right-of-Way Pipeline Construction Specifications

Compliance with the Company's Pipeline Construction Specifications is a part of Contractor's Scope of Work and cost for completing the specified Work is to be included in Contractor's Lump Sum Lay Price. Compliance with "Standard Construction Specifications" is required by the "Right of Way Landowner Line List" and the "Erosion and Sediment Control (E&S) Plan", the following

requirements are common to all tracts: The Contractor shall be responsible for preparing the permanent right-of-way, the temporary workspace and any Site access for construction. This Work preparation includes but is not limited to clearing & removal of timber, brush and stumps, grading where required, erecting temporary fences, gaps and barricades and installing ramps and culverts. The Contractor shall perform the necessary cuts and fills, supplying additional fill material as required.

- 10.5.1 The Contractor shall maintain the right-of-way in a clean, neat condition at all times. At no time shall litter be allowed to accumulate for more than one day at any location on the right-of-way. The Contractor shall provide a daily garbage detail with each major construction crew to keep the right-of-way clear of trash, Waste from coating products, skids, defective materials, rocks and all construction and other debris immediately behind his operations to the satisfaction of Company, landowners, and tenants. Paper from wrapping or coating products or lightweight items such as tobacco products shall not be permitted to be scattered around by the wind.
- 10.5.2 Contractor to install pipeline with a minimum of 48" of cover in all areas with the exception of 60" of cover on all road crossing barrow ditches and creeks or as indicated on permits and stakeholder line list. Cover is measured from top of cut right-of-way grade to top of pipe.
- 10.5.3 The Contractor shall provide required portable restroom facilities for all personnel working on the location.
- 10.5.4 Ingress and Egress for construction is limited to pipeline ROW, public roads and approved private roads specifically provided by Company and shown on Web-Based GIS Map. **Contractor shall not use property-owners private roads without WRITTEN permission from landowner and approved by Company ROW agent or Company representative, verbal approvals are not acceptable to Company.**
- 10.5.5 Contractor shall provide chains and locks for each "construction access gate". Cost of chains and combination locks (limited to one lock per gate) will be included in Contractor's lump sum price. Contractor may remove and keep the locks for future use at the conclusion of final clean-up.
- 10.5.6 Rock construction entrance pads are required, as detailed in Standard Construction Drawings where equipment exits the construction area onto any roads. Tracking of sediment onto any roads is to be prevented. Geotextile fabric will be used beneath these pads to separate the rock from the underlying soils. Unless otherwise directed by Company, all rock and geotextile materials will be removed and disposed of in an approved off-site location after completion of construction activities.
- 10.5.7 Contractor transport and service vehicles parked along the right-of-way shall be located within the boundaries of ROW, so as not to impede progress of the Work, or in any way prevent ready access of Company's Representative, surveyors and third party inspection crews.
- 10.5.8 No clearing, grading or other ground-disturbing construction activities shall occur outside approved, surveyed and flagged or staked right-of-way and temporary extra workspace limits, or outside of pipe storage yards, borrow and disposal areas, access roads and other approved areas, as shown on the Company's construction Drawings and/or in the "Right of Way Landowner Line List" and/or Web-Based GIS Map work areas without prior written approval from Company. **These activities may also require approval from applicable federal and state agencies.** If the Contractor exceeds authorized workspace limits, Contractor is responsible for all costs resulting there from. All costs for damages of any kind or character whatsoever resulting from the use of unauthorized workspace shall

be borne by Contractor.

- 10.5.9 Any activities conducted outside the approved construction right-of-way may result in immediate TERMINATION of the parties involved.
- 10.5.10 Contractor shall be responsible for carefully dismantling and restoring all fencing at any existing fence line, foreign pipeline or utility facilities.
- 10.5.11 All fences are to be "H-Braced" prior to cutting and all temporary fencing and gates must be comparable to existing fencing. Temporary construction fences will be maintained to a condition that insures containment of livestock and exotic game for the duration of construction. Permanent fences and gates shall be constructed in accordance with Company's standard construction Drawings. Gate security is required at all game fences at all times and may be required at all gates as referenced in landowner line list.
- 10.5.12 The Contractor shall minimize the use of the full temporary workspace width to the extent practicable. Where wetlands are encountered, every effort shall be made to minimize the extent of workspace utilization through the wetlands with a view to minimizing the disruption of natural habitat. Temporary workspace may be cleared and prepared to the extent that it is needed to complete the Work.
- 10.5.13 The Contractor shall ensure that construction through livestock grazing and agricultural areas is completed in a manner that minimizes interference or inconvenience to landowners/tenants and their livestock and agricultural operations. Landowner/tenant access to their property shall be maintained at all times including providing openings in the topsoil and spoil piles and leaving ditch plugs across the trench at various locations as necessary for access to water & feed.
- 10.5.14 Certain trees along the right of way are not to be removed or damaged in accordance with right of way landowner line list. Contractor will mark these trees in a manner that his own personnel will know to avoid removal or damage to these trees. Cost incurred by Company as a result of the erroneous damage or removal of an identified tree will be reimbursed by Contractor, including any punitive damages that may be assessed.
- 10.5.15 Clearing of trees, shrubs, and brush shall occur project-wide where necessary within the LOD, unless specifically identified on project plans as restricted from this activity. Clearing of trees (>6 inches in diameter) project-wide is only to occur between October 1 and March 31. If E&S permits are not issued upon notice-to-proceed hand-cutting and felling in place will be allowed between October 1 and March 31, except where noted on project plans.
- 10.5.16 Trees cut or trimmed along the right of way to provide clearance for construction equipment will be trimmed with the proper tree cutting equipment and not broken off with excavation or construction equipment. Contractor will be charged for the cost of trees needlessly damaged during construction.
- 10.5.17 All Trees cut or pushed down and any brush or timber removed during construction of the pipeline by Contractor will be handled in a manner as specified and approved by the landowner(s) and as dictated in the Construction Drawings and/or in the "Right of Way Landowner Line List" and/or Web-Based GIS Map. Brush or timber may be removed from the pipeline ROW by hauling off for disposal by Contractor at a location and in a manner determined by Contractor and approved by Company. Chipping may be performed within the right-of-way but shall not impede restoration and shall comply with all permit conditions. Contractor shall grind all stumps. Burying of stumps and brush on Company's temporary work-space or permanent easement is prohibited. Contractor is permitted to haul merchantable timber from the ROW for sale, unless otherwise specified in the "Right of

Way Landowner Line List”. Burning of all debris and or timber may be allowed with landowner permission only and proper permitting.

- 10.5.18 All excavation required for installation of the pipeline will be performed utilizing Top-Soil Segregation spoil placement. Top-Soil Segregation (double-ditch or triple ditch) may be required, full ROW top-soil segregation may be specified in the “Construction ROW Special Provisions” section or environmental permits. Topsoil segregation depth in other areas will be not less than twelve (12) inches. See “PA Notes and Details” for strict specific instructions.
- 10.5.19 Top-Soil Segregation will be employed at all times where cuts in soil banks for conventional installation of creeks, canals, water-ways, roads etc. require banks to be cut for approach or pipe installation. Topsoil will be segregated and placed back on top of the completed backfill.
- 10.5.20 The Contractor shall segregate the entire topsoil layer for the working width of the ROW (if less than 12 inches) or up to a maximum of 12 inches of topsoil (if topsoil layer is greater than 12 inches) from graded areas in the following areas **ONLY**:
- cultivated or rotated croplands, and managed pastures;
 - residential areas;
 - hayfields;
 - wetlands, non-saturated; and,
 - other areas as required by an individual landowner or land managing agency.
- 10.5.21 Topsoil shall be segregated from all other spoil. The methodology used by the Contractor shall be subject to approval by the Company. Any additional topsoil segregation requirements will be identified on the “Right of Way Land Owner Line List”. Maintain separation of salvaged topsoil and subsoil throughout all construction activities. Segregated topsoil may not be used for padding the pipe, constructing temporary slope breakers or trench plugs, improving or maintaining roads, or as a fill material.
- 10.5.22 Stabilize topsoil piles and minimize loss due to wind and water erosion with use of sediment barriers, mulch, temporary seeding, tackifiers, or functional equivalents, where necessary per the “Erosion and Sediment Control Plan”.
- 10.5.23 Contractor will leave ditch plugs or other means for livestock to travel across ditched areas for access to food and water.
- 10.5.24 No fishing in privately owned ponds; no firearms; no hunting; no pets allowed on Company’s Right of Way.
- 10.5.25 No alcoholic beverages and/or ‘energy drinks’; and no illegal and/or un-prescribed drugs, allowed on Company’s Right of Way.
- 10.5.26 Trench Breakers will be installed on all terraces and steep slopes utilizing polyurethane foam having a minimum two (2) pound density.
- 10.5.27 Rocks 4-inches and larger disturbed by construction of the pipeline will be picked up and disposed of by Contractor at a location that is approved by the Company, except in AG areas where rock 3” and larger shall be removed.
- 10.5.28 Contractor will properly prepare ground and apply seed, fertilizer and agricultural lime to the easement and all temporary workspace area in accordance with specific seed mix and fertilizer specifications if specified by a landowner and listed in the ROW “Special Provisions” or as listed herein. The reseeding specifications shall meet the requirements of the local ASCS office or as required by landowner. Non-vegetated areas shall be

returned to preconstruction condition.

10.5.29 There shall be no smoking within any Company facilities.

10.5.30 There will be a speed limit enforced on the ROW, temporary access roads and permanent access roads of 20 MPH unless otherwise specified by the Landowner Line List.

10.5.31 There shall be no removal of artifacts.

10.5.32 All vehicles are subject to search.

10.5.33 There shall be no non-employee individuals allowed on ROW or Company facilities.

10.5.34 All employees are required to attend Environmental and Safety Training prior to commencement of Work.

10.6 All landowners require a minimum of 48 hour notice before Contractor entry, or as required in any landowner special conditions. Landowner notification will be made by a Company ROW agent, Contractor to provide notification requirements to Company agent a minimum of 96 hours prior to entry.

11.0 ENVIRONMENTAL PERMITS PLAN AND PROCEDURES

11.1 All construction activities shall be performed in accordance with all environmental plans and permits, included in Attachment B.

11.2 Contractor shall install temporary and permanent trench plugs and waterbars in accordance with the E&S Control Plan.

11.3 Prior to construction, the Contractor shall meet with Company environmental consultant to review all environmental concerns. All Contractor's employees and Subcontractors will be required to attend an environmental awareness review prior to any activities on the right-of-way. This orientation will be held daily for new personnel who have not attended the initial meeting. The Contractor's supervisory personnel will be required to attend an environmental orientation prior to construction

11.4 Company will provide Contractor with a copy of the Company's construction permits applicable for the Work. Contractor shall perform the Work hereunder in strict conformance with the Company's environmental permits and Company's environmental compliance plans.

11.5 Contractor will find enclosed within the Bid Documents, Company's Erosion and Sediment (E&S) Control Plan. Contractor shall adopt the E&S Control Plan and comply with all requirements included in the plan throughout the performance of the Work.

11.6 Contractor shall complete for Company's approval ten (10) days before commencement of Work, Attachment D-1 of the Spill Prevention Control and Countermeasures Plan (SPCC Plan), found in the *Construction Environmental Requirement*" Book. Company will provide a generic SPCC plan for Contractor to incorporate as part of their plan.

11.7 The Contractor shall employ its best efforts in accordance with common industry practices to return all areas disturbed during the Work to pre-construction contours, revegetated, and stabilized per the Erosion and Sediment Control Plan, ROW "Special Conditions" and all applicable permits.

11.8 The E&S Control Plan and/or the Environmental permit includes the Environmental details for each typical crossing. The Contractor shall install, maintain and remove temporary erosion and sediment controls as required, and shall include compliance with required erosion and sediment control in

Contractor's mainline installation lump sum price.

- 11.9 The Company Environmental Inspector, in compliance with the E&S Control Plan documents enclosed within these Bid Documents, will provide guidance to Contractor on required erosion and sediment control structures and the Contractor will be responsible for compliance with the E&S Control Plan and Environmental permit.
- 11.10 The E&S Control Plan with attached typical details shall be followed for all open trench "watercourse" crossings.
- 11.11 Open-cut water crossings will be constructed per the Erosion and Sediment Control Plan; methods Contractor to use best judgment as to crossing method and all costs must be included in the base installation price.
- 11.12 The Company shall provide an environmental monitoring inspection staff throughout the construction of the pipeline. The Company environmental inspection staff will verify contractor compliance with all received environmental permits, authorizations, and approved plans, including cultural resources. The Contractor is responsible for adhering to received environmental permits, authorizations, and approved plans and providing environmental crews specialized in the installation of environmental best management practices and project special conditions.

The Contractor shall adhere to the direction and guidance given by the environmental inspection staff. The Contractor shall coordinate and communicate with the environmental inspection staff on a daily basis

12.0 SAFETY

- 12.1 Contractor shall comply with Company's safety requirements as set forth in Attachment F "Company's Safety Procedures", with respect to conduct of its activities on Company's or other's property.
- 12.2 Company will provide Contractor with Company's Safety Manual for distribution to Contractor and its subcontractor personnel upon request.
- 12.3 Contractor shall be responsible for ensuring its personnel and those of its subcontractors have successfully completed safety training required by Company. No Contractor or subcontractor personnel will be allowed on Company's right-of-way without proper safety credentials.
- 12.4 The Contractor shall comply with all of the provisions included in the Company's "Contractor Safety Manual", included in Attachment F. The Contractor shall have a written Fire Protection Plan, and at a minimum shall include the following:
 - Fire Retardant Clothing (FRC) and fire retardant vests as outlined in the "Personal Protective Equipment (PPE)" section above.
 - One designated Fire Watch individual (with spark shield) on the firing line and one with the pipe gang, during all above ground welding or grinding, to be maintained for at least one-half hour after the work is completed.
 - One designated Fire Watch individual (with spark shield) during all trench (tie-in) welding or grinding, to be maintained for at least one-half hour after the work is completed.
 - Provision for two (2) fire extinguishers on hand with the pipe gang.
 - All other Fire Protection and Prevention provisions shall be in compliance with the COMPANY's "Contractor Safety Manual."

13.0 WELDING AND NON-DESTRUCTIVE EXAMINATION (NDE)

- 13.1 Contractor shall utilize Company welding procedures or prepare documented welding procedure(s) for Company review and approval. The final approved welding procedure shall govern the performance of all welds that become a permanent part of the Work. Welding procedure test shall meet the requirements outlined in API Standard 1104, latest edition and approved by DOT Part 195. Use of Company procedures shall not relieve Contractor of any liabilities to perform quality welds in accordance with Company's specifications nor will Company be liable for any delays and/or extra work attributed by Contractor from the use of Company procedures.
- 13.2 Contractor shall perform welder qualification tests in accordance with API Standard 1104, latest edition and referenced by DOT Part 195.
- 13.3 Unless otherwise approved by Company, all procedure and welder qualification tests shall be performed employing the same Company provided material for pipelay Work. Contractor shall be responsible for the preparation of pup pieces for testing.
- 13.4 Contractor shall make available sufficient number of proposed welders/welding operators at the time of qualification testing to allow achieving the required number of Company approved welders within seven (7) working days. Otherwise, Contractor shall be responsible for Company's further inspection and administration cost.
- 13.5 A Company qualified representative must be present during all procedure and welder qualification testing.
- 13.6 All welds and all welding operations shall be completed at the end of each day's production, unless otherwise approved by Company's Representative.
- 13.7 Contractor will provide NDE contractor for 100% inspection of welds and shall provide the necessary transportation along the ROW for NDE Contractor. All welds shall be subjected to 100 percent NDE inspection in accordance with API Standard 1104, latest edition and approved by DOT Part 195 and subject to 100 percent ongoing audit. Contractor is responsible for storage of all records until project is complete, and shall maintain a record of each weld.
- 13.8 CONTRACTOR SHALL FIELD VERIFY ALL MEASUREMENTS.
- 13.9 A qualified welding inspector shall witness all welding of all process, gas transmission, hazardous liquids, or other types of pressurized piping including temporary welds.

14.0 BURIAL AND SPECIFIC CROSSING REQUIREMENTS

- 14.1 The standard minimum cover of installed pipeline is 48-inches all areas, with the exception of 60-inches on road crossings. Cover is measured from top of cut to top of the pipe except for locations where the pipe has weight coating or weights added. In such locations the cover is measured to the top of the weight or weight coating.
- 14.2 The minimum cover in the ROW of most public roads from the lowest point of barrow ditches to the top of pipe in all public and private road crossings is 60-inches. All lease, private, public, township, county, state and federal roads are included.
- 14.3 The minimum cover below road surface at all public road crossings shall be not less than 60-inches or as shown on the Company's construction Drawings and/or in the "Right of Way Landowner Line List" and/or Web-Based GIS Map or any Permit Drawings.
- 14.4 The minimum cover below the base of rail for active railroad crossing shall be as specified on the Permit Drawings or 11-feet minimum below the base of the rail.

- 14.5 Contractor shall install the pipe in all open-cut water crossings with minimum 60-inches of cover.
- 14.6 The minimum clearance between Company's pipeline and foreign pipelines at foreign pipeline crossings shall be 24-inches if open cut, 36-inches if bored, 10-feet if HDD, or the minimum distance required by the foreign pipeline owner/operator, whichever is greater, unless otherwise approved by Company. Contractor will have no recourse against Company for the greater clearance distance required by the foreign pipeline owner/operators.
- 14.7 Where the proposed pipeline crosses or parallels existing foreign pipelines (and/or other utilities) the Contractor shall, prior to ditch excavation, locate them and flag their location. The Contractor shall include all foreign line crossings that are shown on the construction drawings in the base lay price. It is the responsibility of the Surveyor to fill out the COMPANY Foreign Line Crossing Form. The CONTRACTOR shall air bridge all foreign line crossings
- 14.8 The Contractor shall, at its own expense, confirm or determine in advance of actual construction the precise location and actual depth of all utilities and subsurface structures and pipelines that either cross or are in close proximity to the proposed pipeline. Contractor shall report to Company the discovery of any existing pipelines and other facilities not identified by Company furnished Web-Based GIS Map, maps and Drawings.
- 14.9 Contractor is to insure that the ditch is free from any rocks, limbs or any object or discontinuity in the ditch that may damage the coating or pipe wall. Contractor personnel cannot enter the ditch to remove rocks or debris unless the ditch excavation and ingress/egress ramps or ladders meet OSHA excavation standards for personnel entry.
- 14.10 The striking, cutting, damage, modification, destruction, or crushing of drain or irrigation tiles and required repairs associated with such damage in accordance with the Environmental Plans, Landowner requirements, and the terms of the Master Construction Agreement, whether or not such drain or irrigation tiles were known or unknown (mapped or not) at the time of execution of this Agreement.

15.0 PIPE BENDS

- 15.1 Contractor will field bend the new 20" pipe to the extent possible as set forth in Company's Pipeline Construction Specifications.
- 15.2 For the 20-inch and 16inch, at all PI locations less than 25°, a field (cold) bend will be used. At all PI locations 25° or greater, a segmentable elbow shall be used. The Company shall supply a sufficient number of 20-inch and 16-inch 3R segmentable elbows in 45° and 90° increments to be trimmed accordingly for use along the pipeline route.

For bends in excess of those that can be successfully made in the field within Company's specifications, Company has elected to provide Contractor with segmentable elbows or induction bends and are listed on Company's Web-Based GIS Map. The Contractor will be required to transition bevel the bend or the adjoining pipe bevel to within 0.093" of the adjoining line pipe or install a transition piece of pipe. The Contractor will not be granted additional payment if it elects to install additional bends in lieu of field bending. Contractor will provide experienced and skilled workman fully capable of installing such bends as required. Contractor should consider any cost associated and include such costs in the Contractor's lump sum firm offer.

- 15.3 The Contractor shall meet the requirements of ASME B31.4 Figure 434.8.6-2 "Acceptable Butt Weld Joint Design for Unequal Wall Thicknesses." In locations where the wall thickness transition is greater than 3/32", the Company will not supply transition pieces. In these locations, the CONTRACTOR shall cut a 14 to 30 degree taper on the thicker pipe. This includes, but is not limited to, transitions to road crossing pipe, HDD pipe, and facility piping.

- 15.4 Any field bends that do not meet minimum standards after the caliper pig run will be removed and replaced at Contractor's expense.

16.0 HORIZONTAL DIRECTIONAL DRILLS

- 16.1 Company shall review and approve Contractor's HDD plan and any subcontractor or vendor or supplier utilized to perform horizontal directional drills.
- 16.2 Company has determined certain water bodies and other crossings will be installed utilizing Horizontal Directional Drilling (HDD). The crossings shall be installed by HDD and shall be included in the lump sum pricing in the Contractor's submittal form in Part IV.
- 16.3 The Contractor shall perform all necessary One-Calls and notify the pipeline owners prior to any HDD activity in the vicinity of the crossings.
- 16.4 Company will provide 20-inch pipe coated with FBE coating and an abrasion resistant overlay (Powercrete R95) for the specified HDD. Powercrete R95 shall be applied per manufacturer's specification.
- 16.5 Travel through HDD alignments is not allowed in most cases and shall only occur only where designated on HDD drawings.
- 16.6 Implementation of the Inadvertent Return Contingency Plan (Attachment B).
- 16.7 Contractor shall perform a 4-hour pre-installation test at a minimum test pressure of 1850 psig as designated on the HDD drawing or as designated by a company representative. Hauling, transporting, pumping and metering of Contractor supplied water for HDD operation's and pretest of the HDD crossings is the responsibility of Contractor and shall be included in Contractor's lump sum pricing. All Directional Drill crossing water and drilling mud will be properly disposed of in accordance with regulatory and Company rules and regulations and is the responsibility of Contractor and shall be included in Contractor's lump sum pricing. Disposal within the Pipeline ROW is prohibited unless otherwise permitted by the Company.
- 16.8 Contractor is to flock all girth welds for the HDD pipe with FBE and Powercrete R95 coating as per Clause 6.13 above.
- 16.9 Any water body crossings, public and/or private road crossings or other locations not addressed specifically in the pay items of Part IV is to be installed by a method determined by the Contractor and is to be included in Contractor's lump sum price for each segment installation of the pipeline. Should Contractor encounter locations or conditions that Contractor deems would be a candidate for directional drilling, Contractor has the option to install the pipeline using directional drilling techniques, if the required line pipe is available. However, should Contractor decide to employ directional drilling techniques at locations and in situations where Company did not identify directional drilling as a requirement, cost of such directional drilling is at Contractor's expense and must be included in Contractor's lump sum firm offer. Company will not pay additional compensation for directional drilling installation after Contractor's bid is accepted and the construction contract is executed. If Contractor desires to use directional drilling in locations not identified by Company, Company supports Contractor in that decision, however, the cost of the installation on Contractor's lump sum price will be the total amount paid to Contractor for that Pay Item regardless of Contractor's method of installation.
- 16.10 Contractor will be responsible for all sound barriers, if required.
- 16.11 Contractor may be required to adhere to restricted working times in residential/urban areas.

- 16.12 The HDD Contractor shall mark the drill path on the surface with survey fuzz and pin flags for use by the Surveyor for as-built purposes. This can be done during drilling by placing markers when locating the line with a walk over or working the offset from the Tru Tracker wire.
- 16.13 The Contractor shall send a pig with a sizing plate of the correct size through the HDD following pull back.

17.0 PUBLIC ROAD AND RAILROAD CROSSINGS

- 17.1 Company has determined there are Township, County and/or State public, private lease roads that will be affected by this project. For the purpose of the lump sum pricing the road will be bored/installed per the applicable permit requirements. However there may be some private roads, lease roads, field roads, etc. that may require conventional boring based on landowner request. See landowner line list, GIS Web Based Tool or Part IV.
- 17.2 The Contractor shall comply with all state and local traffic control requirements including the development of traffic control plans and the use of warning signs and flagman. In doing so, the Contractor shall hire a Traffic Control Firm (in urban and suburban areas only) to develop a comprehensive Traffic Control Plan. The choice of Traffic Control Firm shall be mutually agreed upon by the Company, the Contractor and the government entity affected. The price associated with providing a Traffic Control Plan shall be included in the pipeline bid but rather will be considered an extra to this Scope of Work.
- 17.3 Company will provide pipe, as shown on the Web-Based GIS Map, coated with FBE coating and an abrasion resistant overlay (Powercrete R95) for the crossings specified to be bored. (Quantities indicated under materials furnished by Company under Attachment C).
- 17.4 The backfill for open cut road crossings shall use Controlled Density Fill (CDF). CDF shall be backfill material which is a flowable, excavatable, self-compacting and self-leveling material, which after solidifying will have the structural characteristics of a well-compacted load bearing soil. The CDF shall be installed to a point to allow two six (6) inch lifts of compacted fill on top of the CDF and the appropriate black top or asphalt thickness to grade. The compaction, type of fill and paving material shall be in accordance to County requirements where the crossing is located.
- 17.5 Boring will extend the full width of the crossing ROW.
- 17.6 Contractor is to flock all girth welds per Clause 6.13 above.
- 17.7 All road, railroad and other non-environmental permits shall be provided by the Company Right-Of-Way group.

18.0 STREAM AND WETLAND CROSSINGS

- 18.1 Contractor shall cross streams and wetlands in accordance with the E&S Control plan and permit restrictions. A listing of stream and wetland crossings is provided in Attachment B.
- 18.2 Wetland and Stream Crossings consist of all work necessary for the complete crossing construction of wetland and stream crossings of the listed as specified in the Contract Documents. This item shall include all mats, single layer, necessary for maintaining equipment and material during the course of work.

19.0 WEIGHT FOR BUOYANCY CONTROL

- 19.1 Contractor shall furnish and install all weights or weight coating required for buoyancy control across water crossings and wetlands as shown on the Construction Drawings and/or Web-Based GIS

Map. The Contractor is ultimately responsible for furnishing and installing all weights which are required to ensure the negative buoyancy of the installed pipeline.

19.2 The amount of weight coating or saddle bags used for weighting are specified in the table below:

Pipe Size	Concrete Coating Thickness (in)	Saddle Bag Spacing (ft) Per 5000lb Dry Saddle Bag
Line Pipe: 20", 0.380" Wt.	3.5	20
Crossing Pipe: 20", 0.456" Wt.	3.0	20
Crossing Pipe: 20", 0.594" Wt.	2.5	30
Line Pipe: 16", 0.375" Wt.	2.5	35
Crossing Pipe: 16", 0.438" Wt.	2.0	40
Crossing Pipe: 16", 0.562" Wt.	1.5	65

20.0 HYDROSTATIC TESTING

The following MUST be done before any test water is introduced into the system or any dewatering takes place:

- 20.1 The Contractor shall include a minimum of two (2) cleaning pig runs per hydrostatic test section prior to filling the pipeline with water for the hydrostatic testing.
- 20.2 The Contractor shall use Sunoco Construction Specifications procedures and forms.
- 20.3 The Contractor shall hydrostatically test the pipeline for a minimum stabilized test pressure of eight (8) hours to a minimum of % of MOP ($1.25 \times 1480 \text{ psig} = 1850 \text{ psig}$) at all points along the pipeline route.
- 20.4 The Company shall provide a hydrostatic test target pressures and elevation profiles. The Company shall provide the Contractor a site specific Hydrostatic Test Plan, as provided in Attachment B. The Company shall provide the water source. The Contractor shall be responsible for all documentation per CFR Title 49, Part 195.
- 20.5 Dewatering will be conducted through permit approved discharge structures. The Contractor shall comply with all governing authority rules and regulations, and the applicable Permits and Restrictions. The contractor shall comply with the environmental specifications.
- 20.6 The Contractor shall hydro test pipe for HDDs prior to pull back in accordance with Sunoco Specification PR-11-0004 which can be found in Attachment B. Contractor is responsible for providing the test water for these tests. The water will be recycled between tests. Contractor is responsible for transporting this water from test to test. The water can be discharged at the designated sites for the mainline hydro test.
- 20.7 The Contractor shall supply all Frac tanks, hoses, pumps, valves, fittings, plugs, necessary discharge piping, etc. necessary for the hydrostatic test, as part of the hydrostatic test cost. The Contractor shall provide all other instruments and equipment necessary to monitor and document the pressure test (i.e. dead weights, pressure & temperature recorders, valves, pumps, etc.).
- 20.8 The Contractor shall also provide documentation regarding the valid / current calibration of the test equipment. This documentation is listed in Sunoco Logistics Specification PR-11-0004. The Contractor will provide a designated individual solely responsible for coordination and providing all documentation to the Company or designee.

- 20.9 Hydrostatic test water shall be drawn only from hydrostatic permit approved sources or obtained from Contractor identified approved offsite providers. The Company will be allowed to test offsite provided hydrostatic test water in accordance with Company requirements and specifications. Discharge must be tested and returned to the source or an approved discharge location and in accordance with the stipulations identified within the Company obtain applicable Hydrostatic Discharge Permit. Discharge must be filtered as per Permit requirements.
- 20.10 Contractor is responsible for filling line with water, air removal, testing, de-watering, and drying as outlined in Company's Pipeline Construction Specifications, latest edition. Contractor is responsible to complete these tasks in accordance with all permits and engineering requirements.
- 20.11 Contractor to provide all temporary materials required for fabricating temporary pig launchers and receivers and shall fabricate and install temporary pig launchers and receivers, test headers, and supply all other temporary materials and all equipment, which includes, but may not be limited to fittings, valves, pigs, calibrated recorders and dead weights, hoses and enclosures with 3rd party certification of all test documentation necessary to complete all required testing of the completed pipeline. On all temporary test headers and/or temporary traps the MTR's must be supplied and on Site as well as all welds shall be x-rayed and MT on Site
- 20.12 Contractor shall, test an additional 180 feet of each line pipe and 180 feet of bore pipe, which includes but may not be limited to test headers on any additional items to test these joints within the pipeline hydrotest.

21.0 RECORDS

- 21.1 Pipeline Safety Regulations and Regulatory Agency's regulations require that Company preserve certain records. Contractor shall cooperate with development and documentation of records as requested by Company's Representative.
- 21.2 Contractor shall keep and furnish complete records of all phases of the testing program.
- 21.3 Contractor shall record and maintain a log on a daily and monthly basis of water used for horizontal directional drills (if utilized).
- 21.4 HDD documentation, profiles, charts, etc. shall be submitted in an AutoCAD 2010 or later version file within fourteen (14) days of completion of successful drill and pull back.
- 21.5 Contractor shall record and provide Company's Representative, the date, time, location, total volume, maximum rate, and methods of all water discharged to the ground or surface water in association with trench dewatering.
- 21.6 Contractor shall provide Company's Representative with copies of Material Safety Data Sheets (MSDS) for all chemicals used during construction of the pipeline.
- 21.7 Hazardous waste manifests will be provided to Company's Representative on a weekly basis or as appropriate.
- 21.8 Contractor shall provide an electronic (Latest Edition of AutoCAD) as-built report for each horizontal directional drill.
- 21.9 Contractor shall provide Company with a copy of all records and inspection reports required by the Erosion and Sediment Control Plan.
- 21.10 Contractor shall remove seed labels, as each bag is emptied, and submit the labels to Company's Representative at the time of seeding.

- 21.11 Contractor shall complete a caliper survey report detailing the time and activities for completing the caliper surveys. The report shall include a summary review/analysis of all findings and/or actions resulting from the caliper survey.
- 21.12 Contractor shall provide written acknowledgement from appropriate Township/County/State road and bridge authorities acknowledging their satisfaction with conditions of roads and bridges after movement of equipment by Contractor as a condition of retainage payment.

22.0 DOCUMENTATION

The CONTRACTOR shall note that certain documentation, submittals, and reporting requirements are required by this General Scope of Work. These shall include, but not be limited to:

Key Milestone Schedule (within 7-Days of signing the Agreement)

The CONTRACTOR shall prepare and submit to the COMPANY within 7-days after signing the Agreement, a Key Milestone Schedule detailing all phases of the Scope of Work. This schedule shall be prepared using either Microsoft Excel ®, Microsoft Project ®, or other COMPANY approved software and shall outline key milestones within the execution of the Scope of Work, including but not limited to, mobilization, key construction steps, hydrostatic testing, final tie-ins, commissioning, final clean-up and demobilization.

Weekly 3 Week Look-Ahead Schedule (Weekly as Agreed Upon)

The CONTRACTOR shall prepare and submit to the COMPANY a Weekly 3 Week Look-Ahead Schedule showing the activities planned, manpower requirements, and any other special requirements including, but not limited to, permits, material receipts, material shortages, etc. for the upcoming 3 week period. The 3 Week Look-Ahead Schedule shall be submitted on a day and time agreed upon between COMPANY and CONTRACTOR, throughout the performance of the work.

Weekly Progress Report (Weekly as Agreed Upon)

The CONTRACTOR shall prepare and submit to the COMPANY a Weekly Progress Report showing the scheduled progress versus actual progress from the previous week, including an itemized breakdown of the percent complete of key milestones within the execution of the Scope of Work as detailed by the initial Key Milestone Schedule. The Weekly Work Schedule shall be submitted to the COMPANY on a day and time agreed upon between COMPANY and CONTRACTOR, throughout the performance of the work. The COMPANY shall use these reports for progress tracking and documentation of the project.

Unpriced Copies of Purchase Orders (within 3-Days of Order)

The CONTRACTOR shall submit to the COMPANY un-priced copies of purchase orders for all CONTRACTOR'S furnished equipment and materials within 3-days of their purchase.

Hydrostatic Test Procedure (1-Week Prior to Hydrotesting)

The COMPANY shall submit a detailed hydrostatic test procedure to the CONTRACTOR. This procedure is outlined in the Sunoco standards.

Hydrostatic Test Records (within 24-hours following test)

The CONTRACTOR shall submit to the COMPANY all required hydrostatic test charts and test logs within 24-hours following completion of the test. When approved by the COMPANY, a complete package must be submitted by the CONTRACTOR within 2 weeks. Dewatering may NOT take place prior to approval of the hydrostatic test by the COMPANY. The hydrostatic test results shall include at a minimum: original hydrostatic test chart recorder wheel (with the following info on the front: signature of both the inspector and the test technician, name of the hydro test COMPANY, date, start and end points / location / name of piece(s) or part(s) being tested), the hydrostatic test equipment calibration certification, and the hydrostatic test technician operator qualification / certification.

As-Built Red Line Mark-Ups of Construction Drawings (within 2-weeks after completion)

The CONTRACTOR shall be responsible for maintaining an updated and accurate set of red lined drawings (for both the pipeline and the stations) during the execution of the Scope of Work. Red lined information shall include, but not be limited to, dimensional information for piping fabrication, depth of cover, orientation, materials, tag numbers, etc. Progress red line drawings shall be submitted to the COMPANY with each invoice. A completed clean and legible set of the red lined drawings shall be submitted to the COMPANY within 2-weeks following completion of the work as a record of the work performed and use in preparation of As-Built Drawings.

23.0 CONSTRUCTION OVERSIGHT

The CONTRACTOR shall be responsible for all construction oversight services as required in execution of the Scope of Work, including but not limited to, the following:

- Designated Construction Manager: The Contractor shall designate a full time, competent individual to serve as construction manager for the performance of the Work. This individual shall have full authority to act on behalf of the Contractor including, but not limited to, the authority to supply additional labor or equipment, procure materials and services, and make scheduling decisions as necessary for the execution of the Work.

The Contractor may not replace the individual designated as Construction Manager without prior consent of the Company. This is intended to ensure consistency and continued progress within the execution of the Work.

- Designated Construction Materials Manager: The Contractor shall designate a full time, competent individual to coordinate with the designated Materials Management Company, acting on behalf of the Company. This individual shall have full authority to act on behalf of the Contractor including, but not limited to, request for material release on the behalf of the Contractor, planning for materials needs for a 2 week look-ahead period, material inspection upon receipt by Contractor, and submitting all material rejections within a period of 2 weeks.
- Designated Hydrostatic Test Document Coordinator: The CONTRACTOR shall designate a full time, competent individual to coordinate all of the documentation necessary for all hydrostatic tests. This individual shall have full authority to act on behalf of the CONTRACTOR including, but not limited to, collection and organization of all documentation listed in the Sunoco Logistics – Construction and Maintenance Checklist and Sunoco Specification PR-11-0004, Pressure Testing of US DOT Part 195 Regulated Pipelines. This individual shall coordinate directly with an engineer designated by the COMPANY a minimum of 5 business days prior to the scheduled hydrostatic test.
- Designated Safety Officer: The Contractor shall designate a full time, competent individual to serve as safety officer for the performance of the work. The Contractor shall provide one safety officer per Spread.
- Designated Document Control Manager: the Contractor shall designate one or more full time document control individual(s) to manage and coordinate all construction document changes and updates to SharePoint. This individual shall be the interface between the Contractor and Company.

ATTACHMENT F

COMPANY SAFETY

If not attached hereto, Company's Safety Handbook has been supplied to Contractor by Company's Representative and are incorporated herein by this reference.

EXHIBIT "F"

SAFETY AND SECURITY REQUIREMENTS FOR PIPELINE AND TERMINAL FACILITIES

SUNOCO LOGISTICS



Sunoco Logistics



Sunoco Logistics Contractor Safety & Security Requirements

General

It is Sunoco Logistics' goal to manage all construction projects to a plan of "Zero Accidents." Sunoco Logistics' contract representative will provide all general contractors working in and around projects with an overview of Sunoco Logistics' Safety and Security requirements. Each contractor will comply with all federal, state and local regulations, and any safety requirements Sunoco Logistics has listed pertinent to the job. The standard safety practices for general industry, construction, and the petroleum business must also be followed. All Sub-Contractors are also bound by the same regulations as the general contractor, and it is the general contractor's responsibility to inform and require all sub-contractors to follow Sunoco Logistics' safety and security regulations. The Contractor shall conduct operations in a manner which shall prevent personal injury and property damage through fires, accidents, or otherwise, and to this end the Contractor shall furnish all necessary protective equipment and devices as stated in the Work Permit or other documentation, unless specified otherwise in the Contract. **Contractor shall provide at no cost to Owner all personal protective equipment, air monitoring devices, and other safety equipment unless otherwise specified by the Contract.**

Sun's representative will conduct a Pre-Bid meeting, a Pre-Construction meeting, or both. During these meetings, Sun's representative will provide an overview of the contents of this document, discussing the minimum general and project specific safety requirements. Each contractor is then required to designate a project safety representative, develop a project specific Site Safety Plan and train all project personnel and subcontractor personnel in the project specific Site Safety Plan **PRIOR** to the commencement of any work. The plan and its contents are discussed in more detail in this document.

Pre-Construction Meeting

All Contractor and subcontractor's personnel, who shall be working at Sunoco Logistics' facilities or Right of Ways, regardless of the type or duration of Work, shall attend a pre-construction safety meeting. This meeting shall be conducted by Sunoco Logistics' representative, and shall generally cover Sunoco Logistics' facility safety procedures and operating procedures. Material Safety Data Sheets (MSDS's) for Sunoco Logistics' hazardous materials present at the worksite will also be reviewed at this meeting. Sunoco Logistics' representative and all Contractor personnel during the safety meeting shall review this Section, Safety and Security Requirements. A safety meeting attendance sheet shall be completed and filed in Sunoco Logistics' facility project files.

All subsequent workers, primary contractor employees, or sub-contracted employees must have the same information presented to them. This communication and acquisition of signatures is the responsibility of the Primary Contractor Rep.

The Work Permit form shall be reviewed during the Safety meeting.

Start-of-Work

Upon daily entrance onto Sunoco Logistics' work sites, all Contractor personnel shall identify themselves to Sunoco Logistics' representative, and will sign-in. Sunoco Logistics' representative shall be notified whenever entering or exiting Sunoco Logistics' facility. The prime contractor shall require all sub-contractors to also sign-in and inform the Sunoco Logistics representative of their arrival and departure.

The Contractor shall obtain the required Work Permit(s), before starting any work. The Contractor must inform Sunoco Logistics' representative of all work to be conducted at the worksite and any safety concerns on a daily basis. Sunoco Logistics' representative shall be involved in the general supervision and direction of the work dealing solely with the contractor and **not** with subcontractors. Sunoco Logistics' representative shall have full authority to stop the work when such stoppage may be deemed necessary for safety purposes and/or to ensure proper execution of the contract.

Safety Procedures

Health & Safety Plan

The Contractor shall prepare a Health & Safety Plan for the Work that is being performed. This will include:

- An organization structure chart with the safety representative designated,
- A work plan with a list of tasks,
- Emergency Procedures with directions to the closest hospital,
- Emergency phone number list,
- Specific safety requirements for each task listed in the work plan.

Additional procedures may be required, examples of which are in the list below. A copy of this plan shall be available to Sunoco Logistics or other outside authorities on-site for inspection.

The project specific "Site Safety Plan" shall address the following items to the satisfaction of the construction manager. The construction manager will review the site-specific safety hazards with the contractor before the starting of any work activities. The site safety plan need only address the items that pertain to the work being conducted, which may include:

- Work Permits, including Hot Work
- Confined Space
- API Tank Ventilation Procedure
- Tank Entry and Work Area Ventilation
- Open Excavations
- Flammable and explosion Hazards
- Rigging and Handling of Large or Bulky Lifts
- Ladders and Scaffolding requirements
- Electrical Lockout and Ragout Procedures
- Emergency Response Requirements
- Emergency Response contact list
- Accident and Injury reporting
- Hazard Communication
- Proper Personal Protective equipment required
- Product Transfer on Site - (Tank to Tank or Tank to Truck)
- Line and Tank Purging of Product
- The Contractor is encouraged to contact the Sunoco Logistics Health, Environmental & Safety (HES) Department or facility representative for assistance in developing the project-specific "Site Safety Plan."

Emergency Procedure

- Each site shall develop, post, distribute, and maintain an emergency response list. This emergency response list shall be maintained by the general contractor, managed by the construction group and issued before the start of construction. The general contractor shall update the list as changes occur. An evacuation area will be designated for each job site.
- Sunoco Logistics reserves the right to have the Contractor stop all Work at any time job conditions occur which would endanger personnel or property of either Sunoco Logistics or the Contractor should such Work continue. The Contractor's personnel shall follow the instructions given by Sunoco Logistics' representative during an emergency.
- If a hazardous material spill occurs, only properly trained personnel should attempt cleanup activities. All other personnel should notify Sunoco Logistics' representative immediately.
- The Contractor will make each of his Sub-Contractors aware of these procedures and requirements.

Electrical Equipment - Lockout and Tagout Procedures

- Before any Work is started on electrical equipment, the electrical circuit must be de-energized by turning the control switch to the off position and then locked or sealed in that position.
- Sunoco Logistics' representative must be advised of such de-energizing before work. All OSHA lockout / tag-out procedures must be followed.

Asbestos

Some pipeline coatings may contain non-friable asbestos. Worker exposure monitoring for airborne asbestos has been conducted while removing the pipeline coatings using methods described below. All contractors conducting pipeline coating removal must use the methods listed below and ensure that contractors' employees have been trained in these methods as well as the requirements specified in the OSHA Asbestos Construction standard (29 CFR 1926.1101). Refer to the Training section of this document for more information regarding training requirements for working with pipeline coatings containing asbestos.

Unless there is evidence to the contrary, assume that the pipeline coating contains asbestos, and use the following procedures or equivalent:

- The material shall not be sanded, abraded, or ground.
- All removal or disturbance of pipeline asphaltic wrap shall be performed using wet methods.
- Manual methods, which prevent the material from becoming 'non-intact', shall be used as follows:
 - Wet down the pipe coating with amended water (water with a few drops of a mild dish soap such as Dawn)
 - Strike the coating with a hammer, cracking the coating into relatively large pieces, catching the pieces that fall on plastic sheeting below the pipe.
 - Scrape off any coating that remains on the pipe using a drawknife as needed to prepare the pipe for repair.
 - Decontaminate tools using amended water and double-bag and disposable PPE, plastic sheeting and pipe coating in 6 mil poly bags for disposal
 - Repair pipe as needed
 - Re-coat pipe with non-asbestos coating and backfill excavation.
- Use of respirators, labeled disposal bags, and performance of air monitoring are NOT required for removal of intact non-friable asbestos pipe coating.

Chemicals (Hazard Communication)

Upon request, the Contractor shall supply the Sunoco Logistics Representative with MSDS's for all hazardous materials and supplies brought on the job site which are being used, stored, or installed.

Confined Space Entry Procedures

- Sunoco Logistics requires the Contractor to provide an Oxygen level meter, a combustible gas meter, and detectors for any hazardous substance that could be in or near the confined space. The Contractor is responsible for monitoring the atmosphere whenever his employees are working in a confined space.
- All contractors shall strictly comply with requirements of 29 CFR 1910.146, particularly as it pertains to the confined space attendant. This attendant must be positioned so that all contractor personnel working within the confined space can be kept under observation and communication shall be maintained at all times.
- The contractor shall provide a qualified confined space entry supervisor who shall be responsible for all health, safety, and environmental aspects of confined space work.
- For aboveground storage tanks containing petroleum products, an Oxygen meter and combustible gas meter are acceptable at most facilities. Sunoco Logistics' representative shall use the facility's own monitoring equipment to confirm proper operation of the Contractor's equipment. This shall be done upon issuance of the Work Permit requiring such equipment. The contractor must conduct follow up testing and continuous monitoring. To assure reliability, all air quality testing equipment must be calibrated before confined space entry.
- A Work Permit must be issued before entry into any confined space.
- Sunoco Logistics representative will discuss the following information regarding confined space entry with the Contractor:
 - The Contractor shall be informed that some Sunoco Logistics workplaces contain confined spaces requiring permits and that confined space entry is allowed only through compliance with the confined space entry program.
 - The Contractor shall be informed of the location of all confined spaces on the worksite.
 - The Contractor shall be apprised of the elements, including the hazards identified and Sunoco Logistics' experience with the confined space, that make the space in question a confined space requiring a permit.
 - The Contractor shall be apprised of any precautions or procedures that Sunoco Logistics has implemented for the protection of personnel in or near confined spaces where the Contractor shall be working.
- Sunoco Logistics shall coordinate confined space entry operations with the Contractor, when both Sunoco Logistics' personnel and Contractor's personnel will be working in or near the confined space.
- The Contractor shall be debriefed at the conclusion of the confined space entry operation regarding the confined space entry program followed and regarding any hazards confronted or created in confined spaces during entry operations.
- The Contractor shall obtain any available information regarding confined space entry hazards and entry operations from Sunoco Logistics.
- The Contractor shall inform Sunoco Logistics of the confined space entry program that the Contractor will follow and of any hazards confronted or created in the confined space, either through a debriefing or during the entry operation. These procedures are to be implemented according to Owner's Confined Space Entry Procedures.

Hot Work

- Hot work is defined as any operation or procedure involving sources of ignition or temperatures sufficient to cause ignition of a flammable mixture. This includes work requiring the use of welding, burning, grinding, or soldering equipment, blow torches, some power driven tools, portable electric equipment not intrinsically safe or contained with an explosion-proof housing, sand blasting, or operating internal combustion engines.
- Unless otherwise specified, the contractor shall provide the equipment and qualified personnel to test the work site with a calibrated combustible gas indicator, and hot work shall not commence until the area is tested and declared vapor free and safe for hot work. **A hot work permit** issued by Sunoco Logistics' representative will be used in conjunction with the monitoring. Adequate ventilation shall be provided to

disperse gases, which might otherwise accumulate during progress of work. Where conditions are such that flammable vapors could be generated, the work site shall be kept under surveillance by a combustible gas monitor in continuous use. All hot work shall cease whenever the atmosphere in the vicinity of work reaches 10% of the lower flammable limit (LEL) or greater. Work shall not resume until the source of vapors has been located and controlled.

Fire Protection

- Fire protection and extinguishing equipment must be available and deployed as necessary in all work areas, especially where "Hot Work" is being performed. This includes one or more personnel designated as fire watches, as appropriate. The Contractor will furnish this equipment unless otherwise specifically agreed to in writing by Sunoco Logistics' representative. Before beginning work, the contractors shall determine the type and amount of fire equipment needed.
- The fire watch shall man extinguishers during hot work operations. Depending on the scope of hot work, more than one fire watch may be required.
- Whenever a fire extinguisher has been used, this fact must be reported immediately to Sunoco Logistics' representative. The used fire extinguisher must either be removed from the area or be identified as being spent, or immediately recharged.

Personal Protective Equipment (PPE)

- When working on a Sunoco Logistics job, the Contractor's personnel are required to wear ANSI-approved safety glasses with attached side shields and to be fully clothed, including appropriate foot wear and full length trousers. All PPE must be worn per the manufacturer's instructions. Sun's PPE requirements are attached to the end of this document.
- Special protection, such as particulate respirators or air breathing equipment, may be required especially when working in or around equipment, which has contained leaded gasoline or where exposure of friable asbestos has been identified. The contractor shall ask the Sunoco Logistics Representative regarding the PPE requirements. The Representative will specify other PPE requirements or exceptions on the work permit.

Substance Abuse

- The use of or possession of alcohol, illegal drugs, or the improper use of legal drugs is prohibited within Sunoco Logistics facilities. The contractor's employees, agents, or suppliers shall not enter Sunoco Logistics facilities while under the influence of illegal drugs or alcohol.
- Entry onto the property of Sunoco Logistics constitutes consent on the part of all contractor employees to submit to a substance test when reasonable cause warrants such testing. Such testing shall be conducted at the direction of Sunoco Logistics and at the sole expense of the contractor. Any contractor employee testing positive for alcohol, illegal drugs or the improper use of legal drugs shall be removed from the facility.
- Any Contractor employee removed from Sunoco Logistics facilities under the Substance Abuse policy will be removed for a minimum of one year.
- Any contractor employees using prescription medicine shall notify their supervisor, and where the medication could affect the safe performance of the work, job reassignment will be made. Anyone violating the requirements of this section shall be removed from the facility.

Equipment Inspection

- All equipment, including heavy equipment, must be inspected before use for safe operations.

Training Requirements

HAZCOM (HAZard COMmunication) Training

- If any Contractor personnel handle potentially hazardous materials, then they are required to have Hazard Communication Training. This training includes a review of MSDS's for materials being used as part of the Work, either Sunoco Logistics' or Contractor's materials, plus a review of safety precautions, first aid measures and personal protective equipment required for safe handling of these materials.

Asbestos

Some pipeline coatings may contain **non-friable** asbestos. Contractors conducting pipeline coating removal must ensure that contractors' employees have been trained in these methods as well as the requirements specified in the OSHA Asbestos Construction standard (29 CFR 1926.1101). Refer to the pipeline coating procedure on page three of this document. When installing, removing, repairing, or maintaining intact pipe line asphaltic wrap which contains asbestos fibers encapsulated or coated with bituminous or resinous compounds, compliance with all the requirements below are deemed to be in compliance with the OSHA Construction Standard for Asbestos, 29CFR1926.1101(g)(11) and (k)(9)(viii).

All employees performing work on intact pipeline asphaltic wrap shall be trained as follows under 29CFR1926.1101(k)(9)(viii).

- The training must be conducted in a manner that the employee can understand;
- The employee must be informed of the following:
 - Methods of recognizing asbestos;
 - The health effects associated with asbestos exposure
 - The relationship between smoking and asbestos in producing lung cancer
 - The nature of operations that could result in asbestos exposure, necessary protective controls, work practices, respirators, housekeeping procedures, hygiene facilities, protective clothing, decontamination procedures, emergency procedures, waste disposal procedures, and instruction in these control procedures
 - The purpose, proper use, fitting instructions, and limitations of respirators
 - The appropriate work practices for performing the asbestos job
 - Medical surveillance program requirements (non-required for work tasks with Negative Exposure Assessment)
 - The content of OSHA Standard 29CFR1926.1101
 - The names, addresses, and phone numbers of public health organizations which provide information, materials and/or conduct programs concerning smoking cessation
 - The requirements for posting signs and affixing labels and the meaning of the required legends for such signs and labels.

HAZWOPER (HAZardous Waste Operations and Emergency Response) Training

- For Contractors conducting emergency response or spill clean-up activities, the Contractor employees will have the required OSHA Hazwoper training (29 CFR 1910.120) prior to beginning work. All other contractors will have the Hazwoper Awareness Level training.
- If the Contractor may be involved in an uncontrolled release but will not clean up the hazardous material, then **First Responder awareness level** training is required. This level requires sufficient training or proven and documented experience in specific competencies. Hazardous communication training and general awareness as to the chemicals and hazards located at the site will meet this requirement. This type of training usually involves one to four hours at the work site

- If the Contractor may be involved in an uncontrolled release and will clean up a small release of hazardous material with absorbent pads, then **First Responder operations level** training is required. This is an 8-hour training course.
- If the Contractor may be involved in an uncontrolled release, plan on patching or plugging the release, and will clean up a large release of hazardous material, then **Technician level** training is required. This is a 24-hour training course.
- If the Contractor is going to be involved in disposal and/or clean up of hazardous materials from Sunoco Logistics' facility, then a 40-hour Hazwoper training course is required.

Electrical Equipment - Lockout and Tagout

- The Contractor's personnel are required to have Lock Out/Tag Out training if they will be performing the necessary task to de-energize, lockout and tag out electrical and power sources and equipment on Sunoco Logistics projects.

Confined Space Entry

- All contractor personnel shall have **Confined Space Entry** training prior to entering storage tanks or other areas with limited entrance/egress that are determined to be permit required confined spaces by the Sunoco Logistics representative.

Site Safety Plan

- Each contractor is required to train all project personnel and sub contractor personnel in the project specific site safety plan **PRIOR** to commencement of any work.

PPE

All contractor personnel shall be trained by the contractor on the proper use, care, and storage of the personal protection equipment required during the project.

Training Documentation

- **Before arriving on site** for the start of the Work requiring any of the above training, the Contractor shall give Sunoco Logistics' representative either copies of certificates from a training agency for each employee, or a letter from the Contractor. This letter shall state the names of Contractor employees who attended the training, the name of the trainer and Company who conducted the training, a brief description of the training session content, the length of the training session and when the training took place. No Work shall be allowed to start until the necessary documentation is received.
- Sunoco Logistics shall not be responsible for any costs incurred by the Contractor if Sunoco Logistics rejects any of their personnel due to a lack of Sunoco-required training.

Operational Procedures

Licenses

- The Contractor shall provide Sunoco Logistics with copies of all required Licenses prior to the start of the Work, as appropriate, e.g., lead abatement, asbestos removal, etc.

Area Restrictions

- Contractor personnel must **not** enter any area other than the one in which the Contractor is performing Work. In going to and from such work areas, Contractor's employees must remain on established routes specifically agreed to by Sunoco Logistics representatives.

Blocking Roadways

- In order that fire and emergency vehicles shall have clear access to all parts of the facility, tools, equipment, vehicles, debris, or mobile equipment should not block roadways.

- In the event it is necessary to block a roadway temporarily, permission must be secured from Sunoco Logistics' representative.

Compressed Gas Cylinders

- The following rules must be followed concerning all compressed gas cylinders, including but not limited to, air, oxygen, acetylene, nitrogen, ammonia and hydrocarbons:
 - Cylinders must be removed immediately upon the completion of a job. Sunoco Logistics' representative must specifically authorize exceptions to this.
 - Cylinders must be used, stored, and transported with extreme care.
 - Cylinders must be securely fastened and supported at all times. Chains are recommended for fastening large equipment.
 - Protective caps must be kept on all cylinders not in use; if a cylinder is left unattended with a hose and torch connected, the cylinder valve must be closed, regardless of the duration of time unattended
 - Oxygen and acetylene cylinders stored in the same location must be segregated by a minimum distance of (20 ft), or a five-foot-tall non-combustible fire wall capable of withstanding a fire for one-half hour.
 - The number of cylinders used on a job in an operating area must be kept to an absolute minimum.
 - Cylinders being transported to or from a job by truck or other conveyance must have protective caps and be surely fastened and supported (or be in a suitable cylinder basket). They may not be carried in a choke hitch.
 - Cylinders must be stored away from an operating area with protective caps in place and securely fastened or supported.
 - Oxygen cylinders must not be used or stored where oil spills could come into contact with the valve or attached equipment.

Excavations

- All excavations over 5 feet are to be sloped, stepped back, or shored with adequate designed shoring to protect the contractor's and Owner's personnel and in accordance with federal OSHA standards. Excavations less than 5 feet will require sloping at the discretion of an Owner's competent person.
- All surface encumbrances must be removed or supported to safeguard employees.
- The location of underground utilities and other installations, such as sewer, power lines, water lines, etc. must be determined prior to initiation of excavation through use of the One Call system.
- Utility Companies or Owners shall be contacted and advised of proposed work prior to work.
- When excavations approach the approximate location of underground installations, the location of the installation shall be located using safe and acceptable methods.
- Structural ramps used by employees for entry and egress from the excavation must be designed by competent person
- No employee shall be permitted underneath loads handled by lifting or digging equipment.
- If there is the potential for a hazardous atmosphere, the Contractor will conduct appropriate air monitoring.
- Ventilation shall be provided, when necessary to assure that workers are not exposed to atmospheres containing concentrations of flammable gases in excess of 10 % of the Lower Explosive Limit (LEL)
- Workers may not work in excavations where water has accumulated or is accumulating unless adequate precautions have been taken to assure protection of workers from the hazards of such
 - accumulation.
- Daily inspections of sites must be performed by a "competent person" to determine if cave-ins, failures of protective systems, hazardous atmospheres, or other hazardous conditions have developed.

- Sunoco Logistics' confined space entry procedures are to be followed for excavations which meet the definition of a confined space.
- Contractor must also provide necessary guard rails and night lighting along trenches, roadways or cross walks where operating personnel might be injured.
- Excavations greater than 20' depth require protection designed by a professional engineer.
- Protective shield systems must be from a shield manufacturer, not "home-made."
- Travel distance within an excavation shall not exceed 25' to the nearest ladder or other means of egress.

Dike Walls, Fire Walls and Operating Areas

- No cars, trucks or other internal combustion engine equipment, nor any fire or heat producing equipment shall be permitted inside storage tank dike walls or fire walls without first having obtained a Work Permit from Sunoco Logistics' representative. Contractor equipment must **not** be left operating while unattended in a hazardous area unless specifically authorized by Owner.
- A Work Permit shall be required for the opening of any dike wall or firewall. Any dike wall or firewall opened under authority of such permit, shall be closed at the end of each and every work day. An exception to this requirement would involve a dike wall or firewall where **no liquid material is being stored**.

Temporary Lights & Flashlights

- Lights and flashlights used must be of the explosion-proof type approved as 'Permissible' by Underwriter's Laboratory and/or Mine Safety and Health Administration when used in a potentially explosive area.
- Portable electric lighting used in wet or moist location shall be operated at a maximum of 12 volts.
- No artificial lights, other than the Owner's-approved artificial lighting shall be used inside a storage tank until the tank has been tested and found to be gas free.

Housekeeping

- During the course of the project, all construction operations, alteration, or repairs, shall be performed in accordance with specific OSHA standards (29 CFR 1926.25) applying to housekeeping at worksites. The following general housekeeping requirements shall be strictly adhered to:
 - Form and scrap lumber with protruding nails, and other debris, shall be kept cleared from work areas, passageways, and stairs
 - Combustible scrap and debris shall be removed at regular intervals in a safe manner.
 - Containers shall be provided and used for the collection and separation of waste, trash, oily and used rags, and other refuse.
 - Over-weighting of floors and catwalks with equipment and debris is to be avoided.
 - Curbing is to be installed on scaffolds, catwalks, and upper floor when necessary to prevent debris from falling or spilling overboard.
 - Stairways and passageways are to be kept open and free of obstruction.

Injury to Contractor Employee

- It is the Contractor's responsibility to provide first aid injury treatment, transportation, hospital arrangements, investigation and OSHA reporting of all accidents occurring to Contractor's employee while on Owner's premises or job.
- The Contractor is requested to report such injury promptly to Owner's representative so that appropriate reports can also be filed in Sunoco Logistics' office.
- The Sunoco Incident Reporting and Investigation form (SIRIS form) shall be completed for each contractor injury on a Sunoco Logistics work site.

Line Shut-off

- The opening and closing of any of Sunoco Logistics' valves is to be performed only by Sun's Company's representative, or under his direct supervision.

Parking

- Sunoco Logistics shall cooperate when possible in efforts to provide Contractor's employees parking space within a reasonable distance of the Work site.
- Advance notice of requirements must be given to Sunoco Logistics' representative, who shall advise the Contractor of the approved parking area and the gate which must be used by Contractor's employees to reach the designated area.
- Some facilities require vehicles to be backed into parking places. The Contractor will check with the Sunoco Logistics Representative regarding the parking requirements.
- Contractor's employees must not use parking facilities provided for Owner's employees, unless Owner authorizes such action.
- All Contractor equipment or vehicles should be removed from hazardous areas (e.g.. tank farms) during non-working hours

Photographs

- Photographic equipment is prohibited, except as specifically authorized in writing by Sunoco Logistics.
- Photography using a flash requires a hot-work permit in an operations area.

Railroad Right-of-Ways and Railroad Cars

- Standard clearance of 10 feet from the closest rail shall be maintained so as not to interfere with use of the tracks.

Sanitary Facilities

- The Contractor and subcontractor shall provide sanitary facilities for their personnel, which shall meet applicable local codes.
- The Contractor's personnel are not to use Sunoco Logistics' toilet, locker room, or wash up facilities unless specifically authorized to do so by Sunoco Logistics' representative.

Ladders and Scaffolding

- Ladders and Scaffolds must be of standard approved construction, and must be erected to meet OSHA, state and local codes. The ladders and scaffolds must be constructed/used in accordance with the manufacturer's guidelines.

Signs

- The erection of signs by the Contractor on Sunoco Logistics' property should be discussed with Sunoco Logistics' representative.
- When necessary to erect signs, permission must be given by Sunoco Logistics' management.

Smoking

- Smoking by Contractor personnel in Sunoco Logistics' facility or other work areas is prohibited except where specifically designated by Owner.
- Sunoco Logistics' designated smoking areas or shelters may be used by the Contractor's employees if specifically authorized by Sunoco Logistics' representative. If overcrowding results because of the large number of Contractor employees, Sunoco Logistics' representative shall deny permission to use Sunoco Logistics' facilities.

- Requests for additional or alternate Contractor smoking areas must be submitted to Sunoco Logistics' representative. Written approval must be obtained prior to erection or use of such alternate facilities or area.

Temporary Buildings

- Temporary buildings must not be erected without first obtaining written approval of Sunoco Logistics' representative and then only in accordance with such approval.

Temporary Walks, Floors and Roadways

- Temporary walks, floors and roadways must be installed whenever an existing walk, floor or roadway is disturbed. Sunoco Logistics' representative must approve variance from this.

Utility Connection

- Connection to any of the facility's utility systems (water, electric, plant air, etc.) must be approved through Sunoco Logistics' representative.

- Personal Protective Equipment

1. General Requirements

- Responsibilities

✓ This policy describes the minimum personal protective equipment (PPE) requirements for all employees working in the Pipeline and F&D Divisions of Logistics.

✓ Each facility supervisor, facility manager, or project construction manager has responsibility for assessing the appropriate personal protective equipment and requiring its use. Refer to the attached Hazard Assessment checklist

✓ Logistics Health and Safety personnel will provide management with assistance in evaluating personal protective equipment for any situation.

✓ Contractors must comply with this standard.

✓ Visitors

- The use and type of PPE for non-Logistics visitors is at the discretion of local management.

- General Work Clothing Requirements

✓ Standard work attire includes long pants and a long sleeve shirt. Supervision may make an exception to long sleeved shirts if the scratches, cuts or exposure to poisonous plants does not exist.

- Safety Equipment Requirements

✓ PPE is not normally required in the following areas unless hazardous work activities are being conducted.

- Lunch rooms Offices
- Change rooms
- Control rooms
- Vehicles
- Parking Lots.

✓ Additional PPE will be required under some circumstances depending upon the type of exposures encountered based upon conducting a Hazard Assessment.

- Footwear

✓ Optional use of steel-toed footwear.

✓ Footwear shall have an oil resistant sole and leather 6-inch upper

- ✓ A well defined heel is required
- ✓ Sneakers, docksiders, and other casual shoes are unacceptable
- ✓ Exceptions
 - The 6-inch upper boot is not required for Transport Drivers, Terminal Mechanics and Terminal Operators.
- Eyewear
 - ✓ Minimum acceptable eye protection for work includes industrial strength safety glasses that comply with ANSI Z87.1 - 1989. These glasses shall have permanently attached side shields. Examples include:
 - piano safety glasses with side shields
 - piano safety glasses that go over street glasses
 - prescription safety glasses with side shields
 - goggles or face shields
 - ✓ Additional eye protection is required for other types of hazards. For example, weld grinding would require at least a face shield in addition to safety glasses. Chemical goggles for handling chemical hazards under pressure or gasoline additives. A proper hazard assessment should be conducted by employees to identify additional PPE required for eye protection.
- Hard Hats
 - ✓ Hard hats are required for all construction work
 - ✓ Hard hats are required for electrical work to protect from high voltage electric shock
 - ✓ Hard hats are required during Emergency Response involving heavy equipment
 - ✓ Each workplace, including the Right-of-Way, will identify any work areas that have the potential for head injury and designate them as hard hat required areas. These include shops with cranes in use, restricted spaces with potential for bumping into pipes or appurtenances, etc.
 - ✓ - Hard hats are not required in general work areas
- Nomex Policy
 - ✓ Workers are required to wear Nomex flame retardant clothing where hydrocarbons may be released in sufficient volume and pressure that a flash fire may occur The following situations require flame retardant clothing due to the associated hazards:
 - During initial emergency response, including excavations

- During tie-ins where the line may contain gasoline, crude oil, and LPG
- Around an open line that has contained gasoline
- Within a designated hot zone
- When excavating a pressurized line containing LPG, crude oil or gasoline at Terminals or Pump Stations

2. Training Requirements

- Review requirements of this standard with all workers annually

3. Purpose of the each policy

- Footwear
 - To provide foot protection during work activities
 - To minimize slips and falls, and loss of footing
 - To provide ankle support and lower leg protection
- Eyewear
 - To provide eye protection from flying objects, dust chemicals and radiation that can damage the eye.
- Hard Hats
 - To protect the head from falling objects or striking fixed objects.
- *Nomex Policy*
 - To minimize the severity of burns in the event of a flash fire.

4. Appendices

- Hazard Assessment form attached

Hazard Assessment

(Review with personnel & contractors before a project begins)

Location: _____ Date: _____

Emergency phone numbers:

Sun contact person _____ At _____ - _____
Ambulance phone # _____
Hospital phone # _____
Fire Department # _____
Directions to hospital: _____

Potential Hazards¹

_____ Exposure to vapor	_____ Hydrogen Sulfide present
_____ Pressure in the line	_____ Benzene present
_____ Release of hydrocarbon with pressure	_____ Trenching, sloping, shoring
_____ Fire/explosion	_____ Confined space entry
_____ Equipment connections between underground and surface	_____ Unmarked pipelines, cables, and other hazards
_____ Electric exposure	_____ Poison ivy, oak, etc.
_____ Welding flash	_____ Housekeeping
_____ Slips, Trips, Falls	_____ Pinch points
_____ Terrain	_____ Slings/Rigging failing
_____ Rocky	_____ Falling objects
_____ Slippery	_____ Noisy Equipment
_____ Steep	_____ Other Hazards _____
_____ Other	_____ Other Hazards _____

Required PPE under certain conditions

<u>Condition</u>	<u>Precaution</u>
_____ Line is open	Flame resistant clothing
_____ Noisy Equipment	Hearing protection
_____ Handling materials	Work gloves appropriate for task
_____ Materials stored overhead	Hard hats
_____ Exposure to liquid hydrocarbons	Rubber gloves, e.g., Nitrile
_____ Welding	Welding goggles or hood
_____ When Total Hydrocarbons > 100PPM Measured with GasTech or Draeger tube	Respirators

1 Review MSDS for product hazards and chemical components.

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Contractor Safety & Security Requirements

Contractor Prequalification:

Those contractors not in the ISNET system must go through the "Manual Prequalification" process (PQF). Contractors represent and warrant that: (1) it has received, reviewed and completed the Sunoco Contractor Prequalification Package, which includes the Sunoco Contractor Prequalification form (PQF); (2) all of the representations, warranties and other information provided by Contractor in the PQF are complete and accurate as of the date of the execution of this Contract; and (3) if any facts or circumstances arise that render Contractor's representations and warranties in the PQF inaccurate or incomplete, Contractor will provide prompt written notice to the Contract Specialist, updating the information in the PQF and explaining the circumstances requiring the update. Contractor's failure to comply with the requirements of this Section shall constitute a material breach of this Contract and justify termination. Further, Sunoco, in its sole discretion, may terminate this Contract if it determines that the updated information provided by Contractor impacts Contractor's qualifications or ability to perform the Work. The PQF completed by Contractor and all updates thereto are incorporated into this Contract by reference.

General

It is the goal of Sunoco Logistics Partners L.P. (Owner) to manage all construction projects to a plan of "Zero Incidents." Owner's contract representative will provide all general contractors working in and around projects with an overview of Owner's Safety and Security requirements. Each contractor will comply with all federal, state and local regulations, and any safety requirements Owner has listed pertinent to the job. The standard safety practices for general industry, construction, and the petroleum business must also be followed. All Sub-Contractors are also bound by the same regulations as the general contractor, and it is the general contractor's responsibility to inform and require all sub-contractors to follow Owner's safety and security regulations. The Contractor shall conduct operations in a manner which shall prevent personal injury and property damage through fires, accidents, or otherwise, and to this end the Contractor shall furnish all necessary protective equipment and devices as stated in the Work Permit or other documentation, unless specified otherwise in the Contract. **Contractor shall provide at no cost to Owner all personal protective equipment, air monitoring devices, and other safety equipment unless otherwise specified by the Contract.**

Applicable to Nederland Terminal, Marcus Hook Industrial Complex, and Eagle Point Only: All Contractor and subcontractor's personnel, who shall be working at Nederland Terminal, regardless of the type or duration of Work, shall have at no cost to Owner successfully completed "Basic Orientation Plus" and "Sunoco Logistics Site Specific" training through the Industrial Safety Training Council (ISTC) or an Association of Reciprocal Safety Councils (ARSC) training facility. Proof of completed training will be required prior to entering the facility.

Owner's representative will conduct a Pre-Bid meeting, a Pre-Construction meeting, or both. During these meetings, OWNER'S representative will provide an overview of the contents of this document, discussing the minimum general and project specific safety requirements. Each contractor is then required to designate a project safety representative, develop a project

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specific Site Safety Plan and train all project personnel and subcontractor personnel in the project specific Site Safety Plan **PRIOR** to the commencement of any work. The plan and its contents are discussed in more detail in this document.

Pre-Construction Meeting

All Contractor and subcontractor's personnel, who shall be working at Owner facilities or Right of Ways, regardless of the type or duration of Work, shall attend a pre-construction safety meeting. This meeting shall be conducted by Owner's representative, and shall generally cover Owner's facility safety procedures and operating procedures. Safety Data Sheets (SDSs) for Owner's hazardous materials present at the worksite will also be reviewed at this meeting. Also at that time if the contractor will be introducing chemicals or hazardous materials to the Sunoco site they must provide these SDS's to Sunoco prior to bringing them onsite.

Owner's representative and all Contractor personnel during the safety meeting shall review this Section, Safety and Security Requirements. A safety meeting attendance sheet shall be completed and filed in Owner's facility project files.

All subsequent workers, primary contractor employees, or sub-contracted employees must have the same information presented to them. This communication and acquisition of signatures is the responsibility of the Primary Contractor Rep.

The Work Permit form shall be reviewed during the Safety Kick-off meeting.

Start-of-Work

Upon daily entrance onto Owner's work sites, all Contractor personnel shall identify themselves to Owner's representative, and will sign-in. Owner's representative shall be notified whenever entering or exiting Owner's facility. The prime contractor shall require all sub-contractors to also sign-in and inform the Owner representative of their arrival and departure.

The Contractor shall obtain the required Work Permit(s), before starting any work. The Contractor must inform Owner's representative of all work to be conducted at the worksite and any safety concerns on a daily basis. Owner's representative shall be involved in the general supervision and direction of the work dealing solely with the contractor and **not** with subcontractors. Owner's representative shall have full authority to stop the work when such stoppage may be deemed necessary for safety purposes and/or to ensure proper execution of the contract.

Safety Procedures

Health & Safety Plan

The Contractor shall prepare a Health & Safety Plan for the Work that is being performed. This will include:

- An organization structure chart with the safety representative designated,
- A work plan with a list of tasks,
- Emergency Procedures with directions to the closest hospital,
- Emergency phone number list,
- Specific safety requirements for each task listed in the work plan.

Additional procedures may be required, examples of which are in the list below. A copy of this plan shall be available to Owner or other outside authorities on-site for inspection.

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The project specific "Site Safety Plan" shall address the following items to the satisfaction of the construction manager. The construction manager will review the site-specific safety hazards with the contractor before the starting of any work activities. The site safety plan need only address the items that pertain to the work being conducted, which may include:

- Work Permits, including Hot Work (Owner procedure will take precedence)
- Confined Space
- API Tank Ventilation Procedure
- Tank Entry and Work Area Ventilation
- Excavations and Trenching (Owner procedure will take precedence)
- Flammable and explosion Hazards
- Cranes, Rigging and Cribbing (Owner procedure will take precedence)
- Ladders and Scaffolding requirements
- Electrical Lockout and Tagout Procedures
- Emergency Response Requirements
- Emergency Response contact list
- Accident and Injury reporting
- Hazard Communication
- Proper Personal Protective equipment required (Owner procedure will take precedence)
- Product Transfer on Site - (Tank to Tank or Tank to Truck)
- Line and Tank Purging of Product
- The Contractor is encouraged to contact the Owner Health, Environmental & Safety (HES) Department or facility representative for assistance in developing the project-specific "Site Safety Plan."

Emergency Procedure

- Each site shall develop, post, distribute, and maintain an emergency response list. This emergency response list shall be maintained by the general contractor, managed by the construction group and issued before the start of construction. The general contractor shall update the list as changes occur. An evacuation area will be designated for each job site.
- Owner reserves the right to have the Contractor stop all Work at any time job conditions occur which would endanger personnel or property of either Owner or the Contractor should such Work continue. The Contractor's personnel shall follow the instructions given by Owner's representative during an emergency.
- If a hazardous material spill occurs, only properly trained personnel should attempt cleanup activities. All other personnel should notify Owner's representative immediately.

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- The Contractor will make each of his Sub-Contractors aware of these procedures and requirements.

Electrical Equipment - Lockout and Tagout Procedures

- Before any Work is started on electrical equipment, the electrical circuit must be de-energized by turning the control switch to the off position and then locked or sealed in that position.
- Owner's representative must be advised of such de-energizing before work. All OSHA lockout / tag-out procedures must be followed.

Asbestos

Some pipeline coatings may contain non-friable asbestos. Worker exposure monitoring for airborne asbestos has been conducted while removing the pipeline coatings using methods described below. All contractors conducting pipeline coating removal must use the methods listed below and ensure that contractors' employees have been trained in these methods as well as the requirements specified in the OSHA Asbestos Construction standard (29 CFR 1926.1101). Refer to the Training section of this document for more information regarding training requirements for working with pipeline coatings containing asbestos.

Unless there is evidence to the contrary, assume that the pipeline coating contains asbestos, and use the following procedures or equivalent:

- The material shall not be sanded, abraded, or ground.
- All removal or disturbance of pipeline asphaltic wrap shall be performed using wet methods.
- Manual methods, which prevent the material from becoming 'non-intact', shall be used as follows:
 - Wet down the pipe coating with amended water (water with a few drops of a mild dish soap such as Dawn)
 - Strike the coating with a hammer, cracking the coating into relatively large pieces, catching the pieces that fall on plastic sheeting below the pipe.
 - Scrape off any coating that remains on the pipe using a drawknife as needed to prepare the pipe for repair.
 - Decontaminate tools using amended water and double-bag and disposable PPE, plastic sheeting and pipe coating in 6 mil poly bags for disposal
 - Repair pipe as needed
 - Re-coat pipe with non-asbestos coating and backfill excavation.
- Use of respirators, labeled disposal bags, and performance of air monitoring are NOT required for removal of intact non-friable asbestos pipe coating.

Chemicals (Hazard Communication)

Upon request, the Contractor shall supply the Owner representative with MSDSs for all hazardous materials and supplies brought on the job site which are being used, stored, or installed.

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Confined Space Entry Procedures

- Owner requires the Contractor to provide an Oxygen level meter, a combustible gas meter, and detectors for any hazardous substance that could be in or near the confined space. The Contractor is responsible for monitoring the atmosphere whenever his employees are working in a confined space.
- All contractors shall strictly comply with requirements of 29 CFR 1910.146, particularly as it pertains to the confined space attendant. This attendant must be positioned so that all contractor personnel working within the confined space can be kept under observation and communication shall be maintained at all times.
- The contractor shall provide a qualified confined space entry supervisor who shall be responsible for all health, safety, and environmental aspects of confined space work.
- For aboveground storage tanks containing petroleum products, an Oxygen meter and combustible gas meter are acceptable at most facilities. Owner's representative shall use the facility's own monitoring equipment to confirm proper operation of the Contractor's equipment. This shall be done upon issuance of the Work Permit requiring such equipment. The contractor must conduct follow up testing and continuous monitoring. To assure reliability, all air quality testing equipment must be calibrated before confined space entry.
- A Work Permit must be issued before entry into any confined space.
- Owner representative will discuss the following information regarding confined space entry with the Contractor:
 - The Contractor shall be informed that some Owner workplaces contain confined spaces requiring permits and that confined space entry is allowed only through compliance with the confined space entry program.
 - The Contractor shall be informed of the location of all confined spaces on the worksite.
 - The Contractor shall be apprised of the elements, including the hazards identified and Owner's experience with the confined space, that make the space in question a confined space requiring a permit.
 - The Contractor shall be apprised of any precautions or procedures that Owner has implemented for the protection of personnel in or near confined spaces where the Contractor shall be working.
- Owner shall coordinate confined space entry operations with the Contractor, when both Owner's personnel and Contractor's personnel will be working in or near the confined space.
- The Contractor shall be debriefed at the conclusion of the confined space entry operation regarding the confined space entry program followed and regarding any hazards confronted or created in confined spaces during entry operations.
- The Contractor shall obtain any available information regarding confined space entry hazards and entry operations from Owner.
- The Contractor shall inform Owner of the confined space entry program that the Contractor will follow and of any hazards confronted or created in the confined space, either through a debriefing or during the entry operation. These procedures are to be implemented according to Owner's Confined Space Entry Procedures.

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Hot Work

- Hot work is defined as any operation or procedure involving sources of ignition or temperatures sufficient to cause ignition of a flammable mixture. This includes work requiring the use of welding, burning, grinding, or soldering equipment, blow torches, some power driven tools, portable electric equipment not intrinsically safe or contained with an explosion-proof housing, sand blasting, or operating internal combustion engines.
- Unless otherwise specified, the contractor shall provide the equipment and qualified personnel to test the work site with a calibrated combustible gas indicator, and hot work shall not commence until the area is tested and declared vapor free and safe for hot work. **A hot work permit** issued by Owner's representative will be used in conjunction with the monitoring. Adequate ventilation shall be provided to disperse gases, which might otherwise accumulate during progress of work. Where conditions are such that flammable vapors could be generated, the work site shall be kept under surveillance by a combustible gas monitor in continuous use. All hot work shall cease whenever the atmosphere in the vicinity of work reaches 10% of the lower flammable limit (LEL) or greater. Work shall not resume until the source of vapors has been located and controlled.

Fire Protection

- Fire protection and extinguishing equipment must be available and deployed as necessary in all work areas, especially where "Hot Work" is being performed. This includes one or more personnel designated as fire watches, as appropriate. The Contractor will furnish this equipment unless otherwise specifically agreed to in writing by Owner's representative. Before beginning work, the contractors shall determine the type and amount of fire equipment needed.
- The fire watch shall man extinguishers during hot work operations. Depending on the scope of hot work, more than one fire watch may be required.
- Whenever a fire extinguisher has been used, this fact must be reported immediately to Owner's representative. The used fire extinguisher must either be removed from the area or be identified as being spent, or immediately recharged.

Personal Protective Equipment (PPE)

- When working on a Owner job, the Contractor's personnel are required to wear ANSI-approved safety glasses with attached side shields and to be fully clothed, including appropriate foot wear and full length trousers. All PPE must be worn per the manufacturer's instructions. Owner's PPE requirements are attached to the end of this document.
- Special protection, such as particulate respirators or air breathing equipment, may be required especially when working in or around equipment, which has contained leaded gasoline or where exposure of friable asbestos has been identified. The contractor shall ask the Owner representative regarding the PPE requirements. The representative will specify other PPE requirements or exceptions on the work permit.
- For greenfield projects the contractor should follow the Owners welding PPE requirements.

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Cranes, Rigging and Cribbing

All Contractors and their Subcontractors utilizing cranes, rigging and cribbing during execution of their work shall be solely responsible for the proper setup, inspection, operation, maintenance, and disassembly of said equipment. Contractor and/or

Subcontractor management shall not allow untrained or unauthorized personnel to perform any activities involving the assembly, use, and disassembly of cranes, rigging and/or cribbing.

Contractors and or their Subs should insure that they check with Sunoco safety as Sunoco has specific requirements for Crane Activities. Sunoco requires a lift plan for the following scenarios:

Lift Plans - A Crane Lift Plan is required under any one of the following conditions:

- The lift is greater than 70% of the cranes maximum capacity
- The lift is over pipeline that has the potential to contain product or residual
- The lift is within 20 ft of energized electrical lines
- The lift requires two or more cranes (a dual lift)
- Lifts while a diver is in the water
- The lifted load will be out of the view of the operator
- Personnel lift

The Lift Plan (Appendix A) must be completed and approved prior to work commencing. This means it must be completed in time for all applicable personnel to review and approve. Alternative lifting schemes must be evaluated with consequence potential considered. A trial/test lift (away from the equipment) will be required when possible. Redundant rigging must be considered, all of the rigging components (shackles, slings, etc.) must be inspected by the qualified personnel, and the rigging point for the object being lifted must be inspected. The Crane & Load placement and rigging diagram must be complete including dimensional placement of the crane showing any large.

Substance Abuse

- The use of or possession of alcohol, illegal drugs, or the improper use of legal drugs is prohibited within Owner facilities. The contractor's employees, agents, or suppliers shall not enter Owner facilities while under the influence of illegal drugs or alcohol.
- Entry onto the property of Owner constitutes consent on the part of all contractor employees to submit to a substance test when reasonable cause warrants such testing. Such testing shall be conducted at the direction of Owner and at the sole expense of the contractor. Any contractor employee testing positive for alcohol, illegal drugs or the improper use of legal drugs shall be removed from the facility.
- Any Contractor employee removed from Owner facilities under the Substance Abuse policy will be removed for a minimum of one year.

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- Any contractor employees using prescription medicine shall notify their supervisor, and where the medication could affect the safe performance of the work, job reassignment will be made. Anyone violating the requirements of this section shall be removed from the facility.

Equipment Inspection

- All equipment, including heavy equipment, must be inspected before use for safe operations.

Training Requirements

GHS Hazard Communication Training

- If any Contractor personnel handle potentially hazardous materials, then they are required to have the most up to date GHS Hazard Communication Training. This training includes a review of SDSs for materials being used as part of the Work, either Owner's or Contractor's materials, plus a review of safety precautions, first aid measures and personal protective equipment required for safe handling of these materials.

Asbestos

Some pipeline coatings may contain **non-friable** asbestos. Contractors conducting pipeline coating removal must ensure that contractors' employees have been trained in these methods as well as the requirements specified in the OSHA Asbestos Construction standard (29 CFR 1926.1101). Refer to the pipeline coating procedure on page three of this document. When installing, removing, repairing, or maintaining intact pipe line asphaltic wrap which contains asbestos fibers encapsulated or coated with bituminous or resinous compounds, compliance with all the requirements below are deemed to be in compliance with the OSHA Construction Standard for Asbestos, 29CFR1926.1101(g)(11) and (k)(9)(viii).

All employees performing work on intact pipeline asphaltic wrap shall be trained as follows under 29CFR1926.1101(k)(9)(viii).

- The training must be conducted in a manner that the employee can understand;
- The employee must be informed of the following:
 - Methods of recognizing asbestos;
 - The health effects associated with asbestos exposure
 - The relationship between smoking and asbestos in producing lung cancer
 - The nature of operations that could result in asbestos exposure, necessary protective controls, work practices, respirators, housekeeping procedures, hygiene facilities, protective clothing, decontamination procedures, emergency procedures, waste disposal procedures, and instruction in these control procedures
 - The purpose, proper use, fitting instructions, and limitations of respirators
 - The appropriate work practices for performing the asbestos job

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- Medical surveillance program requirements (non-required for work tasks with Negative Exposure Assessment)
- The content of OSHA Standard 29CFR1926.1101
- The names, addresses, and phone numbers of public health organizations which provide information, materials and/or conduct programs concerning smoking cessation
- The requirements for posting signs and affixing labels and the meaning of the required legends for such signs and labels.

HAZWOPER (HAZardous Waste Operations and Emergency Response) Training

- For Contractors conducting emergency response or spill clean-up activities, the Contractor employees will have the required OSHA Hazwoper training (29 CFR 1910.120) prior to beginning work. All other contractors will have the Hazwoper Awareness Level training.
- If the Contractor may be involved in an uncontrolled release but will not clean up the hazardous material, then **First Responder awareness level** training is required. This level requires sufficient training or proven and documented experience in specific competencies. Hazardous communication training and general awareness as to the chemicals and hazards located at the site will meet this requirement. This type of training usually involves one to four hours at the work site
- If the Contractor may be involved in an uncontrolled release and will clean up a small release of hazardous material with absorbent pads, then **First Responder operations level** training is required. This is an 8-hour training course.
- If the Contractor may be involved in an uncontrolled release, plan on patching or plugging the release, and will clean up a large release of hazardous material, then **Technician level** training is required. This is a 24-hour training course.
- If the Contractor is going to be involved in disposal and/or clean up of hazardous materials from Owner's facility, then a 40-hour Hazwoper training course is required.

Electrical Equipment - Lockout and Tagout

- The Contractor's personnel are required to have Lock Out/Tag Out training if they will be performing the necessary task to de-energize, lockout and tag out electrical and power sources and equipment on Owner projects.

Confined Space Entry

- All contractor personnel shall have **Confined Space Entry** training prior to entering storage tanks or other areas with limited entrance/egress that are determined to be permit required confined spaces by the Owner representative.

Site Safety Plan

- Each contractor is required to train all project personnel and sub contractor personnel in the project specific site safety plan **PRIOR** to commencement of any work.

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PPE

All contractor personnel shall be trained by the contractor on the proper use, care, and storage of the personal protection equipment required during the project.

Training Documentation

- **Before arriving on site** for the start of the Work requiring any of the above training, the Contractor shall give Owner's representative either copies of certificates from a training agency for each employee, or a letter from the Contractor. This letter shall state the names of Contractor employees who attended the training, the name of the trainer and Company who conducted the training, a brief description of the training session content, the length of the training session and when the training took place. No Work shall be allowed to start until the necessary documentation is received.
- Applicable to Nederland Terminal, Marcus Hook Industrial Complex, and Eagle Point Only:

All Contractor and subcontractor's personnel, who shall be working at these locations, regardless of the type or duration of Work, shall have at no cost to Owner successfully completed "Basic Orientation Plus" and "Sunoco Logistics Site Specific" training through the Industrial Safety Training Council (ISTC) or an Association of Reciprocal Safety Councils (ARSC) training facility.

Proof of completed training will be required prior to entering the facility.

- Owner shall not be responsible for any costs incurred by the Contractor if Owner rejects any of their personnel due to a lack of Owner-required training.

Operational Procedures

Licenses

- The Contractor shall provide Owner with copies of all required Licenses prior to the start of the Work, as appropriate, e.g., lead abatement, asbestos removal, etc.

Area Restrictions

- Contractor personnel must **not** enter any area other than the one in which the Contractor is performing Work. In going to and from such work areas, Contractor's employees must remain on established routes specifically agreed to by Owner representatives.

Blocking Roadways

- In order that fire and emergency vehicles shall have clear access to all parts of the facility, tools, equipment, vehicles, debris, or mobile equipment should not block roadways.
- In the event it is necessary to block a roadway temporarily, permission must be secured from Owner's representative.

Compressed Gas Cylinders

- The following rules must be followed concerning all compressed gas cylinders, including but not limited to, air, oxygen, acetylene, nitrogen, ammonia and hydrocarbons:

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- Cylinders must be removed immediately upon the completion of a job. Owner's representative must specifically authorize exceptions to this.
- Cylinders must be used, stored, and transported with extreme care.
- Cylinders must be securely fastened and supported at all times. Chains are recommended for fastening large equipment.
- Protective caps must be kept on all cylinders not in use; if a cylinder is left unattended with a hose and torch connected, the cylinder valve must be closed, regardless of the duration of time unattended
- Oxygen and acetylene cylinders stored in the same location must be segregated by a minimum distance of (20 ft), or a five-foot-tall non-combustible fire wall capable of withstanding a fire for one-half hour.
- The number of cylinders used on a job in an operating area must be kept to an absolute minimum.
- Cylinders being transported to or from a job by truck or other conveyance must have protective caps and be surely fastened and supported (or be in a suitable cylinder basket). They may not be carried in a choke hitch.
- Cylinders must be stored away from an operating area with protective caps in place and securely fastened or supported.
- Oxygen cylinders must not be used or stored where oil spills could come into contact with the valve or attached equipment.

Excavations

- All excavations over 5 feet are to be sloped, stepped back, or shored with adequate designed shoring to protect the contractor's and Owner's personnel and in accordance with federal OSHA standards. Excavations less than 5 feet will require sloping at the discretion of an Owner's competent person.
- All surface encumbrances must be removed or supported to safeguard employees.
- The location of underground utilities and other installations, such as sewer, power lines, water lines, etc. must be determined prior to initiation of excavation through use of the One Call system.
- Utility Companies or Owners shall be contacted and advised of proposed work prior to work.
- When excavations approach the approximate location of underground installations, the location of the installation shall be located using safe and acceptable methods.
- Structural ramps used by employees for entry and egress from the excavation must be designed by competent person
- No employee shall be permitted underneath loads handled by lifting or digging equipment.
- If there is the potential for a hazardous atmosphere, the Contractor will conduct appropriate air monitoring.

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- Ventilation shall be provided, when necessary to assure that workers are not exposed to atmospheres containing concentrations of flammable gases in excess of 10 % of the Lower Explosive Limit (LEL)
- Workers may not work in excavations where water has accumulated or is accumulating unless adequate precautions have been taken to assure protection of workers from the hazards of such accumulation.
- Daily inspections of sites must be performed by a "competent person" to determine if cave-ins, failures of protective systems, hazardous atmospheres, or other hazardous conditions have developed.
- Owner's confined space entry procedures are to be followed for excavations, which meet the definition of a confined space.
- Contractor must also provide necessary guardrails and night lighting along trenches, roadways, or cross walks where operating personnel might be injured.
- Excavations greater than 20' depth require protection designed by a professional engineer.
- Protective shield systems must be from a shield manufacturer, not "home-made."
- Travel distance within an excavation shall not exceed 25' to the nearest ladder or other means of egress.

Dike Walls, Fire Walls and Operating Areas

- No cars, trucks or other internal combustion engine equipment, nor any fire or heat producing equipment shall be permitted inside storage tank dike walls or fire walls without first having obtained a Work Permit from Owner's representative. Contractor equipment must **not** be left operating while unattended in a hazardous area unless specifically authorized by Owner.
- A Work Permit shall be required for the opening of any dike wall or firewall. Any dike wall or firewall opened under authority of such permit shall be closed at the end of each and every workday. An exception to this requirement would involve a dike wall or firewall where **no liquid material is being stored**.

Temporary Lights & Flashlights

- Lights and flashlights used must be of the explosion-proof type approved as 'Permissible' by Underwriter's Laboratory and/or Mine Safety and Health Administration when used in a potentially explosive area.
- Portable electric lighting used in wet or moist location shall be operated at a maximum of 12 volts.
- No artificial lights, other than the Owner's-approved artificial lighting shall be used inside a storage tank until the tank has been tested and found to be gas free.

Housekeeping

- During the course of the project, all construction operations, alteration, or repairs, shall be performed in accordance with specific OSHA standards (29 CFR 1926.25) applying to housekeeping at worksites. The following general housekeeping requirements shall be strictly adhered to:

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- Form and scrap lumber with protruding nails, and other debris, shall be kept cleared from work areas, passageways, and stairs
- Combustible scrap and debris shall be removed at regular intervals in a safe manner.
- Containers shall be provided and used for the collection and separation of waste, trash, oily and used rags, and other refuse.
- Over-weighting of floors and catwalks with equipment and debris is to be avoided.
- Curbing is to be installed on scaffolds, catwalks, and upper floor when necessary to prevent debris from falling or spilling overboard.
- Stairways and passageways are to be kept open and free of obstruction.

Injury to Contractor Employee

- It is the Contractor's responsibility to provide first aid injury treatment, transportation, hospital arrangements, investigation and OSHA reporting of all accidents occurring to Contractor's employee while on Owner's premises or job.
- The Contractor is requested to report such injury promptly to Owner's representative so that appropriate reports can also be filed in Owner's office.
- The Owner Incident Reporting and Investigation form (SIRIS form) shall be completed for each contractor injury on a Owner work site.

Line Shut-off

- The opening and closing of any of Owner's valves is to be performed only by Owner's representative, or under his direct supervision.

Parking

- Owner shall cooperate when possible in efforts to provide Contractor's employees parking space within a reasonable distance of the Work site.
- Advance notice of requirements must be given to Owner's representative, who shall advise the Contractor of the approved parking area and the gate which must be used by Contractor's employees to reach the designated area.
- Some facilities require vehicles to be backed into parking places. The Contractor will check with the Owner representative regarding the parking requirements.
- Contractor's employees must not use parking facilities provided for Owner's employees, unless Owner authorizes such action.
- All Contractor equipment or vehicles should be removed from hazardous areas (e.g.. tank farms) during non-working hours

Photographs

- Photographic equipment is prohibited, except as specifically authorized in writing by Owner.
- Photography using a flash requires a hot-work permit in an operations area.

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Railroad Right-of-Ways and Railroad Cars

- Standard clearance of 10 feet from the closest rail shall be maintained so as not to interfere with use of the tracks.

Sanitary Facilities

- The Contractor and subcontractor shall provide sanitary facilities for their personnel, which shall meet applicable local codes.
- The Contractor's personnel are not to use Owner's toilet, locker room, or wash up facilities unless specifically authorized to do so by Owner's representative.

Ladders and Scaffolding

- Ladders and Scaffolds must be of standard approved construction, and must be erected to meet OSHA, state and local codes. The ladders and scaffolds must be constructed/used in accordance with the manufacturer's guidelines.

Signs

- The erection of signs by the Contractor on Owner's property should be discussed with Owner's representative.
- When necessary to erect signs, permission must be given by Owner's management.

Smoking

- Smoking by Contractor personnel in Owner's facility or other work areas is prohibited except where specifically designated by Owner.
- Owner's designated smoking areas or shelters may be used by the Contractor's employees if specifically authorized by Owner's representative. If overcrowding results because of the large number of Contractor employees, Owner's representative shall deny permission to use Owner's facilities.
- Requests for additional or alternate Contractor smoking areas must be submitted to Owner's representative. Written approval must be obtained prior to erection or use of such alternate facilities or area.

Temporary Buildings

- Temporary buildings must not be erected without first obtaining written approval of Owner's representative and then only in accordance with such approval.

Temporary Walks, Floors and Roadways

- Temporary walks, floors and roadways must be installed whenever an existing walk, floor or roadway is disturbed. Owner's representative must approve variance from this.

Utility Connection

- Connection to any of the facility's utility systems (water, electric, plant air, etc.) must be approved through Owner's representative.

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Hazard Assessment (Review with personnel & contractors before a project begins)

Location: _____ Date: _____

Emergency phone numbers:

Sunoco contact person _____ At _____ - _____
Ambulance phone # _____ - _____
Hospital phone # _____ - _____
Fire Department # _____ - _____
Directions to hospital: _____ - _____

Potential Hazards¹

_____ Exposure to vapor	_____ Hydrogen Sulfide present
_____ Pressure in the line	_____ Benzene present
_____ Release of hydrocarbon with pressure	_____ Trenching, sloping, shoring
_____ Fire/explosion	_____ Confined space entry
_____ Equipment connections between underground and surface	_____ Unmarked pipelines, cables, and other hazards
_____ Electric exposure	_____ Poison ivy, oak, etc.
_____ Welding flash	_____ Housekeeping
_____ Slips, Trips, Falls	_____ Pinch points
_____ Terrain	_____ Slings/Rigging failing
_____ Rocky	_____ Falling objects
_____ Slippery	_____ Noisy Equipment
_____ Steep	_____ Other Hazards _____
_____ Other	_____ Other Hazards _____

Required PPE under certain conditions

<u>Condition</u>	<u>Precaution</u>
_____ Line is open	Flame resistant clothing
_____ Noisy Equipment	Hearing protection
_____ Handling materials	Work gloves appropriate for task
_____ Materials stored overhead	Hard hats
_____ Exposure to liquid hydrocarbons	Rubber gloves, e.g., Nitrile
_____ Welding	Welding goggles or hood
_____ When Total Hydrocarbons > 100PPM Measured with GasTech or Draeger tube	Respirators

Review MSDS for product hazards and chemical components

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Insert contractor company name here

Site Safety Plan for

Insert Project Name

Insert Sunoco Logistics Facility Name here

Emergency Phone Numbers:

Fire 911

Ambulance 911

Police 911

Hospital

Hospital Name	Insert name here
Address	Insert address here
Directions	Insert detailed directions

Insert Contractor Company Name Emergency Phone Numbers:

Name	Title	Numbers

Sunoco Logistics Emergency Phone Numbers:

Name	Title	Numbers

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Serious Incidents:

24 Hour Sunoco Logistics Emergency Number: 800-SUN-CALL (800-786-2255)

Sunoco Logistics Management: Insert Contact Name

Insert Phone No. (Office)

Inset Phone No. (Cell)

Insert Phone No. (Home)

Emergency Response:

In the event of a fire, the following steps will be taken:

1. The first person on the scene shall assess the situation and call Insert emergency number, 911 or direct dial giving the dispatcher all pertinent information including the terminal address, which is:
Insert Sunoco Logistics Facility Address
2. Sunoco Logistics facility manager and operator will also be informed immediately.
3. After the initial steps of responding to an emergency are performed the Insert Contractor Company Name employees must report to the emergency assembly area.

In the event of an injury/incident, the following steps will be taken:

1. The first person on the scene shall assess the situation. If medical assistance above and beyond First Aid is needed an ambulance shall be called for. The person calling for an ambulance shall stay on the line and give the dispatcher all pertinent information including the facility address, which is:
Insert Sunoco Logistics Facility Address
2. In the event of a minor injury that just requires first aid the first qualified person on the scene shall assist the injured person. If the minor injury requires medical attention the injured person should go to:
Insert local hospital name and address
3. All injuries must be immediately reported to the Insert Contractor Company Name foreman who will notify Sunoco Logistics representatives.

Emergency Assembly Area:

Employees will proceed Insert/specify designated assembly point (be specific). All personnel will remain there until everyone that signed in to the Insert Sunoco Logistics Facility Name are accounted for according to the evacuation plan posted in the facility office.

Hazard Communications:

MSDS for all chemicals that are being used on the job are Specify location of Contractor MSDSs. All MSDS for chemicals used by Insert Contractor Company Name employees are also held by their safety director Insert

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Contractor Safety Director Name. MSDSs for all chemicals used by Sunoco Logistics can be found Insert specific Sunoco Logistics Location

Work Permits:

Upon daily entrance into the terminal, the contractor foreman must check in with Sunoco Logistics representatives and sign off on all work to be conducted on the worksite that day and any related safety concerns. The foreman shall acquire the appropriate permits before performing any work that day.

Energized Equipment – Lockout Tagout Procedures

Before any work is performed on and energized equipment, that equipment shall be locked and tagged out according to insert Contractor Company Name and Sunoco Logistics Lockout / Tagout procedures.

Personal Protective Equipment:

All personnel will wear the personal protective equipment appropriate for the task(s) being performed. This will include the following:

- Hard Hat,
- Safety Glasses with ANSI Z87 approved side shields,
- Face shields,
- Gauntlet or welding style work gloves and long sleeve shirts will be worn when grinding, buffing, or torch cutting.
- Low voltage gloves (with a glove rating of 1KV) for performing hot tap procedure on CB-11.
- ABC type Fire extinguishers will be available for all employees performing hot permit work.
- Respirators will be worn for all employees working in areas that may have a hazardous atmosphere, which can be abated by the use of a respirator.
- Employees subject to working areas that have hazardous atmospheres must test that area before entering with the use of an air-sampling meter appropriate for gasses, mists or vapors present in that area.

Confined Space Work

All confined space work will be performed according to insert Contractor Company Name and Sunoco Logistics “Confined Space Entry” procedures.

Hot Work:

1. A hot work permit must be obtained from Sunoco Logistics representatives before performing any hot work.
2. Before and while performing any hot work within the terminal the work site must be tested with a combustible gas indicator. insert Contractor Company Name employees will use a calibrated combustible gas indicator that measures both LEL and oxygen. The air sampling equipment will be calibrated before its use each shift.
3. Two 30 lb. ABC type fire extinguishers will be present when any hot work is performed. A fire watch is required during hot work.

Fall Protection

All work over the height of 6’ will be done according to 29 CFR 1926 Subpart M (Fall Protection).

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Other:

Any work outside the scope of these safety guidelines will be followed according to the insert Contractor Company Name Safety Program or as directed by insert Contractor's Safety Director name.

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The following *THREE EXAMPLES* are provided to assist in completion of JSAs (Job Safety Analysis) for the project. Add, delete, or modify as necessary.

Insert company name here

JSA

Insert Project Name

Insert Sunoco Logistics Facility Name here

Job	Hazards	Abatement
Transporting personnel and equipment to the job site	<ul style="list-style-type: none"> -Vehicular Failures -Driver Failures -Environmental Failures 	<ul style="list-style-type: none"> -Drivers will hold the appropriate licensing for the class of vehicle they are driving. -Driver will perform a pre trip inspection before vehicle departs.
Move in to the job site	<ul style="list-style-type: none"> -Personnel unfamiliar with job site -Lost of loads due to improper material handling procedures 	<ul style="list-style-type: none"> -Hold a site specific safety meeting with all company personnel -Hold a pre-job safety meeting -Provide training for proper material handling and rigging. -Tour the work site and review the work to be done with all personnel.
Excavating & Dirt Removal	<ul style="list-style-type: none"> -Contaminated Soil -Damage to underground piping utilities or conduit -Back Injuries -Struck by injuries 	<ul style="list-style-type: none"> -Observe and test soils for contamination during excavation. -Separate contaminated soil -Locate all underground utilities and other obstructions. -Barricade equipment-operating area. -Hand dig delicate obstructions. -Use proper hand digging techniques to avoid back injuries.

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Insert company name here

JSA

Insert Project Name

Insert Sunoco Logistics Facility Name here

Job	Hazards	Abatement
Installation of Petroleum Counter, Blend Valve, and Temperature Probe.	-Possibility of Electrical Shock	-Lockout Tagout procedures will be followed to Lockout PP2 at JB120
Energizing Tank Lighting and Offload area Lighting	- Possibility of Electrical Shock	-Lockout Tagout procedures will be followed to Lockout PP2 at JB120
Installation of pump #2 (P-2)	-Possibility of Electrical Shock	-Lockout Tagout procedures will be followed to Lockout motor starter #2 (MS-2) at (SW-3) disconnect/breaker.
Installation of pump #3 (P-3)	-Possibility of Electrical Shock	-Lockout Tagout procedures will be followed to Lockout motor starter #3 (MS-3) at (SW-3) disconnect/breaker.
Installation of pump #4 (P-4)	-Possibility of Electrical Shock	-Lockout Tagout procedures will be followed to Lockout motor starter #4 (MS-4) at (SW-3)
Remove motor starter #3 (MS-3)	-Possibility of Electrical Shock	-Lockout Tagout procedures will be followed to Lockout (SW-3)
Circuit Breaker 11 (CB-11) Hot Tap Procedure	-Possibility of Electrical Shock	-Employee will wear all appropriate PPE including but not limited to low voltage gloves (1KV), Hard Hat with face shield or goggles and Rubber insulated shoes or mat. -Employee will have a hot tap watch. -Employee will not wear any conductive or loose clothing.
Installation of lighting power conduit into terminal office	-Foreign object in eye	-Employee will wear appropriate eye and face protection during block drilling procedures.

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Insert company name here

JSA

Insert Project Name

Insert Sunoco Logistics Facility Name here

Job	Hazards	Abatement
Wire Pulling	<ul style="list-style-type: none">-Strained body-Lacerations to hands	<ul style="list-style-type: none">-Employee will use correct body positioning when pulling wire.-If tension of wires being pulled exceeds that which is reasonably handled by one employee wire pulling equipment will be used.-Employee will wear appropriate gloves if there is a possibility of lacerations to the hands due to sharp objects near the pulling area
Cutting and Threading of rigid pipe.	<ul style="list-style-type: none">-Lacerations to hands.-Foreign objects in eyes-Cutting Fluid-Employee being caught in cutting head of threading and cutting equipment.-Possibility of electrical shock	<ul style="list-style-type: none">-Gloves will be worn when there is a chance of lacerations to the hands-Safety glasses will be worn at all times-MSDS for cutting fluid will be kept on site.-Employee will not wear loose clothing or other articles of clothing that could become caught in the cutting and threading head.-Cutting and threading equipment will be used with GFCI protection.
Electrical Grounding	<ul style="list-style-type: none">-Possibility of burns from Cad welding process-Ignition possibilities	<ul style="list-style-type: none">-Employee will wear gloves during Cadwelding operations.-Employee will follow all the guidelines of a hot work permit

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		when performing Cadwelding procedures.
Installation of Tank Lighting	-Falling hazards	-Employee will wear appropriate fall protection when working off of unguarded surfaces over 6'.



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Rooney Engineering, Inc. (REI) is committed to providing a safe and healthy workplace for employees, Contractors, and the general public. Contractors must provide the following safety performance and program information for 1) safety pre-qualification prior to providing contracted services to REI, and 2) annually thereafter. Additional supporting documentation may be requested.

1.0 CONTACTOR INFORMATION

Contractor Name:	
Owner Name or Safety Representative Name:	
Phone number:	
Brief Scope/ Summary of the Service(s):	

2.0 SAFETY STATISTICS

2.1 In the table below, please provide the five most recent full years of your personal/company safety history:

	DESCRIPTION	2010	2011	2012	2013	2014
A	Average Number of Employees:					
B	Employee Hours Worked Per Year:					
C	Number of Workplace Injuries/ Illnesses:					
D	Number of Lost Workday Cases:					
E	Number of Restricted Workplace Cases:					
F	Number of Workplace Fatalities:					
G	Experience Modification Rate (EMR):					

- 1.1 **EMR.** Have you/ your company’s EMR been posted in the above table for the previous five years? Yes No
- 1.2 **Federal or State OSHA Willful Citations.** Have you/your company received any “Willful” citations (including pending) from either Federal or State OSHA in the past five years? Yes No
- 1.3 **Federal or State OSHA Repeat Citations.** Have you/your company received any “Repeat” citations (including pending) from either Federal or State OSHA in the previous five years? Yes No



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1.4 **Federal or State OSHA Serious Citations.** Have you/your company received any “Serious” citations (including pending) from either Federal or State OSHA in the previous five years? Yes No

1.5 **If YES - please describe citations:**

2.0 SAFETY PROGRAM

NOTE: If your safety program has not been pre-approved by REI then you/your company must comply with REI health and safety program prior to performing any contract services for REI.

2.1 **OSHA 300 Forms.** Are you/ your company OSHA 300 logs available for the *previous five years*? Yes *No

o **Note:** If YES, please attach electronic copies of OSHA 300 and OSHA 300A logs for previous five years.

2.2 **EMR Letter.** Are you/ your company EMR information verifiable for the *previous five years*? Yes No

o **Note:** If YES, please attach electronic copies of EMR/discount rate information (cover letter from Insurance Carrier).

2.3 **Health & Safety Program.** Do you/ your company have a written OSHA-compliant health/ safety program? Yes No

o **Note:** If yes, please submit an electronic copy of your written health & safety plan with this questionnaire.

2.4 **Hazard Communication (HAZCOM) Program.** Does you/ your company safety program include a written HAZCOM Program? Yes No

2.5 **Job Hazard Analysis.** Does you/ your company safety program include Job Hazard Analysis for identifying field conditions and hazards? Yes No

2.6 **Personal Protective Equipment (PPE) Assessment.** Does you/ your company safety program include PPE Assessments for identifying field conditions and hazards? Yes No

2.7 **Safety Meetings.** Do you/ your company hold regular safety meetings?
Yes No



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- 2.8 **Safety Meeting Participation.** Do all company employees' participate in safety meetings? Yes No
- 2.9 **Accident Investigations.** Does you/ your company safety program include accident/ incident investigations and root-cause analysis? Yes No
- 2.10 **Stop Work Policy.** Does you/ your company safety program include a Stop Work Policy for unsafe acts, conditions, or behaviors? Yes No

3.0 DRUG TESTING PROGRAM

- 3.1 **Substance Abuse Prevention Program.** Do you/ your company have a written Substance Abuse Prevention program for drug/ alcohol testing? Yes No
- **Note:** If YES, please submit an electronic copy of your written Substance Abuse Prevention plan with this questionnaire for *REI review and approval.*

4.0 SECURITY PROGRAM

- 4.1 **Criminal Background Check.** Do you/ your company have a written criminal background check program for determining a person's security risk? Yes No
- **Note:** If YES, please submit an electronic copy of the criminal background check plan with this questionnaire for *REI review and approval.*

5.0 ADDITIONAL CRITERIA DETAIL

5.1 SafeLandUSA.

- 5.1.1 Does you/ your company utilize SafeLandUSA certification? Yes No

5.2 PHMSA Drug & Alcohol Testing Requirements.

- 5.2.1 Does your Substance Abuse Prevention program conform to PHMSA 49 CFR Part 199 and Part 40? Yes No
- 5.2.2 Do you/ your company perform required PHMSA drug and alcohol history background checks? Yes No
- 5.2.3 Is your company PHMSA Substance Abuse Prevention program PHMSA-compliant and certified by a third party (i.e., NCMS)? Yes No

- 5.2.4 **Note:** If your drug/alcohol screening policy and program have not been pre-approved by REI then you/your company must comply with REI drug/alcohol screening policy and program prior to performing any contract services for REI.



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Criminal Background Check.

5.2.5 Are you/ your company personnel assigned to the REI project cleared by your company's criminal background check and determined NOT to be a security risk? Yes No

5.2.6 ***Note:** If your criminal background screening program has not been pre-approved by REI then you/your company must comply with REI criminal background screening policy and program prior to performing any contract services for REI.

5.3 Contractor Safety Pre-Qualification Affidavit.

5.3.1 If your PHMSA drug testing program and criminal background check program have been approved by REI, do you/ your company certify that all personnel assigned to the REI project (s) will be in compliance to these two requirements? Yes No

5.3.2 **Note:** If REI has approved your company drug testing and criminal background check programs, please sign and submit the following form to the Director of Compliance, or designee: [Appendix E - Subcontractor Pre-qualification Affidavit Form](#).

5.4 Contractor Training Waiver.

5.4.1 In the absence of an OSHA-compliant health & safety program, do you/ your company elect to voluntarily participate In the REI monthly safety meetings? Yes No

5.4.2 **Note:** If your company elects to participate In monthly REI safety meetings, please sign and submit the following form to the Director of Compliance, or designee: [Appendix D - Subcontractor Training Waiver Form](#).

The above information will be used to evaluate each Contractor with regards to safety and health performance. By signing, you are indicating that the submitted information is true and accurate.

Contractor Representative

Printed Name	Job Title	Signature (Electronic acceptable)	Date

Director of Compliance – Rooney Engineering, Inc.

Printed Name	Job Title	Signature (Electronic acceptable)	Date
David Gillespie	Director of Compliance		



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The following information is provided to all Contractors to communicate their responsibilities and to outline Rooney Engineering, Inc. Contractor safety and health review criteria.

CONTRACTOR RESPONSIBILITIES

Note: Contractors will provide this information for pre-qualification and annually, thereafter.

Required information:

- When requested by REI Director of Compliance, provide documentation to demonstrate compliance with all federal, state and local safety and health laws and regulations.
- When applicable, provide REI Director of Compliance the contact information for your representative who will be responsible/ accountable for your personnel safety for the particular project work.
- Manage yourself/your personnel (if applicable) to ensure adherence to all applicable laws, regulations, and to the REI safety, criminal background check and drug testing programs.
- Provide safety training that meets regulatory requirements and assures safe work practices and provide documentation of such training when requested by the REI Director of Compliance.
- Adhere to all Operator site-specific safety and health rules and requirements.
- Upon request, provide REI Director of Compliance with your safety and health plan, when applicable.
- Notify Rooney Engineering, Inc. and/or Operator of any intention to introduce work-related hazards or hazardous materials into the workplace and provide the applicable MSDS for the hazardous materials in advance of the work.
- Become familiar with conditions at the work site that might affect the safety and health of Operator employees, contract employees and/or the general public.
- Promptly notify the Operator of any work-related hazards discovered during the project for which the Contractor is not responsible, or which Contractor cannot correct.
- Conduct/participate in regular safety meetings/job briefings and inspections of Contractor's work areas.
- Ensure the use of all required personal protective equipment (PPE) for protection from hazards.
- Assist Rooney Engineering, Inc. and/or Operator during safety and health related investigations, if requested.
- Disseminate all safety and health information provided by Rooney Engineering, Inc. and/or the Operator.



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- Conduct/participate in site-specific Operator safety and health orientation for contractors.
- Immediately report to Rooney Engineering, Inc. and the Operator any fatalities, injuries, property damage or contact from a representative of a regulatory agency (e.g. OSHA).
- When requested, provide periodic safety performance reports regarding work performed for Rooney Engineering, Inc. and/or Operator, that include but are not limited to:
 - OSHA recordable rate for work performed under contract with Rooney Engineering, Inc.;
 - Employee hours worked;
 - Recap of incidents, accidents, injuries or near misses;
 - Results of accident investigations and action plans;
 - Any regulatory agency inquiries.

CONTRACTOR SAFETY PERFORMANCE ACCEPTANCE CRITERIA

The REI Director of Compliance will evaluate a contractors' safety performance against standardized acceptable safety metrics criteria.

Contractor Safety Performance Acceptance Criteria:

- Worker's compensation experience modification rate (EMR) **ABOVE 1.0**,
- No **job-site fatalities** during the previous five years,
- No **"Willful" or "Repeat"** (including pending) OSHA violations in the past five years,
- Not more than **two "Serious"** OSHA violations in the past five years.

Sunoco Logistics Contractor Safety



Introduction

Welcome to Sunoco Logistics Partners (SXL).

We enlist the full cooperation of each and every person to make our work site as safe as it can possibly be.

We believe that all incidents are preventable by being alert, identifying and controlling hazards, and following safety procedures.

DO IT SAFELY! There is no job too important that you can not take the time to do it safely.

This brochure serves as a reminder of our requirements, but it does not replace our procedures and policies. Our primary goal is a safe job, and we ask for the same commitment from you. Persons who can not meet our safety requirements may be removed from our job sites.

General Safety & Security Requirements

- Smoking is only permitted in designated areas. Smoking is not permitted in vehicles.
- Possessing, using, or distributing alcoholic beverages or illicit /illegal drugs is strictly prohibited on SXL property or job sites. Reporting to work under the influence of intoxicants or drugs is not permitted, and any contractor employees under the influence will be barred from SXL worksites.
- Obtain Work Permits from operations or project personnel before any work begins. Review the permit with the whole crew to ensure safety requirements are understood by all.
- Never open or close valves unless specifically directed by an SXL employee or designee.
- Obtain permission for photographs from Operations or project personnel.



- Immediately report all injuries and incidents to the local supervisor or project management representative. Report damage to any SXL property or equipment, no matter how slight.
- Follow facility / worksite sign-in and sign-out requirements. Comply with requests of facility personnel to inspect all vehicles, packages & materials entering or leaving our workplace.

Start Clean - Work Clean - Finish Clean

- Keep work areas orderly at all times. Stairways and walkways are to be kept open and free of obstruction.
- Do not use the facility trash / scrap containers for personal trash.



Identify Hazards

There are several ways to identify hazards before starting your work. SXL requires all contractor companies to perform the following before work begins:

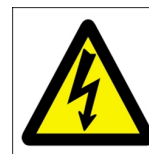
JSA (Job Safety Analysis) – Reviews the specific steps of a job, identifies the job hazards, and actions to minimize the hazard. Must be reviewed each shift or before tasks presenting new hazards.

JHA (Job Hazard Analysis) – A broad overview of an entire project listing the activities the contractor will perform, anticipated hazards for those activities, and preventive measures for the anticipated hazards.

Safety Meetings / Inspections – at a minimum, your company will conduct weekly safety inspections and a weekly safety meeting.

Lockout / Tagout (LOTO)

- De-energize and test all equipment before service work is begun.
- Each Contractor company will follow SXL LOTO procedures, and will sign-on to and apply their locks to the SXL LOTO.



Hot Work

- Obtain a Hot Work permit and conduct continuous monitoring during hot work activities.
- Cell phone use is permitted only outside of petroleum handling operations and equipment.
- Fire Watch personnel must be trained and have this as their sole duty - no distractions.

Excavation Safety

- A Competent Person must conduct an inspection before each shift and after any changes to the excavation environment.
- Excavations greater than four feet in depth must have a ladder, ramp, or stairway within 25 feet of personnel in the excavation.
- Excavations greater than five feet in depth should be considered Permit Required Confined Spaces (PRCS) until cleared and reclassified.

Confined Space Entry

- Follow SXL Confined Space procedures or more stringent procedures of your own. All Confined Spaces shall be considered "Permit Required Confined Spaces" (PRCS) until reclassified.
- Complete a Pre-Job Entry plan, hazard assessment, and work permit prior to entry into the space.
- Conduct atmospheric monitoring prior to entry and continuously during project work.
- A trained "hole watch" must be present. This must be his/her only duty – no distractions.
- When entering PRCS a trained rescue team must be in place and a clear means of summoning them should the need arise.

Fall Protection

- Personal fall arrest systems are required for fall hazards > 6 feet consisting of an approved anchorage, a full body harness, and 100% tie-off using a shock absorbing lanyard, a self retracting lifeline, or a deceleration device.
- All employees must be trained in its use.

Work Safe – Dress Safe

Personal protective equipment (PPE) is your last line of defense and is required on our work sites:

Standard PPE

- Safety glasses with side shields
- Hard Hat
- Safety Toed Boot with a defined heel
- Flame Retardant Clothing (per permit)



Other PPE:

- Established on permit
- All gloves are to have a cuff for wrist protection
- Faceshield protection (with safety glasses) for grinding, cutting & sawing
- Respirators may be required depending on the type of work you will perform. You must be trained by your employer and have proper fit testing and medical evaluation prior to wearing any respirator.

Hazard Communication – your “Right-to-Know”

- Hazardous materials may be present, and it is your right to request and review our Material Safety Data Sheets (MSDSs)
- Your Company will submit MSDSs for any chemicals brought onto our work sites
- Label all containers with the chemical contents and hazard warnings.



Hoisting and Rigging

- A lifting plan is required for all lifts.
- A rigging plan with a diagram will be required for equipment without engineered lifting eyes.
- Maintain a minimum of two feet between spoil piles and the edge of an excavation.



Mobile Equipment

- Only personnel trained by their employer are permitted to operate mobile equipment.
- A “spotter” is required whenever mobile equipment is operating in operations areas around piping, tanks, tank dikes and around electrical lines.
- Seat belts are required to be worn at all times on Mobile Equipment.

Safe Driving

- No cell phone use when driving or operating equipment
- Follow facility speed limits. Leave keys in vehicles parked in operating areas.
- Seat belts must be used by all personnel at all times. Passengers are not permitted in the back of pick-up trucks.
- Never leave a vehicle running and unattended.
- Back vehicles into parking spots; if this is not possible, have a spotter safely guide you when backing.

Ladders

- Portable ladders must be fiberglass and equipped with non-skid shoes (except for trench ladders).
- Ladders must be securely tied off or securely held by another person. Angle the ladder base at a 4:1 ratio with wall.
- Only short duration jobs shall be completed using ladders.
- Defective ladders will not be permitted.

Compressed Gas Cylinders

- Chain or tie cylinders so they can not fall.
- Cap cylinders when stored. Separate oxygen cylinders and fuel cylinders.



Asbestos & Inorganic Lead

- Do not disturb insulation materials and paint coatings without first consulting with SXL personnel as these materials may contain asbestos or inorganic lead.
- Only licensed asbestos / lead contractors are permitted to perform asbestos / lead removal.

Hand Tool Safety

- Always inspect tools prior to use and turn in defective tools to your supervisor. All guards must be in place
- All portable hand tools must be equipped with non-locking triggers.
- All electrical cables (including welding) must be without damage or repairs. GFCIs are required.
- Extension cords should not be run through doorways or windows without a softener
- Keep out of the line of fire to prevent injury.



Heat Exhaustion

- Ensure adequate water is on hand and team members stay hydrated
- When it heats up, provide a shaded area for rest
- Establish a work / rest schedule appropriate for the Heat Index that day.



Our People
Our Contractors
Our Customers



Sunoco Logistics Safety Commitment

I hereby acknowledge that I have received a copy of the Sunoco Logistics Safety Pamphlet, and I understand its contents and will comply with all safety rules and regulations.

Compliance with company, state, and federal regulations only meet the minimum standards for safety. I commit to working safely while on any Sunoco Logistics site or job, looking out for my team and for others who may work along side me.

If for any reason I do not understand a safety requirement, I will ask a Sunoco Logistics representative for further information or clarification.

Name (print): _____

Signature: _____

Company: _____

Date: _____



Our People
Our Contractors
Our Customers



Sunoco Logistics

Mariner East 2

Health and Safety
Ryan Kiley

SXL
LISTED
NYSE

Core Values & Competencies

Move Forward Integrity

- Authenticity
- Candor
- Fairness & Equity
- Respect

Move Forward Excellence

- Expertise in Area
- Setting the Example of the “Safety First Attitude”



Move Forward Innovaton

- Idea Generation
- Idea Sharing and putting them into action
- Maintaining Focus

Move Forward Performance

- Accountability
- Achieving Results
- Always Working Safely

Safety Alignment Pillars

Welcome to Our Team

General expectations meeting:

- Project Inspection Team, Construction and Contractor Management
- Covers main aspects of Health and Safety (H&S):

It's critical for construction teams to engage with H&S:

- H&S professionals
- Please use our H&S Team – it's your resource!

Throwing the Challenge Flag

- **Every employee** has the responsibility to challenge unsafe acts



General Expectations and Requirements

- Contractor HES&S Plan
- Sunoco Logistics HES&S Orientation/Project Specific Orientation
- Event Reporting and Investigations
- Contractor Employee Training
- Statistics and Leading Indicators Tracking

Event Reporting and Investigations

Reporting Expectations

- Report all incidents including near misses to supervisor immediately:
 - through chain of command
 - Contractor Safety communicates with Field Safety
- Report all serious, major and critical incidents verbally ASAP to Safety and Construction Management:
 - through chain of command
 - within 30 minutes (write follow-up report within 24 hours)
- Report all:
 - injuries needing Medical Aid (serious, major, critical)
 - vehicle and equipment incidents – recordable and non-recordable

Training

General Contractors:

- **SXL EXPECTS that all employees are trained and competent in proper procedures and HES regulations for their work prior to beginning work.**
- **Should implement training prior to employees being released to work on SXL ROW:**
 - Site-Specific Safety Plan
 - regulatory requirements
 - applicable industry standard safety training requirements
- **Facilitation of a worksite orientation process for:**

Statistics and Trending

General Contractors

General Contractors:

- **Accountable for:**
 - protecting general public and all workers
 - performing work according to contract (includes safety)
 - controlling worksite and safety at worksite
 - implementing contractor's:
 - safety program
 - safe work procedures

- **Responsible for:**
 - ensuring work-related legal requirements are met

General Contractors

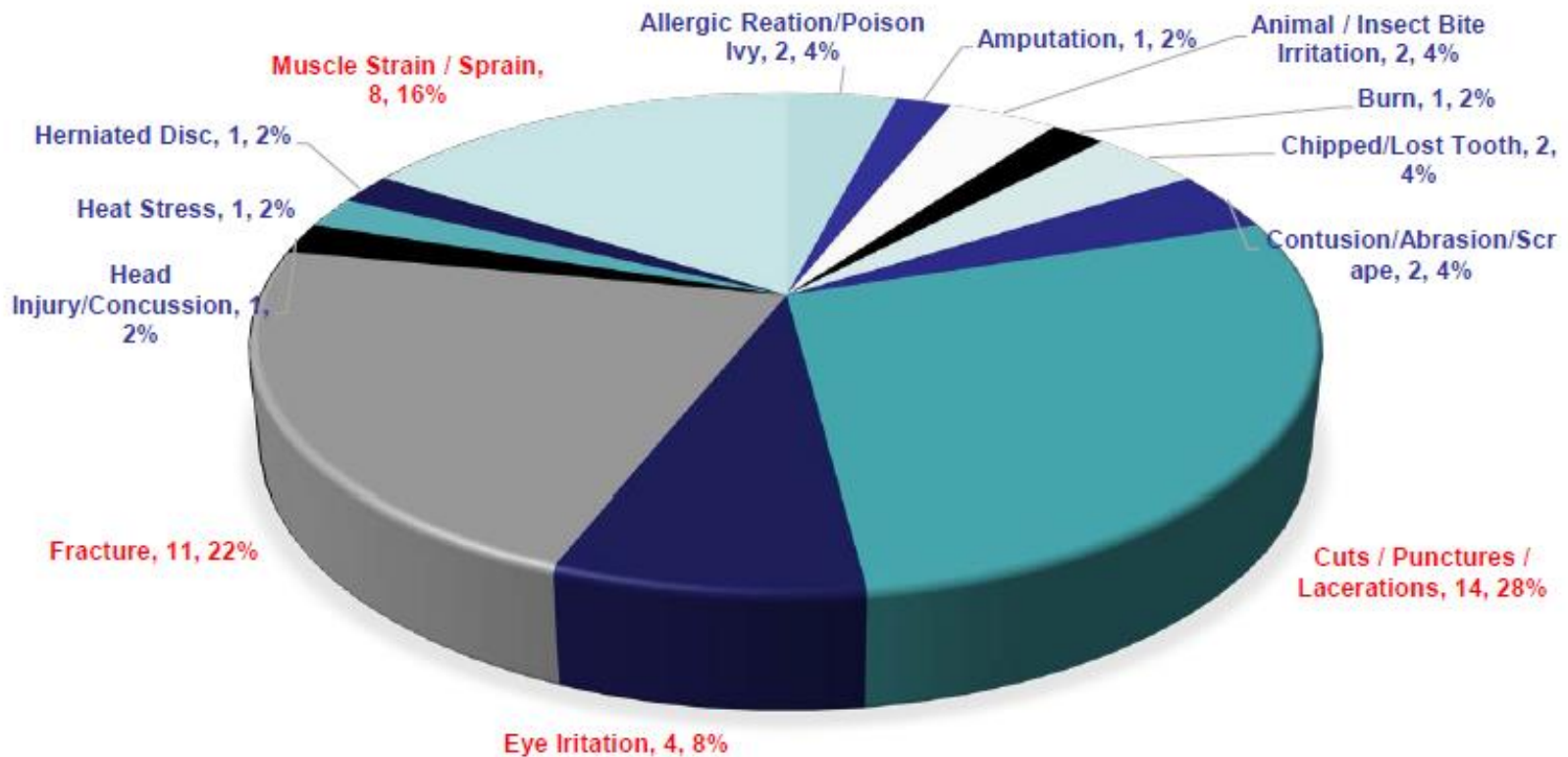
- Understand project safety requirements in all project governance documents and provide the HES&S Plan
- Manage incidents (including Safe Acts, Near Misses)
- Provide worksite orientations, training and on boarding for construction personnel in conjunction with SXL Team
- Monitor workers and worksite activities to ensure that the HES&S Plan is functioning properly and that contract requirements are being met
- Communicate effectively at the worksite:
 - Coordinate worksite safety-related meetings correspondence with all parties – share Lessons Learned, Good Catches, etc.

Auditing & Inspections

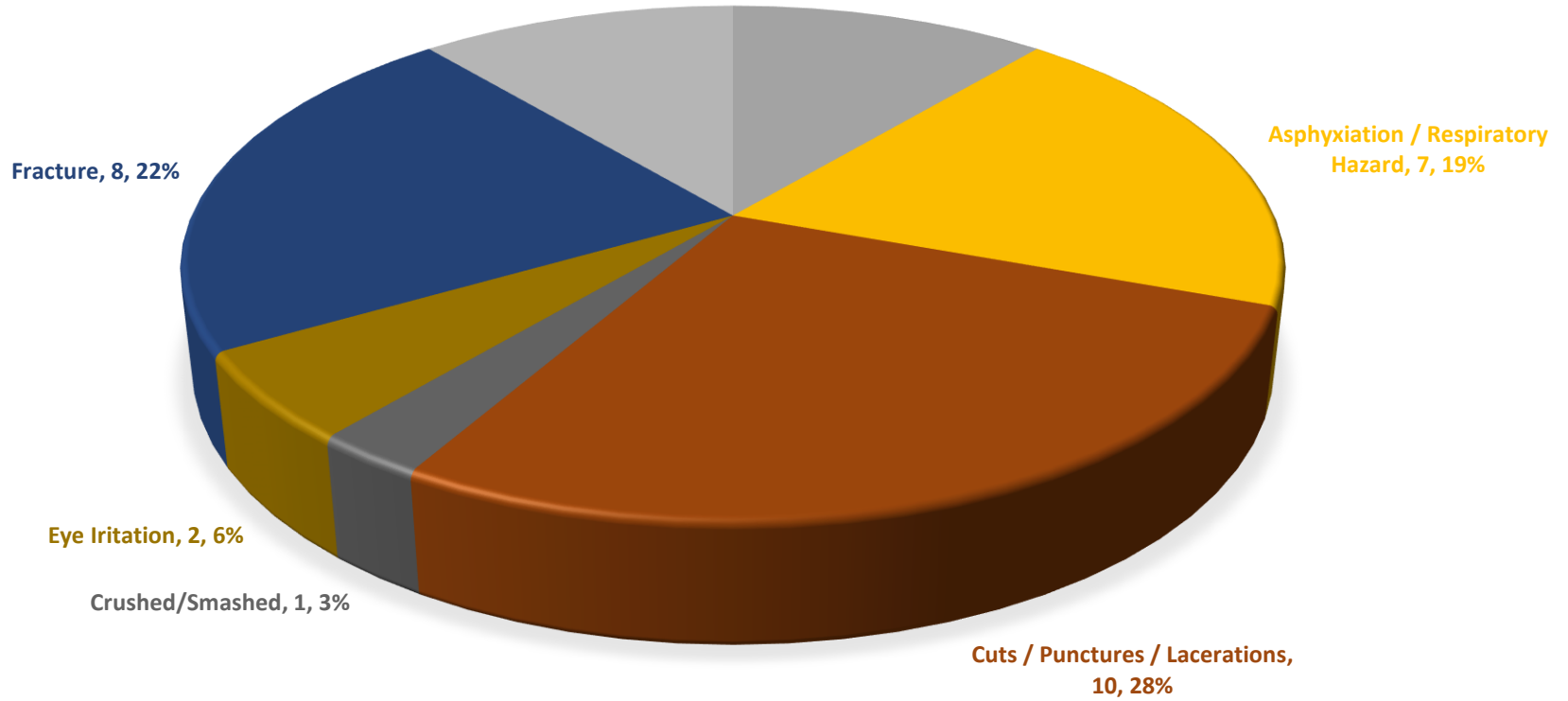
SXL and its authorized representatives:

- Have worksite access at all times for inspection
- Will not monitor activities in a 'controlling or directing' way
- Will communicate effectively with contractor management
- Have the authority to stop or suspend work activities

Looking at The Trends - 2014



CONTRACTOR RECORDABLE



MOVING FORWARD TO WIN




SXL
LISTED
NYSE

SUNOCO LOGISTICS HEALTH AND SAFETY

Pipeline requirements/regulations Overview



DO IT SAFELY

- ▶ Here at SXL, we believe that all incidents are preventable by being alert, identifying and controlling hazards, and following safety procedures
 - ▶ We enlist the full cooperation of each and every person to make our work site as safe as it possibly can be
 - ▶ There is no job too/so important that you cannot take the time to do it in a safe manner
 - ▶ Our primary goal is a safe job, and we require the same commitment from you
 - ▶ Persons who cannot meet our safety requirements may be removed from our job sites!
- 

STOP WORK AUTHORITY- THROW THE CHALLENGE FLAG

- ▶ Each person on our site has the authority, and obligation without fear of reprisal, reprimand, or retaliation to:
 - ✓ **STOP** Immediately any work activity that presents a danger to self, co-workers, contractors, subcontractors, the public, and/or the environment
 - ✓ Be involved, question and rectify any situation identified as out of Compliance with our Safety Policies;
 - ✓ Report any unsafe condition or acts to project leaders and question any work activity that involves the possible violation of established Safety Policies, or safety work rules.
 - ▶ Question everything that doesn't seem right,
 - ▶ Because if it doesn't seem right, it probably Isn't!!!!
 - ▶ Nobody Gets Hurt!


GENERAL SAFETY & SECURITY REQUIREMENTS

- Smoking is only permitted in designated areas. Smoking is not permitted in any vehicle or equipment .
 - ▶ “Foreman” is authorized to designate smoking areas
 - ▶ A can must be provided for all cigarette butts
 - ▶ A fire extinguisher must be placed at all smoking areas
- No photographs are to be taken without prior permission from SXL management.
- Possessing, using, or distributing alcoholic beverages or illicit/illegal drugs is strictly prohibited
- Reporting to work under the influence of intoxicants or drugs is not permitted, and any contractor employees under the influence will be barred from SXL property
- **NO** Fire Arms on SXL Property


SAFETY & SECURITY REQUIREMENTS

- Immediately report all injuries and incidents no matter how slight to the Contractor Safety Representative.

After initial notification of incident/first aid/near miss

- ▶ Contractor has 24hrs in which to submit a written report
 - ▶ Contractor has 36hrs after initial written report to submit a written RCA
 - ▶ (Root Cause Analysis) with preventive actions stated
- 

HOUSEKEEPING

- Housekeeping
 - Keep all work areas orderly at all times
 - No trash or debris is to be left out along the right of way
 - Storage of Material
 - All material and supplies need to be kept organized and in good order
 - All walk ways and drive ways must be clear of trip hazards and ruts
- 

OFF ROAD VEHICLES

(SIDE BY SIDES OR 4 WHEEL ATVS)

In order to operate an off road vehicle (ORV) along the right of way, the operator must have the following:

1. Current valid drivers license
 1. Have passed a online safety training course (Choice of Contractor)
2. Safety flag six feet in height
3. Fire extinguisher, securely mounted
4. Air horn, if vehicles is not equipped with horn
5. Respect and remain off all private property
 - ▶ NO 4 wheel ATV vehicles allowed to be used on SXL ROW

FALL PROTECTION

Personal fall arrest systems are required for fall hazards > **4 feet** consisting of an approved anchorage, a full body harness, and 100% tie-off using a shock absorbing lanyard, or a self retracting lifeline

This policy will be adhered to by employees both in the lay down yard, as well as employees working out along the right of way from vehicles

PERSONAL PROTECTIVE EQUIPMENT (PPE)

(PPE) is your last line of defense and is required on our work sites:

- Hard hat
- Gloves (task appropriate)
- Safety glasses with side shields
- Safety toed boots (with ankle support)
- Reflective vest/and or high visibility clothing
- **Flame Retardant clothing (FR's)**
performing any subsurface work or Initial drilling and/or till 20ft past any known utility locations.
 - * **Subsurface** = Entering equipment bucket, teeth or blade into soil.

Face shield protection (**with foam or tight fitting safety glasses**) for grinding, cutting & sawing –
Review SXL Safety Glasses Policy

PPE

- ▶ “Pancake” welding shields are authorized for use by welders; prior to, and after welding has been completed, all employees are required to wear a hard hat, as well as safety Glasses, 100% of the time

No Exceptions


- ▶ Respirators may be required depending on the type of work you will perform.
- ▶ Personnel must be trained and authorized by employer following medical evaluation and proper fit testing.

MOBILE/HEAVY EQUIPMENT

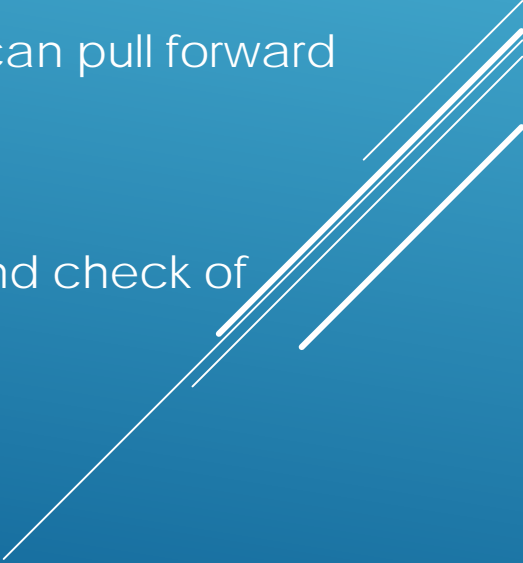
Operators must demonstrate training and qualification to operate heavy equipment

- A backup alarm or **spotter** with signaling device is required whenever equipment is backing
- When equipment must pass under overhead lines
 - ▶ **two spotters** with signaling devices are required to ensure the safe passage
 - ▶ **Goal post** must be erected prior to equipment arriving at access
- Seat belts are required to be worn at all times
- Daily inspections sheets must be filled out and submitted to Contractor Safety Rep weekly
- Cell phone are prohibited from all equipment

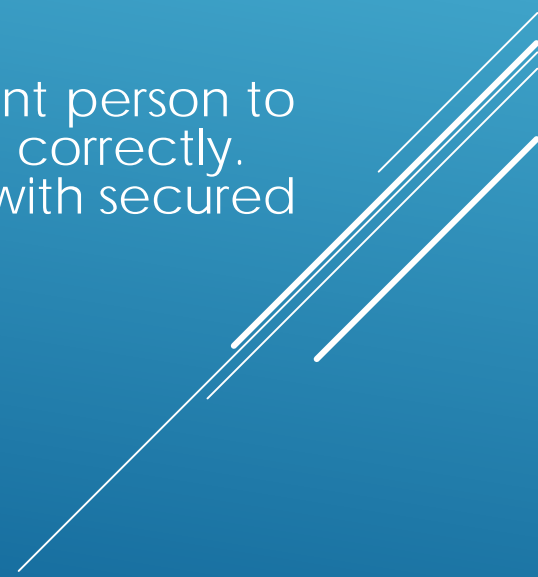
HAZARD COMMUNICATION

- Hazardous materials may be present, and you have the right to request and review Safety Data Sheets (SDSs) provided by your employer and SXL.
 - All contractor companies are required to submit SDSs for all chemicals brought onto our work sites
 - All containers must be identified with the manufacturers label and name of its contents and a hazard warning or labeled accordingly if small quantity is in use.
- 

SAFE DRIVING

- All employees driving vehicles on our site must have a valid drivers license.
 - Cell phone use while driving any vehicle on any of our sites is prohibited. Follow all site speed limits at all times
 - Leave keys in vehicles parked in operating areas.
 - Seat belts must be worn by all personnel at all times.
 - Passengers are not permitted to ride in the back of pick-up trucks.
 - Never leave a vehicle running and unattended.
 - Back vehicles into parking spots and park where you can pull forward first.
 - Use a spotter to safely guide you when backing
 - Before entering a vehicle, perform a 360⁰ walk around check of that vehicle.
- 

EXCAVATION SAFETY

- A competent Person must conduct an inspection **before** each shift and **after** any changes to the excavation environment
 - The contractor is required to provide a list of all competent persons to the SXL Safety Rep prior to the start of a project, and keep this list up to date
 - Excavations greater than four feet in depth must provide proper access/egress within 25 feet of personnel in the excavation
 - It is the responsibility of the contractor/competent person to assure that protective systems are implemented correctly. This may include sloping or use of trench boxes with secured access/egress.
- 


EXCAVATION SAFETY

- Prior to entering any excavation with depths **5 feet or greater**, where there are atmospheric concerns, the competent person shall:
 - Conduct initial atmospheric testing
 - Monitor during occupancy
 - Document the readings on the daily work permit
- When winching vehicle & equipment up and down hills
 - **Process must be reviewed and approved by the following**
 - Contractor Superintendent & Foreman
 - Site Inspector
 - Safety Inspector

GAS MONITORING

- ▶ The Contractor will be required to supply gas monitoring equipment for the project
 - ▶ Monitors to be bump tested on a daily basis
 - ▶ Calibrated monthly
 - ▶ Competent person will perform initial monitoring on ROW and periodic monitoring reading as required

WELDING IN EXCAVATION

- Welding conducted in an excavation will be considered **Hot Work**
 - Contractor is required to conduct **continuous** atmospheric monitoring
 - A trained fire watch present with a 20lbs fire extinguisher readily accessible
 - Fire watch will remain for 30 minutes after completion of hot work
- 

KNOWN FOREIGN LINES

- ▶ The following is the mandatory protocol for excavating around a “known” foreign line.
- ▶ This protocol **MUST BE** adhered to where excavation must take place surrounding every known foreign line.
- ▶ **Failure to follow protocol WILL** result in immediate removal from the project of all offending Required Personnel.
- ▶ Definitions:
 - ▶ KNOWN FOREIGN LINE – is any line which has been previously identified by one or more of the following methods:
 1. Called out on construction alignment sheet
 2. One Call response and flagged
 3. Potholed and/or located

KNOWN FOREIGN LINE

- ▶ REQUIRED PERSONNEL- this is **ALL** personnel who **MUST BE PRESENT AT ALL TIMES** during the excavating process.
- ▶ These personnel include;
 1. Qualified operator OQ'd for digging around foreign lines
 2. Equipment spotter OQ'd for spotting/digging around foreign lines
 3. Company representative – Inspector
 4. Owner of foreign line representative
 5. At least one of the following contractor representatives:

Crew Foreman or "Straw Boss": each OQ'd for digging/spotting around foreign lines.

KNOWN FOREIGN LINES

Required Personnel must be present prior to any work beginning

- ▶ Required personnel **MUST** REMAIN at the site for the entire process.
 - ▶ If for any reason one or more of these personnel must leave the site
 - ▶ work is to be stopped immediately until they return or are replaced by a trained qualified person.

FOREIGN LINE EXCAVATION PROTOCOL

Once a known foreign line is encountered, the crew foreman shall make notification


KNOWN FOREIGN LINES

- ▶ Required Personnel will hold a task-specific JSA to inform all parties of the type of pertinent information known at the time. (i.e. line type (metal, poly, phone, water, electric, gas) possible line product, size, depth “if known”, etc.)
- ▶ The Required Personnel will then review the following protocol:
 - ▶ There **SHALL NOT** be any mechanical digging within 18” on any side (above, below, or either side) of the known foreign line.
 - ▶ All excavator buckets must have “butter bar” welded on teeth when digging.

KNOWN FOREIGN LINE

- ▶ Exposing the line must be done by **manual digging**
- ▶ There shall only be one person giving hand signals to the operator
 - ▶ spotter or a designee of the foreman

The only **EXCEPTION** to this requirement
STOP WORK signal which may be given by any and
all required personnel

A decorative graphic consisting of several parallel white lines of varying lengths, slanted diagonally from the bottom right towards the top right, set against the blue background.

KNOWN FOREIGN LINES

**LINE STRIKES WILL RESULT IN IMMEDIATE REMOVAL FROM
THE PROJECT OF ALL**

REQUIRED PERSONNEL

EVERYONE HAS STOP WORK AUTHORITY AND SHOULD
UTILIZE IT WHEN NECESSARY

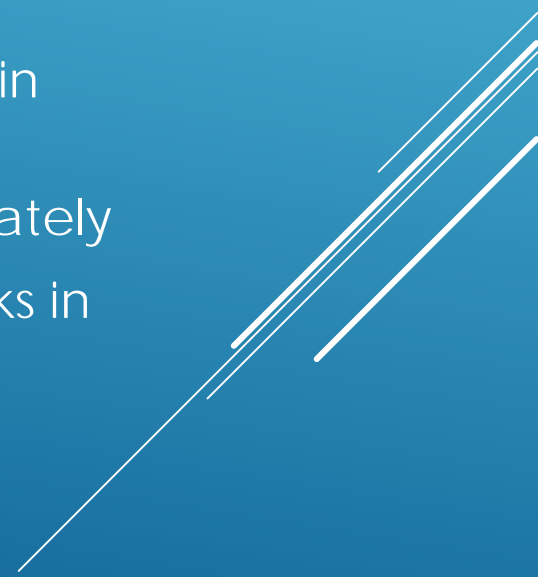
Never proceed with this work if it is in violation of any aspect of
this protocol

LADDERS

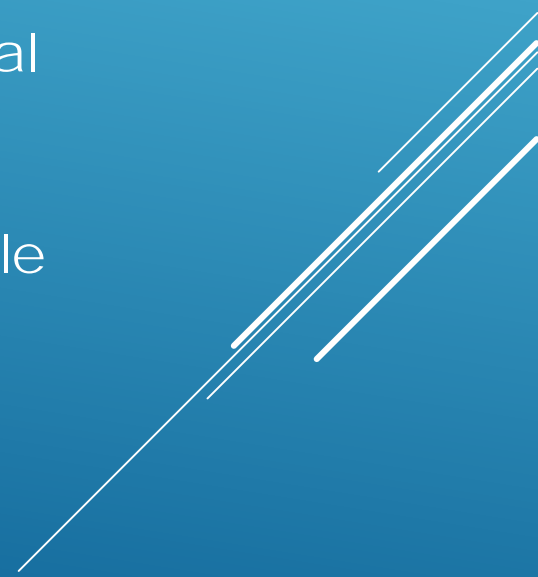
- Portable ladders must be fiberglass and equipped with non-skid feet.
- Ladders must be inspected before use
- All ladders must be securely tied off
- Angle the base of the ladder at a 4:1 ratio with the wall.
- Defective ladders are not permitted

It is the responsibility of the contractor to have defective ladders removed from work site immediately

HAND TOOL SAFETY

- Always inspect tools prior to use and remove all defective tools immediately
 - All portable hand tools must be equipped with non-locking triggers
 - All electrical cables (**including welding leads**) must be without damage or repairs
 - GFCIs are required
 - All hand tools must have all guards and handles in place during use
 - All damaged tools need to be removed immediately
 - All air hoses must have both pins and whip checks in place prior to use
- 

COMPRESSED GAS CYLINDERS/FLAMMABLES

- Chain or tie cylinders so they can not fall
 - Cap cylinders when stored
 - Separate oxygen and fuel cylinders
 - All flammables and combustibles must be properly labeled
 - Stored separately, in containment at a minimal of 25 feet from any open flame, torch or live pipeline
 - Fire extinguisher (20lbs) placed at a reasonable distance
- 

JSA/PERMITTING

JSA (Job Safety Analysis) Reviews the specific safety steps of a job, identifies the job hazards, and actions to minimize the hazard

Must be reviewed each shift and/or before tasks presenting task hazards

- Will be required to be completed by each crew prior to the start of work daily, or when the scope of work changes
- We be made available by each crew to whomever comes onto the site
- Will be reviewed with whomever comes onto the site immediately
- Copies of all daily JSAs will be provided to the SXL Rep on a daily basis

JSA/PERMITTING

Personal Risk Assessment

- ▶ Prior to starting any activity, remember to answer the following four questions:
 1. What am I about to do?
 2. What do I need to do this job and how will I do it safely?
 3. How could I get hurt?
 4. What am I going to do to prevent injury?

ALWAYS

Recognize hazards before they develop

Respond to eliminate or correct hazards

Responsibility for yourself and fellow crew members each day

HDD Inadvertent Return Assessment, Preparedness, Prevention and Contingency Plan

Pennsylvania Pipeline Project

Prepared for:

Sunoco Pipeline L.P.
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Prepared by:

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**December 2, 2016
Revised April 2018**

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A	HDD TABLE
B	INADVERTENT RETURN DATA FORM
C	INADVERTENT RETURN RISK ASSESSMENTS

**HDD INADVERTENT RETURN ASSESSMENT, PREPAREDNESS, PREVENTION
AND CONTINGENCY PLAN
PENNSYLVANIA PIPELINE PROJECT**

1.0 PROJECT DESCRIPTION

Sunoco Pipeline L.P. (SPLP) proposes to construct and operate the Pennsylvania Pipeline Project (Project or PPP) that would expand existing pipeline systems to provide natural gas liquid (NGL) transportation. The Project involves the installation of two parallel pipelines within an approximately 306.8-mile, 50-foot-wide right-of-way (ROW) from Houston, Washington County, Pennsylvania to SPLP's Marcus Hook facility in Delaware County, Pennsylvania with the purpose of interconnecting with existing SPLP Mariner East pipelines. A 20-inch diameter pipeline will be installed within the ROW from Houston to Marcus Hook (306.8 miles) and a second, 16-inch diameter pipeline, will also be installed in the same ROW. The second line is proposed to be installed from SPLP's Delmont Station, Westmoreland County, Pennsylvania to the Marcus Hook facility, paralleling the initial line for approximately 255.8 miles. For a detailed Project Description see Attachment 9 of the Project's Chapter 105 Joint Application for Permit.

2.0 SURFACE AND GROUNDWATER PROTECTION PLANS

SPLP has developed four plans that accompany the Erosion & Sedimentation Plan (E&S Plan). These plans assess the potential impacts and provide for the protection of surface and groundwater due to Project activities. The overarching PPC Plan is designed to address spill prevention, countermeasures, and response in general. Potential impacts to surface waters and public and private water supplies in particular have been analyzed and addressed within two supplemental plans to the PPC Plan: a Water Supply Assessment, Preparedness, Prevention and Contingency Plan (Water Supply Plan); and this Inadvertent Return Assessment, Preparedness, Prevention and Contingency Plan (IR Plan). The Water Supply Plan provides for the assessment of the existing public and private water supplies in or along the Project, as well as identifies prevention and preparedness measures to be implemented to protect those supplies. This IR Plan outlines the preconstruction activities implemented to ensure sound geological features are included in the drill profile, the measures to prevent impact, and the plan to be implemented if an impact were to occur. This IR Plan applies to all trenchless construction methodologies, including horizontal directional drilling (HDD), guided auger bore, cradle bore, conventional auger bore, jack bore/hammer bore, guided bores, and FlexBors. For purposes of this plan, the term HDD shall include trenchless construction methodologies that utilize fluids under pressure. In addition, a Void Mitigation Plan for Karst Terrain and Underground Mining (Karst Plan) is provided as part of the E&S Plan and assesses the potential impacts and avoidance and mitigation measures during open-cut and drilling procedures. The purpose of these plans is to protect surface and groundwater resources Project-wide. The PPC Plan is provided as Attachment 12A of the Project's Chapter 105 Joint Application for Permit, the Water Supply Plan is provided as Attachment 12B, this IR Plan is provided as Attachment 12C, and the Karst Plan as Attachment 12D. These four plans also accompany every E&S Plan developed for the Project under the Chapter 102 regulations.

3.0 INADVERTENT RETURN PLAN

This plan satisfies the requirements set forth in 25 Pa. Code Section 78a.68a and Section 102.5(l), and is in accordance with PADEP's Guidelines for the Development and Implementation of Emergency Response Plans. This IR Plan presents methodologies to control and minimize the impacts to sensitive environmental resources from inadvertent returns (IR) of drilling fluids associated with the proposed HDD crossings along the

construction of the Project. Specifically, these methodologies are divided into three categories as follows:

- HDD site feasibility analysis – IR risk assessment
- HDD implementation procedures – IR preparedness
- IR contingency response

This plan also contains a specific section outlining the procedures to be implemented to avoid potential impacts to the bog turtle (*Glyptemys muhlenbergii*), a federally threatened species. A listing of HDD sites is provided in Appendix A with the special bog turtle HDDs highlighted. Construction personnel will be provided detailed construction plans for each HDD, and will be required to implement all erosion and sedimentation controls and this contingency plan.

4.0 HDD OVERVIEW

HDD is a steerable trenchless method of installing underground pipe, conduit, or cable in a shallow arc along a prescribed bore path by using a surface-launched drilling rig, with minimal to no impact along the bore path. The earliest forms of HDD emerged in the 1960s and have since been greatly improved. HDDs are typically utilized when conventional trenching techniques are not desirable or practicable. It is suitable for a variety of soil and geologic conditions and primarily intended for obstacle avoidance including, but not limited to, river crossings, roads, and environmental features.

HDD Fluids

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 via a fluid stream flowing through the drill annulus between the bore hole and the drill rig.
- Cleaning and Cooling 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 bore wall is reduced by the lubricating properties of the drilling fluid.
- Bore 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.
- 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 aquatic habitats and wildlife 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.

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, or a manmade structure. When this happens, circulation can be lost or reduced. This is a common occurrence in the HDD process that can be effectively managed/controlled and does not prevent completion of the HDD. However, the environment may be impacted if the drilling fluid inadvertently returns to the surface of the ground at a location on a waterway's banks, within a waterway or wetland, or in the vicinity of other potential receptors. When this occurs, it is called an inadvertent return or release. An inadvertent return is an unauthorized discharge of drilling fluids to the ground surface or surface waters, including wetlands, associated with HDD or other trenchless construction methodologies.

5.0 INADVERTENT RETURN MINIMIZATION METHODOLOGIES

The use of HDD for obstacle or resource avoidance during pipeline construction has been extensively utilized for decades with high levels of success. Notwithstanding this fact, inadvertent returns of drilling fluids can occur for various reasons. The following sections detail methodologies to be implemented for the Project with the intent of eliminating or minimizing inadvertent returns based on a sound understanding of the reasons that cause returns.

5.1 HDD SITE FEASIBILITY ANALYSIS AND DESIGN

To ensure the highest probability of success on the proposed HDD installations, SPLP has assembled a technical team (Team) which includes geologists, engineers, scientists, and consultants having expertise in HDD design, construction, subsurface geology/hydrogeology and environmental issues. Provided below are the methodologies the Team employs to eliminate / minimize inadvertent returns.

5.1.1 SITE FEASIBILITY ANALYSIS & IR RISK ASSESSMENT

Feasibility Analysis - Overall

The Team's first step in evaluating a potential HDD location for successful installation was to identify a need (e.g., sensitive habitat, infrastructure) and then perform a feasibility analysis. Previous project HDD data (i.e., Mariner East I projects) was used to assist with this feasibility analysis. Locations where IRs were recorded for Mariner East I projects that also are the locations where HDDs are planned for the PPP are identified in Appendix C and discussed further within those individual assessments. This initial analysis included the following primary constructability areas of review:

- Physical / technical constraints (angle, required depths >5ft at streams and >4 feet at wetlands)
- Practicability constraints
- Geological constraints (karst terrain/carbonate rock/geologic structures)

A general discussion of these constraints is provided within Section 3.2 of the Project's

Trenchless Feasibility Study provided within the Project's Alternatives Analysis of the Project's Pennsylvania Department of Environmental Protection (PADEP) Joint Application for Permit.

Feasibility Analysis – Site Specific

Upon evaluation of the need and positive initial feasibility analysis, planned HDDs were further evaluated utilizing the data already collected during the initial assessment along with site-specific geotechnical and geologic information applicable to the boring locations to make a final feasibility determination. A positive final feasibility determination, then moved the HDD into full design. Project engineers, scientists, and consultants, utilized the site-specific data to design an HDD meeting SPLP specifications along with minimizing the risk of inadvertent return as the highest criteria. In particular, at locations where IRs were noted for the Mariner East I project, the location of the IR, the size of the IR, the drill log, and the design of the IR were all taken into consideration during feasibility and planning. In some, cases such as an early planned drill at the Marsh Creek reservoir in Chester County, the line was rerouted based on these analyses.

With completion of full design, PADEP requested SPLP to provide a risk assessment for each proposed location, and that is provided in Appendix C. Each assessment contains a summary documenting the particular HDD features and assigned an IR risk assessment, as follows:

- Low risk
 - o Geotechnical report indicates non-gravel soils, layers of sand, silt, clay, and/or rock present at HDD profile.
 - o Site considered acceptable – recommend no additional review necessary
- Medium risk
 - o Geotechnical report indicates gravel or cobble present in a high value area (wetland, waterbody, and/or drinking water reservoir).
 - o Identified geological constraints are present and need to be considered
 - o Site considered marginally acceptable – recommend additional site inspections for IR during HDD process
- High risk
 - o Geotechnical report indicates elevated gravel or cobble present in a high value area (wetland, waterbody, and/or drinking water reservoir). High volume of IR anticipated.
 - o Site considered potentially unacceptable – recommend additional inspection and/or further engineering review.

The IR risk assessments and corresponding geotechnical reports are provided within Appendix C. Additionally, available information on geological constraints were assessed in relationship to the HDD location plan and profile drawing locations. None of the risk assessments returned a high risk evaluation result for the HDDs to be implemented for the Project.

5.1.2 WATER SUPPLY PROTECTION

Both public and private water supplies in proximity to and downstream of the Project have been evaluated and described in the Water Supply Plan. Existing location data, as well as consultations with water supply providers, provided the basis for identification of potential risks and concerns. The Water Supply Plan is companion to this IR Plan and further outlines the prevention measures, as well as the preparedness and contingencies plans that ensure water supplies will be protected.

5.1.3 DRILLING FLUID CONTROL

The most effective way to minimize environmental impact associated with HDD installations and specifically with drilling fluids is to maintain drilling fluid recirculation. Maintenance of fluid circulation is the responsibility of the HDD contractor. Monitoring of drilling mud volumes, pressures, and pump rates/returns will assist in determining if significant drill mud loss occurs signaling a possible inadvertent return. The following requirements shall be placed upon each HDD contractor with respect to drilling fluid control:

- Instrumentation – The HDD contractor shall monitor the annulus pressure of returns during the HDD pilot hole phase of HDD using an annular pressure monitor. The contractor shall at all times provide and maintain instrumentation which accurately locates the pilot hole, measures drill string axial and torsional loads, and measures drilling fluid discharge rate. SPLP, or their designee, shall have access to these instruments and their readings at all times. A log of all recorded readings shall be maintained and will become a part of the “As-Built” information to be supplied by contractor to SPLP.
- Composition – The composition of all drilling fluids proposed for use shall be submitted to SPLP for approval.
- Recirculation – The contractor shall maximize recirculation of drilling fluid to the borepit. The contractor shall provide solids control and fluid cleaning equipment of a configuration and capacity that can process drilling fluids to the borepit that produce drilling fluids suitable for reuse. SPLP may specify standards for solids control and cleaning equipment performance or for treatment of excess drilling fluid and drilled spoil.
- Loss of Circulation – The contractor shall employ its best efforts to maintain full annular circulation of drilling fluids. Drilling fluid returns at locations other than the entry and exit points shall be minimized. In the event that annular circulation is lost or significantly diminished, the contractor shall take one or more of the following steps to restore circulation:
 - o Size the hole frequently by advancing and retracting the drill string in order to keep the annulus clean and unobstructed.
 - o Minimize annular pressures by minimizing fluid density consistent with hole cleaning and stabilization requirements.
 - o Viscosity will be adjusted as necessary to reduce annular pressures consistent with hole cleaning and stabilization requirements.
 - o Gel strength will be adjusted as necessary to reduce annular pressures.
 - o Control the balling of material on bits, reaming tools, and pipe in order to prevent a plunger effect from occurring.
 - o Control penetration rates and travel speeds in order to prevent a plunger effect from occurring.
 - o Seal a zone of lost circulation using a high viscosity bentonite plug, loss control materials, or grouting. Drilling activities will be suspended as long as necessary to allow plugs, loss control materials, or grout to cure.
 - o When drilling fluid flow has been suspended, re-establish circulation slowly and before advancing.

5.1.4 ENVIRONMENTAL / GEOLOGIC INSPECTION

Inspection Overview

To ensure that HDD operations are conducted in accordance with permit conditions, established requirements, and standard HDD industry practice, SPLP will provide Environmental Inspectors (EIs) to monitor all pipeline construction activities, with increased attention provided to HDD installations. Specifically, each construction spread will field a team of EIs, one of which will be a Pennsylvania-licensed Professional Geologist (PG). The PG will communicate regularly with the HDD contractors.

The PGs will primarily focus on areas of trenchless construction methodologies (including any type of bore or HDD), and are responsible for monitoring the HDD contractor's performance during trenchless construction. The PGs direct responsibilities include documenting progress of the bore or HDD, documenting subsurface characteristics as evidenced by examination of cuttings and returns on five (5) foot intervals as the HDD is progressing for the complete length of the HDD profile either through the pilot hole, a ream hole, or a combination of both, such that one complete logging of the profile geology is acquired as early in the HDD as possible; tool and mud pressures; bore or HDD materials (water, bentonite) consumption to document potential losses of circulation, and patrolling of the land surface over the bore or HDD to inspect for inadvertent returns. The HDD contractor's performance will be evaluated on compliance with permit terms and conditions at the work location; construction design drawings; technical specifications; PPC Plan requirements, and easement agreements.

The PG will immediately notify the Geotechnical Evaluation Lead (GE) and Lead EI if the contractor fails to conform to these required standards, or if unexpected problems are encountered during performance of the work. In the event of an abrupt loss of circulation or inadvertent return, the PG has the authority to stop the bore or HDD by direct notice to the on-site construction manager. In such an event, the Lead EI will mobilize EIs to the site. The GE may mobilize to the work location to inspect the issue and review the construction performance data, or request a technical specialist to the location to inspect the event. The on-site inspection team (PG, EI, and GE) will follow the inspection, reporting, and corrective action protocols specified in this IR Plan.

The EIs and PGs will report directly to SPLP Environmental Project Manager (EPM). The EIs and PGs have "stop-work" authority, which is the authority to stop site-specific activities that violate the environmental permits or conditions.

If construction or restoration activities may occur outside the easement boundaries, the EI or PG shall notify SPLP's land agent and the land agent will determine whether those activities can occur without prior landowner notification or approval. If prior notification or approval is required, such work shall not begin until notification is given or approval is received.

PG Qualifications

The minimum requirements of the PG shall include the following:

- Current Professional Geologist license in Pennsylvania
- Experienced in the field of hydrogeology
- Completed training by an SPLP technical specialist on general HDD and bore procedures, HDD and bore best management practices, methods to monitor HDD and bore activities and progress, and procedures for analyzing loss of circulation and inadvertent return events.¹

5.1.5 HDD ALIGNMENT MONITORING AND IR PROTOCOLS

Persistent monitoring of the HDD alignment for an IR is an integral component in minimizing adverse environmental impacts. The intensity of this monitoring will vary depending upon the following drilling fluid operational conditions:

- Condition 1: Full circulation
- Condition 2: Loss of circulation

¹ The SPLP technical specialists who will provide the training to PGs can include the Geotechnical Evaluations Lead, members of SPLP's Directional Project Support Team, or other trenchless construction specialists. These trenchless construction specialists will have a minimum of ten years experience in HDD and bore construction procedures.

- Condition 3: Inadvertent returns in surface waters of the Commonwealth

Monitoring Protocol for Condition 1 – Full Circulation

When HDD operations are in progress and full drilling fluid circulation is being maintained at one or both of the HDD endpoints, the following monitoring protocol will be implemented.

- The presence of drilling fluid returns at one or both of the HDD endpoints will be periodically documented.
- Land-based portions of the drilled alignment will be periodically walked and visually inspected for signs of inadvertent drilling fluid returns as well as surface heaving and settlement. Waterways will be visually inspected from the banks for a visible drilling fluid plume.
- Drilling fluid products present at the jobsite will be documented.

If an inadvertent drilling fluid return enters surface waters of the Commonwealth, the monitoring protocol associated with Condition 3 will immediately be implemented. If an inadvertent return enters uplands only, the procedures associated with Section 6.2 of this plan will immediately be implemented.

Monitoring Protocol for Condition 2 – Loss of Circulation

When HDD operations are in progress and drilling fluid circulation to the HDD endpoints is either lost from the annulus or is significantly diminished (“loss of circulation”), the following monitoring protocol will be implemented.

- The HDD contractor shall immediately notify both the EI and the PG.
- The EI/PG will then immediately notify the Spread’s Lead EI and EPM of the loss of circulation (notification of PADEP and other entities will be carried out in accordance with Section 6.5).
- The EI/PG will increase the frequency of visual inspections along the HDD alignment and outside the limits of disturbance on public areas and where authorized without trespassing, and conduct enhanced monitoring of sensitive environmental resources within 100 feet of the HDD alignment. Additionally, the EI/PG will document periods of contractor downtime (during which no drilling fluid is pumped) and the contractor’s drilling fluid pumping rate to estimate lost circulation volumes.
- Drilling operations will be suspended and SPLP will submit to PADEP (1) a loss prevention report, which describes the measure(s) that will be implemented to prevent, to the maximum extent practicable, the likelihood of additional losses of circulation; and (2) proof that every public water supplier with a source within 450 feet of the HDD alignment, and every landowner with a private water supply within 450 feet of the HDD alignment has been notified. Drilling operations shall not resume until all required information has been submitted.
- The HDD contractor will take one or more of the following actions to restore full circulation, as appropriate:
 - Minimize annular pressures by minimizing drilling fluid density consistent with hole cleaning and stabilization requirements.
 - Viscosity will be adjusted as necessary to reduce annular pressures consistent with hole cleaning and stabilization requirements.
 - Gel strength will be adjusted as necessary to reduce annular pressures.
 - Control the balling of material on bits, reaming tools, and pipe in order to prevent a plunger effect from occurring.
 - Control penetration rates and travel speeds in order to prevent a plunger effect from occurring.
 - Reduce drilling fluid pumping pressures to the minimum necessary to maintain hole cleaning requirements.
 - Size the hole frequently by advancing and retracting the drill string in order to

- keep the annulus clean and unobstructed.
 - Seal a zone of lost circulation using a high viscosity bentonite plug, loss control materials, or grouting.
 - Drilling activities will be suspended as long as necessary to allow plugs, loss control materials, or grout to cure.
 - If drilling fluid flow has been suspended, re-establish circulation slowly before advancing.
- The EI/PG will document steps taken by the HDD contractor to (1) restore circulation to the entry/exit and (2) reduce annular pressure down hole. Should the contractor fail to comply with the requirements of this plan, the EI/PG will notify the Spread's Lead EI so that appropriate actions can be taken.
- If circulation is regained, and there is no IR or other loss of circulation within 48 hours, the EI/PG will inform the Spread's Lead EI and resume the monitoring protocol associated with Condition 1.
- If circulation is not re-established, the EI/PG will increase the frequency of visual inspection along the drilled path alignment and outside the limits of disturbance on public areas and where authorized without trespassing. Additionally, the EI/PG will document periods of contractor downtime (during which no drilling fluid is pumped) and the contractor's drilling fluid pumping rate to estimate lost circulation volumes.

Monitoring Protocol for Condition 3 – Inadvertent Returns in Surface Waters of the Commonwealth

If an inadvertent return of drilling fluids is detected in surface waters of the Commonwealth, the following monitoring and operational protocol will be implemented. Inadvertent returns impacting uplands only will be addressed in accordance with the procedures in Section 6.2.

- The HDD contractor, EI, PG, or Spread Construction Manager (SM) shall immediately notify the EPM (notification of PADEP and other entities is addressed in Section 6.5).
- The EI/PG shall document the location, magnitude, and potential impact of the return.
- If the inadvertent return is confirmed to be less than 50 gallons and is the first inadvertent return at an HDD location in surface waters of the Commonwealth, HDD operations may continue after (1) containment is achieved, (2) cleanup of the inadvertent return has been completed, with all solid wastes properly managed in accordance with 25 Pa. Code Subpart D, Article IX (relating to residual waste management)(collectively "cleanup"), (3) SPLP submits to PADEP written notice and documentation that the inadvertent return has been contained and the cleanup has been completed, and (4) PADEP has approved restart of HDD operations. Such PADEP approval shall occur no later than 72 hours after SPLP has submitted the required written notice and documentation to PADEP in the manner described in the following sentence, at which time SPLP may resume trenchless construction unless PADEP disapproves restart or requests additional information before restart. Written notice and documentation of the inadvertent return and SPLP's response thereto shall be provided on the Initial IR and Interim/final report forms attached as Appendix B (the requirements of Initial, Interim, and Final IR reports are set forth below in Section 6.5 (Notifications)). The EI, PG, and HDD contractor will monitor and document the inadvertent return as well as periods of contractor downtime and the contractor's drilling fluid pumping rate to estimate inadvertent return volumes. The basis for the estimate of the inadvertent return volumes, including any information, measurements, or calculations supporting that estimated volume, shall be provided on the forms attached as Appendix B.

- If the inadvertent return is (i) 50 gallons or greater, (ii) of unknown quantity, or (iii) is a second or subsequent inadvertent return at an HDD location in surface waters of the Commonwealth, drilling operations will be suspended until PADEP inspects the site, and subsequently approves the restart report provided by SPLP. The restart report must contain:
 - An overview of the HDD activities
 - The PG's assessment of the strata where IR occurred
 - Depth and alignment of drill bit at time of IR
 - Profile of the drill path as constructed overlain on the permitted drill profile
 - Consideration of the use of:
 - Alternative entry and/or exit points,
 - Alternative entry and/or exit angles,
 - Alternative profile depth,
 - Reduced drilling fluid pressures,
 - Thickened drill mud and/or the use of pre-approved loss circulation materials,
 - Bore hole casing,
 - Relief wells.
 - As SPLP eliminates options from consideration, the restart report must include a detailed justification for doing so.
 - Recommendations on measures that will minimize the likelihood of further IRs so as to adequately protect public health, safety and the environment.
 - An analysis of the risk of additional inadvertent returns after the use of the proposed mitigation measures.
 - The proposed schedule for recommencement of HDD operations and the anticipated duration of the HDD operations

The restart report must be sealed by a Pennsylvania licensed professional geologist. SPLP may recommence HDD activities only after PADEP provides written approval to restart. The restart report will not be approved unless SPLP demonstrates that the mitigation measures will adequately protect public health, safety, and the environment. Periods of contractor downtime and the contractor's drilling fluid pumping rate will also be documented to estimate inadvertent return volumes. The basis for the estimate of the inadvertent return volumes, including any information, measurements, or calculations supporting that estimate, shall be provided on the forms attached as Appendix B. Notifications to government agencies and water supply owners is addressed in Section 6.5.

5.1.6 HYDROLOGICAL IMPACTS

The HDD contractor is able to monitor the annulus pressure of returns during the HDD pilot hole phase of HDD using an annular pressure monitor. If the pressure spikes significantly and unexpectedly and all other drilling parameters are otherwise unchanged, or if the pressure drops, an inspection of the HDD alignment and adjacent areas for returns would be conducted. The surfacing of groundwater over the HDD profile as a result of HDD activities, other than returning water to the entry or exit pit, could be indicative of an ongoing IR. When groundwater surfacing is identified, the trenchless construction contractor, EI, PG, or SM will notify the EPM. The groundwater surfacing will be photographed and characterized (i.e., location, size, limits, flow rate, flow direction, clarity, etc.). The inspection and early detection of any surfacing of groundwater over the trenchless construction profile will allow the trenchless construction contractor to stop or adjust the trenchless construction profile to reduce the potential for secondary impacts or an IR. If SPLP determines that the surfacing of groundwater over the trenchless construction profile, other than returning water to the entry or exit pit, is related to its

construction activities, SPLP shall treat the groundwater as an IR in accordance with the provisions of Section 6.3, below. Notifications relating to the surfacing of groundwater are addressed in Section 6.5.

During the pilot hole or reaming phase of an HDD, a sudden increase in drilling fluid returns, the appearance of clear water mixed with drilling fluids, or clear water only returning to the HDD entry point or exit point indicates that the HDD has progressed into or intercepted a zone of groundwater with a hydrostatic pressure greater than the annular pressure of the HDD phase in progress. This could be naturally occurring groundwater, or an indication that the HDD progressed through a mine pool at a higher elevation than the HDD entry point. If this occurs, the HDD contractor, EI, PG, or SM will notify the EPM. The PG will document the current phase of the HDD, the location and elevation of the tool, and consult with Senior PG's regarding the known presence, or unknown potential for the HDD to have intercepted a mine pool. The EI should collect samples of the water to test for acid mine pool constituents.

If the volume of produced water is minimal or does not exceed the volumes being used for the trenchless construction phase in progress, then this water should be pumped with the returning fluids and cuttings and recycled into the trenchless construction process.

If the volume of produced water exceeds the water demand for continued drilling, the contractor will capture and haul away all produced water for treatment until the test results show that the water can be safely discharged at a suitable location at the trenchless construction location. The EPM will obtain any required authorizations for on-site discharge of excess produced waters. If the volume of produced water exceeds the water demand for continued drilling, when weather permits, SPLP will grout the necessary portion of the bore hole and allow an appropriate period of time for curing before proceeding with further trenchless construction activities.

If the produced groundwater returns persist after pipe pullback, the contractor will develop and implement a plan to establish a seal to stop groundwater flows and/or mine pool discharge as to avoid impacts to environment and public and private water supplies.

6.0 RESPONSE TO INADVERTENT RETURNS

If an IR is observed, the HDD contractor will take measures to eliminate, reduce, or control the return. The actions to be taken will depend on the location and time of return, site specific geologic conditions, and the volume of the return.

6.1 GENERAL CONDITIONS

- This IR Plan, PPC Plan, Water Supply Plan, Karst Plan, and the January 2018 Operations Plan must be present onsite during drilling operations and made available to PADEP;
- PADEP is to be notified at least 24 hours prior to the beginning of each HDD, or any type of bore, under waters of the Commonwealth. This notification will be made through PADEP's online Oil and Gas Reporting Electronic (OGRE) application. The OGRE application is accessed via the DEP Greenport login in system at <https://www.depgreenport.state.pa.us>.
- All required permits and Material Safety Data Sheets must be onsite and made available to PADEP;
- Drilling fluid additives other than bentonite and water shall be approved by PADEP prior to use. All approved or referenced HDD fluid additives are listed on PADEP's web link here:
<http://www.dep.pa.gov/Business/Energy/OilandGasPrograms/OilandGasMgmt/Ind>

[ustryResources/InformationResources/Pages/default.aspx](#);

- When an inadvertent return or loss of circulation is discovered, the inadvertent return or loss of circulation will be immediately reported to PADEP in accordance with Section 6.5; and,
- Any water supply complaints received by SPLP will be reported to PADEP in accordance with Section 6.5.

6.2 INADVERTENT RETURNS IN UPLANDS

If a return is identified within or nearby the HDD alignment, within the adjacent uplands (an “upland IR”), then notification, containment, and cleanup will be carried out as specified in this Section. Upland IRs include “punch-out returns,” which are defined as releases of drilling fluids in uplands that occur within the HDD staging area as depicted in the approved erosion and sedimentation control plan. Punch-out returns may occur when the HDD nears the exit point during pilot hole drilling as a result of reductions in the depth of the drill (less soil/bedrock) and unconsolidated soil conditions near the exit point.

The EI will be required to be present as the containment and cleanup may need to be conducted outside of pre-approved limits of disturbance. The HDD Contractor, PG and EI will work closely to determine the best course of action for inadvertent returns occurring within upland areas. The HDD contractor, EI, PG, or Spread Construction Manager (SM) shall immediately notify the EPM (notification of PADEP and other entities is addressed in Section 6.5). Upon occurrence of an upland IR that impacts a water supply well, results in a complaint that a water supply well has been impacted, or enters a water of the Commonwealth, drilling operations will be suspended until the procedures in Monitoring Protocol for Condition 3 of Section 5.1.5 are complied with.

SPLP will immediately suspend drilling operations following an upland IR, except if the upland IR is a punch-out return where the drilling fluid is contained within the permitted limit of disturbance and does not enter a water of the Commonwealth or impact a water supply well. The EI or PG must quantify the upland IR, document its location, photograph the return, determine the proximity of the return to any resource(s), assess the potential to impact any resource(s), and report the incident to the EPM. Information about the upland IR, will be recorded and updated as necessary as a running interim report on the data form provided in Appendix B. SPLP’s EPM is responsible for completion of the interim report with the assistance of the EI and PG. 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. PADEP, the County Conservation District, the municipality, and affected landowners (private or public) will be notified of the upland IR in accordance with Section 6.5. The HDD contractor will take appropriate actions to contain, reduce, eliminate, or control the return. The actions may include, as appropriate:

- Constructing a small pit or sandbag coffer around the return 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;
- Adjusting the properties of the drilling fluid mixture; and/or
- Adding pre-approved loss circulation materials to the fluid mixture, such as wood fibers, shredded paper, or fluid additives as listed or referenced on PADEP’s website:

<http://www.dep.pa.gov/Business/Energy/OilandGasPrograms/OilandGasMgmt/Ind>

Drilling fluid may be recovered, recycled, and reused to the extent practical. All waste drilling fluid shall be managed in accordance with 25 Pa. Code, Subpart D, Article IX (relating to residual waste management).

When HDD operations have been suspended pursuant to this section following an upland IR, HDD operations may resume after (1) containment of the upland IR is achieved, (2) cleanup of the upland IR has been completed, (3) PADEP receives written notice and documentation that the inadvertent return has been contained and the cleanup has been completed, and (4) for inadvertent returns of 200 gallons or greater at an HDD location, PADEP has inspected the HDD location and approved the restart of HDD operations. Written notice and documentation of the upland IR and SPLP's response thereto shall be provided on the Initial IR and Interim/final report forms attached as Appendix B and in accordance with the requirements for their submission set forth below in Section 6.5 (Notifications).

For punch-out returns where drilling has not been suspended, SPLP will contain the drilling fluids and complete the cleanup of the drilling fluids after "punch-out" of the pilot hole is achieved. Written notice and documentation of the punch-out return and SPLP's response thereto shall be provided on the Initial IR and Interim/final report forms attached as Appendix B and in accordance with the requirements for their submission set forth below in Section 6.5 (Notifications).

6.3 INADVERTENT RETURNS IN SURFACE WATERS OF THE COMMONWEALTH

The environmental impacts of a return 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 return, benthic organisms may be impacted if sufficient quantities of bentonite settle upon them.

If the return is identified within wetlands, springs, seeps, streams, rivers, lakes, or any other surface water, or if SPLP determines that the surfacing of groundwater is related to its construction activities in an area other than the entry or exit pits, as described in Section 5.1.6, above, drilling operations will be suspended, pending DEP approval to resume in accordance with the procedures in Monitoring Protocol for Condition 3 set forth in Section 5.1.5, above. In addition, SPLP will follow the protocols as specified in this Section. During the suspension the EI must quantify the return, document its location, photograph the return, assess the potential to impact to the resource(s), and report the incident to SPLP's EPM. Notifications will be made as outlined within Section 6.5. Information about the return will be recorded and updated as necessary in an interim report on the data form provided in Appendix B. SPLP's EPM 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, springs, seeps, streams, rivers, lakes, or any other surface water, regardless of size, are to be reported to the appropriate agencies in accordance with Section 6.5, below.**

Containment, clean-up, and restoration activities that would require the installation of construction matting, placement of materials in the wetland or waterway, or the entry of construction vehicles and equipment are not allowed without prior 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 may only resume once the return is contained and successfully recovered and restart approval is obtained from DEP to resume in accordance with Monitoring Protocol for Condition 3 of Section 5.1.5 above. The return area will continue to be monitored during the daily inspection.

One exception to ceasing HDD operations would be a return of drilling fluids during the pipe pullback process. Ceasing operations would pose significant risk of causing the pullback section of pipe to be stuck and not able to resume. If a significant risk exists of a release or inadvertent return of drilling fluid during the pipe pullback process, before that process begins, SPLP will propose a plan to PADEP, consistent with Section 6.4, below, to mitigate that risk and will receive PADEP's approval of the plan before beginning the pipe pullback process. SPLP will then implement the risk mitigation plan.

6.4 CONTAINMENT & CLEAN-UP MATERIALS AND EQUIPMENT

The HDD contractor will be required to have the necessary containment and clean-up equipment on-site, at the boring location and 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).

6.5 NOTIFICATIONS

- **Commencement of HDD or Bore:** PADEP is to be notified at least 24 hours prior to the beginning of each HDD, or any type of bore, under waters of the

Commonwealth as to the anticipated date of commencement. This notification will be made through PADEP's online Oil and Gas Reporting Electronic (OGRE) application. The OGRE application is accessed via the DEP Greenport login in system at <https://www.depgreenport.state.pa.us> .

- **Pullback:** SPLP will notify PADEP at least 24 hours prior to commencing pullback at any HDD site as to the anticipated date of commencement.
- **Impact to Water Supply:** SPLP will provide PADEP with immediate verbal notification by an authorized SPLP representative of any citizen complaint it receives of an impact to a private or public water supply, when SPLP otherwise becomes aware of an impact to a private or public water supply, and when SPLP provides an alternate water supply for any private or public water supply. SPLP will make and document at least three attempts to provide verbal notification directly over the phone to a PADEP employee. If, after the third attempt, SPLP is unable to speak directly to a PADEP employee, then SPLP will provide email notification to PADEP. SPLP's verbal (or email) notification will provide a detailed description of the incident using the best currently available information. SPLP shall also report this information to PADEP's online Oil and Gas Reporting Electronic ("OGRE") application within 24 hours. The OGRE application is accessed via the PADEP Greenport login in system at <https://www.depgreenport.state.pa.us> .
- **Inadvertent Returns:** When an inadvertent return is discovered (regardless of whether the IR is to an uplands or waters of the Commonwealth), SPLP shall provide PADEP with immediate verbal notification. SPLP shall promptly thereafter (in all circumstances within 24 hours) report the inadvertent return to the County Conservation District, the municipality in which the inadvertent return occurred, any landowners affected by the return, and to identified public water suppliers with a source located within 450 feet of the HDD alignment and every landowner with a private water supply located within 450 feet of the HDD alignment. Inadvertent returns occurring in or flowing into waters of the Commonwealth also require notification to the Pennsylvania Fish and Boat Commission, U.S. Army Corp of Engineers, and downstream users of water (as described in more detail below). If necessary, for emergency response or remedial activities, an emergency permit shall be sought under § 105.64 (relating to emergency permits).
- **Loss of Circulation:** When a loss of circulation is identified and the loss of circulation is the first occurrence on the HDD, SPLP shall provide PADEP with immediate verbal notification of the loss of circulation. SPLP shall promptly thereafter (in all circumstances within 24 hours) notify identified public water suppliers with a source located within 450 feet of the HDD alignment and every landowner with a private water supply located within 450 feet of the alignment that a loss of circulation occurred and that their water supply may be impacted. If, after full circulation is re-established following a prior loss of circulation, a second or subsequent loss of circulation occurs, SPLP shall provide PADEP with immediate verbal notification of the second or subsequent loss of circulation. If the second or subsequent loss of circulation occurs more than 30 days after the first loss of circulation on the HDD, SPLP shall also re-notify identified public water suppliers with a source located within 450 feet of the HDD alignment and every landowner with a private water supply located within 450 feet of the alignment that a loss of circulation occurred and that their water supply may be impacted.
- **Groundwater:** When trenchless construction activities result in the surfacing of groundwater (other than at the entry or exit pit where the volume of water does not

exceed the volume of water being used for trenchless construction), SPLP shall immediately report such surfacing of groundwater to PADEP. SPLP shall promptly thereafter notify identified public water suppliers with a source located within 450 feet of the trenchless construction alignment and every landowner with a private water supply located within 450 feet of the alignment that a surfacing of groundwater occurred and that their water supply may be impacted.

- **Interception of Mine Pool/Mine Seeps:** When trenchless construction activities intercept a mine pool or a mine seep, SPLP shall immediately report such surfacing of groundwater to PADEP. SPLP shall promptly thereafter notify identified public water suppliers with a source located within 450 feet of the trenchless construction alignment and every landowner with a private water supply located within 450 feet of the alignment that a surfacing of groundwater occurred and that their water supply may be impacted.

A SPLP EPM will be responsible for the notifications described below of all returns occurring in or flowing into aquatic resources. 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 Appendix B. Within one (1) business day of verbal notification of an inadvertent return, Sunoco will provide PADEP with an initial written report regarding the inadvertent return on the form approved by PADEP. Each item of the form shall be fully addressed by SPLP.

The Pennsylvania Clean Streams Law regulations require that when any pollutant 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, for all returns in aquatic resources, SPLP will notify the appropriate PADEP regional emergency number immediately upon return discovery:

- PADEP Southwest Regional Office: 412-442-4000
- PADEP Southcentral Regional Office: 866-825-0208
- PADEP Southeast Regional Office: 484-250-5900
- PA Fish and Boat Commission Bureau of Law Enforcement: 717-705-7861
SWRO: 814-445-8974, SCRO: 717-486-7087, SERO: 717-626-0228
- Other agencies that will be notified:
 - 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 (see Water Supply Plan supplied with the Project's E&S Plan)

Following notification to the appropriate emergency/regulatory numbers, SPLP's EPM will notify the following individuals via e-mail submittal of the inadvertent return form located in Appendix B. This will consist of the initial reporting of the return and open consultation and further reporting to the PADEP/USACE in regards to the return. The further consultations will be in 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.

After submission of the initial written report, every five (5) business days thereafter, SPLP will provide the Department with weekly interim written reports regarding any inadvertent return until a final report is submitted. The interim and final reports shall be submitted on the forms attached in Appendix B or as otherwise approved by the Department. For each

report submitted, SPLP shall fully address each item of the form. SPLP will provide the Department with a monthly status report regarding all HDDs and inadvertent returns (“Status Report”). The Status Report shall provide the status for each HDD (designating whether the HDD is scheduled, in the pilot bore stage, in the reaming state, or complete) and the status of each inadvertent return (contained, contained and remediation underway, or fully remediated).

- PADEP Southwest Regional Environmental Group Manager (Dana Drake, Abbey Owoc, and Aileen Evan)
- PADEP Southcentral Regional Compliance Specialist (Scott Williamson, Andrea Blosser, and Ronald Eberts, Jr.)
- PADEP Southeast Regional Compliance Specialist (John Hohenstein, Desiree Henning-Dudley, and Frank DeFrancesco)
- USACE Pittsburgh District Permit Reviewer (Jared Pritts)
- USACE Baltimore District Permit Reviewer (Debby Nizer)
- USACE Philadelphia District Permit Reviewer (David Caplan)
- PGC – for returns on state game lands (Nathan Havens)
- DCNR – for returns on state forests and parks (David Mong)
- USFWS – Project Reviewer (Pamela Shellenberger)
- USFWS – Project Reviewer (Brian Scofield)

Department of Environmental Protection Southwest Regional Office

Dana Drake | Environmental Program Manager

Phone: 412.442.4149

dadrake@pa.gov

Abbey Owoc | Environmental Group Manager

Phone: 412.442.5219

aowoc@pa.gov

Aileen Evan

Phone: 412.442.4127

aevan@pa.gov

Department of Environmental Protection | Waterways and Wetlands Program
400 Waterfront Drive | Pittsburgh, PA 15222

Department of Environmental Protection South-central Regional Office

Scott Williamson | Environmental Program Manager

Phone: 717.705.4799

scwilliams@pa.gov

Andrea Blosser | Environmental Group Manager

Phone: 717.705.4763

ablosser@pa.gov

Ronald Eberts Jr. | Compliance Specialist

Phone: 717.705.4819

reberts@pa.gov

Department of Environmental Protection | Waterways and Wetlands Program
909 Elmerton Avenue | Harrisburg, PA 17110

Department of Environmental Protection Southeast Regional Office

John Hohenstein | Civil Engineer Manager

Phone: 484.250.5171

johohenste@pa.gov

Desiree Henning-Dudley | Environmental Group Manager

Phone: 484.250.5984

dhenninqdu@pa.gov

Frank DeFrancesco | Compliance Specialist

Phone: 484.250.5161

fdefrances@pa.gov

Department of Environmental Protection | Waterways and Wetlands Program
2 East Main Street | Norristown, PA 19401

Jared N. Pritts

Senior Regulatory Specialist

U.S. Army Corps of Engineers, Pittsburgh District William S. Moorehead Federal Building

1000 Liberty Avenue, Suite 2200

Pittsburgh, Pa 15222

Office: (412) 395-7251

jared.n.pritts@usace.army.mil

Debby Nizer

U. S. Army Corps of Engineers

Baltimore Dist., Regulatory Branch, PA Section

CENAB-OPR-P/Second Floor

2 Hopkins Plaza

Baltimore, MD 21201

Phone: 410-962-6085

debby.nizer@usace.army.mil

David J. Caplan

Biologist, Applications Section II

Regulatory Branch

U.S. Army Corps of Engineers

John Wanamaker Building, 6th Floor

100 Penn Square East

Philadelphia, PA 19107

215-656-6731 (office)

David.J.Caplan@usace.army.mil

David E. Mong

Forest Program Specialist - Right of Way Administration

Department of Conservation & Natural Resources

Bureau of Forestry/Central Office – Operations Section

400 Market Street, 6th Floor

Harrisburg, PA 17105

Office Phone: 717-783-7947

dmong@pa.gov

Nathan Havens
Right-of-Way Administrator
PA Game Commission, Bureau of Wildlife Habitat Management
Real Estate Division
2001 Elmerton Avenue
Harrisburg, PA 17110
717-787-4250, x3619
nhavens@pa.gov

Pamela Shellenberger
U.S. Fish & Wildlife Service
Pennsylvania Field Office
110 Radnor Rd; Suite 101
State College, PA 16801
814 234-4090 x7459
Pamela_shellenberger@fws.gov

Brian Scofield
U.S. Fish & Wildlife Service
Pennsylvania Field Office
110 Radnor Rd; Suite 101
State College, PA 16801
814 234-4090
Brian_scofield@fws.gov

Other Notifications

The existing environment in regards to public and private water supply in proximity to and downstream of the Project has been evaluated and described within the Water Supply Plan. Existing location data, as well as consultations with supply providers, provided the basis for identification of potential risks and concerns. Notifications to private and public water supply owners and/or operators will be implemented in accordance with the procedures described above.

County Conservation Districts shall be notified in depending on the county of occurrence:

County Conservation Districts	
Washington County 2800 North Main Street, Suite 105, Washington, PA 14301	724-705-7098
Allegheny County River Walk Corporate Centre, 33 Terminal Way, Suite 325B, Pittsburgh, PA 15219	412-241-7645
Westmoreland County J. Roy Houston Conservation Center, 218 Donohoe Road, Greensburg, PA 15601	724-837-5271
Indiana County 625 Kolter Drive, Suite 8, Indiana, PA 15701	724-471-4751
Cambria County 401 Candlelight Drive, Suite 229, Ebensburg, PA 15931	814-472-2120
Blair County 1407 Blair Street, Hollidaysburg, PA 16648	814-696-0877

Huntingdon County 10605 Raystown Road, Suite A, Huntingdon, PA 16652	814-627-1627
Juniata County 146 Stoney Creek Drive, Suite 4, Mifflintown, PA 17059	717-436-8953
Perry County P.O. Box 36, 31 West Main Street, New Bloomfield, PA 17068	717-582-8988
Cumberland County 310 Allen Road, Suite 301, Carlisle, PA 17013	717-240-7812
York County 118 Pleasant Acres Road, York, PA 17402	717-840-7430
Dauphin County 1451 Peters Mountain Road, Dauphin, PA 17018	717-921-8100
Lebanon County 2120 Cornwall Road, Suite 5, Lebanon, PA 17042	717-277-5275
Lancaster County 1383 Arcadia Road, Room 200, Lancaster, PA 17601	717-299-5361
Berks County 1238 County Welfare Road, Suite 200, Leesport, PA 19533	610-372-4657
Chester County 688 Unionville Road, Suite 200, Kennett Square, PA 19348	610-925-4920
Delaware County Rose Tree Park Hunt Club, 1521 N. Providence Road, Media, PA 19063	610-892-9484

6.6 SPECIAL WATER SUPPLY PROCEDURES

Prior to the start of any HDD in a particular location, SPLP will offer all landowners with a private water supply source located within 450 feet from the HDD alignment an alternative temporary water supply (e.g., water buffalo with potable water adequate for purposed served) that will be installed and maintained, at SPLP's expense, for the entire period of the HDD. Installations shall be approved as required with local zoning/building ordinances.

If a landowner who had not previously been connected to a temporary water supply reports a complaint of an impact to his or her water supply, SPLP will immediately respond to the complaint and provide the landowner with bottled drinking water. If the complaint occurs on a Monday-Saturday, an alternative temporary water supply (e.g., water buffalo) will be provided to the landowner within 24 hours. If the complaint occurs on a Sunday or a holiday, or if an alternative temporary water supply cannot otherwise be provided within 24 hours, SPLP will offer the landowner temporary accommodations, at SPLP's expense, until such time as a temporary alternative water supply can be installed. Temporary alternative water supply will be provided at SPLP's expense until SPLP restores or replaces the impacted water supply to the satisfaction of the property owner.

For each landowner with a private water supply located within 450 feet from the HDD alignment, SPLP will offer to collect water supply samples, before during and after the HDD, at SPLP's expense. Sampling shall address quantity (yield) (unless the well is not accessible) and quality of the existing source, in compliance with Appendix B of the Water

Supply Assessment, Preparedness, Prevention and Contingency Plan. Once available, sampling results shall be made available to PADEP within 24 hours of a request by PADEP for the results. If any impact to a private water supply attributable to pipeline construction is identified after post-construction sampling, SPLP will restore or replace the impacted water supply to the satisfaction of the private water supply owner.

This Section supplements the Water Supply Assessment, Preparedness, Prevention and Contingency Plan and does not relieve SPLP of its obligation to comply with that Plan fully.

7.0 SPECIAL BOG TURTLE AREA PROCEDURES

Final consultation with the USFWS (letter dated October 31, 2016) resulted in the identification of a single HDD that would require special bog turtle inadvertent return procedures. The drill of Wetland A54 and A55 in Lancaster County are occupied bog turtle habitats and both wetlands will be drilled with a single HDD. In accordance with USFWS final determination letter, activities at this HDD site (listed in Attachment A and highlighted in yellow) include pre-construction and during construction procedures to ensure no bog turtles are negatively impacted, and outlines a contingency plan for inadvertent returns at this special concern area.

As discussed, the primary potential environmental impact associated with HDD revolves around the use of drilling fluids. Inadvertent return of drilling fluids is a potential environmental concern in general and is of particular concern to the USFWS and SPLP in regards to potential impacts to bog turtles. Although implementation of the HDD crossing method represents one of the highest levels of avoidance of impacts (by minimizing/avoiding open trench excavation and the operation of construction equipment in the wetland), the purpose of this IR Plan is to present SPLP's plan to further minimize potential impacts to bog turtles associated with all phases of the HDD process and in particular in the event of an inadvertent return. The objectives of this section of this contingency plan are:

- Avoid impacts to the bog turtle.
- List known or potential bog turtle habitats.
- Ensure that project work areas and wetlands are clearly defined on engineer approved project plans.
- Ensure all construction contractors are appropriately trained on the identification of this species and its biology, the notification procedures, and implementation of this contingency plan.
- Ensure bog turtle wetlands/areas are marked prior to construction and that all work areas are appropriately defined (e.g., staked) according to project plans.
- Ensure bog turtle wetlands/areas are sealed off/protected from construction activities.
- Provide daily inspection of contractor activities to ensure compliance with project work plans.
- Provide daily inspection of the HDD alignment and adjacent areas for timely detection of inadvertent returns.
- Ensure all appropriate notifications are made to the USFWS, United States Army Corps of Engineers (USACE) and PADEP, and all other applicable regulatory agencies in a timely manner and that all required documentation is completed as identified in this document.

7.1 PRE-CONSTRUCTION ACTIVITIES

All construction, including professional survey personnel will be trained on implementation of this plan, the identification of this species and its biology, and the location of the areas

of particular concern. All construction personnel, Environmental Inspector (EI), and on-site bog turtle Specialist (BT Specialist) will be provided with the necessary project plans, mapping, permits, authorized impacts, clearance letters, conservation plans, and this contingency plan prior to the start of construction activities.

To reduce the risk of unintentional impacts to bog turtles and their habitats, a BT Specialist will inspect the surveyed (e.g. staked) entrance and exit locations and access roadways associated with the HDD prior to disturbance to ensure that they are not sited in bog turtle habitat and in accordance with project plans (A BT Specialist is defined as an individual

holding a Pennsylvania Fish and Boat Commission a Scientific Collector's Permit, and a Special Permit to survey for and handle bog turtles species pursuant to 58 PA Code 75.4). In addition, the boundary of the bog turtle habitat nearest to the work areas will be temporarily marked to ensure no activities are unintentionally conducted within bog turtle wetlands and work is restricted to approved work-spaces. Under the direction of the BT Specialist, silt fence will be installed between wetlands and work areas to also prevent bog turtles from entering construction work spaces. Under the direction of the BT Specialist, some areas of herbaceous vegetation may require clearing so that inspection of the area for bog turtles can be made easier. In accordance with the USFWS determination letter, SPLP has also agreed to implement groundwater monitoring and bog turtle radio-telemetry study at the Wetland A54/A55 drill that will occur preconstruction, during, and post-construction.

7.2 CONSTRUCTION ACTIVITIES

All procedures implemented by the drilling contractor discussed previously in this contingency plan to reduce the potential for, identification, and notification of inadvertent returns will be implemented at all HDDs. At the bog turtle HDD of Wetlands A54 and A55, inspection of the work areas and compliance with the project plans will be carried out daily by the BT Specialist. In addition, when drilling commences the BT Specialist will inspect all disturbed upland areas and silt fencing multiple times for bog turtles and inadvertent returns. In addition, each wetland will be inspected once-daily for the occurrence of inadvertent returns, including the surfacing of ground water by the BT Specialist. Multiple, daily inspections for inadvertent returns within the wetlands areas were determined unnecessary and a one-time daily inspection would reduce the direct disturbance of normal behaviors if turtles are present. These inspections will continue until drilling is completed and the inadvertent return risk in the wetlands has been removed. Only if the drilling contractor suspects an inadvertent return as determined from the drilling progress and monitoring of the drilling fluids would more than one daily inspection of the wetlands for returns be performed. SPLP has also agreed to implement a vibration monitoring study at the Wetland A54/A55 drill.

7.3 BOG TURTLE OBSERVATIONS AND HANDLING

Construction personnel will be trained to report all turtle observations to the EI immediately upon siting. All bog turtle observations that are not in harm's way will be documented within project logs and reported to the USFWS/USACE/PADEP within the final report. Documentation will include dates, times, photographs, and behavior. Additional, protection measures should be considered depending on where bog turtles are observed in relation to project areas.

Bog turtles observed in harm's way shall be handled by the BT Specialist assigned to the area and only if handling is determined necessary to remove the risk of injury or death. Other project personnel are allowed to move turtles small distances, but only in cases of immediate danger. Otherwise steps to passively remove the threat and allow the turtles to continue normal behavior may be determined to be the best course of action. Bog

turtles will only be moved to an area within the same wetland, only to a distance necessary to remove the threat. Additional silt fence installation may be required in the area to prevent turtles from returning to areas that presented the threat. Removal or relocation of the construction activity in that particular area will also be considered if practicable to completing the drill. Any bog turtles found within harm's way will be reported to the USFWS immediately as an incident and how it was handled.

7.4 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 return. The actions to be taken will depend on the location and time of return, site specific geologic conditions, and the volume of the return. The EI or CI will notify the SPLP's EPM with the initial details of the return upon discovery.

7.4.1 INADVERTENT RETURNS IN BOG TURTLE WETLANDS/STREAMS

If the return is identified within bog turtle wetlands and/or streams, drilling operations will be temporarily suspended to allow the EI and BT Specialist to appropriately quantify the return, document its location, photograph the return, 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 Appendix B. SPLP's ECC is responsible for completion of the data form with the assistance of the EI, BT Specialist, 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 at the Wetland A54/A55 bog turtle HDD are to be reported to the appropriate agencies in accordance with Section 6.5 and additional notifications provided below.

Containment, clean-up, and restoration activities that would require the installation of construction matting, placement of materials in the wetland or waterway, or the entry of construction vehicles and equipment are not allowed without prior PADEP/USACE/USFWS 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/USFWS 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 return 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.

7.4.2 CONTAINMENT AND 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).

7.4.3 NOTIFICATIONS

Notifications will be carried out in accordance with Section 6.5, however all returns at the HDD of Wetland A55/A54 will also be reported to the following agencies:

<p>Pamela Shellenberger U.S. Fish & Wildlife Service Pennsylvania Field Office 110 Radnor Rd; Suite 101 State College, PA 16801 814 234-4090 x7459 Pamela_shellenberger@fws.gov</p>	<p>Brian Scofield U.S. Fish & Wildlife Service Pennsylvania Field Office 110 Radnor Rd; Suite 101 State College, PA 16801 814 234-4090 Brian_scofield@fws.gov</p>
<p>Andrew McDonald Department of Environmental Protection Waterways and Wetlands Program South-central Regional Office 909 Elmerton Avenue Harrisburg, PA 17110 Phone: 717.705.4776 anmcdonald@pa.gov</p>	<p>Kathy Gipe Pennsylvania Fish and Boat Commission c-kgipe@pa.gov</p>

<p>Cumberland County Debby Nizer U. S. Army Corps of Engineers Baltimore Dist., Regulatory Branch, PA Section CENAB OPR-O/Second Floor 2 Hopkins Plaza Baltimore, MD 21201 Phone: 410-962-6085 DEBBY.NIZER@usace.army.mi</p>	<p>Berks (Baltimore District), York Counties Mike Danko U. S. Army Corps of Engineers Carlisle Regulatory Field Office 401 Louthier Street, Suite 205 Carlisle, PA 17013 Phone: 717-249-8730</p>
<p>Berks (Philadelphia District), Chester (Philadelphia District), Delaware, Counties Bill Jenkins, Chief, Applications Section U. S. Army Corps of Engineers Wanamaker Building 100 Penn Square East Philadelphia, PA 19107-3390 Phone: 215-656-6726</p>	<p>Chester (Baltimore District), Lancaster, Lebanon Counties Pat Strong U. S. Army Corps of Engineers Baltimore Dist., Regulatory Branch, PA Section P. O. Box 1715 Baltimore, MD 21203-1715 Phone: 410-962-1847</p>

8.0 OTHER SPECIAL AREA PROCEDURES

In Cambria County a northeastern bulrush population is located in the vicinity of the HDD of Wetland L62 and M59. The proposed HDD will begin on the southeast side of the access road approximately 150-ft southeast of the northeastern bulrush population, continue for approximately 1684-ft, and end approximately 1534-ft northwest of the northeastern bulrush population location. There will be no travel through or tree clearing between the exit and entry points at this HDD. An EI will ensure the contractor is well aware that the drill is under and nearby a sensitive population of plants. The EI will ensure construction fencing will be installed and no access signs placed on the northwest side off the access road to avoid potential inadvertent use of the area for travel through or other unplanned activities. Access will be limited between the HDDs to foot-travel for inspection of inadvertent returns and any professional land survey that may be required. The area will be regularly inspected for compliance. Notifications in accordance with Section 5.4 will be required, which includes the USFWS. Some HDDs are designed to avoid cultural resources. Notification to the PHMC will be made if ground disturbance is required of any remedial actions that occur in these areas as a result of an inadvertent return.

9.0 FINAL SUMMARY REPORT

A final summary report will be prepared at the end of the project to document the implementation of the drilling method and the IR Plan. Number of drills, duration of drills, number of returns, return characteristics, inspection results and observations, lessons learned, and recommendations will all be discussed within this report.

APPENDIX A

HDD Table

HDD	Aquatic Resource Crossed	County	PADEP Region	Travel and Clearing LOD/Travel LOD	EV Wetland	Bog Turtle Occupied Wetland
PA-WA-0072.0000-SR*	No Aquatic Resources Impacted	Washington	Southwest			
PA-WA-0074.0000-RR	S7	Washington	Southwest			
PA-WA-0102.0000-SR	No Aquatic Resources Impacted	Washington	Southwest			
PA-WA-0103.0000-RD*	S250, S16	Washington	Southwest	ROW - Travel and Clearing LOD		
PA-WA-0106.0000-SR	No Aquatic Resources Impacted	Washington	Southwest	ROW - Travel LOD		
PA-WA-0111.0000-SR	No Aquatic Resources Impacted	Washington	Southwest	ROW - Travel LOD		
PA-WA-0119.0000-RD	S129, S280	Washington	Southwest			
PA-WA-0119.0003-RD	No Aquatic Resources Impacted	Washington	Southwest			
PA-WA-0127.0000-RR*	S131, S130, W43	Washington	Southwest			
PA-WA-0164.0000-RD	No Aquatic Resources Impacted	Washington	Southwest	ROW - Travel LOD		
PA-WA-0171.0000-RR*	S28, S27, S142	Washington	Southwest	ROW - Travel LOD		
PA-WA-0172.0000-RD	S29	Washington	Southwest			
PA-WA-0176.0000-RR	S121	Washington	Southwest			
PA-AL-0001.0000-RR	No Aquatic Resources Impacted	Allegheny	Southwest	ROW - Travel and Clearing LOD		
PA-AL-0033.0000-RD	S163	Allegheny	Southwest			
PA-WM1-0012.0000-RR	S122, S222	Westmoreland	Southwest	ROW - Travel and Clearing LOD		
PA-WM1-0020.0000-WX	S224	Westmoreland	Southwest	ROW - Travel and Clearing LOD		
PA-WM1-0023.0000-RD*	S172	Westmoreland	Southwest	ROW - Travel and Clearing LOD		
PA-WM1-0039.0000-RD	S181, S226	Westmoreland	Southwest	ROW - Travel and Clearing LOD		
PA-WM1-0042.0000-WX	S182	Westmoreland	Southwest			
PA-WM1-0044.0000-RD	S184	Westmoreland	Southwest	ROW - Travel and Clearing LOD		
PA-WM1-0054.0000-RD	S228, S227, W68	Westmoreland	Southwest			
PA-WM1-0072.0000-RD*	S198	Westmoreland	Southwest	ROW - Travel and Clearing LOD		

PA-WM1-0088.0000-RR*	S199	Westmoreland	Southwest	ROW - Travel and Clearing LOD		
PA-WM1-0111.0000-RD	S202, S201	Westmoreland	Southwest			
PA-WM1-0144.0000-RD	S215, W61	Westmoreland	Southwest	ROW - Travel and Clearing LOD		
PA-WM1-0157.0000-RD	No Aquatic Resources Impacted	Westmoreland	Southwest			
PA-WM2-0021.0000-RD*	S-Q5, S-Q8, S-Q7, S-Q9, Q6, Q7, Q8	Westmoreland	Southwest			
PA-WM2-0021.0000-RD-16*	S-Q5, S-Q8, S-Q7, S-Q9, Q6, Q7, Q8, Q4	Westmoreland	Southwest			
PA-WM2-0064.0000-WX*	Pond-O4	Westmoreland	Southwest	ROW - Travel and Clearing LOD		
PA-WM2-0064.0000-WX-16*	Pond-O4	Westmoreland	Southwest	ROW - Travel and Clearing LOD		
PA-WM2-0090.0000-RD	S-P20, S-P19, P13, P14, Pond-P3	Westmoreland	Southwest	ROW - Travel LOD		
PA-WM2-0090.0000-RD-16	S-P20, Pond-P3	Westmoreland	Southwest	ROW - Travel LOD		
PA-WM2-0093.0000-RD*	S-O61, O45	Westmoreland	Southwest	ROW - Travel and Clearing LOD		
PA-WM2-0093.0000-RD-16*	S-O61, O45	Westmoreland	Southwest	ROW - Travel and Clearing LOD		
PA-IN-0000.0001-WX	S-J55, N28, J52	Indiana	Southwest			
PA-IN-0000.0001-WX-16	S-J55, S-J56, N28	Indiana	Southwest			
PA-IN-0002.0000-RR	S-J57	Indiana	Southwest	ROW - Travel LOD		
PA-IN-0002.0000-RR-16	S-J57, P1	Indiana	Southwest	ROW - Travel LOD		
PA-IN-0019.0000-RR	S-J58, J53	Indiana	Southwest			
PA-IN-0019.0000-RR-16	S-J58, J53	Indiana	Southwest			
PA-IN-0022.0000-RD*	S-O113, O77	Indiana	Southwest			
PA-IN-0022.0000-RD-16*	S-O113, O77, N61	Indiana	Southwest			
PA-IN-0025.0000-RD	No Aquatic Resources Impacted	Indiana	Southwest			
PA-IN-0025.0000-RD-16	No Aquatic Resources Impacted	Indiana	Southwest			
PA-IN-0048.0000-RD	N57, N56	Indiana	Southwest			
PA-IN-0048.0000-RD-16	N57, N56	Indiana	Southwest			
PA-IN-0086.0000-RD*	S-N66, N34	Indiana	Southwest		EV	
PA-IN-0086.0000-RD-16*	S-N65, S-N66, N34, N35	Indiana	Southwest		EV	
PA-CA-0016.0000-RD*	S-N42, S-N41, N25, N26, N27	Cambria	Southwest			

PA-CA-0016.0000-RD-16*	S-N41, N25, N26, N27	Cambria	Southwest			
PA-CA-0023.0000-RD*	S-N39, S-O43, S-N36, S-O44, N20, N24	Cambria	Southwest			
PA-CA-0023.0000-RD-16*	S-N39, S-O43, S-N36, S-O44, N20, N24, O35	Cambria	Southwest			
PA-CA-0047.0000-SR*	S-CC8, CC16, CC19, CC17	Cambria	Southwest	ROW - Travel LOD		
PA-CA-0047.0000-SR-16*	S-CC8, CC16, CC19, CC17	Cambria	Southwest	ROW - Travel LOD		
PA-CA-0069.0000-RD*	S-N34, S-N17, N18	Cambria	Southwest	ROW - Travel and Clearing LOD		
PA-CA-0069.0000-RD-16*	S-N34, S-N17, N18	Cambria	Southwest	ROW - Travel and Clearing LOD		
PA-CA-0089.0000-RR*	S-K33, K31	Cambria	Southwest			
PA-CA-0089.0000-RR-16*	S-K33, K31	Cambria	Southwest			
PA-CA-0091.0016-RD*	M59, L62	Cambria	Southwest		EV	
PA-CA-0091.0016-RD-16*	M59, L62	Cambria	Southwest		EV	
PA-BL-0001.0021-RD*	BB120	Blair	Southcentral	ROW - Travel LOD	EV	
PA-BL-0001.0021-RD-16*	BB120	Blair	Southcentral	ROW - Travel LOD	EV	
PA-BL-0001.0027-RD*	S-M69, M49, M79	Blair	Southcentral		EV	
PA-BL-0001.0027-RD-16*	S-M69, M49, M79	Blair	Southcentral		EV	
PA-BL-0001.0032-RD*	No Aquatic Resources Impacted	Blair	Southcentral	ROW - Travel and Clearing LOD		
PA-BL-0001.0032-RD-16*	No Aquatic Resources Impacted	Blair	Southcentral	ROW - Travel and Clearing LOD		
PA-BL-0001.0048-RR*	S-BB48, BB58	Blair	Southcentral	ROW - Travel and Clearing LOD	EV	
PA-BL-0001.0048-RR-16*	S-BB48, BB58	Blair	Southcentral	ROW - Travel and Clearing LOD	EV	
PA-BL-0001.0094-WX*	S-L77, S-L76, S-BB95, S-BB92, L55, L54, L56	Blair	Southcentral		EV	
PA-BL-0001.0094-WX-16*	S-L77, S-L76, S-BB95, S-BB92, L55, L54, BB125, L56	Blair	Southcentral		EV	
PA-BL-0122.0000-WX*	S-M31, S-M32, S-M38, M24, M29	Blair	Southcentral	ROW - Travel and Clearing LOD	EV	
PA-BL-0122.0000-WX-16*	S-M31, S-M32, S-M38, M24, M29	Blair	Southcentral	ROW - Travel and Clearing LOD	EV	
PA-BL-0126.0000-RD*	S-M33, S-M30, M26	Blair	Southcentral		EV	
PA-BL-0126.0000-RD-16*	S-M33, S-M30	Blair	Southcentral			

PA-HU-0019.0002-RD*	S-Y7, S-Y6, S-Y5, Y7, Y6	Huntingdon	Southcentral			
PA-HU-0019.0002-RD-16*	S-Y6, S-Y5, Y7, Y6	Huntingdon	Southcentral			
PA-HU-0020.0007-RD	No Aquatic Resources Impacted	Huntingdon	Southcentral			
PA-HU-0020.0007-RD-16	No Aquatic Resources Impacted	Huntingdon	Southcentral			
PA-HU-0020.0008-SS2	S-Y3, S-Y2, S-Y1, Y1, Y3, Y2, Y4	Huntingdon	Southcentral	ROW - Travel and Clearing LOD		
PA-HU-0020.0008-SS2-16	S-Y3, S-Y2, S-Y1, Y1, Y3, Y2, Y4	Huntingdon	Southcentral	ROW - Travel and Clearing LOD		
PA-HU-0020.0008-WX	LK-2	Huntingdon	Southcentral			
PA-HU-0020.0008-WX-16	LK-2	Huntingdon	Southcentral			
PA-HU-0047.0000-RD*	S-L46, L27	Huntingdon	Southcentral			
PA-HU-0047.0000-RD-16*	S-L46, S-L45, L27, Pond I4	Huntingdon	Southcentral			
PA-HU-0078.0000-WX*	S-L28, S-L29	Huntingdon	Southcentral			
PA-HU-0078.0000-WX-16*	S-L28, S-L29	Huntingdon	Southcentral			
PA-HU-0106.0000-RD*	S-K94, K70, K69	Huntingdon	Southcentral			
PA-HU-0106.0000-RD-16*	S-K94, K70, K69	Huntingdon	Southcentral			
PA-HU-0110.0000-SR*	S-K93, S-K91, K68	Huntingdon	Southcentral			
PA-HU-0110.0000-SR-16*	S-K93, S-K91, K68	Huntingdon	Southcentral			
PA-JU-0004.0000-WX*	S-K74, K60, K59	Juniata	Southcentral			
PA-JU-0004.0000-WX-16*	S-K74, K60, K59	Juniata	Southcentral			
PA-PE-0002.0000-RD*	S-L6, L2, L1	Perry	Southcentral		EV	
PA-PE-0002.0000-RD-16*	S-L6, L2, L1	Perry	Southcentral		EV	
PA-CU-0015.0000-RD*	S-I89, J40, I63, J40	Cumberland	Southcentral			
PA-CU-0015.0000-RD-16*	S-I89, J40, I63, J40	Cumberland	Southcentral			
PA-CU-0053.0000-RD	S-BB120, W177	Cumberland	Southcentral	ROW - Travel LOD		
PA-CU-0053.0000-RD-16	S-BB120, W177	Cumberland	Southcentral	ROW - Travel LOD		
PA-CU-0062.0000-WX*	S-J37A, S-J36, S-J37B, S-J41, J35, J35	Cumberland	Southcentral			
PA-CU-0062.0000-WX-16*	S-J37A, S-J36, S-J37B, S-J41, J35	Cumberland	Southcentral			
PA-CU-0067.0000-RD*	S-J34, J31	Cumberland	Southcentral			
PA-CU-0067.0000-RD-16*	S-J34, J31	Cumberland	Southcentral			
PA-CU-0125.0001-WX*	S-J18	Cumberland	Southcentral			
PA-CU-0125.0001-WX-16*	S-J18	Cumberland	Southcentral			
PA-CU-0128.0000-WX*	S-I53, S-I54, S-K45, K44, J9, J10	Cumberland	Southcentral			
PA-CU-0128.0000-WX-16*	S-I53, S-I54, S-K45, K44, I36, J9, J10	Cumberland	Southcentral			
PA-CU-0136.0000-RD	No Aquatic Resources Impacted	Cumberland	Southcentral			

PA-CU-0136.0000-RD-16	No Aquatic Resources Impacted	Cumberland	Southcentral			
PA-CU-0136.0002-WX	S-148, I32, I31	Cumberland	Southcentral		EV	
PA-CU-0136.0002-WX-16	S-148, S-150, I32, I31	Cumberland	Southcentral		EV	
PA-CU-0136.0003-RD*	S-147, I30	Cumberland	Southcentral		EV	
PA-CU-0136.0003-RD-16*	S-147, I30	Cumberland	Southcentral		EV	
PA-CU-0136.0012-RD*	No Aquatic Resources Impacted	Cumberland	Southcentral			
PA-CU-0136.0012-RD-16*	No Aquatic Resources Impacted	Cumberland	Southcentral			
PA-CU-0136.0020-RR*	No Aquatic Resources Impacted	Cumberland	Southcentral			
PA-CU-0136.0020-RR-16*	No Aquatic Resources Impacted	Cumberland	Southcentral			
PA-CU-0174.001*	No Aquatic Resources Impacted	Cumberland	Southcentral			
PA-CU-0174.001-16*	No Aquatic Resources Impacted	Cumberland	Southcentral			
PA-CU-0176.0014-RD*	No Aquatic Resources Impacted	Cumberland	Southcentral			
PA-CU-0176.0014-RD-16*	No Aquatic Resources Impacted	Cumberland	Southcentral			
PA-CU-0176.0019-RD*	No Aquatic Resources Impacted	Cumberland	Southcentral			
PA-CU-0176.0019-RD-16*	No Aquatic Resources Impacted	Cumberland	Southcentral			
PA-CU-0189.0000-RD*	S-143, S-141, S-140, I27, I26, I25	Cumberland	Southcentral			
PA-CU-0189.0000-RD-16*	S-143, S-141, S-140, I27, I26, I25	Cumberland	Southcentral			
PA-CU-0203.0000-WX*	S-136, S-134, I24	Cumberland	Southcentral			
PA-CU-0203.0000-WX-16*	S-136, S-134, I24	Cumberland	Southcentral			
PA-YO-0016.0000-RD*	No Aquatic Resources Impacted	York	Southcentral	ROW - Travel LOD		
PA-YO-0016.0000-RD-16*	No Aquatic Resources Impacted	York	Southcentral	ROW - Travel LOD		
PA-YO-0040.0002-RD*	No Aquatic Resources Impacted	York	Southcentral	ROW - Travel and Clearing LOD		
PA-YO-0040.0002-RD-16*	No Aquatic Resources Impacted	York	Southcentral	ROW - Travel and Clearing LOD		
PA-YO-0063.0000-RR*	S-A22, A18, BB1	York	Southcentral	ROW - Travel and Clearing LOD		
PA-YO-0063.0000-RR-16*	S-A22, A18, BB1	York	Southcentral	ROW - Travel and Clearing LOD		
PA-DA-0005.0000-RD*	No Aquatic Resources Impacted	Dauphin	Southcentral			
PA-DA-0005.0000-RD-16*	No Aquatic Resources Impacted	Dauphin	Southcentral			

PA-DA-0019.0000-RD	No Aquatic Resources Impacted	Dauphin	Southcentral			
PA-DA-0019.0000-RD-16	No Aquatic Resources Impacted	Dauphin	Southcentral			
PA-DA-0020.0000-RD*	No Aquatic Resources Impacted	Dauphin	Southcentral			
PA-DA-0020.0000-RD-16*	No Aquatic Resources Impacted	Dauphin	Southcentral			
PA-DA-0030.0000-RR	S-C54, S-B70	Dauphin	Southcentral	ROW - Travel and Clearing LOD		
PA-DA-0030.0000-RR-16	S-C54, S-B70	Dauphin	Southcentral	ROW - Travel and Clearing LOD		
PA-DA-0039.0000-RD*	S-A75, CC22	Dauphin	Southcentral			
PA-DA-0039.0000-RD-16*	S-A75, CC22	Dauphin	Southcentral			
PA-DA-0056.0000-RD*	S-B63, S-B62, S-B61, S-B60, C26, B58, B57	Dauphin	Southcentral			
PA-DA-0056.0000-RD-16*	S-B63, S-B62, S-B61, S-B60, C26, B58, B57	Dauphin	Southcentral			
PA-DA-0063.0000-RD*	No Aquatic Resources Impacted	Dauphin	Southcentral			
PA-DA-0063.0000-RD-16*	No Aquatic Resources Impacted	Dauphin	Southcentral			
PA-LE-0001.0000-SR*	S-A47, S-K18, J47	Lebanon	Southcentral			
PA-LE-0001.0000-SR-16*	S-A47, S-K18, J47	Lebanon	Southcentral			
PA-LE-0005.0000-RD*	S-A49	Lebanon	Southcentral			
PA-LE-0005.0000-RD-16*	S-A51, S-A49	Lebanon	Southcentral			
PA-LE-0009.0000-RD*	No Aquatic Resources Impacted	Lebanon	Southcentral	ROW - Travel LOD		
PA-LE-0009.0000-RD-16*	No Aquatic Resources Impacted	Lebanon	Southcentral	ROW - Travel LOD		
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, H13, H14	Lebanon	Southcentral			
PA-LE-0117.0000-WX-16*	S-C86, H13, H14	Lebanon	Southcentral			
PA-LA-0004.0000-SR	S-K35, S-K34, K32	Lancaster	Southcentral		EV	
PA-LA-0004.0000-SR-16	S-K35, S-K34, K32	Lancaster	Southcentral		EV	
PA-LA-0014.0000-SR*	S-A82, S-A83, S-A79, S-A78, S-A77, A55, A54	Lancaster	Southcentral		EV	BT
PA-LA-0014.0000-SR-16*	S-A82, S-A83, S-A79, S-A78, S-A77, A55, A54	Lancaster	Southcentral		EV	BT
PA-BR-0075.0000-RD*	No Aquatic Resources Impacted	Berks	Southcentral			
PA-BR-0075.0000-RD-16*	No Aquatic Resources Impacted	Berks	Southcentral			
PA-BR-0079.0000-RD*	No Aquatic Resources Impacted	Berks	Southcentral			
PA-BR-0079.0000-RD-16*	No Aquatic Resources Impacted	Berks	Southcentral			

PA-BR-0138.0001-RD*	Pond-B3	Berks	Southcentral	ROW - Travel and Clearing LOD		
PA-BR-0138.0001-RD-16*	Pond-B3	Berks	Southcentral	ROW - Travel and Clearing LOD		
PA-BR-0181.0000-RD*	S-J51, S-A58, S-A57, J48	Berks	Southcentral			
PA-BR-0181.0000-RD-16*	S-J51, S-A58, S-A57, J48, A37	Berks	Southcentral			
PA-CH-0088.0000-RD*	S-Q86, S-Q83, Q77	Chester	Southeast			
PA-CH-0088.0000-RD-16*	S-Q86, S-Q83, Q77, Q76	Chester	Southeast			
PA-CH-0100.0000-RD*	S-H10, H17	Chester	Southeast	ROW - Travel LOD		
PA-CH-0100.0000-RD-16*	S-H11, S-H10, H17	Chester	Southeast	ROW - Travel LOD		
PA-CH-0111.0000-RD*	S-C89, S-C90, S-C87, S-C92, C43	Chester	Southeast			
PA-CH-0111.0000-RD-16*	S-C89, S-C90, S-C87, S-C91, S-C92, C43	Chester	Southeast			
PA-CH-0124.0000-RD	S-H3, S-C69, S-C68, S-C67, S-H4, C37	Chester	Southeast		EV	
PA-CH-0124.0000-RD-16	S-H3, S-C69, S-C68, S-C67, S-H4, C37	Chester	Southeast		EV	
PA-CH-0127.0000-RD	S-H5	Chester	Southeast			
PA-CH-0127.0000-RD-16	S-H5	Chester	Southeast			
PA-CH-0135.0000-RD	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0135.0000-RD-16	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0138.0000-RD*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0138.0000-RD-16*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0167.0000-RD*	S-C63, S-C64	Chester	Southeast			
PA-CH-0167.0000-RD-16*	S-C63, S-C64	Chester	Southeast			
PA-CH-0199.0000-RD*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0199.0000-RD-16*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0212.0000-RD*	S-C60, S-C59, S-C61	Chester	Southeast			
PA-CH-0212.0000-RD-16*	S-C60, S-C59, S-C61	Chester	Southeast			
PA-CH-0219.0000-RD	S-B81, S-B79, B71	Chester	Southeast			
PA-CH-0219.0000-RD-16	S-B81, S-B79, B71	Chester	Southeast			
PA-CH-0245.0000-RD	S-B79	Chester	Southeast			
PA-CH-0245.0000-RD-16	S-B79	Chester	Southeast			
PA-CH-0256.0000-RR	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0256.0000-RR-16	K21	Chester	Southeast			

PA-CH-0261.0000-RD*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0261.0000-RD-16*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0277.0000-RD*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0277.0000-RD-16*	No Aquatic Resources Impacted	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 Resources Impacted	Chester	Southeast			
PA-CH-0326.0000-RD-16*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0326.0004-SR*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0326.0004-SR-16*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0326.0006-RD*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0326.0006-RD-16*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0355.0000-RD*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0355.0000-RD-16*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0370.0000-RD*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0370.0000-RD-16*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0383.0003-SR*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0383.0003-SR-16*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0413.0000-RD*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0413.0000-RD-16*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0420.0000-RD*	No Aquatic Resources Impacted	Chester	Southeast			
PA-CH-0420.0000-RD-16*	No Aquatic Resources Impacted	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 Resources Impacted	Delaware	Southeast			
PA-DE-0008.0000-RD-16*	No Aquatic Resources Impacted	Delaware	Southeast			
PA-DE-0016.0000-RD*	S-B52, S-B54, B51	Delaware	Southeast		EV	
PA-DE-0016.0000-RD-16*	S-B55, S-B54	Delaware	Southeast			
PA-DE-0032.0000-RD*	No Aquatic Resources Impacted	Delaware	Southeast			

PA-DE-0032.0000-RD-16*	No Aquatic Resources Impacted	Delaware	Southeast			
PA-DE-0046.0000-RD*	S-C40, S-C42, C21	Delaware	Southeast			
PA-DE-0046.0000-RD-16*	S-C40, S-C42	Delaware	Southeast			
PA-DE-0074.0000-RD	S-C23, S-C25, S-C24, S-C26, C10	Delaware	Southeast		EV	
PA-DE-0074.0000-RD-16	S-C23, S-C25, S-C24, S-C26, C10	Delaware	Southeast		EV	
PA-DE-0100.0000-RR*	S-I2, I1	Delaware	Southeast	ROW - Travel LOD	EV	
PA-DE-0100.0000-RR-16*	S-I2, I1	Delaware	Southeast	ROW - Travel LOD	EV	
PA-DE-0104.0008-WX	S-H37, S-H41, S-H39	Delaware	Southeast	ROW - Travel and Clearing LOD		
PA-DE-0104.0008-WX-16	S-H37, S-H41, S-H39	Delaware	Southeast	ROW - Travel and Clearing LOD		
PA-DE-0104.0023-RR	S-I18, I16, BA5, BA6	Delaware	Southeast			
PA-DE-0104.0023-RR-16	S-I18, I16, BA5, BA6	Delaware	Southeast			
PA-DE-0104.0025-RD	S-H43, S-H44	Delaware	Southeast	ROW - Travel and Clearing LOD		
PA-DE-0104.0025-RD-16	S-H43, S-H44	Delaware	Southeast	ROW - Travel and Clearing LOD		

*Indicates a private water well is within 450 ft of the HDD. Wells were identified using DCNR's PAGWIS data and landowner outreach. See Water Supply Assessment Plan in Attachment 12B for additional actions related to water wells.

APPENDIX B

Inadvertent Return Data Form



**Sunoco
Pipeline L.P.**

INITIAL REPORT
Subject to Change as Additional Information Becomes Available

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

REPORT DATE:		HDD ALIGNMENT #	
PROJECT SITE:		HDD COMPANY:	
DATE AND TIME WHEN IR WAS DISCOVERED		DATE:	TIME:
LOCATION: STREET	MUNICIPALITY:		COUNTY:
LATITUDE (decimal):	LONGITUDE (decimal):	FROM STATION:	TO STATION
STREAM NAME:	POND / LAKE NAME:		WETLAND NAME:
DEP PERMIT Nos. (102 AND 105)			
CORPS PERMIT NO.			
IR TRACKING ID:			
IS AUGUST 8, 2017 ORDER APPLICABLE?	LISTED IN WHICH EXHIBIT?	DESCRIPTION IN EXHIBIT	
I. BACKGROUND INFORMATION			
A. NAME OF ALL PERSON(S) PROVIDING INFORMATION FOR THIS REPORT AND CONTACT INFORMATION			
B. MATERIAL(S) RELEASED			
C. DESCRIPTION OF THE RELEASE (PROVIDE DATES, TIMES, AND DURATION OF IR IF KNOWN, INCLUDE ROOT CAUSE(S))			
D. ESTIMATED QUANTITY OF MATERIAL RELEASED			
E. ESTIMATED AERIAL EXTENT OF MATERIAL RELEASED			
F. HAS IR BEEN CONTAINED WITHIN THE LIMIT OF DISTURBANCE? (PROVIDE DATE AND TIME)		NOTE:	
F1. WHAT REVISION(S) TO DRILLING WERE IMPLEMENTED PRIOR TO RESUMPTION OF DRILLING? (PROVIDE DATE AND TIME)			
G. T & E / BOG TURTLE AREA?		NOTE:	
H. TROUT STREAM?		NOTE:	
I. EV WATER		NOTE:	
J. EV WETLAND		NOTE:	
K. ANY DOWNSTREAM IMPACTS? (PROVIDE DESCRIPTION, DATES, TIMES, AND DURATION)		NOTE:	
K1. Did a Fish Kill Occur? (PROVIDE DATES AND TIMES)		NOTE:	
K2. Has the Substrate Been Coated?		NOTE:	
K3. Where any Water Supplies Impacted? (PROVIDE DATES AND TIMES)		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)		NOTE:	
MAP:			

II. VERBAL NOTIFICATIONS									
PADEP EMERGENCY NOTIFICATION:			WHO MADE THE CALL ON BEHALF OF SPLP?						
PHONE NUMBER CALLED:									
DATE:									
TIME:									
PERSON CALLED:									
NOTES:									
V/M?			NOTE:						
LIST ANY NOTIFICATIONS OF INCIDENT MADE TO WATER INTAKES, WATER WELL OWNERS AND LANDOWNERS, INCLUDING DATE AND TIME WHEN EACH NOTIFICATION OCCURRED:									
NAME:		DATE:		TIME:		PUBLIC OR PRIVATE:		NOTE:	
NAME:		DATE:		TIME:		PUBLIC OR PRIVATE:		NOTE:	
NAME:		DATE:		TIME:		PUBLIC OR PRIVATE:		NOTE:	
NAME:		DATE:		TIME:		PUBLIC OR PRIVATE:		NOTE:	
COUNTY CONSERVATION DISTRICT NOTIFICATION:			WHO MADE THE CALL ON BEHALF OF SPLP?						
PHONE NUMBER CALLED:									
DATE:									
TIME:									
PERSON CALLED:									
NOTES:									
V/M?			NOTE:						
USACE REGULATORY NOTIFICATION:			WHO MADE THE CALL ON BEHALF OF SPLP?						
PHONE NUMBER CALLED:									
DATE:									
TIME:									
PERSON CALLED:									
NOTES:									
V/M?			NOTE:						
FISH AND BOAT COMMISSION NOTIFICATION:			WHO MADE THE CALL ON BEHALF OF SPLP?						
PHONE NUMBER CALLED:									
DATE:									
TIME:									
PERSON CALLED:									
NOTES:									
V/M?			NOTE:						
OTHER NOTIFICATION:			WHO MADE THE CALL ON BEHALF OF SPLP?						
PHONE NUMBER CALLED:									
DATE:									
TIME:									
PERSON CALLED:									
NOTES:									
V/M?			NOTE:						
III. ACTIONS TAKEN/FOLLOW UP									
IMMEDIATE ACTION TAKEN:									
A. WHEN DID THE RELEASE OCCUR?									
B. DATE AND TIME OF CESSATION OF DRILLING.		DATE:		TIME:		NOTE:			
C. WAS DRILLING RESUMED?			IF SO, HAS THE RELEASE CONTINUED OR ANOTHER RELEASE OCCURRED?			NOTE:			
CORRECTIVE MEASURES SUMMARY:									
A. WAS THE IR CEASED?			HOW AND WHEN?						
B. WAS THE IR CONTAINED?			HOW AND WHEN?						
C. WAS THE IR/DRILLING FLUID RECOVERED?			HOW AND WHEN?						
D. WAS DRILLING RESUMED?			IF SO, WHAT MODIFICATIONS TO THE HDD PROCESS WERE USED?			IF SO, HAS ANOTHER RELEASE OCCURRED?			



If Interim report, Subject to Change as Additional Information Becomes Available
 If Interim Report, this Report is cumulative, containing information from previous reports in addition to new information and may change
SPLP PENNSYLVANIA PIPELINE PROJECT
HORIZONTAL DIRECTIONAL DRILLING – INADVERTENT RETURN REPORT FORM

	IF INTERIM, SEE NOTE ABOVE.	NOTES:				
REPORT DATE:			HDD ALIGNMENT #			
PROJECT SITE:			HDD COMPANY:			
DATE AND TIME WHEN IR WAS INITIALLY DISCOVERED			DATE:		TIME:	
LOCATION: STREET			MUNICIPALITY:		COUNTY:	
LATITUDE (decimal):		LONGITUDE (decimal):	FROM STATION:		TO STATION	
STREAM NAME:			POND / LAKE NAME:		WETLAND NAME:	
DEP PERMIT Nos. (102 AND 105)						
CORPS PERMIT NO.						
IR TRACKING ID:						
IS AUGUST 8, 2017 ORDER APPLICABLE?		LISTED IN WHICH EXHIBIT?		DESCRIPTION IN EXHIBIT		
COMPLETE THE FOLLOWING QUESTIONS IF APPLICABLE:						
1. IS THE IR ON-GOING? Provide dates, times, and duration of all IRs.			NOTE:			
2. HAS THE IR CEASED? Provide date and time for each IR.			NOTE:			
3. WHEN WAS DRILLING STOPPED? Provide date and time for each IR.						
4. VOLUME OF IR (CURRENT ESTIMATE)?						
4A. DOES THIS VOLUME RELEASE REPRESENT A TOTAL VOLUME RELEASED SINCE THE RELEASE BEGAN?			NOTE:			
5. HAS THIS VOLUME CHANGED SINCE THE LAST REPORT? IF SO, HOW?			NOTE:			
6. WHAT IS THE DURATION OF EACH IR? Provide dates and times.						
7. WHAT STEPS WERE TAKEN TO STOP EACH IR? Provide dates and times.						
8. WHAT REVISIONS TO THE DRILLING WERE IMPLEMENTED PRIOR TO EACH RESUMPTION OF DRILLING? Provide dates and times.						
8a. What was the technical basis for resuming drilling?						
9. WAS THE DRILLING RESUMED? Provide dates, times, and duration for each IR.			NOTE:			
9A. IF SO, HAS ANOTHER IR OCCURRED? IF YES, provide dates and times for each IR.			NOTE:			
10. HAS IR BEEN CONTAINED? If YES, Provide dates, times, and measures for each IR.			NOTE:			
11. HAS A FISH KILL OCCURRED? If YES, Provide dates, times, and measures for each IR.			NOTE:			
12. ARE FISH AND OR OTHER AQUATIC LIFE IN DISTRESS?			NOTE:			
13. AS OF THE DATE OF THIS REPORT, DOES DRILLING FLUID REMAIN IN THE WETLAND OR WATERCOURSE?			NOTE:			
14. IS THERE NOTICEABLE HIGH LEVELS OF TURBIDITY IN THE WATERCOURSE? If YES, Provide dates, times, and duration for each IR.			NOTE:			
15. HAS FLUID LOSS OCCURRED? (IF KNOWN) If YES, Provide dates, times, and duration for each loss of fluid.			NOTE:			
16. CORRECTIVE MEASURES IMPLEMENTED NOT PREVIOUSLY LISTED ABOVE? Provide dates and times for each IR.						
17. DESCRIPTION OF IMPACTS INCLUDING TIMES, DATES, AND DURATION OF EACH IMPACT.						

LIST ANY NOTIFICATIONS OF INCIDENT MADE TO WATER INTAKES, WATER WELL OWNERS AND LANDOWNERS, INCLUDING DATE AND TIME WHEN EACH NOTIFICATION OCCURRED:									
NAME:		DATE:		TIME:		PUBLIC OR PRIVATE:		NOTE:	
NAME:		DATE:		TIME:		PUBLIC OR PRIVATE:		NOTE:	
NAME:		DATE:		TIME:		PUBLIC OR PRIVATE:		NOTE:	
NAME:		DATE:		TIME:		PUBLIC OR PRIVATE:		NOTE:	
NAME:		DATE:		TIME:		PUBLIC OR PRIVATE:		NOTE:	
NAME:		DATE:		TIME:		PUBLIC OR PRIVATE:		NOTE:	
NAME:		DATE:		TIME:		PUBLIC OR PRIVATE:		NOTE:	
NAME OF ALL PERSON(S) PROVIDING INFORMATION FOR THIS REPORT AND CONTACT INFORMATION									
NAME:		PHONE:		EMAIL:		TITLE:			
NAME:		PHONE:		EMAIL:		TITLE:			
NAME:		PHONE:		EMAIL:		TITLE:			
NAME:		PHONE:		EMAIL:		TITLE:			
NAME:		PHONE:		EMAIL:		TITLE:			
IMPACTED RESOURCE(S)									
RESOURCE:		SURFACE WATER CLASSIFICATION OR WETLAND TYPE:		WHAT STEPS HAVE BEEN TAKEN TO ELIMINATE OR MITIGATE THE IMPACTS?					
RESOURCE:		SURFACE WATER CLASSIFICATION OR WETLAND TYPE:		WHAT STEPS HAVE BEEN TAKEN TO ELIMINATE OR MITIGATE THE IMPACTS?					
RESOURCE:		SURFACE WATER CLASSIFICATION OR WETLAND TYPE:		WHAT STEPS HAVE BEEN TAKEN TO ELIMINATE OR MITIGATE THE IMPACTS?					
RESOURCE:		SURFACE WATER CLASSIFICATION OR WETLAND TYPE:		WHAT STEPS HAVE BEEN TAKEN TO ELIMINATE OR MITIGATE THE IMPACTS?					
RESOURCE:		SURFACE WATER CLASSIFICATION OR WETLAND TYPE:		WHAT STEPS HAVE BEEN TAKEN TO ELIMINATE OR MITIGATE THE IMPACTS?					
RESOURCE:		SURFACE WATER CLASSIFICATION OR WETLAND TYPE:		WHAT STEPS HAVE BEEN TAKEN TO ELIMINATE OR MITIGATE THE IMPACTS?					
RESOURCE:		SURFACE WATER CLASSIFICATION OR WETLAND TYPE:		WHAT STEPS HAVE BEEN TAKEN TO ELIMINATE OR MITIGATE THE IMPACTS?					
ADDITIONAL INFORMATION									
IF DRILLING RESUMED DOES IT INVOLVE A CHANGE IN EQUIPMENT, DEPTH OR ALIGNMENT?		NOTE:							
PUBLIC OR PRIVATE WATER SUPPLY - PROXIMITY TO DOWNSTREAM WATER INTAKES?		NOTE:							
PROXIMITY TO PUBLIC OR PRIVATE WATER SUPPLIES AND WELLS?		NOTE:							
LIST AND DESCRIBE MATERIAL(S) RELEASED:									
HAS THE ESTIMATED QUANTITY OF THE RELEASE INCREASED SINCE THE LAST REPORT? IF SO, HOW?		NOTE:							
ESTIMATED AERIAL EXTENT OF RELEASE									
EXTENT (LINEAR FEET/MILES) OF DOWNSTREAM EDGE OF RELEASE, IF ANY									
DESCRIBE ROOT CAUSE(S) OF IR									
OTHER COMMENTS: NOTE ANY MATERIAL CHANGE IN THE INFORMATION FROM PRIOR REPORTS)									
HAVE THE IMPACTS FROM THE IR BEEN REMEDIATED? Please provide date of remediation.									
PRINTED NAME, TITLE AND SIGNATURE OF PERSON(S) COMPLETING THIS REPORT									
NAME:		TITLE:		SIGNATURE:		DATE:			
PADEP USE ONLY									
AUTHORIZATION FROM PADEP OR CCD TO RESUME HDD REQUIRED?		NOTE:							
PERMIT AMENDMENT?		NOTE:							
PADEP / CCD REVIEWER NAME:		DATE:							

APPENDIX C

Inadvertent Return Risk Assessments *(provided under separate cover)*

The table below lists the drills on ME1 projects that had returns and indicates whether or not there is an associated ME2 drill. The corresponding risk assessment reports state that there was an inadvertent return on ME1 and describes the nature of the return. The risk assessment reports speak to the inadvertent return likelihood, potential impacts and severity, and mitigation measures.

ME1 Drill #	ME1 Drill Size	ME2 Drill	ME2 Drawing	Drill Name	Township	County	Latitude	Longitude
HDD 4	8"	No			Upper Frankford	Cumberland	40.2451	-77.3619
HDD 5	8"	No			Upper Frankford	Cumberland	40.2451	-77.3497
HDD 10	8"	Yes	PA-LE-0117.0000	Creek & T307	Heidelberg	Lebanon	40.2854	-76.2394
HDD 13	8"	No			West Cocalico	Lancaster	40.2827	-76.1580
HDD 14	8"	No			West Cocalico	Lancaster	40.2838	-76.1112
HDD 22	8"	Yes	PA-CH-0088.0000	Pennsylvania Turnpike 76	Upper Uwchlan	Chester	40.0896	-75.7300
HDD 23	8"	Yes	PA-CH-0111.0000	Park Road	Upper Uwchlan	Chester	40.0751	-75.7024
HDD 23	8"	Yes	PA-CH-0124.0000		Upper Uwchlan	Chester	40.089910	-75.730608
HDD 24	8"	No			Edgmont	Delaware	39.9406	-75.4943
	12"	Yes	PA-WA-0103.0000	Linden Creek Rd	North Strabane	Washington	40.2354	-80.1373
	12"	Yes	PA-AL-0033.0000	Hayden Blvd	Elizabeth	Allegheny	40.2210	-79.8480
	12"	Yes	PA-WM1-0088.0000-RR	Northern Southern Railway	Jeanette	Westmoreland	40.3300	-79.6326
	12"	Yes	PA-WM1-0039.0000-RD	Kalamazoo Road	Sewickley	Westmoreland	40.2585	-79.6987
	12"	Yes	PA-WA-0127.0000-RR	Allegheny Valley RR	Nottingham	Washington	40.2356	-80.0907
	12"	Yes	PA-WA-0171.0000-RR	Wheeling and Lake Erie RR	Union	Washington	40.2308	-79.9966

The following is presentation of individual inadvertent return risk assessments for each area planned for HDD with either a single 20-inch pipeline (Houston to Delmont section) or both the 20-inch and 16-inch pipeline. Final HDD drawings are found within Attachment 7 of the PADEP Joint Application for Permit.

SUNOCO PIPELINE
An ENERGY TRANSFER Company

Pennsylvania Pipeline Project

Operations Plan

January 2018

Sunoco Pipeline
An ENERGY TRANSFER COMPANY
535 Fritztown Road
Sinking Spring, PA 19608



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- Appendix D SPLP Pennsylvania Pipeline Project Chapter 105 Wetland and Water Crossing and Trenchless Upland Crossing Notice to Proceed Form

LIST OF ACRONYMS AND ABBREVIATIONS

ATON	Aids to Navigation
BMPs	best management practices
CCD	County Conservation District
CEI	Chief Environmental Inspector
CMs	Spread Construction Managers
DC	Document Controllers
ECC	Environmental Compliance Coordinator
ECP	Environmental Compliance Program
EIM	Environmental Inspection Manager
EIs	Environmental Inspectors
EPM	Environmental Project Manager
E&S	Erosion and Sediment
E&S Plans	Erosion and Sediment Control and Site Restoration Plans
E&SCs	Erosion and Sediment Controls
GE	Geotechnical Evaluations Lead
HDD	horizontal directional drill
IR Plan	Inadvertent Return Assessment, Preparedness, Prevention and Contingency Plan
IT	information technology
LEI	Lead Environmental Inspector
MOC	Management of Change
NPDES	National Pollutant Discharge Elimination System
NTP	Notice to Proceed
NTP Form	SPLP Pennsylvania Pipeline Project Chapter 105 Wetland and Water Crossing Notice to Proceed Form
PADCNR	Pennsylvania Department of Conservation and Natural Resources
PADEP	Pennsylvania Department of Environmental Protection
PAFBC	Pennsylvania Fish and Boat Commission
PCSM	Post-Construction Stormwater Management
PG	Professional Geologist
PGC	Pennsylvania Game Commission
PCS	Project Consulting Services
PM	Project Manager
PNDI	Pennsylvania Natural Diversity Inventory
PPC	Preparedness, Prevention and Contingency
PPC Plan	Preparedness, Prevention and Contingency Plan
PPP	Pennsylvania Pipeline Project
Procedures	Impact Avoidance, Minimization, and Mitigation Procedures
Project	Pennsylvania Pipeline Project
QC	quality control
SMs	Spread Project Managers
SPLP	Sunoco Pipeline LP
U.S.	United States
USFWS	United States Fish and Wildlife Service
Void Mitigation Plan	Void Mitigation Plan for Karst Terrain and Underground Mining
Water Supply Plan	Water Supply Assessment, Preparedness, Prevention and Contingency Plan

1.0 INTRODUCTION AND PURPOSE

Sunoco Pipeline LP (SPLP) is committed to ensuring the construction, restoration, and operation of the Pennsylvania Pipeline Project (PPP or Project) is conducted in a manner that is environmentally compliant and protects public safety, health, and welfare. Consistent with that commitment, this Operations Plan documents the measures and controls that SPLP and its contractors will implement to ensure that all conditions of all environmental permits will be followed at all times. To that end, the Operations Plan sets forth SPLP's organization, reporting, controls, and procedures for ensuring compliance and accountability with all environmental regulations, permits, and conditions during the construction and restoration phases of the PPP Project. SPLP will manage and implement this Operations Plan to ensure environmental compliance during all phases of construction and restoration of the Project via corporate oversight (Section 2.1); management team organization, roles, and responsibilities (Sections 2.2 – 2.4); contractual and co-permittee controls (Section 2.5); daily inspection, reporting, and compliance issue resolution process (Section 3.0); critical plan items, including incident reporting (Section 4.0); training (Section 5.0); and, environmental compliance documentation control, transmittal, access, and use (Section 6.0).

This Operations Plan references all mitigation plans, and all Project-specific environmental permits, conditions, and plans that form the environmental compliance requirements for the Project. In addition to federal, state, and local permits and conditions, this includes the following plans:

- Impact Avoidance, Minimization, and Mitigation Procedures (Procedures)
- Erosion and Sediment Control and Site Restoration Plan (E&S Plan)
- Prevention, Preparedness, and Contingency Plan (PPC Plan)
- Water Supply Assessment, Prevention, Preparedness and Contingency Plan (Water Supply Plan)
- Inadvertent Return Assessment, Prevention, Preparedness, and Contingency Plan (IR Plan)
- Void Mitigation Plan for Karst Terrain and Underground Mining (Void Mitigation Plan)
- Aids to Navigation (ATON) Plans
- Compensatory Mitigation Plan Pennsylvania Department of Conservation and Natural Resources (PADCNR) Conservation Plan for Identified Species of Special Concern
- Pennsylvania Game Commission (PGC) Eastern Small-footed Bat Conservation Plan
- PGC Allegheny Woodrat Conservation Plan
- Pennsylvania Fish and Boat Commission (PAFBC) Timber Rattlesnake Conservation Plan
- United States (U.S.) Fish and Wildlife Service USFWS Bog Turtle Conservation Plan
- USFWS Northeastern Bulrush Conservation Plan
- USFWS Myotis Conservation Plan
- USFWS Migratory Bird Habitat Conservation Plan

- Post-Construction Stormwater Management (PCSM) Plan (part of E&S Plan)

Regarding spill prevention and preparedness, SPLP has developed four plans that accompany the E&S Plan that are designed to assess the potential impacts and provide for the protection of upland areas, waters of the Commonwealth and associated water resources from impacts due to Project activities. The overarching PPC Plan is designed to address release prevention in general, and potential impacts to surface waters and public and private water supplies in particular have been analyzed and addressed within two supplemental plans to the PPC Plan; the Water Supply Plan and the IR Plan. The Water Supply Plan provides for the assessment of the existing environment in terms of public and private water supplies in or along the Project areas and impacted waters, as well as the prevention and preparedness measures to be implemented to protect those supplies. The IR Plan outlines the preconstruction activities implemented to ensure sound geological features are included in the Horizontal Directional Drilling (HDD) profile, the measures to prevent impact, and the preparedness plan if an impact were to occur. In addition, a Void Mitigation Plan is provided as part of the E&S Plan and provides an assessment of potential impacts and avoidance and mitigation measures during open-cut and drilling procedures. The purpose of these plans is to protect water resources Project-wide. Attachment 12 of the Project's Chapter 105 Joint Permit Application includes these four plans.

2.0 ENVIRONMENTAL PERMIT COMPLIANCE TEAM SUPERVISION AND DIRECTION OF EIs AND CONTRACTORS

SPLP's Environmental Permit Compliance Team is an integrated framework designed to ensure environmental compliance with all environmental regulations, permits, and conditions during construction and restoration of the PPP Project and provides for accountability at all Project levels including SPLP executives, the SPLP Corporate Construction Compliance Team, an Environmental Compliance Program, (including Environmental Inspectors [EIs]), and SPLP contractors. The specific roles and responsibilities of each group within the Environmental Permit Compliance Team is described below.

2.1 Overall Corporate Executive Oversight

SPLP's Operations Plan includes a corporate oversight program to ensure environmental compliance and accountability with all environmental regulations, permits, and conditions during construction and restoration of the PPP Project. This program is designed to ensure direct, complete, and authoritative control of the construction contractor, methods, and schedule, including ensuring internal SPLP management approval and accountability and required agency approvals of any proposed modifications to Project permits and conditions. This corporate oversight program includes: 1) an environmental compliance team structure, organization, and contacts, 2) chain of command for construction management, compliance assessment and reporting, and project modification approval procedures, and 3) a construction management and contractor environmental compliance training program.

SPLP's **Executive Vice President, Jennifer Street**, has primary and overarching corporate responsibility and accountability for comprehensive environmental compliance. This includes responsibility to oversee and ensure the development, implementation, quality assurance/quality control, auditing, and continuous improvement of corporate environmental compliance programs, systems, and reporting protocols and requirements.

SPLP's **Senior Vice President-Construction, Chris Sonneborn**, has primary and overarching corporate responsibility and accountability for Project construction and compliance with engineering, design, construction, inspection, and commissioning plans and specifications of Project pipeline, station, and appurtenant facilities. This includes responsibility to oversee and ensure the development, implementation, quality assurance/quality control, auditing, and continuous improvement of corporate Project construction compliance programs, systems, and reporting protocols and requirements. This also includes the responsibility to ensure corporate integration of construction management and environmental compliance requirements.

SPLP's **Vice President-Emergency Response & Security, Gus Borkland**, has primary and overarching responsibility and accountability for day-to-day management and implementation of the corporate comprehensive environmental compliance program. This includes responsibility to oversee and ensure proper Project-specific implementation, quality assurance/quality control, auditing, and continuous improvement of the corporate environmental compliance programs, systems, and reporting protocols and requirements.

SPLP's **Executive Project Manager (EPM), Rick Smith**, is primarily responsible for leading and ensuring full corporate oversight, support, and accountability for the management and implementation of the construction, restoration, and placing in-service of the Project. This includes day-to-day management and integration of construction and environmental compliance requirements on the Project. This responsibility includes oversight to ensure day-to-day environmental compliance with all environmental regulations, permits, and conditions during construction and restoration of the Project, including management and implementation of this Operations Plan and associated commitments.

SPLP's executive and project management team also exert corporate oversight and accountability via use of contractual controls of the construction contractors and subcontractors, including the requirement to comply with all applicable environmental laws, regulations, permits, and conditions, and co-permittee status of HDD construction contractors (see Section 2.4). SPLP also directs contractors and subcontractors to comply with environmental compliance training and inspection programs, project modification approval processes, and construction schedule controls. Any violation of these contractual provisions may constitute a breach of the construction contracts and potentially subjects the contractor to damages and/or cancellation of the contract, even if construction schedules are otherwise met.

2.2 Environmental Permit Compliance Team Organization

SPLP has developed a robust environmental compliance team structure and organization to implement this Operations Plan to ensure SPLP and construction contractor/subcontractor accountability and compliance with all environmental regulations, permits, and conditions during construction and restoration of the Project. This structure and organization is designed to ensure direct, complete, redundant, and authoritative control of the construction contractor, methods, and schedule, including ensuring internal SPLP management approval and accountability and required agency approvals of any proposed modifications to Project permits and conditions.

This includes the SPLP Corporate Construction Compliance Team and the supporting SPLP Environmental Compliance Program (ECP) Team focused on environmental training, inspection, monitoring, and permitting. The names, titles, and reporting chain-of-command for these environmental compliance teams are presented in the Project organization chart, provided as

Figure 1 (Appendix A). Appendix A also presents contact information for key members of the environmental compliance team.

SPLP Corporate Construction Compliance Team

As described in the Project Procedures, SPLP in-office and in-field management personnel (see Section 2.3) will supervise all aspects of construction, operation, and maintenance of the Project. Utility or “Craft” inspectors working on behalf of SPLP are staffed throughout all phases of construction to ensure the facilities are installed in accordance with SPLP, federal, state, and local specifications and standards.

Environmental Compliance Program Team

As described in the Project Procedures, supplemental and integral to the Corporate Construction Compliance Team, SPLP will implement a comprehensive ECP (see Section 2.4). The ECP encompasses highly integrated and essential program elements designed to ensure compliance with the requirements of the E&S Plan, permit conditions, and approved mitigation measures and commitments. Each of these elements is incorporated into the single integrated ECP organization structure and execution plan. The primary elements of the ECP are:

- Environmental training;
- Environmental inspection;
- Biological and cultural resource monitoring; and,
- Agency and Project team notification and documentation requirements.

In general, the environmental compliance team is organized as a tiered and integrated network of management, construction, and environmental professionals, each with primary roles and responsibilities to lead and implement the environmental compliance program represented by this Operations Plan. This organization supports the efficient identification; open, reliable, and consistent two-way communication; internal and agency reporting; and resolution of environmental compliance requirements and/or issues to a commensurate level of authority within the organizational chain-of-command. The primary roles and responsibilities of key team members are summarized in Section 2.3.

2.3 Corporate Construction Compliance Team Roles and Responsibilities

SPLP’s designated and dedicated Project Manager (PM), Spread Project Managers (SMs), and Spread Construction Managers (CMs), work closely as an integrated team responsible for all aspects of the pipeline construction contractors/subcontractors, process, materials, logistics, and schedule across the Project (PM) or across their construction spread (SMs, CMs). In addition, SPLP’s designated and dedicated Environmental Project Managers including the Geotechnical Evaluations Lead (GE) work closely as an integral part of the construction compliance team, and are primarily responsible for environmental permitting, inspection, reporting, and compliance. This SPLP management team has the full authority to manage and direct the work of the construction contractors/subcontractors, including compliance with and accountability for contract terms and conditions, construction management and schedule, and construction methods and procedures on a Project-wide and site-specific basis. In addition, they have the following primary environmental compliance responsibilities.

2.3.1 Project Manager (PM)

SPLP's designated and dedicated **Project Manager, Matt Gordon**, is primarily responsible for overseeing implementation of this Operations Plan and associated environmental compliance program across the entire Project. These responsibilities include, but are not necessarily limited to, review and approval oversight of SPLP's environmental compliance team organization and staffing, and training, inspection, reporting, and compliance program for the Project; review and approval oversight of construction contractors/subcontractors and associated processes for contractor/subcontractor accountability with environmental compliance, training, and inspection programs and commitments; and review and written/signed approval authority of potential project modifications and associated required environmental permits. The PM reports directly to the SPLP Executive Project Manager and executive management team.

2.3.2 Spread Project Managers (SMs)

SPLP has assigned a dedicated **Spread Project Manager** to each of the six construction spreads on the Project. Each SM is primarily responsible for environmental compliance on their assigned construction spread. These responsibilities include, but are not necessarily limited to, day-to-day oversight, management, and reporting of the environmental compliance program, including environmental compliance training and inspection, incident reporting, and initial review of potential project modifications. The SMs are primarily responsible for communicating and reinforcing with construction contractors/subcontractors their contractual and procedural requirements to ensure compliance and accountability with environmental permits, plans, and procedures. The SMs report directly to the PM to identify, review, coordinate, and resolve environmental compliance concerns on their assigned construction spread.

2.3.3 Spread Construction Managers (CMs)

SPLP has assigned one dedicated **Spread Construction Manager** to each of the six construction spreads on the Project. Each CM is primarily responsible for in-field environmental compliance management on their assigned construction spread. These responsibilities include, but are not necessarily limited to, day-to-day oversight, management, and reporting of the environmental compliance program, including SPLP and construction contractor/subcontractor environmental compliance training and inspection, incident reporting, and initial review of potential project modifications. The CMs are primarily responsible for in-field communication, coordination, and integration of environmental compliance programs and requirements with the construction contractor/subcontractor, including direction to ensure construction contractor/subcontractor communication and cooperation with the Chief, Lead, and staff Environmental Inspectors. The CMs also are responsible, in coordination with the Lead Environmental Inspectors (LEIs), to support coordination of County Conservation District (CCD)/Pennsylvania Department of Environmental Protection (PADEP) site visits and interactions with job site personnel. The CMs report directly to the SMs to identify, review, coordinate, and implement in-field resolution of environmental compliance concerns on their assigned construction spread.

2.3.4 Environmental Project Managers

SPLP has assigned three dedicated **Environmental Project Managers, Monica Styles, Chris Embry, and Larry Gremminger**, who serve as the conduit between the Corporate Construction Compliance Team and the Environmental Compliance Program Team. In this role, they are primarily responsible for overseeing implementation of this Operations Plan and associated environmental compliance program across the entire Project. These responsibilities include, but

are not necessarily limited to, managing the EIs, responding to requests for information from PADEP or the public concerning environmental compliance issues, responding to water supply complaints, overseeing response efforts and reporting for loss of returns and inadvertent returns. As described in Section 4.1, the Environmental Project Managers have “stop-work” authority, which is the authority to stop site-specific activities that violate the environmental permits or conditions.

2.3.5 Geotechnical Evaluations Lead (GE)

SPLP’s designated and dedicated **Geotechnical Evaluations Lead, Larry Gremminger**, is primarily responsible for the general oversight of Construction Contractor performance with trenchless construction, which performance will be evaluated on its compliance with permit terms and conditions, construction drawings, technical specifications, PPC Plan requirements, and easement agreements. The GE is also available for consultation when karst/openings or groundwater seeps are encountered. Project Professional Geologists and EI’s fall under the GE’s direction when applicable for construction contractor performance.

2.4 Environmental Compliance Program Team

The ECP Team (see Figure 1) consists of a field component and an office-based component that works in unison to ensure compliance during the Project. The field component is managed by the Environmental Inspection Manager (EIM), and the office component is led by the Environmental Compliance Coordinator (ECC). The EIM leads a team of Chief, Lead, and staff Environmental Inspectors. The ECC is supported by various field and office based specialties. These positions are described below.

In general, the primary responsibilities of the ECP Team are to communicate, coordinate, facilitate, inspect, and report in-field construction contractor/subcontractor compliance with all environmental permits, plans, and procedures. Although the ECP Team members are not responsible for or authorized to manage or direct the work of the construction contractors/subcontractors, the ECP Team works closely with the SPLP construction management team (PM, SMs, CMs, SPLP Environmental Project Managers), and construction contractors/subcontractors to proactively facilitate in-field environmental compliance and identify, report, and resolve in-field environmental compliance issues. As described in Section 4.1, however, ECP Team environmental inspectors have “stop-work” authority, which is the authority to stop site-specific activities that violate the environmental permits or conditions.

The Project is staffed with a combination of full-time staff and environmental inspection personnel, many of whom have previously worked for the company on projects over the last few years, including projects in Pennsylvania. These personnel have previous high-profile, environmentally sensitive, pipeline environmental inspection experience; technical degrees; excellent working skills; and have completed projects effectively and successfully with minimal concerns.

The ECP field component consists of Chief Environmental Inspectors (CEIs), Lead Environmental Inspectors (LEIs), Environmental Inspectors (EIs), biological monitors, and professional consultants. SPLP also provides all cultural and biological monitoring, including specialized services that require certified monitors such as timber rattlesnake and bog turtle.

Chief Environmental Inspector

The CEIs are responsible for the oversight of environmental compliance and spend their time coordinating the environmental compliance of the Project and the EI staff, including any specialty biological and cultural monitors. The CEIs support the LEIs by: resolving conflict; scheduling inspection services; facilitating resolution of noncompliance issues; coordinating between the LEIs, the construction staff, and construction inspection staff; and coordinating with agencies as necessary. The CEIs must work closely with the SPLP SMs, Land Department, the contractors, and the inspection staff to ensure compliance with all permit conditions.

The CEIs have extensive experience in environmental construction inspection and substantial industry-related environmental training. The CEIs have the experience, knowledge and ability to communicate with federal, state, county, and local environmental agency representatives and have excellent communication and documentation skills, with an emphasis in computer software usage. The CEIs have the capability to define, differentiate and delineate environmental resources.

Each CEI is responsible for the following:

- The CEIs report to the SPLP Environmental Manager and CMs and spend 100% of their time coordinating the environmental compliance of the Project and the EI staff, including the biological and archeological monitors as necessary. The CEIs are accountable for the oversight of all the in-field construction environmental compliance.
- The CEIs support the LEIs by resolving conflict, scheduling inspection services, facilitating resolution of noncompliance issues, coordinating between the LEI and the construction staff and construction inspection staff, and coordinating with agencies as necessary.
- The CEIs must work closely with the SPLP's Land Department, the Construction Contractors, and the inspection staff to facilitate environmental compliance with all permits.
- The CEIs work closely with the EIM and ECC (permit coordinators) are responsible for the coordination of the Management of Change (MOC) process.

Lead Environmental Inspector

One LEI is assigned and dedicated to each of the six construction spreads. The LEI is responsible for the inspection and monitoring of the day-to-day construction activities within their assigned spread and reports to both the Spread Construction Manager and the CEI. The LEI will attend any daily meetings that may be setup by the Spread Construction Manager, train new Construction Contractor personnel, and be involved in the inspection of compliance with environmental requirements and/or permit conditions specific to that Spread.

The LEIs are not required to have an environmental or biological college degree, but must have the capability to define, differentiate and delineate environmental resources. The LEI shall have extensive experience (5-10 years) of Environmental Construction Inspection and substantial industry-related environmental training. The LEI shall have the experience, knowledge and ability to communicate with federal, state and local environmental agency representatives and have excellent communication and documentation skills, with an emphasis in computer software usage. The LEI should have experience in the project area.

Each LEI is responsible for the following:

- The LEIs spend the majority of their time in the field involved in inspection of compliance with environmental requirements and/or permit conditions specific to that construction spread.
- The LEIs support the CEI by inspecting and compiling the daily environmental construction inspection reports for the Spread, which are forwarded to the CEI, Project team for that Spread, and the Document Coordinator for inclusion in the overall Project Environmental Reports.
- The LEIs direct and provide oversight and guidance to the team (consisting of one or more) EIs inspecting and working with the on-site Spread Construction Managers.
- The LEIs resolve, clarify, or assure necessary precautions are taken or permit conditions implemented by the Construction Inspection Team and Construction Contractor to maintain compliance with the applicable environmental requirements on the construction spread.
- The LEIs attend daily spread meetings and will have multiple reporting responsibilities to the Spread Construction Manager and CEI.
- The LEIs work closely with the CEI and are responsible for the initiation and implementation of the MOC process.
- The LEIs, in coordination with the CM, serves as the primary point of contact/liaison with, and facilitates oversight and coordination of, CCD/PADEP site visits to allow CCD/PADEP staff to interact and talk with job site personnel consistent with safety protocols.
- The LEIs work with the CCD/PADEP and other agency staff to establish a regular schedule for field inspection audits, or spot inspections, to monitor and facilitate inspection program and construction compliance with all permits.

Environmental Inspector

One or more staff EIs are assigned and dedicated to each of the six construction spreads. Each EI reports to and works with the LEI to which they are assigned. The EI is responsible for the inspection and monitoring of the day-to-day construction activities within their assigned construction spread. The EI spends 100% of their time in the field and if deemed necessary or applicable may or may not be required to attend the daily construction spread meetings set up by the Spread Construction Manager. The EI works with the various Craft Inspectors and the Construction Contractor to facilitate the maintenance of compliance with applicable environmental requirements specific to the ongoing activities. The staff EIs on each construction spread have “peer status” with all other activity inspectors and have “stop-work” authority, which is the authority to stop site-specific activities that violate the environmental permits or conditions.

Each EI is responsible for the following:

- The EI spends their time in the field and may attend the daily construction spread meetings set up by the Spread Construction Manager. The EI works with the various Construction Inspectors and the Construction Contractor to facilitate maintenance of compliance with applicable environmental requirements specific to the ongoing activities.

- The EI may participate in tailgate discussions, meetings, or necessary site specific training, and may oversee the completion of the overall Project Environmental Training of new Construction Contractor personnel.
- The EI shall be familiar with, understand and interpret permit conditions and requirements and be able to relay this information to the Construction Inspector and Construction Contractor to assure correct installation or implementation of construction materials or techniques to meet the permit conditions.
- The EI is responsible for inspecting and daily reporting to the LEI on the construction activities for which they are responsible.
- The EI should have an Environmental, Biological or Cultural Resource college degree (or relevant experience).
- The EI reviews all Project documents (right-of way descriptions, permits, alignment sheets, and relevant plans) for its construction spread prior to construction.
- The EI inspects activities daily to verify that Contractors are complying with the environmental conditions and mitigation measures, and applicable federal, state, and local permit requirements and landowner agreements.
- The EI identifies, documents, and oversees corrective actions, as necessary to bring an activity back in to compliance.
- The EI inspects that the limits of disturbance are properly marked before clearing begins.
- The EI verifies the location of signs and highly visible flagging marking the boundaries of sensitive resource areas along the construction work area such as waterbodies, wetlands, or areas with special requirements.
- The EI may coordinate with water and wetland resource agencies to assure the Project Procedures are properly implemented.
- The EI inspects and photo-documents sensitive areas and workspaces before, during, and after construction.
- The EI inspects and facilitates to ensure that construction activities occur within authorized work areas.
- The EI inspects the location of pumped water filter bags to ensure they are located in well-vegetated (grassy) areas, and discharge onto stable erosion resistant areas. Where this is not possible, a geotextile underlayment and flow path shall be provided.
- The EI facilitates to ensure that topsoil is stripped, stockpiled, and appropriately segregated (where required).
- The EI inspects the proper maintenance of all erosion and sediment controls (E&SCs). Inspections of E&SC features occurs daily, or at a minimum on a weekly basis and after precipitation events, and will be recorded on the appropriate inspection forms.
- The EI facilitates to ensure preventative and corrective maintenance work, including clean out, repair, replacement, regrading, reseeding, and remulching will be performed as soon as practical. If E&SCs fail to perform as expected, replacements or modifications of those installed will be implemented at the direction of the EI.
- The EI inspects the repair of all ineffective temporary erosion control measures within 24 hours of repair completion.

- The EI maintains a log showing dates that Erosion and Sediment (E&S) best management practices (BMPs) were inspected as well as any deficiencies found and the date they were corrected.
- The EI provides updated environmental training as new contracted personnel begin working on construction.
- The EI inspects that all trash is picked up and contained in an approved container for proper disposal.
- The EI facilitates to ensure that the Construction Contractor maintains an orderly storage of chemicals, supplies, and parts.
- The EI facilitates to ensure the Construction Contractor promptly removes any spillages to prevent discharge from site and proper disposal of spilled material.
- The EI facilitates to ensure the Contractor has the Project's PPC Plan on-site and understands its implementation.
- The EI works with the ECC to ensure the appropriate PPC Plan procedures are followed in regards to the unanticipated discovery of impacted soil.
- The EI helps to ensure all proper environmental notifications are made in accordance with the Project's PPC Plan.
- The EI performs routine monitoring to determine the general physical condition of the entire construction spread, including liquid levels in tanks, quality of site runoff, quality of any waste to be disposed of, etc.
- The EI facilitates to ensure that the Contractor conducts training for spill prevention and impact minimization.
- With the exception of certain water pump locations, the EI inspects to ensure sites for refueling and routine servicing of equipment and storage of fuels, lubricants, and any other materials that could potentially contaminate waterbodies and wetlands are located in upland locations at least 100 feet from the edge of the nearest waterbody and wetland.
- The EI facilitates to ensure that the Contractor maintains adequate supplies of suitable absorbent material and any other supplies and equipment necessary for the immediate containment and cleanup of releases.
- The EI inspects to ensure that back-up equipment is present at all dry pump bypass stream crossings.

Biological and Cultural Resource Monitors

Biological Monitors have experience with rattlesnake and bog turtle monitoring in Pennsylvania and are required to be on the qualified list of contractors, if one is maintained by the appropriate resource agency. Cultural Resource Monitors will be qualified based on the required standards maintained by the Pennsylvania Historical and Museum Commission. Monitors will:

- Be approved by Pennsylvania as monitors (as required).
- Be onsite when monitoring is required, including but not limited to, when construction activities are occurring, travel along access roads, and active construction activity at ancillary facilities.
- Be able to comply with the permit, agency determination letters, and Project Conservation Plan requirements as they pertain to handling, monitoring, and reporting.

Preconstruction, construction, and post-construction survey and monitoring for sensitive species as outlined within the final Pennsylvania Natural Diversity Inventory (PNDI) agency letters and approved conservation plans will be followed. SPLP and ECP personnel will be responsible to ensure only approved specialists conduct the monitoring or mitigation tasks in accordance with obtained clearances.

Professional Geologists

Each of the six construction spreads for the Project will field a licensed Professional Geologist (PG). The minimum requirements of the PG shall include the following:

- Current PG license in Pennsylvania.
- Experienced in the field of geology or hydrogeology.
- On the job training, provided by SPLP technical specialists, on general horizontal directional drilling (HDD) procedures; HDD best management practices; methods to monitor the HDD activities and progress; and procedures for analyzing Loss of Circulation (LOC) events.¹

The PGs primary focus is on areas of trenchless construction activities (i.e., bores or HDDs), and are responsible for monitoring Construction Contractor performance during trenchless construction. Their direct responsibilities include documenting progress of the bore or HDD, subsurface characteristics as evidenced by cuttings and returns, tool and mud pressures, bore or HDD materials (water, bentonite) consumption to document potential LOC; and patrolling of the land surface over the bore or HDD to inspect for Inadvertent Returns (IR). The Construction Contractor performance will be evaluated on compliance with permit terms and conditions at the work location; construction design drawings; technical specifications; PPC Plan requirements; and easement agreements.

The PG immediately notifies the Geotechnical Evaluation Lead (GE) and LEI if the Construction Contractor fails to conform to these required standards, or if unexpected problems are encountered during performance of the work. In the event of an abrupt LOC or IR, the PG has the authority to stop the bore or HDD by direct notice to the on-site construction manager (Stop-work Authority). In such an event, the LEI mobilizes EIs to the site. The GE may mobilize to the work location to inspect the issue and review the construction performance data, or request a technical specialist to the location to inspect the event. The on-site inspection team (PG, EI, and GE) follows the inspection, reporting, and corrective action protocols specified in the IR Plan. HDD construction method incidents related to loss of drilling fluids in terms of loss of circulation or surface IRs will be reported and addressed under agreed upon process outlined in the IR Plan (see Section 4.3.2).

PGs are consulted when karst/openings or when groundwater seeps are encountered. SPLP has evaluated the potential for all wetlands to contain fragipan soils or other confining layers through an investigation of the United States Department of Agriculture soil series as well as field data collected during wetland delineations and functions and value assessments. A licensed PG will use these data to identify wetlands with the potential for restrictive layers. The PG will be present to evaluate each wetland that is found to have a potential confining layer

¹ The SPLP technical specialists who will provide the training to PGs can include the Geotechnical Evaluations Lead, members of SPLP's Directional Project Support Team, or other trenchless construction specialists. These trenchless construction specialists will have a minimum of ten years experience in HDD and bore construction procedures.

during trenching. During trenching of these wetlands, the PG will advise on the segregation (e.g., triple ditching) of confining layers for proper restoration of subsurface conditions. At wetlands determined to require confining layer restoration, the PG will be on-site during subsurface soil backfilling to ensure proper soil layer restoration. PGs may advise on bentonite or bentonite sandbag layering along the entire or portions of the trench line at the appropriate height if an identified confining layer cannot be segregated and/or restored properly.

2.5 Construction Contractors/Subcontractors

2.5.1 Contractual Provisions

As stated in Section 2.1, as part of its corporate oversight program, SPLP's executive and project management team uses contractual controls to ensure construction contractors and subcontractors comply with environmental laws, regulations, and permits. Specifically, all construction activities performed by contractors and subcontractors must be performed in accordance with all applicable environmental plans and permits. The environmental permits include, but are not necessarily limited to, the Chapter 105 Water Obstruction and Encroachment Permits and the Chapter 102 Erosion and Sediment (E&S) Permits issued by the Pennsylvania Department of Environmental Protection (PADEP) for the Project. The environmental plans (approved by PADEP as part of issuance of the permits) include, but are not necessarily limited to, the E&S Plan, Water Supply Plan, IR Plan, and Void Mitigation Plan. Furthermore, contractors and subcontractors are required to cross all streams and wetlands in accordance with the E&S Plan and the Chapter 105 permit restrictions. Any violation of these contractual provisions may constitute a breach of the construction contracts and potentially subjects the contractor to damages and/or cancellation of the contract, even if construction schedules are otherwise met.

2.5.2 Co-Permittee Status

As stated in Section 2.1, as part of its corporate oversight program, SPLP's executive and project management team have required prime HDD contractors to apply for and receive co-permittee status on the Chapter 102 permits in accordance with applicable regulations. Specifically, pursuant to the Chapter 102 permit program regulations (25 Pa. Code 102.5(h)), prime HDD construction contractors/operators who are not the initial permittee shall be co-permittees. For this Project, all prime HDD construction contractors are considered operators and therefore are required by regulation (and by extension the SPLP contract provisions referenced previously) to be co-permittees. All of SPLP's prime HDD construction contractors/operators on the Project have completed and submitted to PADEP a *Transferee/Co-Permittee Application for a General or Individual NPDES Permit for Stormwater Discharges Associated with Construction Activities* (Form 3150-PM-BWEW0228). Under co-permittee status, the prime HDD construction contractors/operators assume all responsibility, coverage and liability under the permit for any obligations, duties, responsibilities, and violations under the permit. Thus, under co-permittee status, the prime HDD construction contractors/operators have the same legal responsibility and requirement as SPLP to ensure compliance with applicable environmental laws, regulations, permits, and conditions.

3.0 DAILY INSPECTION, REPORTING, AND ISSUE RESOLUTION

SPLP's LEIs and EIs shall visually inspect the Project weekly at a minimum and within 24 hours of the conclusion of each measurable (0.1 inch) storm event throughout the duration of earth disturbance and until SPLP receive acknowledgement of the Notice of Termination from PADEP

or an authorized conservation district. Visual inspections shall be documented on the Visual Inspection Report form and will be made available to PADEP or authorized agencies upon request.

A log showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected is maintained onsite and at the time of inspection will be made available to authorized agencies.

In addition to record keeping and reporting required to ensure compliance with all environmental regulations, permits, and conditions, EIs generate daily reports documenting construction observations and inspection activities, including agency inspections and landowner contact, problem areas and incidents observed. The LEI compiles and reviews the EI daily reports and provides them to the Document Coordinator for distribution to the CEI, CM, and Corporate Construction Compliance Team.

4.0 IMPLEMENTATION OF CRITICAL PLAN ITEMS AND JOB SITE DIRECTION

4.1 Stop Work Authority

Any employee of SPLP, any contractor, and/or any subcontractor on each construction site has the responsibility and authority to stop work and report to Lead EIs and staff EIs site-specific activities that are not in compliance with the environmental permits or conditions.

The Lead EIs and staff EIs on each construction spread have “peer status” will all other activity inspectors. Lead EIs and staff EIs on each construction spread have “stop-work” authority, which is the authority to stop site-specific activities that violate the environmental permits or conditions. EIs are responsible for identifying, reporting, and re-inspecting to ensure implementation of corrective action for compliance issues.

In addition, the Lead EIs and staff EIs have authority to make “stop-work” recommendations to the CM who has overall “stop-work” authority, which is the authority to stop all construction and restoration activities across an entire Project construction spread. The Lead EI will discuss a potential “stop-work” action with the Chief EI and/or appropriate SPLP personnel (CM or SM) prior to construction shut down, and the Lead EI will notify the CM when a “stop-work” recommendation will be issued.

4.2 Formal Notice to Proceed for Regulated Resource Pipeline Crossings

SPLP has established a formal written notice to proceed (NTP) procedure that requires construction contractor/subcontractor acknowledgment and signature approval that it possesses and will comply with current environmental permits, plans, procedures, and conditions prior to initiation of construction of pipeline crossings of PADEP-regulated aquatic resources. The primary purpose of this NTP procedure is to ensure the pre-construction receipt, review, understanding, coordination, and planning, and construction phase use, of current SPLP and PADEP/agency-approved wetland and waterbody pipeline construction environmental permits, plans, procedures, and conditions.

The subject of this formal NTP procedure includes:

- Aquatic resource-specific pipeline construction crossings, meaning any PADEP agency regulated pipeline construction or restoration activity in or beneath a regulated wetland or stream, such as installation, maintenance, and removal of temporary BMPs, travel lanes,

and equipment bridges, as well as the pipeline installation via open cut or trenchless construction methods (i.e., conventional bore and HDD construction methods).

- PADEP-regulated wetlands and streams pursuant to the Chapter 105 Water Obstruction and Encroachment Permit.
- Trenchless construction method (i.e., conventional bore and HDD construction methods) crossings of upland areas (i.e., roads, railroads, physical obstacles).
- All applicable federal, state, and local environmental permits, plans, procedures, and conditions.

This formal NTP procedure includes the following two-step process and associated actions prior to the initiation of pipeline construction:

- The SPLP CM, EI, and construction contractor/subcontractor conduct an in-office and/or on-site pre-construction coordination meeting to:
 - Confirm receipt and possession of current SPLP and regulatory agency approved engineering and environmental drawings, plans, procedures, permits, and conditions, including the PADEP-approved pipeline construction method.
 - Review and confirm understanding of current SPLP and regulatory agency approved engineering and environmental drawings, plans, procedures, permits, and conditions, including the PADEP-approved pipeline construction method.
 - Identify, discuss, and confirm that the construction contractor/subcontractor will comply with SPLP's contractual and policy expectations, which are to comply with all applicable and approved engineering and environmental drawings, plans, procedures, permits, and conditions.
 - Identify, discuss, and confirm a resource-specific construction plan and schedule, including consideration of current site-specific conditions, special resource protection requirements, and construction and restoration challenges unique to the site.
- Following completion of the pre-construction coordination meeting, a site- or resource-specific *SPLP Pennsylvania Pipeline Project Chapter 105 Wetland and Water Crossing Notice to Proceed* form (NTP Form) (Appendix D) will be reviewed and executed by written signature by:
 - The construction contractor/subcontractor responsible for the aquatic resource crossing;
 - The LEI or EI assigned to inspect the aquatic resource crossing; and
 - Then the CM, and a CM supervisor (the SPLP SM and/or PM), will countersign the NTP Form, which thereby formally releases the construction contractor/subcontractor to proceed with construction of pipeline crossing of the subject PADEP-regulated aquatic resource.

4.3 Reporting of Environmental Incidents

4.3.1 E&S, PSCM, and PPC Best Management Practice Incidents

Where E&S, PSCM or PPC BMPs are found by anyone at the job site to be inoperative or ineffective at any time, and have an off-LOD or resource impact, the environmental incidents are immediately reported to the EIs who then relay information concerning the incident to the ECP Team and the CCD by phone and email within 24 hours of the incident. Within 5 business days, the Environmental Project Manager submits a written Noncompliance Report to the CCD.

Any time SPLP becomes aware of any incident causing or threatening pollution as described in 25 Pa. Code § 91.33 (relating to incidents causing or threatening pollution), SPLP's Environmental Project Manager immediately (i.e., within 2 hours), but no later than within 24 hours, contacts PADEP or the agency with jurisdiction over the activity by phone or personal contact, and follows-up by submitting a written Noncompliance Report within five (5) days of the initial contact. The Noncompliance Reports will include the following information:

- Any conditions on the project site which may endanger public health, safety or the environment, or involve incidents which cause or threaten pollution;
- The period of the noncompliance including exact dates and times and/or anticipated time when the activity will return to compliance;
- Steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance; and
- The dates or schedule of dates, and identifying remedies for correcting noncompliance conditions

An immediate response by the contractor to the incident is expected and the EI will re-inspect and document corrective actions taken to address the incident. All noncompliance reports will be updated to document corrective actions and provided to the Corporate Construction Compliance Team and the CM.

A flowchart summarizing Incident Report procedures for incidents related to E&S, PCSM or PPC BMPs is provided in Figure 2 (Appendix B).

4.3.2 HDD Inadvertent Return Incidents

HDD incidents related to loss of drilling fluids in terms of loss of circulation or surface IRs will be reported under the agreed upon process outlined in the IR Plan. In addition, as required by the Corrected Stipulated Order issued by the Environmental Hearing Board, dated August 10, 2017. SPLP has evaluated HDD construction method design, management, implementation, inspection, and reporting, at specific sites and identified additional measures to further reduce the risk of future incidents related to loss of drilling fluids in terms of loss of circulation or surface IRs and submitted the reevaluation reports to PADEP for review and approval. To the extent applicable, SPLP will employ the HDD best management practices identified in the approved reevaluation reports at all HDD sites to reduce the risk of future IRs.

PGs will be consulted when IRs occur while HDD activities are taking place.

PGs will also be consulted in the field to identify additional measures for preventing and/or minimizing groundwater flowback. During any IR incident, PGs will confirm the risks to private and public water supplies and communicate any additional risks to the LEI.

4.3.3 HDD Special Water Supply Procedures

Prior to the start of any HDD operations in a particular location, SPLP will offer all landowners with a private water supply source located within 450 feet from the HDD alignment an alternative temporary water supply (e.g., water buffalo with potable water adequate for purposed served) that will be installed and maintained, at SPLP's expense, for the entire period of the HDD operations. Installations shall be approved as required with local zoning/building ordinances.

If a landowner who had not previously been connected to a temporary water supply reports a complaint of an impact to his or her water supply, SPLP will immediately respond to the complaint and provide the landowner with bottled drinking water. If the complaint occurs on a

Monday-Saturday, an alternative temporary water supply (e.g., water buffalo) will be provided to the landowner within 24 hours. If the complaint occurs on a Sunday or a holiday, or if an alternative temporary water supply cannot otherwise be provided within 24 hours, SPLP will offer the landowner temporary accommodations, at SPLP's expense, until such time as a temporary alternative water supply can be installed. Temporary alternative water supply will be provided at SPLP's expense until SPLP restores or replaces the impacted water supply to the satisfaction of the property owner.

For each landowner with a private water supply located within 450 feet from the HDD alignment, SPLP will offer to collect water supply samples, before during and after HDD operations at SPLP's expense. Sampling shall address quantity (yield) and quality of the existing source. Once available, sampling results shall be made available to the Department within 24 hours of a request by the Department for the results. If any impact to a private water supply attributable to pipeline construction is identified after post-construction sampling, SPLP will restore or replace the impacted water supply to the satisfaction of the private water supply owner.

4.4 Project Modification Review and Approval Process

4.4.1 Management of Change (MOC) Process

SPLP is committed to ensuring environmental compliance with all applicable federal, state, and local laws, regulations, permits, and conditions. As part of this commitment, SPLP will manage and implement a MOC Process to ensure any potential or proposed modifications are identified, reviewed, assessed, internally approved, and submitted to and approved by the applicable agencies as a modification or amendment to existing permits and conditions. The MOC Process involves an integrated and detailed evaluation of any potential or proposed modifications to the permitted Project (i.e., E&S Plan, E&SCs, construction methods, limits of disturbance) or activities that may violate Project permits and conditions. The MOC Process will consider opportunities to modify the permitted Project to further avoid and minimize potential environmental impacts, while simultaneously considering potential construction and operational constraints presented by affected landowners, existing land uses, infrastructure obstacles, and other factors affecting use of existing technology, cost, and logistics. Figure 3 presents a flowchart summarizing the primary process, decision tree, and responsible parties that implement the MOC Process.

The MOC Process will be initiated on a site-specific basis as opportunities or constraints are raised by an Integrated Project Team. The Integrated Project Team consists of representatives from SPLP project management (PM, SMs, CMs, Environmental Project Managers/GE), engineering, construction contractors, land/right-of-way, and environmental specialists (ECC, EIM). Any member of the Integrated Project Team that identifies an opportunity or constraint along the Project as permitted will raise the subject issue to the rest of the team for consideration of a potential modification (i.e., additional limit of disturbance, minor route variation, expansion or contraction of trenchless construction method, change in construction method). Thus, any type of opportunity or constraint – practicability, constructability, engineering design, landowner concerns, land use, environmental impacts, or any other relevant concern – could initiate the MOC Process.

Upon initiation of the MOC Process, each member of the Integrated Project Team will be engaged and solicited for input on the subject modification under consideration. The Integrated Project Team will then work together to review, consider, and provide subject matter expertise regarding the feasibility and practicability of the potential modification with regard to each area of expertise

– design requirements, land constraints, constructability constraints, environmental resources, existing technology, cost, and logistics. Approval from each member of the Integrated Project Team, including environmental, are required in order to adopt the suggested modification, and applicable agency approvals are requested and obtained prior to initiating construction of the permit modification.

4.4.2 Agency Modification Approval Process

Once adopted by the Integrated Project Team, SPLP will request applicable agency approval of a permit modification request, and obtain any required authorizations prior to initiating construction of the modification. Figure 3 also presents the County Conservation District (CCD) and PADEP agency approval process for a proposed permit modification to the Project. There are two levels of Project modification and approval requests, Level 1 Modifications and Level 2 Modifications, as described below.

Level 1 Modifications and CCD Approval

Level 1 Modifications are those that typically require CCD approval, but do not typically require PADEP approval. Such modifications include, but are not necessarily limited to, requests for:

- Additional limit of disturbance (LOD) in uplands;
- Minor changes in best management practices (BMPs) in uplands.

Once internally approved by SPLP senior management (EPM, PM, and/or Environmental Project Manager/GE), the EI is authorized to request CCD approval for the Level 1 Modification. Based on consultation with the authorized CCD personnel, an approval request may take the form of a verbal or email request, and submittal of redlined changes on, or formally revised, applicable E&S Plans and engineering drawings (if applicable). The authorized CCD personnel review the proposed modification plans, and either approve the request or elevate the request to PADEP for review, comment, or approval.

Level 2 Modifications and PADEP Approval

Level 2 Modifications are those that typically require PADEP approval, or are elevated by the CCD for PADEP approval. Such modifications include, but are not necessarily limited to, requests for:

- Additional LOD in wetlands, streams, and floodways;
- Any changes in BMPs in wetlands, streams and floodways;
- Change in construction method in wetlands, streams, and floodways; and
- Change in construction method from open cut to a trenchless construction method (i.e., conventional bore and HDD construction methods) or trenchless construction method to open cut in uplands.

Once internally approved by SPLP senior management (EPM, PM, and/or Environmental Project Manager/GE), SPLP authorizes the SPLP Environmental Project Manager or ECC to request PADEP approval for the Level 2 Modification. Based on consultation with the authorized PADEP personnel, an approval request may take the form of an email and/or hard copy request, and submittal of formally revised applicable E&S Plans and engineering drawings (if applicable). The authorized PADEP personnel review the proposed modification plans, and, subject to any PADEP comments, requests for clarification or submission of additional information or application forms, either approve or deny the request.

SPLP Internal Approval Notification and Issuance for Construction

As presented in Figure 3, once a proposed permit modification has received all required agency approvals, the ECC notifies the engineering project manager, who in turn notifies the SharePoint DC to process the modification via the notification and document control process. Authorized SPLP, ECP, and construction contractor/subcontractor office and field personnel are issued an email notification that the permit modification has been approved and is being issued for construction, and are provided a SharePoint link to the electronic file of the approved revised engineering drawings and environmental permits, plans, and procedures. Approved revised electronic files also are uploaded to the SharePoint site in the appropriate library (see Section 6.3). Prior to initiation of construction of the revised plans on a given construction spread, the SM, CM, EI, and construction contractor/subcontractor have a pre-construction meeting to discuss and ensure understanding of the approved revised plan issued for construction.

5.0 ENVIRONMENTAL COMPLIANCE TRAINING PROGRAM

5.1 Pre-Construction Training

Prior to the start of initial construction SPLP executed, and prior to the re-start of construction SPLP will execute, two levels of environmental compliance training for all supervisor and construction contractor personnel:

- **Supervisor Training** – Conduct the environmental training for SPLP, Construction Contractor, and Environmental Inspection leads prior to commencement of construction activities; and,
- **Construction Contractor Personnel Training** – Provide daily environmental training to new Construction Contractor personnel on each Spread, each morning, and before each new member begins work.

Training involves the presentation of all pertinent environmental restrictions to Project personnel. This has been in the form of a formal, pre-prepared presentation that includes a discussion of the environmental conditions, site-specific permit and condition requirements, such as limits of disturbance, E&S Plan and E&SCs, and any special resource-specific, monitoring, and timing requirements, restrictions, and notifications required for the Project. The training outlines the major environmental restrictions and provides the location of all environmental permits, conditions, guidance, and plans. Contact and notification procedures are reviewed in detail. All aspects of the construction sequence are reviewed and relevant restrictions discussed. SPLP requires all personnel entering the workspaces on the Project to attend this formal training.

5.2 Construction Training

During the construction and restoration phases of the Project, SPLP executes two types of site-specific environmental compliance coordination and review meetings with SPLP and construction contractor/subcontractor supervisor personnel:

- **Morning Environmental Compliance Coordination Meetings** – Prior to initiation of construction activities each morning, the SPLP CEI, LEI, and/or EI conducts a morning meeting to coordinate site-specific planned construction and restoration activities for the day. The purpose of this daily meeting is to ensure the construction management and inspection personnel are aware of, and will ensure compliance, with Project-wide plans and procedures (including the PPC Plan); site-specific permit and condition requirements, such as limits of disturbance, E&S Plan and E&SCs, and any special resource-specific, monitoring, and timing requirements; and identify, review, discuss, and plan to address site-specific compliance challenges (i.e., workspace, geologic, soil, resource, topographic, construction timing, seasonal or fluctuating weather conditions).
- **Daily/Weekly Environmental Compliance Coordination Reviews** – On a periodic basis (typically daily but no less than weekly), the SPLP CEI, LEI, and/or EI conduct an environmental compliance meeting to review site-specific status, progress, and compliance of construction and restoration activities with site-specific permit and condition requirements, such as limits of disturbance, E&S Plan and E&SCs, and any special resource-specific, monitoring, and timing requirements. The purpose of this periodic review meeting is to ensure the construction management and inspection personnel understand their respective roles, responsibilities, and accountability to direct work, have properly executed and ensured compliance, and/or to review, coordinate, and take corrective action to ensure compliance, with Project-wide plans and procedures (including the PPC Plan), and site-specific permit and condition requirements, such as limits of disturbance, E&S Plan and E&SCs, and any special resource-specific, monitoring, and timing requirements. These reviews are performed daily or weekly, commensurate with site-specific level and duration of construction or restoration activities.

6.0 DOCUMENTATION AT JOB SITE

6.1 Responsibility for On Site Permit Use and Compliance

It is the responsibility of each authorized SPLP, environmental compliance team, and construction contractor personnel to acquire, review, and use current environmental compliance documents on-site. In addition, SPLP provides corporate oversight (Section 2.1); management team organization, direction, and control (Sections 2.2 – 2.4); contractual and co-permittee controls

(Section 2.5); daily inspection, reporting, and compliance issue resolution process (Section 3.0); critical plan items, including incident reporting (Section 4.0); training (Section 5.0); and, environmental compliance documentation control, transmittal, access, and use (Section 6.0) to ensure use of current permits, plans, and procedures, and day-to-day compliance with permit terms and conditions.

6.2 Permits, Plans, and Procedures

Applicable environmental permits, plans, and procedures are located at the construction job site for the Project, and are available for access, use, and review by the environmental compliance and construction team at all times. Hard copies of environmental permits, plans, and procedures are housed at the primary spread offices/contractor yards for each of the six construction spreads, and available to construction contractor management and personnel. Additional copies also are provided to each of the key SPLP environmental compliance team members, including the SPLP Spread Project Managers; Spread Construction Managers; and Chief, Lead, and Environmental Inspectors; and Professional Geologists for use in review and inspection to ensure site-specific compliance with all environmental permits and conditions.

As discussed in Section 6.3, additionally, all documents pertaining to the Project are housed in a dedicated SharePoint site and are managed via strict document control procedures. The ECC, in coordination with the SharePoint Document Controllers (DC), ensures each revision to an environmental permit, plan, or procedure is updated, uploaded, and organized in the Environmental Permit Binders folder on the SharePoint site. To ensure knowledge and availability of current environmental compliance documents, the DC issues an email notification to the authorized SPLP, environmental compliance team, and construction contractor personnel when any revision to the environmental permits, plans, procedures, and associated engineering drawings, alignment sheets, and E&S Plan is approved, issued, and uploaded on the SharePoint site. The SharePoint site main library is readily-accessible to all authorized SPLP, environmental compliance team, and construction contractor personnel through internet link, and all current documents are available for access, downloading, and printing to update hard copy documents at the job site at all times.

The documents available at the job site, as well as via the central SharePoint repository for the Project, include copies of all Project-wide and Spread-specific federal, state, and local environmental permits and conditions, as well as the following plans, which form the environmental compliance requirements for the Project:

- Impact Avoidance, Minimization, and Mitigation Procedures (Procedures)
- Erosion and Sediment Control and Site Restoration Plan (E&S Plan)
- Prevention, Preparedness, and Contingency Plan (PPC Plan)
- Water Supply Assessment, Prevention, Preparedness and Contingency Plan (Water Supply Plan)
- Inadvertent Return Assessment, Prevention, Preparedness, and Contingency Plan (IR Plan)
- Void Mitigation Plan for Karst Terrain and Underground Mining (Void Mitigation Plan)
- Aids to Navigation (ATON) Plans
- Compensatory Mitigation Plan

- PADCNR Conservation Plan for Identified Species of Special Concern
- PGC Eastern Small-footed Bat Conservation Plan
- PGC Allegheny Woodrat Conservation Plan
- PAFBC Timber Rattlesnake Conservation Plan
- USFWS Bog Turtle Conservation Plan
- USFWS Northeastern Bulrush Conservation Plan
- USFWS Myotis Conservation Plan
- USFWS Migratory Bird Habitat Conservation Plan
- Post-Construction Stormwater Management (PCSM) Plan (part of E&S Plan)

6.3 Central Recordkeeping and Document Control Procedures

SPLP has a strict recordkeeping and document control procedure to ensure the accurate documentation, revision control, and readily-available access to current engineering design and environmental compliance documents. The purpose of this document control procedure is to facilitate use by the environmental compliance team to ensure Project compliance with current engineering design, as well as all environmental laws, regulations, permits, and conditions.

- **Document Control** – The document control procedure is managed and executed by assigned and dedicated DC. The DC are responsible for all aspects of controlling, tracking, and maintaining project documents during the design and construction of the Project. The DC examine documents, such as drawings and specifications, to verify completeness and accuracy of data. The DC also confer with document originators or engineering liaison personnel to resolve discrepancies, and comply with required changes to documents.
- **SharePoint Site** – All documents pertaining to the Project are housed in a dedicated SharePoint site, and each library within SharePoint site has special permissions applied to and administrated by SharePoint IT personnel. The main library is readily-accessible to all authorized environmental compliance construction personnel through internet link.
- **Environmental Permits, Plans, and Procedures** – All current environmental permits, plans, and procedures are uploaded and maintained on the SharePoint site by the ECC in coordination with the DC. The ECC ensures each revision to a permit, plan, or procedure is updated, uploaded, and organized in the Environmental Permit Binders folder on the SharePoint site. The DC issues an email notification to the appropriate SPLP, construction contractor, and environmental compliance team personnel when any revision to the environmental permits, plans, procedures, and associated engineering drawings, alignment sheets, and E&S Plan is issued.
- **Engineering Drawing Process** – The DC receive notice that a package is ready to be transmitted. The DC perform quality control (QC) of the documents and either sends the document back to the engineer for correction or uploads the documents and builds the transmittal. Folders are organized under the SharePoint main library for all station and block valve issued only drawings, and the transmittal library. When a document has been revised, and has passed the QC process, it is then uploaded to SharePoint and designated with the updated revision number. After the drawing has been uploaded, a transmittal is then created with a link to the documents and to the library.

- **Permit Modification Document Control Process** – For any proposed Project design modification, the engineering project manager develops and sends the proposed design revision to the mapping department, which creates the revised drawing and submits the engineering manager for review and approval. Once approved, the engineering project manager sends the final revised drawing as a PDF file to the DC to upload to “Crossing Pending Agency Approval Transfer Library.” After the upload, a transmittal is generated and sent to SPLP Environmental Project Managers/GE for review and approval. Once approved by SPLP, the transmittal is uploaded to the Transmittal Library and SPLP approval filed in the Approval Emails Library.
- **Construction Progress Tracking** – The document control SharePoint site also serves as the central repository for tracking construction progress. The progress of each construction activity is tracked in the field by the Utility Inspectors via completion of Construction Forms. On a daily basis, Utility Inspectors complete and submit all Construction Forms to Project Consulting Services (PCS), who is responsible for compiling and uploading all forms to the SharePoint site. Hard copies of all Construction Forms also are maintained in the field by the Utility Inspectors. Construction Forms are organized and uploaded by each of the six construction spreads. The following presents the list of the Constructions Forms that are used to track pipeline construction progress for this Project (there are analogous forms for station construction):
 - D02.01 Daily Construction Log_PL.xlsx
 - D02.02 Backfill_PL.xlsx
 - D02.03 Cleanup_PL.xlsx
 - D02.04 Clearing_Grading_PL.xlsx
 - D02.05 Tie In_PL.xlsx
 - D02.06 Lowering In_PL.xlsx
 - D02.07 Bending_Laying_PL.xlsx
 - D02.09a EI Environmental Form_PL.xlsx
 - D02.09b Utility Environmental Form_PL.xlsx
 - D02.10 Foreign Utility Crossing_PL.xlsx
 - D02.12 Pot Hole_PL.xlsx
 - D02.13 Reclamation Restoration Daily_PL.xlsx
 - D02.14 Road Railroad Crossing_PL.xlsx
 - D02.15 Tie for Road Bore_PL.xlsx
 - D02.16 Stringing_PL.xlsx
 - D02.17 Ditching Trenching_PL.xlsx
 - D02.18 Welding Inspector Daily Report_PL.xlsx
 - D02.19 Photo Log_PL.xlsx
 - D06.01 Weld Compliance Report_PL.xlsx
 - D06.02 Chief Welding Inspector Daily _PL.xlsx
 - D06.03 Senior Welding Inspector's Report_PL.xlsx
 - D06.05 Weld Repair_PL.xlsx
 - D06.07 Mainline Weld Map_PL.xlsx
 - D06.08 HDD Weld Map_PL.xlsx
 - D06.09 Bores -Tie In Weld Map_PL.xlsx
 - D08.01 Coating Inspection_PL.xlsx
 - D14.02 Maintenance Record - Pipeline Form Sun43218.docx
 - _Station_BV_Construction_Docs_Guide.xlsx

6.4 WebMap Viewer and Document Interface

In addition to conventional engineering design and environmental compliance document development, management, and control procedures (see Sections 6.1, 6.2, and 6.3), SPLP uses WebMap as a supplemental tool to ensure readily-available access and use of current documents issued for construction and compliance on the Project. WebMap is an internet based map viewer and document interface that allows SPLP construction management, environmental compliance, and construction contractor and subcontractor team users to easily view project related features, such as the current pipeline route, limits of disturbance of the construction right-of-way, survey line work, property parcels, and all other features in one location without having to download, store, or manage large datasets and multiple files and drawings typically associated with pipeline projects.

The WebMap functions as a centralized data management system or dashboard for all project information by providing a direct link to documents and drawings available on the project SharePoint site. The WebMap significantly minimizes the risk of the SPLP construction management, environmental compliance, and construction contractor and subcontractor team using out of date information with real time server updates and direct hyperlinks to the latest versions of drawing and documents on SharePoint. Approved edits are made on the secure WebMap server and the associated drawings are then revised and uploaded to SharePoint. Users can quickly view the changes in the WebMap viewer, access the newly revised drawings via the SharePoint links, and monitor the progress of pre-construction and construction activity in real time without delays in transmittal and delivery of drawings.

SPLP project team users easily access the WebMap from an internet browser on a desktop, laptop, or any mobile device such as smart phones and tablets, allowing users the ability and freedom to access and view the project data from anywhere with an internet connection. The interactive geo-location tool enables users to pin-point their real-world location in relation to the project. Many users utilize the geo-location function while working on-site at the Project.

All data stored on the WebMap server is available as layers that can be turned on and off. The layers are selectable which enables the user to access stored attribute data associated within each feature, such as land owner information pertaining to a specific parcel or the individual restrictions of environmentally sensitive areas. The WebMap viewer is not limited to a set scale, it can be viewed as an overall project at once or can be zoomed in to a level of detail not available on alignment sheets. During construction of the Project, the WebMap service is being used daily for planning meetings, annotating and printing handouts for field crews, on-site referencing and geo-location, and real time document access and printing for inspections and audits.

SPLP project team users are required to attend formal training of the WebMap tool, and use of the WebMap is protected with user specific login credentials. All data is hosted on secured servers located in a hardened data center.

Available WebMap data layers include the following:

- Pipeline Layers
 - Pipeline Centerlines
 - Milepost Markers
- Centerline Stationing
- ROW Layers
 - Permanent ROW, Temporary ROW and ATWS, Temporary Access Roads

- Limits of Disturbance and Extra Spoil Workspace
 - Restrictions
- Block Valve Sites and Stations
 - Block Valve Sites and Permanent Access Roads
 - Station Sites and Permanent Access Roads, Station Piping
- Construction Method Layers
 - HDD, Bores, Open Cut with Crossing Pipe and Matted Wetlands
- Crossing Data Layers
 - Existing Pipelines, Roads
- Environmental Layers
 - Wetlands, Streams, Mining Areas, Timing Restrictions and Exclusion Areas
- Parcel Boundary Layer
 - Parcel ID, Landowner Name
- Municipal Boundary Layer
- Alignment Sheets
- Road Usage and Maintenance Agreements (RUMA)
- Contours
- Aerial Imagery

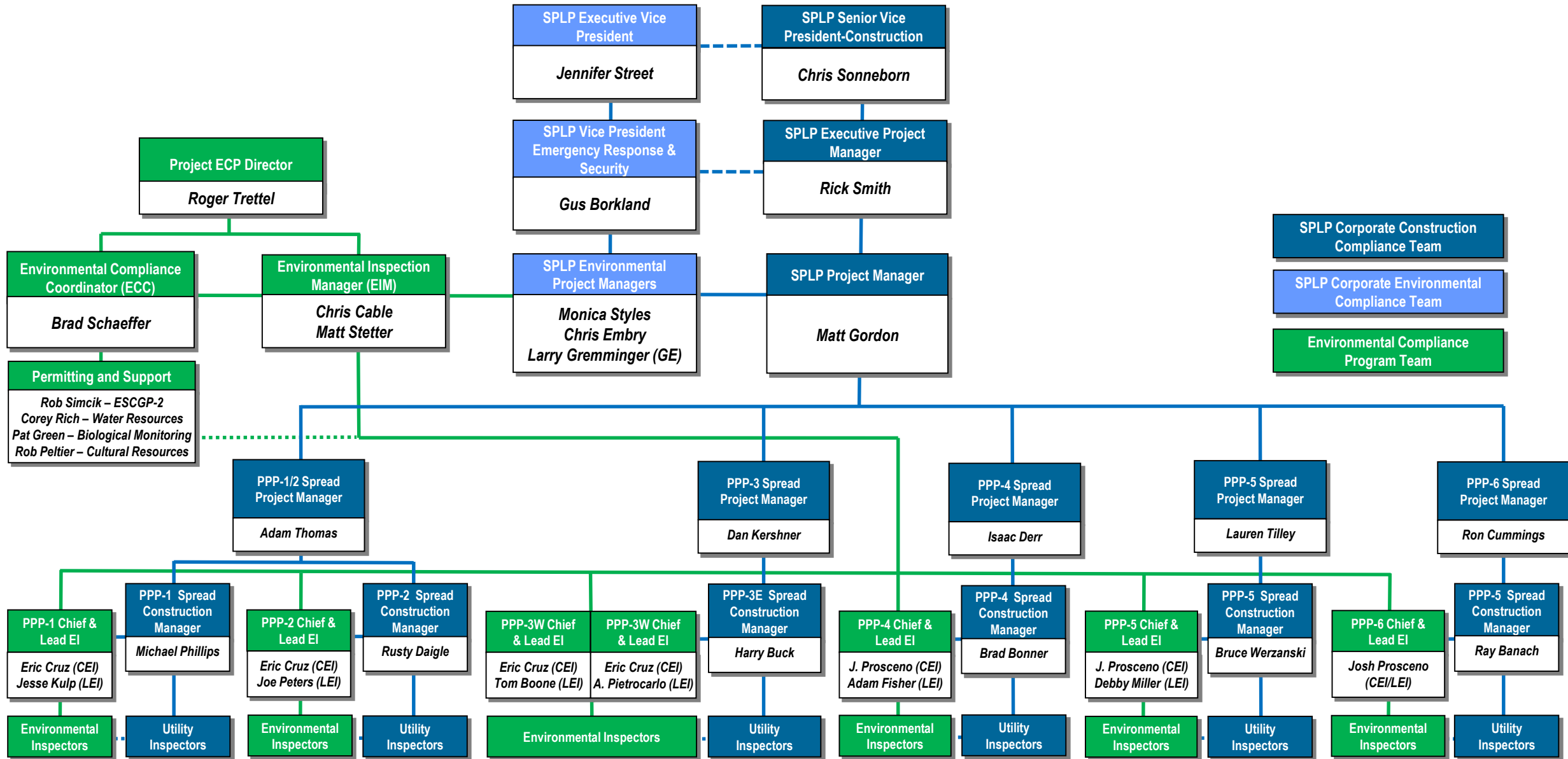
APPENDIX A

Environmental Compliance Team Organization and Contacts

Figure 1. SPLP PPP Corporate Construction and Environmental Compliance Program Team Organization

Contact Information for Key Environmental Construction Compliance Team Members

Figure 1. SPLP PPP Construction and Environmental Compliance Team Organization



**CONTACT INFORMATION FOR
KEY ENVIRONMENTAL CONSTRUCTION COMPLIANCE TEAM MEMBERS**

Separately Provided to the Department

APPENDIX B

Figure 2. PPP Environmental Incident Agency Notification Process

Figure 2. PPP Environmental Incident Agency Notification Process

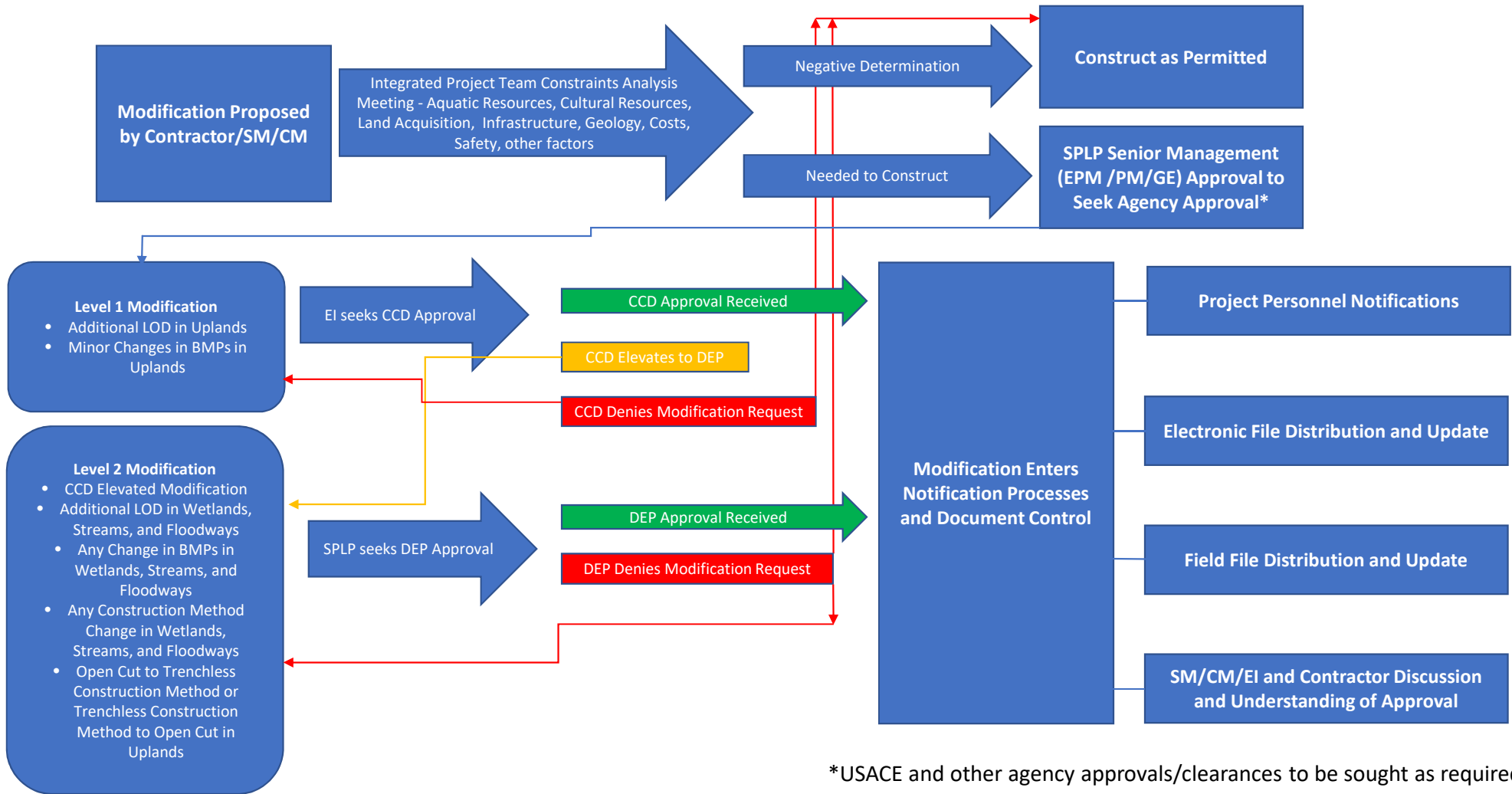


**Incidents related to loss of drilling fluids in terms of loss of circulation or surface inadvertent returns, as well as water supply complaints will be reported and remediated under processes outlined within the IR and Water Supply PPC Plans.

APPENDIX C

Figure 3. PPP Management of Change (MOC) Process

Figure 3. PPP Management of Change (MOC) Process



Appendix D

**SPLP Pennsylvania Pipeline Project
Chapter 105 Wetland and Water Crossing and
Trenchless Upland Crossing Notice to Proceed Form**



SPLP PENNSYLVANIA PIPELINE PROJECT

CHAPTER 105 WETLAND AND
WATERCROSSING AND TRENCHLESS
UPLAND CROSSING
NOTICE TO PROCEED FORM

SPREAD:		COUNTY:		MUNICIPALITY:	
STREAM ID(s):		WETLAND ID(s):		ROAD NAME(s):	
HDD PLAN REF #		BORE PLAN REF #		E&S SHEET NO(s):	
MAINLINE CONTRACTOR:		HDD/BORE CONTRACTOR:		OTHER CONTRACTOR:	
DEP PERMIT Nos. (102 AND/OR 105):		USACE PERMIT NO.:		MOD REF NO.:	
		PERMITTED CROSSING METHOD:		TIMING RESTRICTION(S):	

NTP COMPLIANCE CHECKLIST

	YES	NO	NA	Notes:
102 and 105 Permits and Modifications On-site and Reviewed				
Applicable PPC Plans On-site and Reviewed				
E&S Plan On-site and Reviewed (e.g., planned matches permitted)				
HDD/Bore/Special Crossing Drawings On-site and Reviewed (e.g., planned matches permitted)				
HDD/Bore Prior Notifications Complete (e.g., GreenPort/Landowner)				
Pre-construction On-site Meeting with Contractor(s)/Construction Spread Manager, and Environmental Inspector Held				

CONTRACTOR SIGNATURE(S)

By signing below, you acknowledge that this crossing is subject to PADEP and/or USACE authorizations and other requirements listed above, as applicable. By signing below you acknowledge that the crossing will be installed and the area restored in accordance with all approved plans and all PADEP, USACE, and all other agency authorizations.

	Company Name	Name	Title	Signature	Date
Mainline Contractor 1					
HDD Contractor 2					
Contractor 3					

ENVIRONMENTAL COMPLIANCE PROGRAM SIGNATURE(S)

By signing below, you acknowledge that the Contractor(s) and Construction Spread Manager have held an on-site preconstruction meeting where the requirements of the PADEP, USACE, and other agency approvals for the crossing were reviewed and discussed. By signing below you acknowledge your understanding of the requirements of all the approved plans and all PADEP, USACE, and other agency authorizations.

	Company Name	Name	Title	Signature	Date
Environmental Compliance Rep1					
Environmental Compliance Rep2					
Environmental Compliance Rep2					

SPLP MANAGEMENT NTP SIGNATURE(S)

By signing below, you acknowledge that the Contractor(s), Construction Spread Manager, and Environmental Compliance Program have held an on-site preconstruction meeting where the requirements of the PADEP, USACE, and other agency approvals for the crossing were reviewed and discussed. By signing below you provide the contractor notice-to-proceed with the referenced crossing(s).

	Company Name	Name	Title	Signature	Date
Spread Construction Manager					
SPLP Spread Project Manager or Project Manager					



OTIS EASTERN SERVICE, LLC

**2971 State Route 417
P.O. Box 330
Wellsville, NY 14895-0330
Phone: 585.593.4760**

Site Specific Safety Plan

Mariner East Phase II Spread 6



PROJECT FIELD OFFICE

Initial Issue Date: 02/11/16

Revision Date: 12/5/2016

Revision: 1

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1.0 Introduction and General Information

1.1 Policy

To our valued clients, personnel, and partners;

Thank-you for joining our Safety process at Otis Eastern. We view Safety in our work as a shared value for everyone - every day. From the newest hire to the most-experienced supervisor, it is the goal of Otis Eastern Services, LLC. (OES) to provide a work environment free of unwanted events for everyone on site, including sub-contractors and approved visitors.

Excellent Safety and health is no accident. It is the result of diligent work and careful attention paid company policies by everyone, every day. Effective Safety demands contribution and cooperation on everyone's part. Communication is critical; for this reason, OES management practices an open door policy.

OES strives for a zero-incident culture. Incident prevention is achieved through a process of planning our efforts - identifying and assessing hazards; then implementing preventative measures to control or eliminate those hazards. **You** play a major role in sustaining that process - identifying hazards and reporting even seemingly minor concerns or events to your supervisor. Therefore, we expect that all hazardous conditions, behaviors, near misses, events, injuries, and illnesses **must** be reported to your supervisor immediately.

When an unwanted event occurs, an "Event Report" is completed to assist OES Management/Safety Coordinator in investigating that event/determining root causes and contributing factors; to address these factors and prevent recurrence, or a more serious incident. Your input is critical to the success of these investigations.

Everyone is obliged to know and abide by the safety requirements and standards for their work. The rules outlined here are for your benefit and have come from an industry with over 100 years' experience. Workers and supervisors who observe hazards or safety concerns, or feel they need additional training, must notify their supervisor. Supervisors and management must address these concerns and take corrective action.

Supervisors must instill a culture of positive attitude and awareness of Safety in their workers through leadership by example, attitude, personal contact, training, and regularly scheduled safety meetings. It is the duty of all employees to perform their work with maximum regard for the safety of themselves and co-workers.

Our safety policies are integral to our personnel policies - meaning that compliance with safety policies is a condition of employment; non-compliance is grounds for disciplinary action, up to and including termination. Safety and health is every bit as important as productivity and quality. If a job cannot be done safely, it will not be done. That is our expectation and should be your commitment.

1.2 Purpose

This project Site Specific Safety Plan (SSSP) is a companion document to the OES Safety Program and Policy. This SSSP identifies safety issues specific to this project and will be complimented by JSA's on a daily basis. General issues that may not be covered in this SSSP are covered in the OES Safety Program and Policy and/or the safety plans of our subcontractors.

1.3 Applicability

This SSSP applies to all OES employees, subcontractors and visitors. They are required to comply with this SSSP in addition to their own safety programs and policies.

1.4 Compliance with Applicable Laws and Regulations

This SSSP generally complies with the safety requirements of 29 CFR 1926, OSHA's Construction Regulations. Additional state and local laws may apply to this project, as well as client expectations. In the event a discrepancy exists between this SSSP and any applicable local or state law, the provisions of the most protective regulation (usually the state or local regulation) shall govern.

1.5 Availability of Site Specific Safety Plan Policy

- A copy of this SSSP shall remain on-site until the completion of the project with the site safety manager, OES office manager and superintendent.
- All employees, sub-contractors and all persons working on the project will be required to attend a project orientation outlining the details of this SSSP.

1.6 Project Description:

Pennsylvania 20" and 16" NGL Pipeline Project, Spread 6 work to be performed consists of all activities necessary to complete the installation of a 20-inch and 16-inch high-pressure natural gas liquid pipelines with ancillary facilities for Sunoco Logistics. The work includes all items set forth in this section and as detailed in the complete scope of work below.

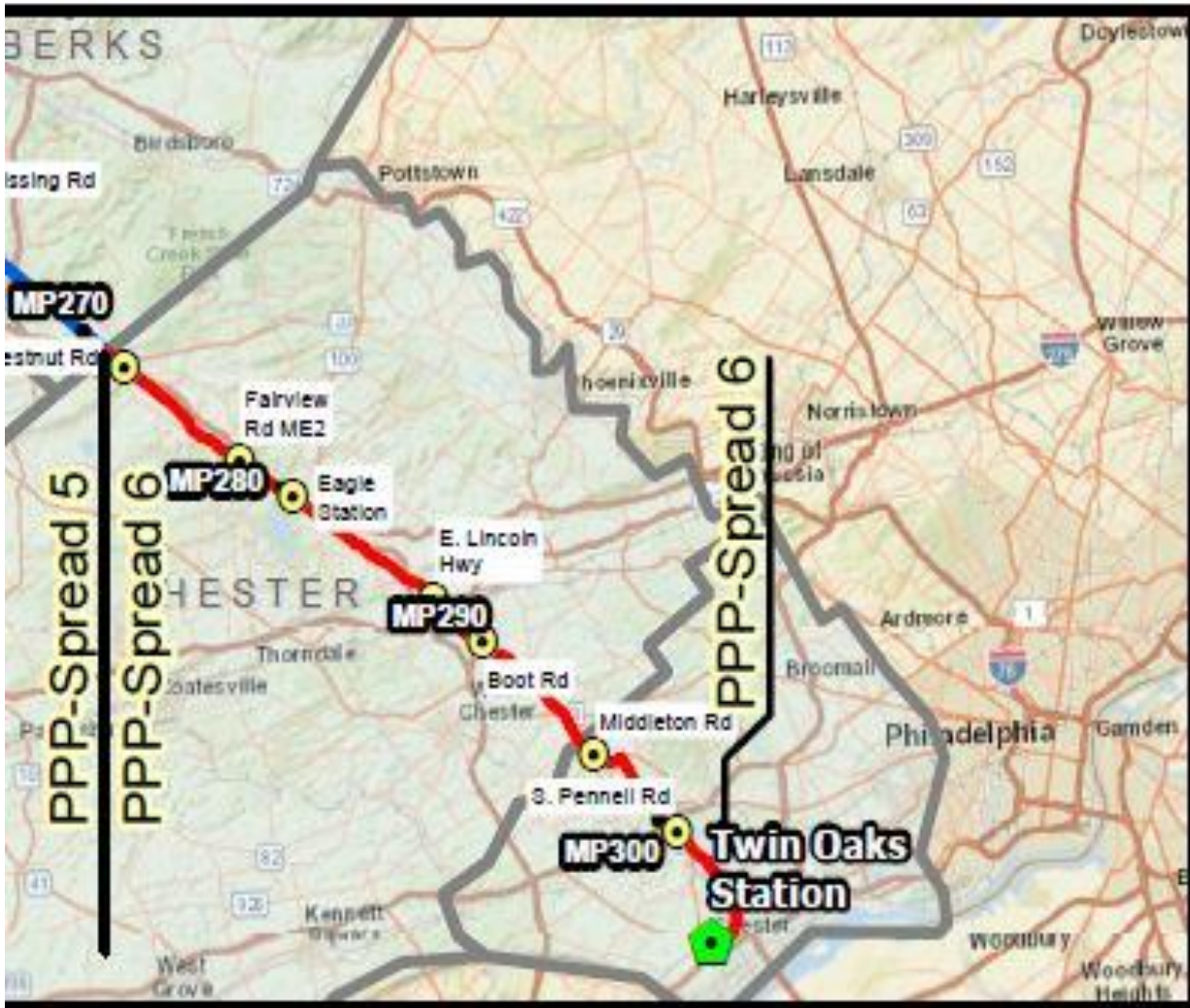
Pennsylvania 20" and 16" NGL Pipeline Project Spread 6 commences at Mile Post 324.2 at the county line in Berks/Chester counties, Pennsylvania and ends at approximate Mile Post 359.2 at the Twin Oaks site in Delaware County, Pennsylvania.

Work, construction, and installation of the following:

- **20" and 16" high pressure natural gas liquid pipeline-** Installation of approximately 189,010 linear feet (35.0 miles) of a 20" and 16" coated line pipe.
- **Uncased Bore Crossings-** Total of 38 uncased bore crossings.
- **HDD Crossings-** Total of 35 horizontal directional drill (HDD) crossings.
- **MLV Site at M.P. 324.5-** The work involves the complete, turn-key construction and installation of one pre-fabricated 20" main line valve and one 16" main line valve assemblies. The work further includes all associated interconnect piping systems and valves: coating and painting all above ground piping; site work for an approximate 125' x 125' site, which includes, clearing, rough grading, fill dirt required to level site, rocking, temporary fencing, and one permanent access road; and civil work, which includes, concrete sleepers and reinforced piers in accordance with Company Drawings.
- **MLV Site at M.P. 330.4-** The work involves the complete turn-key construction and installation of one pre-fabricated 20" main line valve and one 16" main line valve assemblies. The work further includes, without limitation: all associated interconnect piping systems and valves; coating and painting all above ground piping; site work for an approximate 125' x 125' site, which includes, clearing, rough grading, fill dirt required to level site, rocking, temporary fencing and one permanent access road; and civil work, which includes, concrete sleepers and reinforced piers in accordance with Company Drawings.

- **MLV Site at M.P. 332.8-** The work involves the complete, turn-key construction and installation of one pre-fabricated 20" main line valve and one 16" main line valve assemblies. The work further includes, all associated interconnect piping systems and valves; coating and painting all above ground piping; site work for an approximate 125' x 125' site, which includes, clearing, rough grading, fill dirt required to level site, rocking, temporary fencing and one permanent access road; and civil work, which includes, concrete sleepers and reinforced piers in accordance with Company Drawings.
- **MLV Site at M.P. 339.6-** The work involves the complete, turn-key construction and installation of one pre-fabricated 20" main line valve and one 16" main line valve assemblies. The work further includes, all associated interconnect piping systems and valves; coating and painting all above ground piping; site work for an approximate 125' x 125' site, which includes, clearing, rough grading, fill dirt required to level site, rocking, temporary fencing and one permanent access road; and civil work, which includes, concrete sleepers and reinforced piers in accordance with Company Drawings.
- **MLV Site at M.P. 342.1-** The work involves the complete, turn-key construction and installation of one pre-fabricated 20" main line valve and one 16" main line valve assemblies. The work further includes, all associated interconnect piping systems and valves; coating and painting all above ground piping; site work for an approximate 125' x 125' site, which includes, clearing, rough grading, fill dirt required to level site, rocking, temporary fencing and one permanent access road; and civil work, which includes, concrete sleepers and reinforced piers in accordance with Company Drawings.
- **MLV Site at M.P. 348.4-** The work involves the complete, turn-key construction and installation of one pre-fabricated 20" main line valve and one 16" main line valve assemblies. The work further includes, all associated interconnect piping systems and valves; coating and painting all above ground piping; site work for an approximate 125' x 125' site, which includes, clearing, rough grading, fill dirt required to level site, rocking, temporary fencing and one permanent access road; and civil work, which includes, concrete sleepers and reinforced piers in accordance with Company Drawings.
- **MLV Site at M.P. 353.1-** The work involves the complete, turn-key construction and installation of one pre-fabricated 20" main line valve and one 16" main line valve assemblies. The work further includes, all associated interconnect piping systems and valves; coating and painting all above ground piping; site work for an approximate 125' x 125' site, which includes, clearing, rough grading, fill dirt required to level site, rocking, temporary fencing and one permanent access road; and civil work, which includes, concrete sleepers and reinforced piers in accordance with Company Drawings.

ME II Spread 6 Location:



1.7 Site Specific Hazards and Safety Concerns

On a daily basis, Otis Eastern and its subcontractors are required to obtain from the Owner's Representative (Sunoco Pipeline L.P) a copy of the Owner's signed Work Permit that is to be prepared prior to the start of any work.

Typical hazards associated with pipeline work include: heavy machinery; working in trenches; uneven and slippery surfaces; snow and ice; weld flash; cold stress in winter; grinding wheels and other powered hand tools; ladders and severe weather. These and others will be identified with the Job Safety Analysis (JSA) and are covered in various sections of this document.

Three additional hazards which may or may not be present are underground and overhead power lines, in-service gas lines and 3rd party vehicular traffic. These site-specific hazards are discussed below for each of the pipelines involved in this project.

Utility Lines

No offloading of equipment from lowboys or operation of equipment within 20 feet of utility lines without goal posts and spotters present. Spotters will be utilized when needed for escorting deliveries.

2.0 Emergency Contacts and Procedures

2.1 Key Otis Eastern Project Personnel

Name	Title	Cell Phone	Office Phone	E-mail
Otis Eastern				
Casey Joyce	President – OES	716-498-8418	585-593-4760	cmj@otiseastern.com
Tony Deusenbery	Vice President – Construction	716-498-4760	585-593-4760	ard@otiseastern.com
Jimmy Joyce	Project Manager	716-498-0726	585-593-4760	vjj@otiseastern.com
TBD	Superintendent			
TBD	Office Manager			
TBD	Engineer			
TBD	Grade/Ditch Foreman			
TBD	String Foreman			
TBD	Bending Foreman			
TBD	Weld Foreman			
TBD	Coating			
TBD	Lowe/Tie Foreman			
TBD	Enviro Foreman			
Matt Landry	Site Safety	585-808-6676		mdl@otiseastern.com

2.2 Offsite Emergency Phone Numbers: 911

State Police: 911

Fire Department: 911

Trench Rescue

Fame Fire Department

200 E. Rosedale Ave.
West Chester, PA. 19382

Phone: 610-692-5404

Hospitals/Emergency Room

Main Line Health Center at Exton Square

154 Exton Square Parkway
Exton, PA 19341

Phone: 484-565-8600

Brandywine Hospital

201 Reeceville Rd.
Coatsville, PA 19320

Phone: 610-383-8000

Medical Facilities:

Main Line Health Care Occupational & Travel Health

154 Exton Square Pkwy
Exton, PA 19341

Phone: 484-476-8218

The Occupational Health Center

915 Old Fern Hill Road, Building A, Suite 3
West Chester, PA 19380

Phone: 610-738-2450

Concentra Medical Center

4201 Pottsville Pike
Reading, PA 19605

Phone: 610-921-5811

Concentra Medical Center

850 Germantown Pike
Plymouth Meeting, Pa 19462

Phone: 610-275-3884

Eye Injury (Optometry)

Moore's Eye Care PC

460 Creamery Way Brandywine Oakland Corporate Center
Suite 105
Exton, PA 19341

Phone: 610-524-3110

2.3 Owner Contact

Owner Contact Phone Numbers:

Sunoco Logistics				
Name	Title	Cell	Office	Email
Matt Gordon	Project Manager			
Ron Cummings	Project Manager			
Ray Banach	Project Management			
Ryan Kiley	H&S Project Manager			
Brian Yates	H&S Manager			
Craig Mills	Project Safety Manager			
Chris Embry	Sr Specialist Environmental			
Monica Styles	Environmental Compliance			
Donald Zoladkiewicz	Government/ Public Relations			

2.4 Emergency Procedures

Minor Personal Injury (First Aid)

- Notify the onsite foreman who will assess the injury and provide first aid.
- The foreman should fill out an Accident/Injury report and turn it into the field office within 24 hours of the incident.

Serious Injury (Treatment Beyond First Aid)

If injured employee can walk and has a non-life threatening injury, then contact the foreman, who will assess the situation to determine if treatment beyond first aid is required. The foreman will contact the Office Manager, and make arrangements for transport to approved medical facility for treatment.

If the injured employee is unconscious do not move him unless he is in an unsafe location and only if it is safe for rescuers to do so. If an injured unconscious employee must be moved, do so only with the greatest care. If injury to the neck or spine is suspected, attempt to stabilize before moving. If injured is unconscious but in a safe location, do not move them. If breathing has stopped follow training to address. Control bleeding if needed - using universal precautions. Treat or prevent shock by covering the victim with a blanket and raising feet above heart.

Contact the onsite foreman, who will assess the situation and call 911 and provide the following information:

- address on paved roads;
- exact location on right of way;
- number of personnel injured; and
- nature of the injuries.

The onsite foreman will contact the Office Manager at the Project Field Office and alert him of the accident and the actions that have been taken. After offsite emergency medical services have assumed care of the victim, the onsite foremen with assistance of the Safety Coordinator will begin investigation of the accident.

Site Evacuation

An evacuation of a work site or ware yard is an extremely unlikely event. However, if an explosion, fire, or other dangerous/catastrophic event occurs, it may be necessary to move personnel to a safe location until the situation can be assessed or controlled. An evacuation signal will be given via radio. Personnel will move to a designated assembly point, preferably up wind of the site for a headcount; the most likely location would be where the nearest paved road crosses the right of way. Possible evacuation scenarios and where personnel should meet for a headcount, should be discussed in the daily JSA process. Personnel will remain in the assembly area until a head count is performed and they are released by the Site Foreman, Project Manager, Safety Coordinator other OES senior manager.

The site foreman will call 911 and provide the following information:

- address on paved road;
- exact location on right of way; and
- nature of the emergency (police, fire, medical).

The site foreman will contact the Field Office Manager and/or the Safety Coordinator. The Field Office Manager will radio other foreman in the vicinity of the emergency if they are in danger, and order them to shut down operations and evacuate to the designated assembly point.

3.0 Safety Meetings

3.1 Weekly Safety Meeting

The site safety manager and superintendent will conduct a weekly jobsite safety meeting, held every Friday morning at 0700 hrs. Attendance is mandatory, and a sign-in roster will be maintained. Topics discussed may include recent accidents, hazards of a new phase of the project, general safety topics and/or site specific awareness such as:

- work site congestion;
- residential areas;
- other contractors;
- traffic and work zones;
- overhead power lines;
- fabrication; and
- working around heavy equipment and cranes.

3.2 Daily Safety Meetings

All OES foremen and subcontractors will conduct a “daily tailgate” meeting with their crew including a Job Safety Analysis (JSA) before each shift detailing their tasks and associated hazards for the shift.

4.0 Conduct and Discipline Policy

4.1 Prohibited Conduct

The following conduct is prohibited and may result in discipline, up to and including termination:

1. Horseplay, fighting, harassing, threatening or menacing behavior.
2. Removal of a Lock-Out/Tag-Out Device, or disabling of safety device.
3. Violation of the Drug and Alcohol Policy (as presented in the new-hire packet).
4. Dishonesty and/or theft of company/client/subcontractor property.
5. Deliberate abuse/misuse of company equipment, assets or personnel.
6. Repeated inability to follow safety expectations.
7. Violating or disobeying any instruction given by a supervisor.
8. Non-compliance with PPE use expectations.

4.2 Other Conduct Policy Violations

Employees who commit policy violations other than those addressed in Section 4.1 above will be subject to discipline, up to and including immediate termination of employment.

4.3 Disciplinary Actions

The consequences discussed below apply to all employees who are found to have violated the provisions of this SSSP. Any foreman, supervisor, or official of management, as soon as he/she becomes aware of any such violation, shall ensure that the following action is taken:

Stage 1 - A formal verbal warning may be given to the employee by his/her immediate supervisor, along with a warning that this is the first stage in the disciplinary procedure and any repetition within one month will lead to the Stage 2.

Stage 2 - Should the offense(s) addressed in Stage 1 be repeated and/or continued, or a more serious offense committed, the employee may be issued a formal written warning, setting out the details of the offense(s) and stating that if the offense(s) is (are) repeated within one month the third stage in this procedure will be invoked. In addition to the written warning, the employee will be suspended, without pay, for a period of one day. Upon his/her return to work, the employee must undergo additional formal training in the area of the offense(s) before he/she is permitted to work so as to prevent injury to that employee or fellow coworkers.

Stage 3 - Should an offense that was written up under Stage 2 be repeated within three weeks, the employee may be terminated. An employee so terminated will be ineligible for rehire for 12 months.

If conduct is so egregious or if willful disregard of safety rules or policies results in serious injury or significant damage to or loss of property, OES reserves the right to bypass the stages above and immediately terminate the individual or individuals responsible. In addition, if criminal activities are involved, OES will file charges with local law enforcement authorities and will prosecute to the fullest extent of the law.

4.4 Smoking Policy

Smoking is allowed only in authorized areas designated by the Chief Inspector.

5.0 Health and Safety Responsibilities

The effectiveness and success of the safety program depends upon the active participation and cooperation of all employees. Duties and responsibilities of all employees under this policy are the following:

5.1 Safety Coordinator

1. Coordinate health and safety training for management and supervisors.
2. Coordinate jobsite safety audits.
3. Review daily Job Safety Analysis (JSA)
4. Provide assistance and company representation for occupational injuries and illnesses at local facilities (hospital, urgent care clinics, etc.)
5. Conduct weekly (Friday mornings) safety toolbox talks
6. Maintain and revise the safety policy, corporate safety manual, and site specific safety plans as needed.
7. Maintain jobsite postings and notices required by law.
8. Ensure the proper filing of any paperwork relating to accidents.
9. Participate in post-event investigations.
10. Maintain all records and reports related to this policy.
11. Implement OES safety program and policy.

12. Communicate and reinforce OES drug and alcohol policy
13. Perform the duties of a DOT urine collection station in accordance with 49 CFR Part 40, "Procedures for Transportation Workplace Drug Testing Programs".
14. Maintain an incident/accident/first aid log
15. Coordinate issuance/replacement of personal protective equipment (PPE)
16. Provide site-specific orientation to all project personnel and unescorted visitors, including subcontractors, company representatives, regulators and vendors.
17. Document and maintain onsite all records of attendance and agreement to comply with OES site safety and health plan and safety manual.
18. Document copies of safety meeting minutes using Safety Services Report (SSR), Safety Manager's Log (SML), JSAs, training records, incident reports, and urine testing collector copies.

5.2 Project Manager

1. Implement the site specific safety plan SSSP
2. Direct and coordinate health and safety regulations.
3. Participate in post-accident investigations.
4. Assist in formulating policy matters.
5. Implement OES safety program and policy.
6. Participate in daily JSAs, safety tailgate meetings, and weekly safety meeting

5.3 Superintendent

1. Familiarize him/her-self with health and safety regulations related to his/her area or responsibility.
2. Direct and coordinate health and safety activities within his/her area of responsibility.
3. Ensure all employees supervised use required personal protective equipment (PPE) and safety devices.
4. Ensure that safety equipment is available, maintained, used, and stored correctly.
5. Instruct and train all persons within area of responsibility in job health and safety requirements.
6. Direct correction of unsafe conditions and behaviors.
7. Conduct weekly project update/safety meetings.
8. In the case of an event, completes the Report of Occupational Injury or Illness.
9. Participate and review all event investigation.
10. Ensure corrective action is taken immediately to eliminate the cause of the accident.
11. Ensure that foremen are aware of and comply with requirements for safe practices.
12. Require all subcontractors to comply with health and safety regulations as well as Otis Eastern Safety Program and Policy.
13. Maintain copies of applicable programs and OSHA forms on site, in accordance with Otis Eastern practice and policy.
14. Implement Otis Eastern safety program and policy.
15. Participate in daily JSAs, safety tailgate meetings, and weekly safety meeting

5.4 Field Office Manager

1. Ensure arrangements for prompt medical attention in case of serious injury have been provided for each job, to include transportation, communication, and emergency telephone numbers.
2. Maintain an adequate supply of materials for first aid kits.
3. Maintain an adequate supply of personal protective equipment (PPE).

5.5 Foreman/Front Line Supervisor

1. Be familiar with, explain, and enforce health and safety regulations that apply to company operations within his/her area of responsibility.
2. Direct and coordinate health and safety activities within his/her area or responsibility.
3. Ensure that safety devices and proper PPE are used by persons under his/her supervision.
4. Instruct and train all persons within area of responsibility in job health and safety requirements, including, but not limited to, hazard recognition and avoidance, and require compliance by workers with the safety rules established.
5. Direct the correction of unsafe conditions.
6. Ensure that safety equipment is available, maintained, used, and stored correctly.
7. Ensure that injuries and illnesses are reported and treated promptly.
8. Participate in post-accident investigation.
9. Coordinate daily jobsite inspection.
10. Implement Otis Eastern safety program and policy.
11. Inspect first aid kits weekly, and replenish supplies used by contacting the safety coordinator.
12. Direct and participate in daily JSHAs, safety tailgate meetings, and weekly safety meetings.

5.6 All Employees

1. Be familiar with and comply with proper health and safety practices.
2. Use the required safety devices and proper PPE.
3. Notify the supervisor immediately of unsafe conditions/acts, incidents, and injuries.
4. Implement Otis Eastern safety program and policy.
5. Participate in daily JSHAs, safety tailgate meetings, and weekly safety meetings.
6. Report all injuries and illnesses to your foreman, no matter how minor.

5.7 Subcontractors

1. By contract, Subcontractors shall comply with and ensure the compliance of their employees with the provisions of this SSSP as well as their own safety program.
2. Failure to fulfill this requirement is a failure to meet the conditions of the subcontract.
3. All Subcontractors will be informed of the requirements of the SSSP during the pre-job site orientation, and any time there is a change in their work scope. To insure that the Subcontractor (s) implement and follow the site specific safety plan, the Safety Coordinator will conduct a weekly field safety assessment.
4. The Safety Coordinator will also insure that all of the administrative requirements are being implemented by requiring the subcontractors to turn in all documentation of Safety Meetings, JSA, PTP, Training, Orientation, Hazard ID, Near Miss, Incidents investigations, and any other documentation that may be used to document the processes being used.
5. The Subcontractors will attend the weekly safety meeting that will be held every Friday morning or any other safety meetings including special meetings and stand-downs that are deemed necessary during the course of this project.

6.0 General Jobsite Procedures

6.1 Training

Training and education are necessary for the success of this policy. Employees will be trained to recognize jobsite hazards and the procedures to follow to minimize these hazards. Training may consist of, but is not limited to, the following:

1. Project orientation training.
2. Individual job/task training for the specific job/task.
3. New employees not familiar with gas pipeline operations will be paired with an experienced employee as a part of their training program. The duration of the training will be assessed by the experienced employee. Contributing factors are the skill set and skill level required for assigned task and new employee aptitude.
4. Each supervisor working in a competent person task will receive documented training for the task being performed. An example would be; competent person for trenching and/or excavation, first aid/CPR, confined space entry supervisor, etc.

6.2 Project Orientation

1. New employees will have their initial new hire packet prepared by the Field Office Manager. Once that is complete, the Safety Coordinator, will conduct the required urine collection at the Field Office trailer in accordance with the policies and procedures of DOT 49 CFR 49.
2. The Safety Coordinator will conduct Project Site Specific Safety Plan Orientation every morning at 0700 as needed.
3. Safety Coordinator will maintain an attendance log of all persons attending and completing orientation.

6.3 Hazard Communication

1. Otis Eastern has developed a written hazard communication plan.
2. Specific chemicals that will be used on the project will be explained to each employee during orientation, and subsequently by each foreman.
3. The purpose of the hazard communication plan is to provide information about chemical and physical agent hazards and the control of such hazards which includes container labeling, safety data sheets (SDS), physical agent data sheets, and training.
4. SDS access is provided through the project office (trailer) and will be covered during orientation.

6.4 Environmental Health and Sanitation

1. An adequate quantity of portable toilets (Port-A-Johns) will be located on the project for employee use and utilization of the right of way is strictly forbidden.

6.5 Poisonous Snakes, Insects and Plants

1. Eastern Timber Rattlesnakes, Northern Copperheads and Eastern Massasaugas (in wetlands) are prevalent in the region. These are protected by environmental regulation. If you encounter a snake, do not kill it, notify your supervisor and a snake handler will relocate the snake if necessary.

2. The best control from the hazards presented by Poisonous snakes, Insects, Plants and Animals is to avoid them and the areas in which the potential danger resides. Most animals, snakes and insects will not attack humans unless they are threatened.
3. Like most accidents and injuries, prevention is important in controlling hazards from poisonous snakes, insects and plants.
4. Each employee should review the work activities planned to determine what exposures might exist.
5. Efforts should then be made to minimize situations, which might result in a snakebite, insect sting or exposure to poisonous plants.
6. Employees should also avoid application of perfumes, aftershaves, etc., to help minimize attraction of insects.
7. Snakes
 - a. Employees should wear work boots, long pants and long sleeved shirts when going into hazardous areas.
 - b. Employees should make as much noise as possible when entering un-cleared or wooded area.
 - c. Employee should avoid reaching or stepping into hidden areas
 - d. If a snakebite should occur:
 - i. Remain as calm as possible
 - ii. Move away from the snake
 - iii. Apply a constricting bandage (not a tourniquet) between the wound and heart. A finger should pass under it. Apply ice to bite area if available.
 - iv. Allow a fellow worker to transport to the closest medical facility, if emergency services are unavailable.
8. Insect stings
 - a. To avoid exposure employees should:
 - i. Wear appropriate clothing.
 - ii. Pay attention to and avoid areas where stinging insects might be.
 - iii. Schedule work in infested areas during cool months, if possible.
 - iv. Avoid strong smelling aftershave, colognes, etc., that may attract insects.
 - v. Use available insect repellents.
 - b. If a sting does occur, any stinger should be removed by scraping a card across the wound (DO NOT SQUEEZE). The area should be washed with soapy water. Apply a cold compress to control swelling. Take an antihistamine as needed for minor itching and swelling, if you have them readily available and are not allergic to the medication available.
 - c. If the employee has had an allergic reaction to stings (determine how allergic), fever, swelling, difficulty breathing, feels faint or has multiple bee/wasp stings, seek emergency medical care immediately.
 - d. If an employee has a known allergy to bees, wasps, hornet, etc., please notify your supervisor and the site safety manager.
9. Ticks
 - a. Are especially important because they have been linked to Lyme disease. To minimize exposure:
 - i. Wear appropriate clothing when in wooded areas, including light colored clothes to easily spot the dark colored insects, tuck your shirt into your pants and pants into your socks.
 - ii. Use "Tick Repellent"
 - iii. Check yourself twice a day, paying close attention to hair, neck and groin areas.
 - iv. Notify your supervisor if a tick is found and note its condition. Save the specimen for future reference if able.
 - b. To remove a tick:

- i. Place fine point tweezers around the tick's mouthparts, as close to the skin as possible and gently pull the tick out.
- ii. If fever is noticed, notify your supervisor immediately.
- iii. Fever chills, headaches, muscle aches can develop within 3-10 days after Lyme disease exposure. A rash may develop in 1-3 days on wrists and ankles.

10. Poisonous Plants

- a. Employees will generally have exposures to three types of poisonous plants:
 - i. Poison Oak
 - ii. Poison Ivy
 - iii. Poison sumac
 - iv. Giant Hogweed is also prevalent in region
- b. Not all employees are allergic or have reaction to the aforementioned plants
- c. Reactions vary in intensity from minor itching to life threatening allergic reactions.
- d. Predominant method of control is avoidance; to avoid exposure:
 - i. Avoid having employees with allergens to poisonous plants from working in their vicinity.
 - ii. Wear long sleeved shirts, long pants, boots, and eye protection.
 - iii. Use silicone protective or other barrier creams when available.
 - iv. Wash hands, arms, and face and any exposed body part as often as possible.
 - v. All exposed clothing must be washed thoroughly in HOT water with plenty of soap to dissolve the poisonous oils.
 - vi. Avoid rubbing eyes and face with gloves or hand that were exposed to these plants.
- e. If a reaction/rash occurs, contact the Safety Department immediately.

11. Domestic and Wild Animals

- a. Field employees are at risk from exposure to all types of animals, their waste products and their carcasses. Rodents and other animals can harbor disease-causing agents very harmful to humans. Care should be taken to avoid all wild animals and domestic animals that have the potential to harm you.
- b. To avoid accident or injuries associated with rodents and other animals observe the following guidelines:
 - i. Be aware of your surroundings and note any wild or suspicious acting animals in your work area. If necessary, seek safe shelter from these animals.
 - ii. Avoid reaching or stepping into or over hidden areas that may contain such animals.
 - iii. When working with soil, be aware of signs that indicate above or below ground animal nests and take appropriate action to prevent contamination by dust or injury from bites.
 - iv. Spray animal carcasses with a disinfectant (Lysol) prior to removal and wear rubber gloves to remove animal carcasses. Dispose of dead animals in compliance with applicable county health guidelines. Wash exposed skin with an antibacterial or disinfectant soap after removal and disposal of the animal.
 - v. If an animal bite occurs, clean the wound with soap and water, and follow appropriate first aid procedures and immediately report the incident to your supervisor and safety department.
 - vi. Transport any bite victim to the clinic (If possible, safely capture the animal so it can be tested for any known disease-causing agents.)
 - vii. If exposure to airborne particles and dust from a nest does occur, immediately report the incident to your supervisor. (If possible, and without exposing yourself, mark the site without disturbing it so trained personnel can collect samples to determine if any disease-causing agents are present.)
 - viii. Avoid direct contact with bird, bat and other animal droppings. Areas where birds and bats roost should be avoided or appropriate respiratory protection shall be used.

- ix. Avoid direct contact with animal blood. Wear rubber gloves if contact with animal blood cannot be prevented. Dispose of rubber gloves properly. Wash hands thoroughly with an antibacterial soap after disposal of rubber gloves and before eating, drinking or smoking.

6.6 Job Safety Analysis

1. A Job Safety Analysis (JSAs) (sometimes referred to a Job Hazard Analysis or JHA) will be completed prior to a critical task or change in phase of work. The JSA will cover the major activities of construction, the hazards associated with these activities, and steps to mitigate these hazards..
2. The foreman will lead the daily tailgate meeting for their respective crews and use the JSA to convey known hazards and hazard controls; they will also seek input from their crew and SAFETY COORDINATOR to assist in identifying hazards for the assigned tasks.
3. Employees are expected to participate in the development of the JSA. Daily observations shall include: Current and anticipated weather, the daily scope of work, the hazards associated with that work, necessary PPE and other tools for the tasks at hand, short service employees, stop work authority, near misses - reporting or unique safety actions/attitude by crew members.
4. Every crew member shall print and sign their name to the daily JSA.
5. The JSA will be collected and reviewed by the Safety Coordinator(OSEA RSP®) and forwarded to OES corporate office in Wellsville, NY.
6. The Safety Coordinator(OSEA RSP®) will conduct ongoing JSAs and audits to determine the effectiveness of the JSAs and their process.
7. Additional requirements for continuous safety improvement will be discussed on a daily basis with the superintendent.
8. JSAs shall notify each crew member where the assembly point for emergency response will be, and communicate that to the office manager and the site safety manager.
9. Safety Data Sheets, specific to the operation detailed in the JSA, will be copied and attached to each JSA submitted.
10. Specific modification to approaches with traffic safety and the use of traffic persons will be performed in the daily JSAs before each applicable area.
11. The site safety manager and superintendent will determine the applicability of necessary requirements for each traffic control area.

6.7 Personal Protective Equipment (PPE)

1. Head Protection -- 100% head protection is required. All hard hats must meet the requirements of ANSI Z89.1-1997 and will be worn with the bill turned towards the front unless job duties dictate variance and the hard hat is labeled with the symbol denoting that it may be worn with the bill facing forward or backward. Workers will not be allowed to wear hard hats that have had the shell altered by drilling, cutting or painting. These alternations destroy the integrity of the shell, and the hat will not provide adequate protection. All hard hats will be periodically inspected for defects.
2. Gloves -- Workers will wear work gloves that are in good condition and are suited for the type of work performed. Workers will not wear loose fitting gloves, sleeves and other garments which may get sucked into rotating machinery.
3. Shoes -- Workers will wear safety rated footwear which meets the requirements of ASTM F2413-05. Shoes must be kept in good repair. Footwear with worn heels or thin or worn soles will not be permitted. Workers will not be allowed to wear sneakers, sandals, tennis shoes or worn out footwear.

4. Eye and Face Protection -- Eyes shall be protected by ANSI Z87.1 approved eyewear with integrated hard side shields. Double eye protection with a face shield shall be worn when grinding, and welders helpers should consider the use of vented safety goggles underneath safety face shields when grinding in awkward positions. Prescription eyewear shall meet the requirements of Z87.1 and have hard side shields, or the employee can wear over the glass safety glasses.
5. Hearing Protection -- Noise hazards may be presented from site activities. Noise levels identified as greater than 86 decibels (i.e. whenever you have to raise your voice above conversational speech at three feet to be heard) will be reduced with the use of hearing protective devices (HPDs). HPDs must have an assigned Noise Reduction Rating (NRR) assigned by the USEPA.
6. High Visibility Clothing -- All OES employees shall wear ANSI/ISEA 107-2010 Class II approved safety vests at all times. Welders and welder helpers are exempted from the use of traffic safety vests when welding and grinding, but must wear vests after completing the welding or grinding activity.
7. Respiratory Protection -- Respiratory protection may be required by some operations. Your foreman or the SAFETY COORDINATOR can assist with that determination based on a hazard determination of the chemicals used.
8. PPE requirements will be reviewed by the foreman during the daily tailgate meeting and be noted on the daily JSHA.
9. Fire resistant clothing (FRC) is required in all work areas having a reasonable potential for flash fire potential as deemed by client or site supervision.
10. SDS from the manufacturer will be reviewed and may determine the use of additional PPE.

6.8 Housekeeping

1. Housekeeping is one of the most important factors in preventing slip-trip-fall accidents, and for fire prevention.
2. All debris shall be cleared from work areas on a daily basis.
3. Excess materials should be stacked neatly.
4. Tools shall be returned so they are available for all employees to use.

6.9 Excavation and Trenches

Excavation and trenching operations shall be done in the presence of an OSHA defined Competent Person and in compliance with, but not limited to, the following procedures:

1. Otis Eastern shall be responsible for initiation of the One-Call System in keeping with client and contractual requirements prior to any excavation as applicable.
2. The phone number is **811**.
3. There are multiple areas along the right-of-way where underground utilities, gas lines and electric lines are placed. Care must be taken to properly identify, mark and support these utilities when preparing the worksites.
4. Any excavation or trench four feet or more in depth will have a method of access and egress, earthen ramps shall be sloped to allow upright travel, ladders shall extend 36' above the excavation and secured; travel distance shall not exceed 25' to point of egress.
5. Atmospheric testing shall be conducted when there is potential for hazardous atmosphere as outlined by client permit and inspector guidance before work begins.

6. Excavations five feet in depth or deeper shall utilize protective systems in accordance with the competent person's assessment influenced by OSHA standard Subpart P, and Manufacturer's Tabulated Data – where manufactured systems are utilized.
7. The Competent person shall determine soil type using visual and manual means. Sloping shall follow guidelines outlined in subpart P based on depth and soil type. Shoring and shielding shall be inspected prior to use and installed per manufacturer's tabulated data.
8. Any entry into protective systems shall utilize necessary rescue procedures and systems and shall be reviewed in the daily JSA.
9. A competent person will inspect each excavation/trench at least daily prior to the start of work, and throughout the day looking for changes in conditions which may increase hazards, such as after every rainstorm, and as needed throughout the shift. These inspections shall be noted on an excavation inspection form. (Attached)
10. Dewatering means shall be provided to remove water that may accumulate in trenches. No work shall take place in trenches that have accumulated water.
11. Spoil piles, equipment and supplies will be kept at least two feet from the edge of the trench or excavation.
12. All excavations will be documented using a daily trench log for each excavation location.

6.10 Equipment Use and Operation

1. Equipment shall be used as intended by the manufacturer. Riding the bucket, steps, load, hook, or sling is prohibited.
2. Employees are prohibited from operating a vehicle in a reckless manner or at a speed greater than is reasonable and proper. Equipment will be operated with due regard for weather, traffic, character of roadway, load, type of vehicle, and any other conditions which may affect the safe operation of the vehicle. The vehicle must be kept under control at all times and special care shall be exercised when transporting personnel. Employees using Otis Eastern vehicles must sign and abide by the company's vehicle policy. A seatbelt is critical to operator control.
3. Employees may only ride equipment if there are seats or equal protection available for each person. Seatbelts shall be worn at all times while operating equipment with seats.
4. Vehicles and equipment shall only be operated by qualified persons (training or experience). Employees operating Otis Eastern' owned vehicles must sign and abide by the company's Vehicle Policy.
5. All equipment operators are responsible for checking, on a daily basis, all fluid levels, drive components, and hydraulics.
6. All equipment shall have a daily documented inspection, as necessary and required. This inspection shall be documented by the foreman in their daily paperwork.
7. In addition, operators should visually inspect the engine and look for structural breaks and cracks on the machine.
8. Any and all deficiencies must be reported to a supervisor immediately.
9. When equipment is stopped or parked, parking brakes shall be set and other safety precautions will be done as required per type of equipment, such as placing the forks flat on the ground.

6.11 Severe Weather

1. Outside construction operations will be suspended if severe wind or rain conditions present safety hazards at the worksite. Weather hazards will be evaluated daily and appropriate measures will be taken to abate potential hazards.
2. Thunderstorms present hazards for construction projects; whenever there is a potential for lightning strikes, work will be suspended in the work zone.
3. The SAFETY COORDINATOR will update daily weather forecast using local weather reporting service or a weather radio.

6.12 Event reporting:

1. Any unplanned, unwanted event which results in injury, property, equipment damage, spills or environmental issues must be reported immediately to the foreman or superintendent. The foreman or superintendent will contact the office manager. These include all accidents, incidents and near misses/close ones/near hits.
2. An Otis Eastern Event Report shall then be filled out by the employee and his or her supervisor.
3. Completion of an Event report should not delay medical attention; any injury should be treated first and documented ASAP immediately following.
4. Employees should file such reports without fear of reprisal by management. The SAFETY COORDINATOR will be available to assist in the completion of this report.
5. The Event may be discussed at weekly safety meetings or in a non-scheduled safety meeting to refocus personnel and avoid repetition of behavior leading to similar events in the future.

6.13 First Aid

1. All injuries and illnesses, no matter how minor, must be reported to your foreman.
2. First aid kits are available in the project office, with the OSEA RSP®, all foremen's trucks and other locations as indicated during orientation.
3. In addition, OSEA RSP®, Foremen and Superintendents shall maintain current first aid and CPR cards.
4. The SAFETY COORDINATOR will assist with all injuries and illnesses, and is available to escort an injured employee to the local urgent care facility or hospital as needed.

6.14 Traffic Control Plan

Safety Coordinators shall develop a construction traffic control plan for each of the road crossings prior to construction in some cases this will require accreditation – seek if necessary. In addition:

1. All traffic control operations will be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) and state appendices as required and set up accordingly.
2. Traffic control devices will be covered or removed during non-working hours.
3. Access to work sites will be on approved roads, drives, or ROW.
4. All flaggers will be State certified, depending on the site where they are used.
5. All flaggers must wear ANSI/ISEA 107 Class II reflective vests.
6. Staging of equipment to the various locations shall require coordination to make sure that signage and flaggers are available.

6.15 Traffic Safety

1. All drivers must remember that we are guests on the right-of-way. Practice courtesy and patience at all times.
2. Remember to observe speed limits, use turn signals, and anticipate the moves of the other driver.
3. Some Amish and Mennonite families reside in the area. And may use horse drawn buggies for transportation, please use extreme caution when approaching.

6.16 In-service Gas Lines

If in-service gas lines are encountered in this project either in the hook-up to existing wells or encountered during excavation activities then the following will apply.

1. All workers must be instructed in the hazards associated with in-service gas lines prior to work.
2. PPE for hot taps, hot work, and live tie-ins will require the use of flame resistant clothing (FRC).
3. **Hot Work**- Is considered any operation that will generate heat, sparks, or flame; including, but not limited to, grinding, soldering, welding, cutting, and brazing operations, outdoor charcoal cooking or any other operation involving a flame or sparks for construction/ demolition or repair activities.
4. **Hot Work Area**- The area exposed to the sparks, hot slag, radiant heat convective heat, conduction heat, or flame generated by the hot work operations taking place. This includes the immediate work area as well as areas adjacent to and above and/or below the work area
5. **Hot Work Permit**-
 - a. Is approval given to the responsible person in order to complete the required hot work permit. No hot work shall be performed until a written permit is issued. The responsible person shall be on the approval list in order to have a permit issued to them.
 - b. It is the responsibility of OES to request a hot work permit from the Sun Logistics chief inspector or his designee on a daily basis.
 - c. The permit will be given to the responsible person at the hot work site where an inspection of the site will be completed to ensure that; hot work equipment is in good repair, flammable gasses, liquids, and dusts are removed, an appropriate extinguisher is onsite and in good working condition, combustibles within 35' of the work area(s) are moved or if they cannot be moved shall be covered with fire retardant welding blankets and curtains, and all other applicable precautions listed on the permit are met.
 - d. A copy of the Hot Work Permit shall be retained and filed by the site safety manager; and a copy shall be posted in a visible location within the hot work area.
6. **Responsible person (Fire Watch)**-
 - a. A "Fire watch" is a qualified person who ensures continuous and systematic surveillance of a building or portion of the building or activity. Fire watch personnel must be trained in Fire Prevention and Fire Extinguisher procedures and must possess a means to communicate with emergency services.
 - b. All fire extinguishers must be inspected before each planned use.
 - c. The responsible person will be onsite during hot work procedures and for a minimum of 30 minutes after hot work has stopped to monitor for fire and unsafe conditions.
 - d. During times of welding or torch cutting a second person to perform fire watch at the site may be required, depending on client requirements and environment conditions.
 - e. The fire watch's sole responsibility is to watch the area during hot work activity.
 - f. The fire watch can and shall stop all hot work activities if an unsafe condition arises.
 - g. If hot work is being conducted in an area where explosive vapors could accumulate, such as a live tie in, adequate ventilation shall be provided before work starts and air monitoring may have to be conducted.

7. Prior to the issuance of the Hot Work Permit, an inspection of the area shall be conducted. Items included in this review shall include, but are not limited to:
 - a. Verification the hot work operator(s)/fire watch is trained in the safe operation of their equipment;
 - b. Verification that the apparatus used for the hot work is in good condition;
 - c. Verification that the hot work operator(s)/fire watch understand the emergency procedures in the event of a fire or general emergency;
 - d. Proper location of fire protection and extinguishing equipment;
 - e. Verification that operator(s) are utilizing personal protective equipment; and
 - f. Verification that the proposed work does not jeopardize the health and safety of the operator or others.

6.17 Overhead Power Lines

1. There are a number of locations along the right of way where overhead power lines may bisect the work area. Each area will be marked by signage (**DANGER – Overhead Power Line**) and a goalpost which will be erected ten (10) feet from the overhead power line.
2. Whenever overhead power lines are encountered, the following controls must be used:
 - a. Equipment in transit with no load and boom lowered, the equipment clearance shall be a minimum of **4 feet** for voltages less than 50 kV, and **10 feet** for voltages over 50 kV up to and including 345 kV, and **16 feet** for voltages up to and including 750 kV.
 - b. Dedicated Spotter – A trained, dedicated employee not engaged in any other duties while providing spotter duties. The employee’s task is to monitor and direct traffic around lines, and use an air horn to warn the operator/driver of potential danger.
 - c. All excavator operators will lower their booms whenever they are traveling under overhead power line zones that will be marked with signage.
 - d. All dedicated spotters will use ANSI approved hand signals in addition to the air horn for communication with operators and other personnel operating within the power line zones.

6.18 Heavy Equipment

1. DOT or CSA approved safety helmets shall be worn when driving ATV’s in the construction yard or on any area of the ROW.
2. Seatbelts shall be worn and maintained on vehicles originally equipped with manufacturer installed seatbelts, when the vehicle is in operation.
3. Heavy equipment and off road equipment will have functional and audible back-up alarms installed.
4. Trucks installed with auxiliary powered generators will have carbon monoxide (CO) monitors installed inside the trucks operating spaces.
5. Qualified equipment operator records and applicable records of inspection shall be retained on file at the worksite and made available upon request.

6.19 Grinding & Welding

1. Dual eye protection (face shield & safety glasses with side shields) required during welding, grinding and cutting operations.
2. Only approved head-gear (ANSI Z87.1-2003 or equivalent standard) will be used for grinding, welding and cutting shields.

3. Fire rated clothing (FRC) shall be worn in hot work permit areas.
4. Factory installed grinder guards will not be removed or otherwise altered.
5. Trained, equipped & competent fire watches required at each permit required hot-work operation
6. Grinders that are dropped will be examined, the grinding disc removed, and subjected to a ring test to assure its stability prior to any use.

6.20 Safety Inspections

1. All management team members will be constantly reviewing operations to monitor unsafe acts and unsafe conditions, and coordinating with the site safety manager for guidance and assistance.
2. Every employee on the project will be empowered to identify safety concerns. Don't walk by. All employees are given "Stop Work Authority" if an unsafe condition is revealed or develops. It is to be brought to the attention of the onsite foreman and the foreman is then responsible for stopping all work in the area and inspecting work activity for safety prior to restarting work.
3. All work requiring daily/periodic inspections (trenching, excavation, scaffolding, welding, and fire protection) shall be conducted by a competent person.
4. The Safety Coordinator (SAFETY COORDINATOR) will complete daily site safety inspections, and communicate any deficiencies.

6.21 Respiratory Protection

1. NIOSH approved respirators will be required of all personnel for sandblasting and coating activities. This will require:
 - a. Respiratory medical history questionnaire
 - b. Medical examination by a physician or other licensed health professional (PLHP)
 - c. Selection of respiratory protection
 - d. Qualitative respiratory fit testing

6.22 Shot-Blasting Procedures

1. It is the policy of the Company to reduce the risk of adverse health effects due to the products and wastes used in the shot or sandblasting process.
2. To minimize the exposure of employees to silica sand used in sandblasting operations, all employees must wear adequate respiratory protection.
3. All employees subject to silica exposure shall be provided information about adverse health effects, work practices, hazard communication and the use and care of personal protective equipment.

6.23 Ladder Safety

1. Ladders shall be used only for purpose for that they were designed.
2. All ladders must be inspected with each use; damaged ladders must be tagged and taken out-of-service.
3. Ladders used in trenches must extend at least three feet from the side of the trench.
4. All ladders must be secured.

6.24 Hand and Power Tool Safety

1. Tools are such a common part of our lives that it is difficult to remember that they may pose hazards. Tragically, a serious incident can occur before steps are taken to identify and avoid or eliminate tool-related hazards.

2. Employees who use hand and power tools and are exposed to the hazards of falling, flying, abrasive, and splashing objects, or to harmful dusts, fumes, mists, vapors, or gases must be provided with the appropriate personal protective equipment. All electrical connections for these tools must be suitable for the type of tool and the working conditions (wet, dusty, flammable vapors). When a temporary power source is used for construction a ground-fault circuit interrupter (GFCI) should be used.
3. Employees should be trained in the proper use of all tools. Workers should be able to recognize the hazards associated with the different types of tools and the safety precautions necessary.

6.25 Electrical Safety

1. Due to the dynamic, rugged nature of construction work, normal use of electrical equipment at the site causes wear and tear that results in insulation breaks, short-circuits, and exposed wiring. If there is no ground-fault protection, these can cause a ground-fault that sends current through the worker's body, resulting in electrical burns, explosions, fire, or death.
2. Use ground-fault circuit interrupters (GFCIs) on all 120-volt, single-phase, 15- and 20-ampere receptacles, *and/or* have an assured equipment grounding conductor program (AEGCP).
3. Follow manufacturers' recommended testing procedure to insure GFCI is working correctly.
4. Use double-insulated tools and equipment, distinctively marked.
5. Use tools and equipment according to the instructions included in their listing, labeling or certification.
6. Visually inspect all electrical equipment before use. Remove from service any equipment with frayed cords, missing ground prongs, cracked tool casings, etc. Apply a warning tag to any defective tool and do not use it until the problem has been corrected.
7. Use only extension cords that are heavy duty rated 3-wire type.
8. Use only cords, connection devices, and fittings that are equipped with strain relief.
9. Continually audit cords on-site. Any cords found not to be marked for hard or extra-hard use, or which have been modified, must be taken out of service immediately.

6.26 Compressed Gas Safety

1. Cylinder storage is important since many cylinders contain hazardous chemicals and hazardous pressures.
2. Storage:
 - a. Separate non-compatible contents;
 - b. When stored outside, keep cylinders off the ground;
 - c. Chain/secure cylinders from falling and tipping in an upright position;
 - d. Make sure contents are appropriately labeled;
 - e. Make sure valve covers are on and hand tight;
 - f. Segregate separate cylinders which have an affinity for one another (i.e., acetylene and chlorine and oxygen) by at least 20 feet, or a barrier five (5) feet high.
 - g. Cylinders shall be identified as full, empty, in-use, and should be stored separately;
 - h. Compressed gas cylinders shall be stored away from heat and flame; and
 - i. Protect cylinders from ice/snow accumulation.

6.27 Fall Protection Program

1. Falls remain the leading cause of serious injury and death on construction sites. With that fact in mind, it is the policy of Otis Eastern Service to implement 100% fall protection programs on all sites for employees and sub-contractors.

2. A 100% fall protection program requires that any worker performing duties elevated at six feet or more above a working surface will be protected by a compliant fall protection system without any exceptions. This will include fall protection systems properly installed and utilized by trained individuals.

6.28 Crane Safety

1. The operation of cranes includes side booms, hydraulic boom truck cranes are now regulated with 29 CFR 1926.1400 – 1441 and required appendices, which was promulgated November 7, 2010.
2. The new standards require trained qualified spotters to be used whenever the view of the load is impeded and the crane operator cannot see the operation.
3. The new standards require trained qualified riggers to be used whenever workers are in the fall zone, and hooking, unhooking or guiding a load.
4. Tag lines shall be used to stabilize and control the movement of all loads. (i.e., pipe movement, bending)

6.29 Crane Critical Lift Plan Procedure

1. A critical lift is defined as a lift involving a weight that exceeds 75% of the capacity of the crane or lifting apparatus, or where multiple cranes or lifting vehicles are used to lift the object.
2. A Critical Lift Plan consist(s) of as many drawings, specifications, procedures and job safety & health analysis (JSHA) as necessary to accurately assess all important load factors and site factors relating to a Critical Lift.
3. Sound engineering and planning is still the responsibility of the superintendent and associated with the lift, and must be coordinated with the Chief Inspector.
4. This includes the signed reading acknowledgement for individuals performing the actions of the procedure, specifically the Competent Person of the lift and the crane operator.
5. The following is the minimum level of information required for completing an adequate Critical Lift Plan:
 - a. Elevation View Drawing of the crane, load, and any nearby structures, which could cause interference. This drawing must be made to scale and should note:
 - i. Crane manufacturer(s), model(s), and counterweight(s) if variable.\
 - ii. Boom length(s) and lifting radius(i).
 - iii. Maximum load elevation during lifting procedure.
 - iv. Any jibs or special lifting devices required.
 - v. Minimum number of parts of crane hoist line required for lifting the load.
 - vi. All required slings, shackles, and other rigging components identified by capacity, size, length, and location.
 - vii. Calculated center of gravity of load.
 - b. Plan View Drawing of the crane, load, and nearby structures, which could cause interference. This drawing must be made to scale and should note:
 - i. Route that transport will take to position the load for lifting.
 - ii. Initial lifting position of the load including radius. Lifting radius must be accurately determined.
 - iii. Final placement position of the load including radius. Lifting radius must be accurately determine
 - iv. Location of the crane(s) including tail swing limits.
 - v. Route that crane(s) will take if walking with the load, as well as associated matting requirements.

- vi. Any utilities located within the work zone. Underground facilities - piping, ducts, etc. - must be accurately located.
- vii. Space may be needed to assemble crane.
- c. Planning must include load transportation considerations, e.g., how to get the load close enough to the crane. This may be a function of the type of crane being used, for example, since some cranes perform better in certain sectors (quadrants) of operation than others.
- d. Lift Analysis, including:
 - i. Tabulation of the gross load weight, including the weight of all blocks and rigging tackle.
 - ii. Rigging attachment points and special rigging requirements.
 - iii. Gross rated capacity of the crane in the configuration specified.
 - iv. Calculation of the percentage of the cranes rated capacity at which the lift will be made.
 - v. Crane-imposed soil loads must be determined. Soil analysis may be needed to verify crane-imposed loads can be safely supported
 - vi. Consideration for working over existing gas pipeline and other utility systems.
 - vii. Allowable weather conditions for the lift and the effect of wind loading.
 - viii. Sequence of work, including lift-off, steady state conditions, and set-down of load (including positions where there is a shift in the location of the center of gravity, for the pick points).
- 6. All potential complicating issues for any lift must be addressed in the Critical Lift Plan. However, for a relatively simple operation, the above items can provide sufficient information and even be organized onto one drawing.
- 7. A common lift at a pipeline project is the use side booms to place assembled pipe into the trench using multiple side booms or other lifting vehicles. The proper number and spacing of the sidebooms is dependent on the side boom capacity and the weight of the pipe section to be lifted. The approximate weight (in pounds) of the pipe (per foot of length) can be determined by the following formula:

Pipe diameter (inches) X Pipe thickness (decimal) X 10.68 = Pipe weight in lb/ft

Example: for 30-inch dia. pipe with 3/8-inch (0.375) wall thickness

30 X 0.375 X 10.68 = 120.15 round off to 120 lb/ft

Multiply the lbs/foot weight by the total length of pipe to obtain the total weight of the pipe. The table below provides some weights for common pipe diameters used for pipeline work.

Nom. OD (inches)	¼ inch (0.25") Wall (lbs/ft)	5/16 inch (0.312") Wall (lbs/ft)	3/8 inch (0.375") Wall (lbs/ft)	7/16 inch (0.438") Wall (lbs/ft)	½ inch (0.50") Wall (lbs/ft)
6.625	17.04	21.70	25.05	28.97	32.74
10.75	28.06	35.90	41.59	48.28	54.79
12.75	33.41	42.78	49.61	57.65	65.48
16	42.09	53.97	62.64	72.86	82.85
20	52.78	67.74	78.67	91.59	104.23
24	63.47	81.50	94.71	110.32	125.61
30	79.51	102.16	118.76	138.42	157.68

7.0 Documentation and Reporting

1. The core documentation as outlined in the project specific safety plan will be maintained by the Site Safety Coordinator. All records will be maintained on file for review until close of contract. This will include:
 - a. Meeting documentation and attendance rosters
 - b. New employee safety orientations
 - c. Weekly safety talks
 - d. Job safety & health analysis (JSA)
 - e. Subcontractor orientation
 - f. Collector copies of DOT urine drug screening tests.
 - g. Daily Trenching Logs
 - h. Daily Pipeline Safety Checklist
 - i. Daily preparation of OSEA Safety Services Report, which will chronologically detail the daily activities.
 - j. Daily preparation of OSEA Safety Manager's Log, which will summarize the discrepancies noted on the project.
 - k. Daily preparation of the OSEA Daily Pipeline Safety Checklist.
 - l. The weekly and monthly reporting format will be used to convey job statistics relative to the project so continuous monitoring of results can be achieved.
 - m. Associated forms for trench & excavation inspections and other forms as deemed necessary as the project progresses will be completed and maintained on file for review until close of contract.
 - n. All incidents will be investigated using a Foreman's Accident Report, a site Incident/Accident report will be completed by the Site Safety Coordinator outlining "Root Cause" and detailing mitigation measures to prevent further incidents.

8.0 Management of Change

1. No change in standard operating procedures or the project specific safety plan will be allowed without contact and approval of Owner's site management. Such changes would include any deviation from standard specifications and/or protocols as outlined in the site safety plan or corporate safety documents.
2. No deviation will be allowed that will in any way compromise the welfare of the working crews, public or environment.
3. Crews will be advised that no changes will occur without express specific permission. Information on this policy will be conveyed during the orientation and regular site safety meetings.
4. When such changes are to be made and an alternative method is to be used to accomplish a task, a Job Safety Analysis will be conducted reviewing the area, work to be performed, equipment to be used, PPE and special training needs for the crew. As training needs are identified, Safety Coordinator will conduct the training after obtaining necessary information to properly convey to the crew. As always, documentation of training will be retained on file.

9.0 Project Security

1. All equipment will be stowed in appropriate containers, locked and secured at the close of the day.
2. Heavy equipment left onsite will be parked in dedicated staging areas, locked and secured.
3. Additional measures will be addressed and implemented on an as-needed basis, including security guards, in an ongoing effort to maintain proper site security.

10.0 Safety Award Program

At the discretion of the Project Superintendent, a Safety Award Program will be initiated at the project. A weekly award of \$100 will be given out at the weekly safety meeting based on one of two factors relating to safety performance at the project.

First, the weekly random drawing from all names will be conducted at the end of each week where the Project Manager or Superintendent feel that project personnel have demonstrated adherence to the project Site Specific Safety Plan and have shown good judgment regarding safety at the project site.

Second, the Project Superintendent has the option of giving the Safety Award directly to an onsite individual who, in the judgment of the Project Superintendent, identifies a hazard and suggests a corrective action that likely prevented a potential accident or has demonstrated outstanding safety practice or awareness while performing his or her job duties.

The Project Superintendent has the final say of whether a Safety Award is issued in a given week or who will receive the award. Personnel who are given the Safety Award will be ineligible to receive the Award a second time during the duration of the project.



SAFETY ANALYSIS / HAZARD ASSESMENT



Date:							
Project Name				Emergency Phone Number			
Project Number				Ambulance Number			
Township				Fire Department Number			
County				Client Contact Person			
Supervisor / Foreman				Hospital			
Description of Work:				Directions to Hospital:			
Assessment Review Attendees:				Attendees:			
1				7			
2				8			
3				9			
4				10			
5				11			
6				12			
Have you considered the following? Prior to the start of each shift, take a few moments to review and discuss the strategy to deal with each applicable topic.							
Personal Protection:		Potential Hazards:		Welding:		Excavation:	
<input type="checkbox"/> Rubber Gloves	<input type="checkbox"/> Airborne Particles	<input type="checkbox"/> Falshburn	<input type="checkbox"/> Visual Inspection of Trench	<input type="checkbox"/> Cloth / Leather Gloves	<input type="checkbox"/> Electrical Shock	<input type="checkbox"/> Combustibles	<input type="checkbox"/> Soil Typing
<input type="checkbox"/> Slicker Suit	<input type="checkbox"/> Heat Stress	<input type="checkbox"/> Spark Containment	<input type="checkbox"/> Ladder Every 25' of Lateral Travel	<input type="checkbox"/> Tyvex Suit	<input type="checkbox"/> Heavy Objects	<input type="checkbox"/> Shields	<input type="checkbox"/> Ladder Extends 3' above trench
<input type="checkbox"/> Rubber Boots	<input type="checkbox"/> Hot / Cold Surfaces	<input type="checkbox"/> Burning Goggles	<input type="checkbox"/> Adequate Sloping and Shoring	<input type="checkbox"/> Mono Goggles	<input type="checkbox"/> Inadequate Lighting	<input type="checkbox"/> Grounding / Bonding	<input type="checkbox"/> Accumulating Water Removed from Trench
<input type="checkbox"/> Burning Goggles	<input type="checkbox"/> First Opening of Equipment	<input type="checkbox"/> Water Hose	<input type="checkbox"/> Spoils Pile 2' From Edge of Trench	<input type="checkbox"/> Face Shield	<input type="checkbox"/> High Noise Levels	<input type="checkbox"/> Fire Extinguisher	<input type="checkbox"/> Surface Encumbrances
<input type="checkbox"/> Respirator	<input type="checkbox"/> Access / Egress	<input type="checkbox"/> Trained Fire Watch		<input type="checkbox"/> Hearing Protection	<input type="checkbox"/> Housekeeping	<input type="checkbox"/> Sewer / Trench Cover	Lifting / Materials Handling:
<input type="checkbox"/> Hard Hat	<input type="checkbox"/> Sharp Objects	<input type="checkbox"/> Other:	<input type="checkbox"/> Crane (Current Inspection)	<input type="checkbox"/> Safety Glasses w/ Side Shields	<input type="checkbox"/> Poison Plants		<input type="checkbox"/> Cherry Picker (Current Inspection)
<input type="checkbox"/> Nomex	<input type="checkbox"/> Insects and Snakes	Emergency Equipment Location:	<input type="checkbox"/> Fork Lift (Current Inspection)	<input type="checkbox"/> Safety Harness / Lanyard	<input type="checkbox"/> Body Pinch Points	<input type="checkbox"/> Site Specific Safety Plan	<input type="checkbox"/> Load Chart Verified
<input type="checkbox"/> Other:	<input type="checkbox"/> Slips, Trips, and Falls	<input type="checkbox"/> Fire Monitors	<input type="checkbox"/> Boom Angle Verified			<input type="checkbox"/> Fire Extinguishers	<input type="checkbox"/> Chainfall Capacity Verified
Tools:	Permits: (Current and Signed)	<input type="checkbox"/> Safety Showers	<input type="checkbox"/> Come Along Capacity	<input type="checkbox"/> Proper Tools for the Job	<input type="checkbox"/> Work permit	<input type="checkbox"/> Eye Wash	<input type="checkbox"/> Rigging Condition
<input type="checkbox"/> Good Tool Condition	<input type="checkbox"/> Hot Work Permit	<input type="checkbox"/> Evacuation Route	<input type="checkbox"/> Proper Rigging		<input type="checkbox"/> Confined Space Permit	<input type="checkbox"/> Other:	<input type="checkbox"/> Overhead Lines
			<input type="checkbox"/> Manual Lifting				<input type="checkbox"/> Track Hoe
Access:	Overhead Work:	Electrical:		<input type="checkbox"/> Scaffolds Inspected and Tagged	<input type="checkbox"/> Barricades	<input type="checkbox"/> Lacked / Tagged Out	
<input type="checkbox"/> Ladders Tied Off	<input type="checkbox"/> Signs	<input type="checkbox"/> Try Stop / State Switch	Confined Space:	<input type="checkbox"/> Personnel Man Basket	<input type="checkbox"/> Hole Covers	<input type="checkbox"/> GFCI	<input type="checkbox"/> Trained Attendant
<input type="checkbox"/> Aerial Platforms	<input type="checkbox"/> Hand Rail	<input type="checkbox"/> Condition of Electrical Cords	<input type="checkbox"/> Trained Entrants	<input type="checkbox"/> Special Provisions	<input type="checkbox"/> Physical Barriers	<input type="checkbox"/> Overhead Wires	
<input type="checkbox"/> Others:	<input type="checkbox"/> Others:	<input type="checkbox"/> Other:					



Inspection Detail

Inspection Type:	Safety	Inspection Date:	
Project:		Inspected By:	
		Reviewed With:	

Category : Sub-Category

Administration	Safe	Unsafe	Comments/Observations:
All clear on competent person			
All Federal/State Posters Posted			
DAP/Wkly tool talks held			
Document PreCon mtgs			
Freq/req safety inspections			
JSA submitted each trade			
MSDS Book Available			
OSHA Posters / OSHA 300 Log			
Safety manual available			
Safety meetings			
Visitor PPE available			
Visitor sign-in form			

Cranes And Hoisting Equipment	Safe	Unsafe	Comments/Observations:
Annual inspection current			
Anti – Two Block device			
Load secured before release			
Boom angle indicator			
Cables/sheaves inspected			
Certified Rigger present			
Copy of operators license			
Crane firmly supported & level			
Fire extinguisher in crane			
Flagman identified			
Inspection log maintained			
Lift plan on file			
Load chart on crane			
Loads properly secured			
Means of communication			
Operator appears competent			
Operator manual in crane			

Cranes And Hoisting Equipment	Safe	Unsafe	Comments/Observations:
Outrig extend/cribbing			
Power lines inactive/safe dist			
Proper load cap at lift radius			
Qualified Signaler present			
Rigging inspected daily			
Safety latches used			
Swing zone marked			
Tag lines used			
Weight of load verified			

Confined Space	Safe	Unsafe	Comments/Observations:
Competent supervision			
OES Written/Policy followed			
Air testing/monitoring devices			
Safety Watch/Lifeline/Roster			
Training docs available			
Ventilation adequate			

Electrical	Safe	Unsafe	Comments/Observations:
Cords heavy duty?			
Elect Hot Work Procedures			
Overhead power identified			
Energized parts protected			
Extension cord condition			
GFCI's used			
LO/TO procedures			
Proper use temp pwr bxs			
Signage present			

Environmental	Safe	Unsafe	Comments/Observations:
Asbestos/lead/mold/silica controlled			
Construction Limits properly flagged			
Dust Control measures employed			
Erosion control measures			
Haz material properly stored			
Inactive areas temporarily seeded or mulched			
Proper fuel storage and containment practices			
Public roads free of tracked sediment			
Sediment laden water discharged through filtering device			

Environmental	Safe	Unsafe	Comments/Observations:
Sediment traps installed and maintained			
Silt fence installed and maintained properly			
Spill control measures available			
Stabilized Construction entrances installed and maintained			
Stockpiles (Materials and Fill) stabilized			
Stormwater pollution measures			
SWPPP on-site and maintained			
Waste Receptacles available and used			
(Proper) Concrete Washout			

Excavations	Safe	Unsafe	Comments/Observations:
Access every 25'			
Adjacent structures shored			
Competent person present			
Daily inspections doc			
Equip safe distance from edge			
Excav > 20' engineered			
Perimeter prot/barricade			
Roads/sidewalks supported			
Sloped, benched, or shored			
Spoil 2' from edge			
Surface traffic exposure			
Utilities located before dig			
Utilities marked per code			
Water entering excavation			

Fall Protection	Safe	Unsafe	Comments/Observations:
100% tie-off at 6'			
Ext/int guardrails			
Fall protection plan			
Floor/wall opening protected			
Flr covrs adeq,secure,label			
Proper anchorage points			
Roof edge protected			
Safety harness and lanyard			
Stair/ramp/walkway prot			

Fire Protection	Safe	Unsafe	Comments/Observations:
Cables/hoses protected & safe			
Cylinders upright/cap/secured			
Emergency vehicle access			
Ext charged/inspected/available			
Flammable material/hazards			
Fire hazards eliminated			
Fire suppression equip avail			
Fire watch when applicable			
Caps on gas canisters			
Flash arrest on torches			
Flash protection available			
Gauges working properly			
Hot Work Permit obtained			
No Smoking signs posted			
Prop signs in store areas			
Proper fuel containers used			
Proper PPE in use			
Torch hoses good cond			
Weld machines ventilated			

Hand And Power Tools	Safe	Unsafe	Comments/Observations:
Ground prong in place			
Information label on tool			
Mechanical guards in place			
Proper tool for the job			
Strain relief functioning			
Tool cord condition			
Tool in good condition			

Hazard Communications	Safe	Unsafe	Comments/Observations:
Copy of program			
Employees trained			
Inventory list			
SDS' (site specific)			
Proper labels on containers			
Readily available			

Housekeeping	Safe	Unsafe	Comments/Observations:
Clear access to site			
Hand washing facilities avail			

Housekeeping	Safe	Unsafe	Comments/Observations:
Impalement protection			
Potable water for drinking			
Proper food storage practices			
Proper material storage			
Recycling program implemented			
Roadway around proj clear			
Rodents, insects, and wildlife controlled			
Sanitation units secure, clean, and available			
Slip, trip, fall hazards			
Walkways clear			
Worksite clear of debris			
Work Areas Organized			

Ladders / Stairs	Safe	Unsafe	Comments/Observations:
Side rails 36"above landing			
Access break >19"			
Clear of debris/materials			
Extension ladder 4:1 pitch			
Extension ladder secured			
Inspected for defects			
Job-bit ldrs const properly			
Landings and treads filled			
Proper use of ladder			
Rails at stairs/landings			
Safe work dist from hazd			
Slip trip exposure elim			
Stairs illuminated			
Step ladder fully opened			

Medical / Emergency	Safe	Unsafe	Comments/Observations:
1st aid kit in job trucks			
Emergency action plan			
Emergency numbers posted			
Emergency Response training			
Emergency supplies available			
Eye wash			
Map to medical facility			
Supt 1st Aid & CPR trained			
Team contact numbers			

Motorized Equipment	Safe	Unsafe	Comments/Observations:
Back up (travel) alarm functioning			
Flagman used if applicable			
Forklift Forks used properly			
Glass free of obstructions			
Inspected daily/documented			
Lights/horn/signals/brakes			
Operator appears competent			
Rollover protection provided			
Seat belts used			
Strobe Lights			
Training docs available			

P.P.E.	Safe	Unsafe	Comments/Observations:
Proper safety glasses Z87.1			
Gloves			
Hard Hats/Worn properly			
Hearing protection			
High Viz' (Class II Lime Vests)			
Metatarsal protection			
Chemical Protective Clothing			
Rebar caps			
Respiratory protection			
Work Boots			

Scaffolds	Safe	Unsafe	Comments/Observations:
Bracing and pins in place			
Compatible components used			
Competent person present			
Competent person supervise erection			
Handrail/midrail/toe boards			
Inspected daily			
Proper access to platforms			
Proper loading of materials			
Properly fixed to structure			
Safe work distances			
Sills,plates,jacks installed			
Sound planking provided			
Tie-off point			

Scissor / Aerial Lifts	Safe	Unsafe	Comments/Observations:
Equipment loaded properly			
100% tie-off boom/aerial lifts			
Gate or chain secured			
Nothing to increase height			
Operating on flat surface			
Operator training			
Safe work distances			
Surface free of holes			

Site / Public Protection	Safe	Unsafe	Comments/Observations:
Access road conditions adequate for travel			
Adequate lighting available			
Barricade illuminated/reflective			
Barricade Road/walkway			
Company rep present			
Excavations protected			
Falling object protection			
Parking areas laid out and posted			
Perimeter fences/ gates utilized and in good condition			
Public protection signage			
Public road conditions adequate for travel			
Remove all fall hazards			
Restrict public access			
Security system in place			
Street closure identified			
Traffic Control devices used			
Traffic Control plan			

Appendix C: Excavation Inspection Overview

Excavations	Safe	Unsafe	Comments/Observations:
Access every 25'			
Adjacent structures shored			
Competent person present			
Daily inspections doc			
Equip safe distance from edge			
Excav > 20' engineered			
Perimeter prot/barricade			
Surface encumbrances supported			
Sloped, benched, or shored			
Spoil 2' from edge			
Surface traffic exposure			
Utilities located before dig			
Utilities marked per code			
Water entering excavation			

Appendix D: Asbestos Policy

INTRODUCTION


As part of Otis Eastern Service, Inc. activities, there may come times when asbestos is of concern. Otis Eastern Service, Inc. does not handle, work with or transport asbestos. However, we should acknowledge the possibility of its presence and be prepared to maintain our “Don’t Touch, Keep Clear Of” asbestos policy.

It is the responsibility of Otis Eastern Service, Inc. clients to properly identify any possible asbestos containing materials. Otis Eastern Service, Inc. is dependent on the client to perform this task. Only individuals who are appropriate certified by new York State under Code Rule 59 can handle, test or remove asbestos. Federally, the Occupational Safety & Health Administration (OSHA) has several regulations dealing with asbestos [Construction-29CFR 1926.1101 and General Industry 29CFR 1910.1001].

The intent of Otis Eastern Service, Inc.’s program and policy is to make employees aware of the possibility of asbestos containing materials, where they may be, their health hazards and our policy of “Don’t Touch, Keep Clear Of Asbestos.”

Otis Eastern Service, Inc. will use only qualified, certified subcontractors if we are engaged to handle and/or remove asbestos containing materials. The information to follow will help you identify asbestos, understand its hazards and the need to be knowledgeable about its possible presence. All employees whose work activities may contact ACM or PACM will receive asbestos awareness training prior to the start of the job.

Appendix E: Event Report

 EVENT REPORT									
DATE OF EVENT:		TIME	AM/PM	DAY OF WEEK	Job #				
DATE REPORTED:									
Description Where and how did event happen? (Use additional sheets if necessary)									
Injuries If yes, Describe injury(ies) sustained by employee(s) or member(s) of the public.									
Name of Person(s) injured or involved. Include contact information									
If employee required medical attention, when did employee return to work?									
Property Damage: If yes, describe and estimate damage to any property.									
Owner of property damaged and contact info:									
Factors: Specify machine, tool, substance or object connected with the event									
Mechanical/physical/environmental condition at time of accident (be specific)									
Personal factors (attitude, lack of knowledge or skill, slow reaction, fatigue)									
Personal protective equipment required and in use?									
Was injured employee using required equipment per training?									
Witnesses: Names and contact info:									
Recommendations: Action plan to prevent recurrence (Modification of machine, mechanical guarding, environment, training)									
Employee Signature					Printed Name				
Follow Up: Action taken on recommendations (include date completed)									
Report Date:									
Foreman					Printed Name				
Higher level supervisor					Printed Name				

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Appendix E: Short Service Employees (SSE's)

Scope: Otis Eastern Services, LLC Management Personnel, and subcontractors

Application: Otis Field Operations, where safety factors of SSE's are of concern

Goals:

I. To sustain minimal potential for events involving Short Service Employees - targeting:

- A. Injury to Client Personnel, Otis employees, subcontractors and/or the general public.
- B. Property Damage to facilities owned by clients, Otis Eastern and subcontractors, or the general public.
- C. Negative impacts to the environment.

II. To provide assurance to our clients that Otis Eastern Services, LLC, properly manages our personnel and operations, through leadership accountability; which includes determination of SSE's and execution of a management process of mentorship, monitoring/supervision and training of SSE's.

Practices:

Determination of Short-Service Employee (SSE) – Any anticipated utilization of personnel, including subcontractors, with less than six months experience on Otis project work.

Crew Composition – Crew makeup minimums are as follows:

- The goal for SSE's is no more than 20%.
 - Crews seeking approval for greater than 20% SSE's may be permitted with application of a variance to the operator.
 - A single person crew (or sole proprietor) cannot be an SSE.
 - Crew sizes of less than five contain no more than one SSE.
- Deviation from this is known as "variance." Variances must be documented using the [Otis Short Service Employee Form](#).

Notice – Operator must be notified of proposed crew makeup utilizing the [Otis Short Service Employee Form](#). Before mobilization, Otis/Subcontractors shall submit completed Otis SSE form to the Otis project coordinator, contractor contact, or onsite supervisor for all jobs containing SSE personnel. (If an SSE arrives on operator property for whom an SSE form has not been filed, operator management may request removal of SSE. Operator/work owner, or person in charge will make determination of return and should retain the original form in project files.

Distinguishing identifier – SSE personnel will be visibly distinguishable from other field personnel, by color of garments, hard hats or other identification as approved.

Coaching, monitoring/supervision and training of SSE's: For a period of not less than six months Otis will employ a mentoring process, acceptable to the operator, designed to provide guidance and development for SSE personnel. A mentor can only be assigned one SSE per crew and the mentor must be on site with the SSE to be able to monitor, mentor and train the SSE. If at the end of that period the SSE's competency is not in question the identifier may be removed, however if competency is in question, the SSE may be removed and will require written authorization from the operator to return.

Safety Sensitive locations – Certain locations and operations should prohibit SSE's from unnecessary proximity these may include asbestos, H2S, necessity for SCBA, highly volatile or flammable compounds etc.

Accountability – The Operator representative in charge shall approve and present SSE program and expectations at the pre-job meeting.

- Otis shall submit the proposed crew composition and SSE form(s) to the operator for verification and approval of named crew members and associated experience levels by the underlying form(s).

Existing Employees serving as coaches to SSE's at a minimum must:

1. Have a broad and deep understanding of:
 - A. Duties of the Short-Service Employee's job

B. Responsibilities required in coaching an SSE,

C. The hazards associated with that job.

2. Have current orientation training and any other pertinent training in the duty to be performed.
3. From orientation, understand site policies, procedures, and any unique considerations of the work.
4. Exhibit the ability to recognize hazards and unsafe acts.
5. Be confident in challenging personnel in the workplace that do not comply with site policies, procedures, or requirements; and display stop work authority.
6. Be an active participant in the behavior-based safety process.

Sub-contractors that work on site must have their own mentors that mentor only their personnel.

Mentoring of personnel outside of that company will be reviewed on an individual basis.



OTIS Short Service Employee Form

Date of submittal:	
Approved <input type="checkbox"/> Yes	<input type="checkbox"/> No

Where requested by operators, this form will be submitted and approved by operator prior to affected employees arrival on site.

A. SSE Background and data

Name of SSE:			
Contractor/Subcontractor Name:			
Date of Hire:		Position:	
Experience (years):		Time in position:	Years Months
Is SSE enrolled in company Substance Abuse Policy?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Has SSE been oriented to EHS expectations?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Has the SSE been assigned to shadow an existing employee?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Name of that employee?		Time in position:	Years Months
Recent Training Provided SSE:		Specialized Training:	
Distinguishing Identifier: <input type="checkbox"/> HH <input type="checkbox"/> Vest <input type="checkbox"/> Other _____			

B. Crew Makeup and SSE influence(s)

Check crew size and type:

<input type="checkbox"/>	One person - unacceptable unless variance granted
<input type="checkbox"/>	3-5 person crew - Only one can be an SSE
<input type="checkbox"/>	5 or greater - Limited to 20%
<input type="checkbox"/>	Any time SSE influence rises above 20% variance must be granted

C. Approvals

Contractor representative:	Date:
Subcontractor representative:	Date:
Operator Supervision:	Date:

OTIS Eastern - SSE

Window from: _____ to: _____

Variance Form

When conditions, crew makeup and expectations demand we use more than 20% SSEs, we will pursue variance with the approval of the operator representative

A. Necessity for variance pursuit

Operation performed by crew requiring variance:

Has a JSA been performed? Yes No

Please attach for consideration

What is the need for variance?

What steps will be taken to assure we minimize the potential risk in this operation?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Approvals

Operating Company Representative
Signed: _____

Approval
Yes No

OTIS Management Representative
Signed: _____

Approval
Yes No

Subcontractor Management Representative
Signed: _____

Approval
Yes No



Otis Eastern Service, LLC SAFETY Orientation Outline

Name: (Print)		Date:		
Social Security#:	Occupation:		Job#:	

Items outlined here below are discussed in detail during the hiring process. This should cover items typically in question from a safety standpoint. However Otis Eastern Service, LLC. Safety policies are integral to our personnel policies - meaning that compliance is expected as a condition of employment; non-compliance is grounds for disciplinary action, up to and including termination. Safety and Health is every bit as important as productivity and quality. If a job cannot be done safely, it will not be done. That is our expectation and should be your commitment.

NEW EMPLOYEE SHALL INITIAL EACH LINE ITEM AS DISCUSSED:

Item	Topic	(Steward)	Initials
1.	Explain work hours and days that may be required.	(Steward)	
2.	Discuss regular attendance and notification of absence.	(Steward)	
3.	Specify meal periods, breaks, and/or any special restriction, such as smoking.	(Steward)	
4.	Explain the job duties and responsibilities that go along with it.	(Steward)	
5.	Drug & Alcohol Testing Policy a) Pre-employment b) Post Accident c) Random Testing d) Testing for Cause e) Return to Duty		(Safety)
6.	Explain Safety First: a) Stop Work Authorization * Recognize Unsafe Conditions-Report Immediately * Recognize Unsafe Acts * Recognize Defective or Damaged Equipment b) Safety Absolutes/Life Critical c) Safety is your responsibility d) Personal cell phone use is limited to scheduled breaks and rest periods during work hours.		(Safety)
7.	Hazard Communication a) The Right to Know b) Material Safety Data Sheets (MSDS) c) Labeling d) Storage		(Safety)
8.	Discuss any known special hazards of the job. These topics shall be addressed by Otis Eastern Service, LLC. management and client representatives prior to the start of, and throughout different phases of the project. Topics will also be discussed during Daily Tailgate Safety Meetings or as new requirements present themselves.		(Safety)
9.	Daily Equipment/Rigging Inspection. a) Lifting, Mobile Equipment & Materials Handling Program Review b) Daily Equipment Inspection Documentation (Crane, Excavator, Dozer, Side Boom, Fork Lift, Slings, etc.) e) Suspended Loads – Never travel beneath any Suspended Load		(Safety)
10.	Notification & Reporting Requirements: a) Near Misses or Potential Accidents b) Injury Accidents c) Vehicle Accidents – (Call the Police)(You are Responsible) d) Property Damage Accidents – e) Spills – f) All near misses are treated like accidents therefore they shall be reported and investigated.	Report incidents no matter how small or large	(Safety)

11.	<p>Procedures for Caring for Injured:</p> <ul style="list-style-type: none"> a) Location of First Aid Kits. b) Occupational Medical Clinic c) Hospital Emergency Rooms – Phone #: 911 	(Safety)
12.	<p>Trenching & Excavation:</p> <ul style="list-style-type: none"> a) One Call b) Line Location & Potholing c) Competent Person d) Soils Classification e) Sloping and Shoring f) Spoil Placement g) Access & Egress - Ladder Placement & Securing h) Daily Inspections - Documented 	(Safety)
13.	<p>While on Company Property and Job Sites:</p> <ul style="list-style-type: none"> a) Follow posted Speed Limits b) Buckle Up for Safety c) Backing Up & Back In Parking d) No Alcohol or Drugs e) No Firearms f) No Horseplay g) Only employees that are on “Otis” payroll are allowed on ROW. h) No personal vehicles allowed on ROW unless the vehicle is on “Otis” Payroll and a copy of current drivers license and current vehicle insurance are on file in Project office. 	(Safety)
14.	<p>Personal Protective Equipment:</p> <ul style="list-style-type: none"> a) Hard Hats (Provided by Otis) b) Eye Protection c) Min. 6” sturdy Safety Toed Boot are Required On All Projects (\$100 Reimbursement) d) Gloves – Appropriate selection for the job e) High Visibility safety vest (provided by Otis) f) Hearing Protection g) Respiratory Protection h) Shirts with at least a 4” sleeve (NO Tank Tops) 	(Safety)
15.	<p>Ladders:</p> <ul style="list-style-type: none"> a) Extension Ladders <ul style="list-style-type: none"> a. Placed at correct angle and secured with 3’ minimum above landing level b. Walk down the ladder using 3-point system facing the ladder. b) Step Ladders <ul style="list-style-type: none"> a. Fully extended, not to be used as an Extension Ladder. b. Should also be secured if ladder will remain in place for any length of time. 	(Safety)
16.	<p>Confined Space:</p> <ul style="list-style-type: none"> a) What is a confined space? b) Do not enter c) Hazards (LEL’s, Atmosphere Testing) 	(Safety)
17.	<p>Tools:</p> <ul style="list-style-type: none"> a) Hand Tools <ul style="list-style-type: none"> a. Proper Use b. Inspection c. Removal b) Electrical Tools <ul style="list-style-type: none"> a. Extension Cords b. Ground Fault Circuit Interrupter (GFCI) c. Inspection 	(Safety)
18.	<p>Heat Related Illnesses:</p> <ul style="list-style-type: none"> a) Heat Stress b) Heat Cramps c) Heat Stroke d) Prevention – Maintain adequate fluid intake. When heat index reaches >100 F. Consume approximately 5 oz. of water every 15 minutes. Individuals working in hot environments can lose up to 2 liters of water an hour. 	(Safety)
19.	<p>Cold Related Illnesses:</p>	(Safety)

	<ul style="list-style-type: none"> a) Frostbite b) Hypothermia <p>Prevention – Hypothermia can happen when the Core Body Temperature (CBT) drops below 95Deg. F. Dress in layers. Hypothermia can occur at temperatures <45 Deg. F. Hydration is still an important factor.</p>	
20.	<p>Overhead Power Lines:</p> <ul style="list-style-type: none"> a) Exclusion Distances <ul style="list-style-type: none"> a. Spotters b) Warning Signs & Goal Posts c) Induced Current <ul style="list-style-type: none"> a. Pipe Grounding b. Equipment Grounding 	(Safety)
21.	<p>Traffic Control:</p> <ul style="list-style-type: none"> a) Proper Signage b) Stop / Slow Paddles as “Primary” Instrument c) Reflective Vests d) Flagger Training Certification 	(Safety)
22.	<p>Observation & Coaching:</p> <ul style="list-style-type: none"> a) Communication b) Report Hazards and Unsafe acts. c) Documentation d) Look after each other, help each other (Lifting etc...) 	(Safety)
23.	<p>Heavy Equipment Operations</p> <ul style="list-style-type: none"> a) NO RIDING ON EQUIPMENT!!! (NO EXCEPTIONS) b) Competent and Qualified Only c) Evaluation d) Safe Operation – Only use equipment for designed purpose. e) Ground Employee Awareness f) Back-up Alarms g) Daily Inspections <ul style="list-style-type: none"> • Equipment Inspection Logs – to be completed by each operator daily. 	(Safety)
24.	<p>Discipline Program</p> <ul style="list-style-type: none"> a) Three Strike Rule <ul style="list-style-type: none"> a. Verbal b. Written c. Dismissal b) Blatant Disregard – Immediate Termination c) Violation of Safety Absolutes/Life Critical – Immediate Termination <p>ZERO TOLERANCE SEXUAL HARASSMENT POLICY</p>	(Safety)

The above items with my initials’ were fully discussed with me prior to employment, or upon transferal to another area or job.

I understand that my employment will be “at will” and that the employment relationship may be terminated at any time and for any reason, by either the company or by me.

I fully understand the Company’s controlled substance and alcohol use policy.

I have received and signed the Company’s employee safety guidelines and agree to support the safety polices of the Company to the best of my abilities.

(Employee) (Print name clearly)	Date	(Signature)

(Safety Representative) (Print name clearly)	Date	(Signature)

Appendix X: Safety Policy Acknowledgement

SAFETY POLICY ACKNOWLEDGEMENT

Detach and return after you have read and understood this Safety Policy and Hazardous Materials Communication Policy.

Date _____

I have read and understand the foregoing Safety Policy and Hazardous Materials Communication Policy and also understand that any violation or non-compliance with company safety regulations is sufficient cause for disciplinary action including termination.

I will comply with the safe trenching practices outlined in the foregoing policy.

In case I am injured, no matter how minor, while in the course of my work, I shall report immediately to my supervisor.

Signed _____

WITNESS _____

Date _____



Operator Qualification Plan

Standard Operating Procedures

Applicable to Hazardous Liquids Pipelines and Related Facilities

Code Reference :	Procedure No.: HLA.18	
49 CFR 195 Subpart G: 195.501, 195.503, 195.505, 195.507, 195.509	<i>Effective Date:</i> 05/01/18	Page 1 of 41

1.0 Purpose All individuals who operate and maintain pipeline facilities shall be trained, evaluated, and qualified to perform company identified Operator Qualification tasks and shall have the ability to recognize and react appropriately to Abnormal Operating Conditions (AOC) encountered while performing work.

This Standard Operating Procedure (SOP) establishes the requirements and responsibilities for the qualification of individuals who perform Operator Qualification (OQ) Tasks at the pipeline facilities for which the operator has responsibility.

2.0 Scope The Operator Qualification (OQ) Plan applies to company personnel, contractor personnel, subcontractor personnel, and personnel of all other entities who perform OQ Tasks on behalf of the company. All personnel described above shall be qualified in accordance with this plan or a third party plan approved by the company and in accordance with the Operator Qualification Rule. Individual qualification records shall be maintained for five years

3.0 Applicability This SOP applies to all individuals who perform an OQ Task (as defined in *Section 7.1, (OQ Task Requirements: Employee OQ Task Lists including CRM, and Appendix B: Contractor OQ Task Lists)*) regardless of whether they are employed by the company, a contractor, a subcontractor, or any other entity performing the OQ Task on behalf of the company.

4.0 Frequency Annually at least once each calendar year: The Operator Qualification Plan is reviewed and revised by Manager of OQ Compliance / Technical Training as needed in consideration of new regulations, revised regulations, work experiences, and changes in operating or maintenance technologies, procedures, and equipment. (*Refer to SOP HLA.03 Management of Change.*)

Annually: Review of OQ Tasks, including recognizing and reacting to abnormal operating conditions, is conducted by the Operator Qualification Committee.

Code Reference :	Procedure No.: HLA.18	
49 CFR 195 Subpart G: 195.501, 195.503, 195.505, 195.507, 195.509	<i>Effective Date:</i> <i>05/01/18</i>	Page 2 of 41

Annually: Each supervisor will conduct an Annual Work History Review with each of his / her assigned personnel to determine that:

- each OQ Task is applicable to the job assignment
- the SOPs used in the performance of the tasks are adequate and effective
- in the event an SOP was deficient, was the deficiency identified
- if the SOP needed an MOC (Management of Change), was one submitted using form A.03.A Management of Change or the Electronic MOC Process.

Upon completion of the Work History Review, the supervisor will sign and date the document and the supervisor may ask the employee to sign the document as an acknowledgement of the process.

Annually: Each employee performing OQ tasks will review Abnormal Operating Conditions and Abnormal Operations for proper recognition and reaction when performing OQ tasks in the field. This is conducted during the Annual Work History Review with the employee’s supervisor.

Three Year Intervals: Review third party OQ plans to determine compatibility and acceptability for continued use on the company’s behalf.

As required: Subsequent Qualification is performed within the period required for that task as identified in Appendix A.

As required: Performance Related Qualification including recognizing and reacting to abnormal operating conditions.

As required: Accident/Incident Related Qualification including recognizing and reacting to abnormal operating conditions.

As required: Special Circumstance Re-qualification including recognizing and reacting to abnormal operating conditions.

Company representative from the OQ / Tech Training Department will attend VeriForce sponsored periodic meetings and annually receive results of a third party audit of the VeriForce processes, procedures, and documentation

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**5.0
Governance**

The following table describes the responsibility, accountability, and authority for the Operator Qualification Plan.

The responsibilities of management are described in the sections that follow.

Function	Responsibility	Accountability	Authority
Identify OQ Tasks	Operator Qualification Committee	Manager OQ Compliance / Technical Training	Director OQ Compliance / Technical Training
Establish Initial Qualification	Operator Qualification Committee	Manager OQ Compliance / Technical Training	Director OQ Compliance / Technical Training
Plan Administration of Qualification Evaluation	Manager OQ Compliance / Technical Training	Manager OQ Compliance / Technical Training	Director OQ Compliance / Technical Training
Subsequent Qualification for Individuals	Operations Personnel	Operations Manager/Director of Operations	Vice President of Operations
Performance Related Qualification	Operations Manager	Director of Operations	Vice President of Operations
Accident/ Incident Related Qualification	Operations Manager	Director of Operations	Vice President of Operations
Special Circumstance Re-qualification	Operations Manager	Director of Operations	Vice President of Operations
Supervising Nonqualified Individuals	Operations Personnel	Area Management	Manager OQ Compliance / Technical Training
Qualifying Contractors	Manager OQ Compliance / Technical Training	Director OQ Compliance / Technical Training	Vice President of Technical Services
Other Operator's OQ Plan	Director OQ Compliance / Technical Training	Director OQ Compliance / Technical Training	Vice President of Technical Services

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- 5.1 Executive Vice President of Operations**
- Provide the resources necessary to ensure that qualified individuals are performing OQ Tasks or are directing and observing nonqualified company individuals while they are performing OQ Tasks.
 - Subsequent to a merger or acquisition of the company, guides the development and implementation of a transition plan under the direction of the Director of OQ Compliance/Technical Training.
-

- 5.2 Director of OQ Compliance / Technical Training**
- Direct the activities of the Operator Qualification Committee.
 - Verify that the company’s OQ Plan and Procedures meet all regulatory requirements.
 - Provide leadership to the Operator Qualification Committee.
 - Consult with the Director of Interstate and Intrastate Regulatory Compliance on all potential state and / or federal regulatory changes that may impact the Plan.
 - Subsequent to a merger or acquisition of the company, develops and implements transition plan as directed by the Executive Vice President of Operations
-

- 5.3 Operator Qualification Committee**
- Provide OQ Plan technical oversight.
 - Present the OQ Plan to inspecting agencies for audit as appropriate.
 - Incorporate feedback from regulatory agencies and other sources as appropriate.
 - Maintain the lists of OQ Tasks.
 - Incorporate changes as appropriate.
 - Review and modify (as needed) Standard Operating Procedures and Abnormal Operating Conditions to determine employee or contractor qualification status following a reportable pipeline incident in accordance with the requirements of the current SOP HLA.12 Safety Related Condition and Incident Reporting. Determine the effectiveness of an OQ task specific AOC and reactions following an incident in accordance with SOP HLA.13 Recognizing and Responding to Abnormal Operations
-

- 5.4 OQ Compliance / Tech Training Department**
- Administer the OQ Plan.
 - Advise local management regarding qualification, subsequent qualification, requalification, and revocation of qualifications of individuals.
 - Develop and implement training needed to support the OQ Plan

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- Maintain OQ records.
- Maintain list of qualified evaluators.
- Act as liaison between the company and Veriforce who is approved and directed by the company to oversee the company’s contractor OQ Plan.
- Participate in Veriforce-sponsored functions seeking to improve the success of Veriforce’s Contractor OQ plan.

**5.5
Control Room**

- Assign only qualified individuals to perform Control Room related OQ Tasks or to direct and observe nonqualified individuals.
- Continually monitor Control Room related OQ task performance to identify individuals who may need requalification due to concerns with performance of an OQ Task as outlined in *Appendix E: Performance Related Requalification Process..*

**5.6
Evaluators**

- Must meet the requirements as identified in the definition of an evaluator, Section 6 - Terms and Definitions
- Must successfully complete an instructor led training prior to evaluating personnel and will be retrained every three years by attending an instructor led class or completing the “Role of the Evaluator” CBT.
- Evaluate the initial, subsequent, and requalification of individuals in accordance with company procedures. Refer to *Appendix C: Operator Evaluator Selection Process.*
- Complete required documentation (i.e.: SER).

**6.0
Terms and
Definitions**

Terms associated with this SOP and their definitions follow in the table below. For general terms, refer to HLA.01 Glossary and Acronyms.

Terms	Definitions
Abnormal Operating Condition (AOC)	A condition identified by the operator that may indicate a malfunction of a component or deviation from normal operations that may: <ul style="list-style-type: none"> • Indicate a condition exceeding design limits, or

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	<ul style="list-style-type: none"> Result in a hazard(s) to persons, property, or the environment.
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NOTE: Contactors performing OQ tasks are instructed to call a company employee when recognizing an AOC while performing an OQ task. Company employees are expected to be able to recognize and react properly to all AOCs of the tasks they have attained.

Terms	Definitions
Abnormal Operation	<p>For regulated lines, procedures are required in order to achieve safety when operating design limits have been exceeded. Procedures provide instruction for responding to, investigating, and correcting the cause of the following:</p> <p>Operations that may:</p> <ul style="list-style-type: none"> Unintended closure of valves or shutdowns. Increase or decrease in pressure or flow rate outside normal operating limits. Loss of communications. Operation of any safety device. Any other foreseeable malfunction of a component, deviation from normal operation, or personnel error, which may result in a hazard to persons or property.
Construction	Activities including fabrication, testing, and installation of pipeline facilities up to but not including the introduction of liquids/product. Tasks that involve construction prior to actual tie-in to an existing pipeline facility are not OQ Tasks.
DIF Analysis	A scoring or ranking system for OQ tasks that involves exploring and assigning values for the task’s Difficulty, Importance, and Frequency (DIF) of performance.
Element	A discrete action or step executed during the performance of an OQ Task. (May also be referred to as a step or a subtask.)
Emergency	An occurrence that requires prompt and proper action to avoid endangerment of people and/or property.
Evaluation	A process established and documented by the operator to determine an individual’s ability to perform an OQ task by Performance Evaluation and one of the following:

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Terms	Definitions
	<ul style="list-style-type: none"> • Initial Qualification <ul style="list-style-type: none"> ○ Oral examination ○ Demonstration during: <ul style="list-style-type: none"> ▪ Task performance ▪ Simulation performance • Subsequent Qualification <ul style="list-style-type: none"> ○ Computer-based testing ○ Written examination



NOTE: Area Management may elect to require an employee to complete a requalification vs. the Computer Based Testing

Evaluator	<p>An employee who has completed evaluator training and is approved by management to be an evaluator.</p> <p>An employee who is recognized by Area Management as capable of evaluating and approving an individual’s qualifications. This person has the training and/or experience to ascertain the individual’s ability to:</p> <ul style="list-style-type: none"> • Independently perform the OQ Task, and • Recognize and react to Abnormal Operating Conditions (AOC) that may be encountered during the performance of the OQ Task.
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Terms	Definitions
Individual	A pipeline worker who is responsible for the operation and maintenance of pipeline facilities of the operator, including an employee of the operator, a contractor employee, a subcontractor employee, or an employee of any other entity performing a task on behalf of the operator.
Initial Qualification	Qualification of individuals who were not performing a covered task on a regular basis prior to August 27, 1999.

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Terms	Definitions
Operator	Each of the pipeline operating companies with responsibility for the physical control over the use of the pipeline facilities owned by the affiliated companies and utilized to gather or transport liquids in interstate or intrastate commerce.
Operator Qualification (OQ) Task	A task that meets the requirements of Section 7.1 or 7.10
Operator Qualification Committee	This committee is composed of the Directors Regulatory Compliance, Director OQ Compliance, Manager OQ Compliance, Manager Regulatory Compliance (as assigned) and any SME deemed appropriate by the committee for a specific discipline involved.
Re-qualification	Evaluation of employees whose qualification has either expired or been revoked.
Skill Evaluation Record (SER)	The document used by the company to record the results of an individual’s evaluation.
Span of Control (SOC)	The ratio of OQ qualified personnel to supervise and observe non-qualified personnel in the performance of an OQ Task.
Subject Matter Expert (SME)	An individual recognized as having a specialized skill or specialized knowledge either through training and / or experience in a particular discipline or a piece of equipment.
Subsequent Qualification	Evaluation performed periodically to validate the ongoing qualifications of individuals.
Task	A specific unit of work having an identifiable beginning and end, and containing two (2) or more elements.
Training and Evaluation Guide (TEG)	The document which identifies the evaluation criteria, abnormal operating conditions, evaluation questions, training courses, and training materials associated with the specific OQ Tasks.
Work History Review	An Annual review of a qualified employees work performance of OQ Tasks conducted by the employee’s supervisor.

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**7.0
Operator
Qualification
Plan**

The Operator Qualification Plan contains the following sections:

- Identifying OQ Tasks
- Initial Qualifications
- Initial Qualifications Special Circumstance
- Qualification Evaluation
- Supervising Nonqualified Individuals
- Management of Change
- Qualifying Contractors
- AOC Review and Evaluation following an Accident or Incident
- Other Operator’s OQ Plan
- Mergers & Acquisitions
- Notifications to PHMSA and State Agencies
- Emergency Response

**7.1
Identifying OQ
Tasks**

For the purpose of the OQ Plan, a four-part test shall be used by the Operator Qualification Committee to determine whether a task is an OQ Task. A task must meet all four of the following criteria to be an OQ Task:

- Is performed on a pipeline facility as defined in *CFR 49 Part 195.2*
- Is an operations or maintenance task
- Is performed as a requirement of *49 CFR Part 195*
- Affects the operation or integrity of the pipeline

Additional tasks may be added to the list at the discretion of the company.

Refer to Appendix A – OQ Task Requirements

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7.2 Initial Qualifications Individuals performing OQ Tasks were qualified under the company OQ Plan which has been in effect since October 28, 2002. These qualifications were completed by October 28, 2002. Copies of the original Plan documents are archived.

Work performance history may have been used as the sole evaluation method for individuals who were performing that OQ Task prior to October 26, 1999.

Individuals beginning employment after October 26, 1999 did not use work performance history as the sole evaluation method. The company performed a work performance review of each individual and OQ task qualification prior to declaring the individuals OQ qualified on or before October 28, 2002. Any questionable reviews concerning individual qualifications were addressed by a full evaluation of the OQ Task.

After October 28, 2002, all OQ task qualifications of company employees were qualified through a full evaluation of their Knowledge, Skills, and Abilities with criteria established by the company through Subject Matter Experts. All initial qualifications will have an evaluation directed at determining the employees Knowledge, Skills, and Abilities to perform the OQ Task. Records for these evaluations are kept in the Qualification Database (QDB) as overseen by the OQ / Tech Training Department. All company Operations Personnel have access to the Qualification Database (QDB) and OQ records through reports located at the company website.

7.3 Initial Qualifications Special Circumstance In special circumstances, such as the establishment of a new pipeline company with new employees, or the start-up of a new system with new employees, it is permissible to have an external third party company provide qualified evaluators to evaluate the new company employees prior to start-up. The 3rd party evaluators must have passed a Veriforce audit with no significant issues within the previous three (3) years. The evaluation must be performed in accordance with Company requirements utilizing Company task criteria.

The OQ manager will confirm with Veriforce that the 3rd party company has been audited within the past three years without significant issues, and record the information in File-Net prior to authorizing the use of 3rd party evaluators.

7.4 Qualification Evaluation Maintaining and verifying qualifications are essential parts of the program once an individual has successfully qualified initially. Requirements for such verification may arise from expiration of a qualification, questionable performance, causing or exacerbating an incident, or not performing the task for an extended period, such as may be due to a lengthy illness or disability. The following steps are used to verify that individuals remain qualified to perform OQ Tasks.

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**7.4.1
Subsequent
Qualification**

Subsequent qualification of individuals is required on OQ Tasks. The process is initiated by the individual and completed within the period required for that task as identified in Appendix A. The subsequent qualification intervals have been established by utilizing a Difficulty, Importance, and Frequency (DIF) Analysis for each OQ Task. The results of the DIF Analysis are documented and filed in the DIF folder maintained by the OQ Compliance / Tech Training Department. If management chooses for the individual not to re-qualify within the specified period, the individual is no longer qualified to perform the OQ Task unless directed and observed by an individual who is qualified.

Reports within Qualification Database are available to advise individuals of their subsequent qualification dates. Subsequent Qualifications will normally be a combination of a Computer Based Test (CBT) (see Appendix D – Subsequent Qualification).and an annual employee performance appraisal dealing with an OQ task(s) work performance review

**7.4.2
Performance
Related
Qualification**

A performance related re-qualification process focuses on identifying and correcting deficiencies in performing OQ Tasks as they surface during operation or maintenance activities, including emergency response activities.

- **Company Employee:** If tasks or elements are not performed competently, a recommendation to re-qualify an employee of operator for performance reasons shall be initiated in writing (*HLA.13.B - Operator Qualification Incident Review*) and submitted to the OQ Compliance / Tech Training Department. Until the required training and re-qualification process is completed, that individual will only be allowed to perform the OQ Task in question as a nonqualified individual according to the requirements of *Section 7.4*. (Refer to *Appendix D - Operator Qualification*)
- **Contractor:** The company individual in charge of the contract work will notify the OQ / Tech Training Department verbally and in writing when disqualification / requalification of a contractor employee is required for performance reasons for an OQ Task. The Manager - OQ Compliance / Tech Training Department will notify VeriForce concerning the details of the events and VeriForce will pull the individuals qualifications for the company until the issues are resolved to the satisfaction of the company. VeriForce will be responsible for retraining and re-evaluation / re-qualification of the individual to the satisfaction of the company. That individual will not be allowed to perform the OQ Task for the company until the issues are satisfactorily resolved. (Refer to *Appendix F - Performance Related Requalification Process*.)

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7.4.3 Accident/ Incident Related Qualification Recommendation of a re-qualification of an employee or contractor shall be initiated in writing by Project Managers, Operations Manager or Director of Operations if there is reason to believe that the individual’s performance may have contributed to a reportable pipeline incident as defined in SOP HLA.15 PHMSA- States - Incident Reporting. That employee or contract employee may not perform the OQ Task in question until re-qualification has been completed or it is determined that the individual’s performance did not contribute to the incident. Refer to Section 7.8.4 for contractor re-qualification requirements. The OQ Compliance / Tech Training Department will facilitate the actions / records for company employees and Veriforce will facilitate the actions / records required for contractor personnel.

7.4.4 Special Circumstance Re-qualification A company individual who has not performed an OQ Task for a significant time period due to factors such as a disability or injury may be required to re-qualify at the discretion of management prior to performing the OQ Task without supervision. This determination will be based on factors such as the knowledge, skills, and ability of that individual and consultation with local management, team members, and evaluators. The OQ Compliance / Tech Training Department will handle the records to facilitate the actions required.

7.5 Supervising Nonqualified Individuals Nonqualified individuals are permitted to perform OQ Tasks except as noted in *Appendix A - OQ Task Requirements*, and *Appendix B - Contractor OQ Task Lists*. The following conditions must be met:

- A qualified individual will be assigned to direct and observe nonqualified individual(s) during the performance of an OQ Task. That qualified individual is responsible for the performance of the Task.
- A qualified individual shall be able to take immediate corrective actions when necessary and recognize and react to any potential Abnormal Operating Conditions.
- The ratio of nonqualified individuals to a qualified individual (Span of Control) for company and contractor personnel is identified in *Appendix A* and *Appendix B*.



WARNING: Energy Transfer Personnel may NOT utilize nonqualified contractors using Span of Control. Contractors must provide qualified personnel to supervise and observe nonqualified contractor personnel.

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7.6 Management of Change Any employee can initiate a recommendation for change per *SOP HLA.03 Management of Change*. Once the need for a change is identified, the management of change process shall be followed according to *SOP HLA.03*. The change may be necessary due to a new or modified regulatory requirement, standard revision, new technology or process, new or change in an existing SOP or the modification to or addition of a new task. Significant changes will be reported to DOT and appropriate state agencies by the Director of OQ Compliance / Technical Training or designee.

7.6.1 Impact of Change The process for adding a new OQ Task and revising an OQ Task is outlined in *Appendix J: OQ Task Maintenance*.

Changes to an existing OQ Task will be categorized as follows:

- Low impact on an OQ Task requiring no communication or further action.
- Moderate impact on an OQ Task requiring only communication of the change.
- High impact on an OQ Task requiring communication of the change and re-qualifying individuals prior to performing the OQ Task.

7.6.2 Periodic Review The OQ Committee will conduct a periodic review (at least annually) of OQ Tasks with the assistance of the OQ Compliance / Tech Training Department and the appropriate SMEs. The OQ Committee will submit any required revisions to the OQ Compliance / Tech Training Department. The OQ Committee may also be called upon if an incident occurs involving the performance of an OQ Task to ensure the SOP guiding the task is addressed and the OQ Task itself is reviewed for content.

7.7 Qualifying Contractors The company currently uses Veriforce to maintain contractor qualifications and the database of individuals and their qualifications. The OQ Compliance / Tech Training Department administers the company’s OQ Plan to verify Veriforce’s adherence to the plan.

There is an interface between the company’s Service Contracts Management System (APTTUS), and the Veriforce database that is updated periodically (approx. every two hours) with contractor qualification updates. This ensures the contractor’s individual OQ qualification data that the field is working with is current.

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Nonqualified contractor personnel may perform OQ Tasks only if directed and observed by a qualified contractor representative with the exception of those tasks identified in Appendix B with a “1:0” or “NA” designation under Span of Control.

Other contract qualification organizations could be used in the future if approved by management.

The company has approved Veriforce’s procedures as reflected in *Appendix G: Veriforce Evaluator Authorization Process* and *Appendix H: Contractor Qualification*.

**7.7.1
Requirements
to Perform OQ
Tasks**

Before the contractor personnel are permitted to perform OQ Tasks, the following is required.

The personnel who are in charge of the project and responsible for monitoring the work performed by the contractor’s personnel will use the company’s Service Contracts Management System (APTTUS) system. The company representative in charge of the contract containing OQ Tasks shall receive from the contract employee evidence (picture ID) satisfactory to the operator that the contractor personnel identified are qualified to perform OQ Tasks. This process is identified in Appendix H Contractor Qualification Process and is accomplished through the following steps:

- Meet with the contractor to review the project scope of work (SOP review) and inform the contractor of the expected response to AOCs, providing phone numbers to call in the event of an AOC occurring while performing the task. Review all safety requirements and anything specific to the project as expected from the contractor (Document the above in APTTUS). Refer to Appendix H - Contractor Qualification Process. An exception to this requirement is the process for verification of credentials of aerial patrol pilots who are required to fax a copy of their current photo ID and the flight plan for that project to the appropriate Company Area Office.
- If the contractor’s qualifications are unsatisfactory, the company will require the following before work begins:
 - The contractor personnel assigned to perform the OQ Tasks on the project must be qualified under Operator’s Qualification Plan, or
 - Contractor’s qualified personnel must be assigned to direct and observe the contractor’s nonqualified personnel.
- Contractor’s personnel are required to understand English or provide English-speaking qualified individuals to interpret instructions on AOCs and task performance.
- Any incident involving an OQ Task performed by a Veriforce qualified contractor will result in immediate contact by the OQ Compliance / Tech

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Training Department with Veriforce informing them of an immediate suspension of the employee from the company approved contractor list.

- Follow-up with Veriforce after an incident review by the OQ Compliance / Tech Training Department will re-establish the requirements for either the reinstatement of the employee to perform work for the company or a permanently block of the employee from performing OQ work.

**7.7.2
Periodic
Random
Inspection**

Veriforce performs a review of the performance history and the qualification or requalification status of approximately 5% of the VeriForce’s contractor personnel each year. The OQ Compliance / Tech Training Department annually reviews the Veriforce audit reports of contractor personnel who have performed or will perform OQ Tasks on company facilities in order to verify that contract work involving OQ Tasks is being performed by qualified individuals.

Company personnel will contact the OQ Compliance / Tech Training Department for a final determination if there is any doubt about a contract person's qualification to perform an OQ Task. In addition.

**7.7.3
Contractor
Qualification
Records**

The OQ / Tech Training Department has ready access to the evaluation and qualification records of each contractor’s personnel who perform OQ Tasks. The Contracts Department maintains documentation of the name of the project or description of the project, project date, OQ Tasks performed during the project, and names of contractor personnel performing OQ Tasks on the project.

Veriforce uploads the following information into the Service Contract Management System (APTTUS):

- Contractor personnel
- OQ Task contractor personnel is qualified to perform
- Method of qualification
- Effective dates(s)

Veriforce maintains the following information in their internal database:

- Method of qualification
- Effective dates(s)
- Evaluator

Refer to *Appendix H. Contractor Qualification Process.*

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**7.7.4
Accident or
Incident** The project manager will disqualify contractor personnel suspected of contributing to a pipeline related accident or incident. Disqualified personnel will be subject to requalification requirements. The project manager will contact the OQ / Tech Training Department for further action. (Refer to Appendix F: Performance Related Requalification Process).

**7.8
AOC Review
and Evaluation
following an
Accident or
Incident** During the investigation of an accident / incident which may indicate that an OQ Task was involved, review the associated AOC for the task to ensure that the listed AOC could be reasonably anticipated during the performance of the task, and that the anticipated reaction was appropriate.

**7.9
Other
Operator’s OQ
Plan** For contract operators that operate and maintain company facilities, the Director or Manager of OQ Compliance / Technical Training or designee will review the Operator Qualification Plans to verify they meet the company’s requirements. The Vice President of Operations will provide written approval to the operator.



NOTE: This is in reference to Mutual Assistance Agreement for Intrastate Pipelines

**7.10
Mergers &
Acquisitions** In the event of a merger or acquisition an OQ transition plan shall be developed using the following guidelines. Compliance with OQ regulatory requirements must be maintained and documented during the transition period.

At the earliest practicable time following the merger or acquisition, and consistent with the overall transition plan, the OQ Committee will develop and execute a transition plan consisting of the following.

- Review of the existing plans. The plans of both companies shall be reviewed to identify similarities, differences and any perceived gaps.
 - It is generally desirable to transition to a single plan. However, if the facilities and operations are different and are going to continue to be operated separately, maintaining both plans may be acceptable.
 - If plans are to be combined:
 - Determination of differences in covered tasks and qualification requirements
-

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- Differences in equipment require examination and resolution.
- Determine employee and contractor qualification requirements under the combined plan.
- The timeline for implementation of the combined plan must be set and communicated allowing employees to continue with current qualifications but complete any needed additional training and subsequent qualifications in a timely manner.

**7.11
Mergers &
Acquisitions**

In the event of a merger or acquisition an OQ transition plan shall be developed using the following guidelines. Compliance with OQ regulatory requirements must be maintained and documented during the transition period.

At the earliest practicable time following the merger or acquisition, and consistent with the overall transition plan, the OQ Committee will develop and execute a transition plan consisting of the following.

- Review of the existing plans. The plans of both companies shall be reviewed to identify similarities, differences and any perceived gaps.
- It is generally desirable to transition to a single plan. However, if the facilities and operations are different and are going to continue to be operated separately, maintaining both plans may be acceptable.
- If plans are to be combined:
 - Determination of differences in covered tasks and qualification requirements
 - Differences in equipment require examination and resolution.
- Determine employee and contractor qualification requirements under the combined plan.
- The timeline for implementation of the combined plan must be set and communicated allowing employees to continue with current qualifications but complete any needed additional training and subsequent qualifications in a timely manner.

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NOTE: This plan should meet the intent of the guidance provided by OPS in *OQ FAQ 1.15*, reproduced here:

“Should operators develop OQ program provisions in anticipation of future industry mergers and acquisitions?”

While industry consolidation by mergers and acquisitions is a current fact of life, an operator need not anticipate how its programs might change if it is involved in such consolidations. However, specific provisions for addressing OQ requirements following mergers or acquisitions should be developed and documented as soon as practical after such business transactions have been negotiated (e.g., provisions for either combining the programs or maintaining distinct programs, so long as compatibility issues are reviewed and resolved).”

**7.12
Notification to
PHMSA and
State Agencies**

Significant changes will be reported to PHMSA at InformationResourcesManager@phmsa.dot.gov or by mail:

ATTN: Information Resources Manager DOT/PHMSA/OPS
East Building, 2nd Floor
E22-321 New Jersey Avenue SE
Washington, DC 20590

And/or the State Agency as appropriate. For State agency addresses see *SOP HLA.01 Glossary and Acronyms* .

A significant change may include:

- A change in the number of covered tasks identified by the operator
- A change in the evaluation methods or criteria for performing covered tasks
- Increases in the number of non-qualified individuals that may perform a covered task while being directed and observed by a qualified individual
- Wholesale changes made to an OQ Plan or Program, whether due to an overall effort to improve program performance or due to a merger or acquisition that results in incorporating the best features of the competing plans and programs

**7.13
Emergency
Response**

In emergency response situations, the first priority is to dispatch qualified individuals to respond to the emergency condition; however, non-qualified individuals that are close to the scene may be called upon to respond to an emergency condition in order to immediately protect life, property and the environment. Guidance and direction shall be provided to non-qualified individuals on the appropriate actions for stabilizing the emergency condition.

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8.0 Reporting Requirements and Recordkeeping

The following employee qualification information is recorded in the Qualification Database:

- Identification of OQ qualified individuals
- Identification of OQ Tasks the OQ individual is qualified to perform
- Initial and expiration dates of current qualification(s)
- Description of qualification methods
- Identification of performance related qualification issues for employees
- Information related to any reportable pipeline incident or accident that may result from a qualification related issue will be documented in the maintenance management system following the requirements of *SOP HLA.15 PHMSA- States Incident Reporting*.

Questionable performance that does not lead to a pipeline incident or accident will be documented on *A.13.B - Operator Qualification Incident Review* and submitted to the Manager – OQ Compliance / Training Department for processing.

Records supporting an individual's current OQ Task qualifications shall be maintained in Qualification Database while the individual is performing the OQ Task(s). Records of prior OQ Task qualifications and records of individuals no longer performing OQ Tasks shall be maintained for a minimum period of five (5) years in the Qualification Database

The database is backed up daily and stored offsite in San Antonio Texas.

9.0 Related Documents

- HLA.03 Management of Change
- HLA.12 Safety Related Condition and MAOP Exceedance Reporting
- HLA.13 Recognizing and Responding to Abnormal Operations
- HLA.15 PHMSA – States - Incident Reporting.

Appendix A: OQ Task Requirements

This appendix lists the OQ tasks and associated task number.

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Employee OQ Task List

#	Task ID	Task Description	Sub-eval Frequency	Span of Control
1	PLOQ007	Operating Pipeline Valves	5 Yrs	1:3
2	PLOQ008	Demonstrate Proper Use of Pipe Thickness Gauge (Ultrasonic)	3 Yrs	1:3
3	PLOQ1800	Ground-bed Maintenance and Troubleshooting	5 Yrs	1:3
4	PLOQ1801	Commission and Maintain Cathodic Protection Systems with AC Power Sources	4 Yrs	1:3
5	PLOQ201	Abnormal Operating Conditions Related to Welding on Pipelines (Maintenance, Tie-ins, and Repair)	1 Yr	N/A
6	PLOQ203	Visual Inspection of Welding and Welds	2 Yrs	N/A
7	PLOQ205	Utilize Wet Magnetic Particle Inspection to identify surface breaking indications on line pipe and other ferrous components (not welds)	3 Yrs	N/A
8	PLOQ206	Utilize Wet Magnetic Particle - Inspection of Welds	1 Yrs	N/A
9	PLOQ207	Non Destructive Testing by Dye Penetrant (SNT-TC-1A Level II Certificate or greater Required)	3 Yrs	N/A
10	PLOQ209	Plastic Pipe Joining: Mechanical Joining	3 Yrs	1:3
11	PLOQ210	Plastic Pipe Joining	1 Yrs	N/A
12	PLOQ211	Perform Plastic Fusion Inspection	3 Yrs	1:3
13	PLOQ212	Joining of Steel Pipe other than by Welding	3 Yrs	1:3
14	PLOQ351A	Commission and Maintain Pneumatic Actuator (High Pressure)	3 Yrs	1:3
15	PLOQ351B	Commission and Maintain Pneumatic Actuator (Low Pressure)	3 Yrs	1:3
16	PLOQ361	Commission and Maintain Electric Actuator	3 Yrs	1:3
17	PLOQ371	Commission and Maintain Hydraulic Actuator	3 Yrs	1:3
18	PLOQ401	Visual Inspection of Buried Pipe and Components When Exposed	4 Yrs	1:3

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#	Task ID	Task Description	Sub-eval Frequency	Span of Control
19	PLOQ402	Inspection of the Application of Above or Below Ground Coatings	4 Yrs	1:3
20	PLOQ403	Demonstrate how to Repair Small Holidays on New or Existing Coatings (above or below grade)	3 Yrs	1:3
21	PLOQ404	Backfilling - Pipe and Coating Protection	5 Yrs	1:3
22	PLOQ406	Measure Structure-to-Electrolyte Potential – AC / DC	5 Yrs	1:3
23	PLOQ407A	Conduct Close Interval Survey	3 Yrs	1:3
24	PLOQ407B	Current Requirement Survey	3 Yrs	1:3
25	PLOQ408	Inspect Rectifier and Obtain Readings	5 Yrs	1:3
26	PLOQ409	Commission and maintain cathodic protection bonds	5 Yrs	1:3
27	PLOQ410	Commission and maintain cathodic protection Electrical Isolation Devices between casing and carrier	5 Yrs	1:3
28	PLOQ411	Commission and maintain cathodic protection Electrical Isolation Devices between flanges, prefabricated assemblies and fittings	5 Yrs	1:3
29	PLOQ412	Installation of Exothermic Electrical Connections	3 Yrs	1:3
30	PLOQ414	Visual Inspection for Internal Corrosion	3 Yrs	1:3
31	PLOQ415	Insert and Remove Coupons / Probes for Internal Corrosion Monitoring	4 Yrs	1:1
32	PLOQ416	Demonstrate the Use of Inhibitors and Biocides	5 Yrs	1:3
33	PLOQ417	Visual Inspection for Atmospheric Corrosion	5 Yrs	1:3
34	PLOQ418A	Measure and Evaluate Pipeline Defects	3 Yrs	1:1
35	PLOQ419	Annual Test Point Survey	3Yrs	1:3
36	PLOQ420	Measure Soil Resistivity	5 Yrs	1:3
37	PLOQ421	Demonstrate the use of a Pit Gauge.	3 Yrs	1:3

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#	Task ID	Task Description	Sub-eval Frequency	Span of Control
38	PLOQ501	Pressure Test to Substantiate MAOP / Integrity	3 Yrs	N/A
39	PLOQ502	Conduct Pressure Test on Pipe that is to be Operated at a Pressure <100 psig	3 Yrs	1:3
40	PLOQ602	MAOP - Monitoring and Protecting	5 Yrs	1:3
41	PLOQ605	Underground Pipeline - Locate and Temporarily Mark	5 Yrs	1:1
42	PLOQ607	Damage Prevention During Excavation / Encroachment Activities	5 Yrs	1:3
43	PLOQ611	Hot Tapping (Steel Pipe)	3 Yrs	N/A
44	PLOQ612	Hot Tap (Plastic Pipe)	3 Yrs	N/A
45	PLOQ614	Purging with Air or Inert Gas - Using an Air Mover	3 Yrs	1:3
46	PLOQ701A	Gas Leakage Survey - Non Instrument	4 Yrs	1:3
47	PLOQ701B	Pipeline Patrol	5 Yrs	1:3
48	PLOQ702	Gas Leakage Survey - Instrument	5 Yrs	1:3
49	PLOQ703	Install and Maintain Pipeline Markers	5 Yrs	1:3
50	PLOQ704	Repair of Steel Pipe by Grinding	3 Yrs	1:1
51	PLOQ706	Apply Composite Reinforcement Products for Repair of Mechanically Damaged or Corroded Pipe	3 Yrs	N/A
52	PLOQ707	Install Mechanical Clamps and Sleeves - Bolted	3 Yrs	1:3
53	PLOQ708	Fabricate and Fit-up Repair Sleeves	3 Yrs	1:1
54	PLOQ709A	Commission and Maintain Spring Operated Relief Valves	4 Yrs	1:3
55	PLOQ709B	Commission and Maintain Pilot Operated Relief Valves	4 Yrs	1:3
56	PLOQ709C	Commission and Maintain Spring Operated Regulator Applied as a Relief Valves	4 Yrs	1:3
57	PLOQ709D	Commission and Maintain Pilot Operated Regulator Applied as a Relief Valve	4 Yrs	1:3

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#	Task ID	Task Description	Sub-eval Frequency	Span of Control
58	PLOQ710A	Commission and maintain a Pneumatically Controlled Emergency Shutdown System	4 Yrs	1:3
59	PLOQ710B	Commission and maintain an Electrically Controlled Emergency Shutdown System	4 Yrs	1:3
60	PLOQ711	Commission and Maintain PID Loop Controllers	4 Yrs	1:1
61	PLOQ712	Automation Controllers	3 Yrs	1:3
62	PLOQ713A	Commission and Maintain Stationary Gas Detection Systems	4 Yrs	1:1
63	PLOQ713B	Commission and maintain all types of flame / heat detection systems utilized in your area of responsibility	4 Yrs	1:1
64	PLOQ714A	Commission and Maintain Spring Operated Regulators	4 Yrs	1:1
65	PLOQ714B	Commission and Maintain Pilot Operated Regulators	4 Yrs	1:1
66	PLOQ714C	Commission and Maintain Control Operated Regulators	4 Yrs	1:1
67	PLOQ715A	Commission and Maintain Control Switches	4 Yrs	1:1
68	PLOQ715B	Commission and maintain transducers and transmitters	4 Yrs	1:1
69	PLOQ716A	Commission and Maintain Plug Valve	3 Yrs	1:3
70	PLOQ716B	Commission and Maintain Ball Valve	3 Yrs	1:3
71	PLOQ716C	Commission and Maintain Gate Valve	3 Yrs	1:3
72	PLOQ716D	Commission and Maintain Globe Valve	3 Yrs	1:3
73	PLOQ718	Collect Sample for Internal Corrosion Monitoring	5 Yrs	1:3
74	PLOQ801	Facility Security	3 Yrs	N/A
75	PLOQ803A	Inspect, Test and Troubleshoot Overfill Protective Devices (for Liquids P/L's Only)	3 Yrs	1:3

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#	Task ID	Task Description	Sub-eval Frequency	Span of Control
76	PLOQ803B	Calibrate Overfill Protective Devices (for Liquids P/L's Only)	3 Yrs	1:3
77	PLOQ804	Inspect and Maintain Rupture Disk Element	3 Yrs	1 : 3
78	PLOQ805	Inspection of Breakout Tanks (for Liquids P/L's Only)	3 Yrs	1:3
79	PLOQ806	Inspect and Maintain Valves (for Liquids P/L's Only)	3 Yrs	1:3
80	PLOQ807	Repair Valves (for Liquids P/L's Only)	3 Yrs	1:3
81	PLOQ808	Testing Emergency Shutdown Devices (for Liquids P/L's Only)	3 Yrs	1:3
82	PLOQ809	Moving In-Service Pipe (for Liquids P/L's Only)	3 Yrs	1:3
83	PLOQ810	Pressure Test to Substantiate MOP / Integrity	3 Yrs	1:3
84	PLOQ811	Startup and or Shut-down of Pipeline to Assure Operation Within MOP	3 Yrs	1:3
85	PLOQ812	Purge a Pipeline (for Liquids P/L's Only)	3 Yrs	1:3
86	PLOQ813	MOP - Monitoring and Protecting	3 Yrs	1:3
87	PLOQ814	Operate Pressure Relieving Devices for Launching and Receiving Facilities (for Liquids P/L's Only)	3 Yrs	1:3
88	PLOQ815	Operation of Pumps (Starting and Stopping)	3 Yrs	1:1
89	PLOQ816	Product Batch and Pig Tracking (for Liquids P/L's Only)	3 Yrs	1:3
90	PLOQ817	Maintain, Troubleshoot and Repair Pumps (for Liquids P/L's Only)	3 Yrs	1:3
91	PLOQ818	Inspect, Test and Calibrate Variable Frequency Drive (VFD)	3 Yrs	1:3
92	PLOQ819	Maintain / Prove Flow Meters and Flow Computers for Leak Detection	3 Yrs	1:3
93	PLOQ820	Verification of Tank Level Transmitters via Hand Gauge for Leak Detection	3 Yrs	1:3

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#	Task ID	Task Description	Sub-eval Frequency	Span of Control
94	PLOQ821	Test and Maintain Gravimeters / Densitometers for Leak Detection	3 Yrs	1 : 1
95	PLOQ822	Installation and Operation of Mud Plugs	3 Yrs	1 : 3

Control Room OQ Tasks

#	Task ID	Task Description	Sub-eval Frequency	Span of Control
1	CROQ001	Controlling Flow and Pressure	3 Yr	N/A
2	CROQ002	Facility Knowledge	3 Yr	N/A
3	CROQ003	Emergency Response	3 Yr	N/A
4	CROQ005	Remotely Operate Valves	3 Yr	N/A
5	CROQ006	Starting Up and/or Shutting In a Pipeline Segment	3 Yr	N/A
6	CROQ007	Respond to Alarms	3 Yr	N/A
7	CROQ008	Control Room: Remote Startup, Operation and Shutdown of Compressor Stations	3 Yr	N/A
8	CROQ009	Control Room: Remote Startup, Operation and Shutdown of Pump Stations	3 Yr	N/A

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Contractor OQ Task Lists

#	VF Task ID	Task Description	Sub-eval Frequency	Span of Control
	001	Provide Security for Pipeline Facilities	3 Yrs	1 : 3
	003	Test Breakout Tank Overfill Protective Devices	3 Yrs	1 : 3
	004	Inspect and Calibrate Breakout Tank Overfill Protective Devices	3 Yrs	1 : 3
	005	Repair Breakout Tank Overfill Protective Devices	3 Yrs	1 : 3
	006	Inspection of Breakout Tanks	3 Yrs	1 : 3
	007	Operate Valves	3 Yrs	1 : 3
	008	Measurement of Wall Thickness with Ultrasonic Device	3 Yrs	1 : 3
	009	Movement and/or Relocation of Liquid Pipelines	3 Yrs	1 : 3
	014	Maintain/Prove Flow Meters for CPM Hazardous Liquid Leak Detection	3 Yrs	1 : 1
	015	Inspect, Test and Maintain Gravimeters/Densitometers for CPM Hazardous Liquid Leak Detection	3 Yrs	1 : 1
	016	Purging - Hazardous Liquids	3 Yrs	1 : 1
	020	Pump Stations/Units - Startup, Operation and Shutdown	3 Yrs	1 : 1
	021	Start-up/Shutdown of Liquid Pipeline to Assure Operation within MOP	3 Yrs	1 : 1
	040	Isolation of Pipe with Mud Plug	3 Yrs	1 : 0
	103	Nondestructive Testing (Other than testing of welds) -- Mag Particle	3 Yrs	1 : 1
	104	Non-destructive Testing (Other than testing of welds) – Dye Penetrant Inspection (DPI)	3 Yrs	1 : 1
	201	Abnormal Operating Conditions Related to Welding on Pipelines	3 Yrs	1 : 0
	202	Monitoring of Welding Process	3 Yrs	1 : 0
	203	Visual Inspection of Welds not Non-Destructively Tested	3 Yrs	1 : 0
	204	Non-Destructive Testing (Dye Penetrant)	3 Yrs	1 : 0
	205	Non-Destructive Testing (Mag Particle)	3 Yrs	1 : 0
	206	Non-Destructive Testing (Ultrasonic)	3 Yrs	1 : 0

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#	VF Task ID	Task Description	Sub-eval Frequency	Span of Control
	207	Non-Destructive Testing (X-Ray)	3 Yrs	1 : 0
	208	Plastic Pipe Joining: Butt Fusion	1 Yr	1 : 0
	209	Plastic Pipe Joining: Mechanical Joining	1 Yr	1 : 0
	210	Plastic Pipe Joining: Electrofusion Joining	1 Yr	1 : 0
	211	Perform Plastic Fusion Inspection	3 Yrs	1 : 0
	213	Joining of Metal Pipe and Components by means other than Welding – Threaded and Flanged Connections	3 Yrs	1 : 3
	214	Joining of Metal Pipe and Components by means other than Welding – Threaded Connections	3 Yrs	1 : 3
	215	Joining of Metal Pipe and Components by means other than Welding –Flanged Connections	3 Yrs	1 : 3
	216	Joining of Metal Pipe – Compression Couplings	3 Yrs	1 : 3
	217	Small Diameter Metal Tubing and Fitting Installation	3 Yrs	1 : 3
	401	Examination of Buried Pipelines When Exposed	3 Yrs	1 : 3
	404	Protection of Coating When Backfilling and From Below Ground Supports	3 Yrs	1 : 3
	405	Protection of Coatings From Above Ground Structures	3 Yrs	1 : 3
	406	Conduct Test to Determine Cathodic Protection Current Requirements	3 Yrs	1 : 3
	407	Perform Cathodic Protection Survey	3 Yrs	1 : 3
	408	Inspect Cathodic Protection Rectifier	3 Yrs	1 : 3
	409	Inspect Interference Bonds	3 Yrs	1 : 3
	410	Clear Shorted Casing	3 Yrs	1 : 3
	411	Inspect/Test to Assure Electrical Isolation is Adequate	3 Yrs	1 : 3
	412	Install CP Leads on Pipeline Using Exothermic Weld	3 Yrs	1 : 3
	413	Anode Installation on Submerged Pipeline or Facilities	3 Yrs	1 : 0
	414	Inspect for Internal Corrosion Whenever Pipe is Removed	3 Yrs	1 : 3
	415	Monitoring for Internal Corrosion with Probes and Coupons	3 Yrs	1 : 1
	416	Monitoring for Internal Corrosion with Gas Samples	3 Yrs	1 : 3

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#	VF Task ID	Task Description	Sub-eval Frequency	Span of Control
	417	Atmospheric Corrosion Monitoring	3 Yrs	1 : 3
	418	General and Localized Corrosion Measurement (Remedial Measures)	3 Yrs	1 : 1
	419	Cathodic Protection Potential Measurement	3 Yrs	1 : 3
	420	Soil Resistivity	3 Yrs	1 : 3
	421	Measurement of Depth of Pitting with Pit Gauge	3 Yrs	1 : 1
	423	Perform Direct Current Voltage Gradient (DCVG) Survey	3 Yrs	1 : 3
	424	Perform AC Current Attenuation (ACCA) Survey	3 Yrs	1 : 3
	426	Inspect Pipe Coating with Holiday Detector	3 Yrs	1 : 1
	427	Inspection of the Application of Above or Below Ground Coatings	3 Yrs	1 : 3
	436	Perform Close Interval Survey	3 Yrs	1 : 1
	480	Apply Approved Coating by Hand Application	3 Yrs	1 : 3
	482	Apply Approved Coatings by Mechanical Spray and Hand Application Methods	3 Yrs	1 : 3
	484	Apply Approved Coatings by Wrap Application	3 Yrs	1 : 3
	501	Conduct Pressure Test to Substantiate MAOP / MOP	3 Yrs	1 : 0
	502	Conduct Pressure Test on Pipe that is to be Operated at a Pressure <100 psig	3 Yrs	1 : 3
	601	Start-up-Shut-down of Pipeline to Assure Operation Within MAOP / MOP	3 Yrs	1 : 3
	602	Monitoring Pipeline Pressure	3 Yrs	1 : 3
	603	Compressor Units/Stations: Start-up, Operation, Shutdown, and Purging Before Returning to Service	3 Yrs	1 : 3
	604	Locate, Mark, and Remediate Exposed Pipelines in the Gulf of Mexico	3 Yrs	1 : 3
	605	Locate Line/Install Temporary Marking of Buried Pipeline	3 Yrs	1 : 1
	606	Locate and Mark Submerged Pipelines	3 Yrs	1 : 0
	607	Damage Prevention: Observation of Excavating and Backfilling	3 Yrs	1 : 3

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#	VF Task ID	Task Description	Sub-eval Frequency	Span of Control
	608	Damage Prevention for Blasting Near a Pipeline	3 Yrs	1 : 3
	609	Inspect and Maintain Odorization Equipment	3 Yrs	1 : 3
	610	Monitor Odorant Concentration	3 Yrs	1 : 3
	611	Hot Tap (Steel Pipe)	3 Yrs	1 : 1
	612	Hot Tap (Plastic Pipe)	3 Yrs	1 : 1
	613	Purge Pipeline Facilities With Gas	3 Yrs	1 : 3
	614	Purge Pipeline Facilities With Air or Inert Gas	3 Yrs	1 : 3
	616	Atmospheric Monitoring during Hot Work Operations	3 Yrs	1 : 1
	619	Damage Prevention during Vacuum Excavation and Backfilling Activities	3 Yrs	1 : 1
	661	Launching and/or Receiving Internal Devices (pigs)	3 Yrs	1 : 2
	701	Patrolling Pipeline and Leakage Survey without Instrument	3 Yrs	1 : 3
	702	Leakage Survey with Leak Detection Device	3 Yrs	1 : 3
	703	Placing/Maintaining Line Markers	3 Yrs	1 : 3
	704	Permanent Field Repair by Grinding	3 Yrs	1 : 1
	705	Permanent Field Repair Using Composite Materials (Clockspring)	1 Yr	1 : 3
	706	Permanent Field Repair Using Composite Materials (Armor Plate)	3 Yrs	1 : 0
	707	Permanent Field Repair Using Bolt-On Clamp or Sleeve	3 Yrs	1 : 3
	708	Permanent Field Repair Using Full Encirclement Weld Sleeve	3 Yrs	1 : 3
	709	Inspection and Testing of Relief Devices (Compressor Stations, Meter Stations, Regulating Stations)	3 Yrs	1 : 3
	710	Inspect/Test Compressor Station Remote Control Shutdown Devices (ESD/EBD)	3 Yrs	1 : 3
	711	Inspect, Test, and Maintain Control Systems	3 Yrs	1 : 3
	712	Programmable Logic Controllers	3 Yrs	1 : 1
	713	Test/Maintain Gas Detection and Alarm Systems	3 Yrs	1 : 3

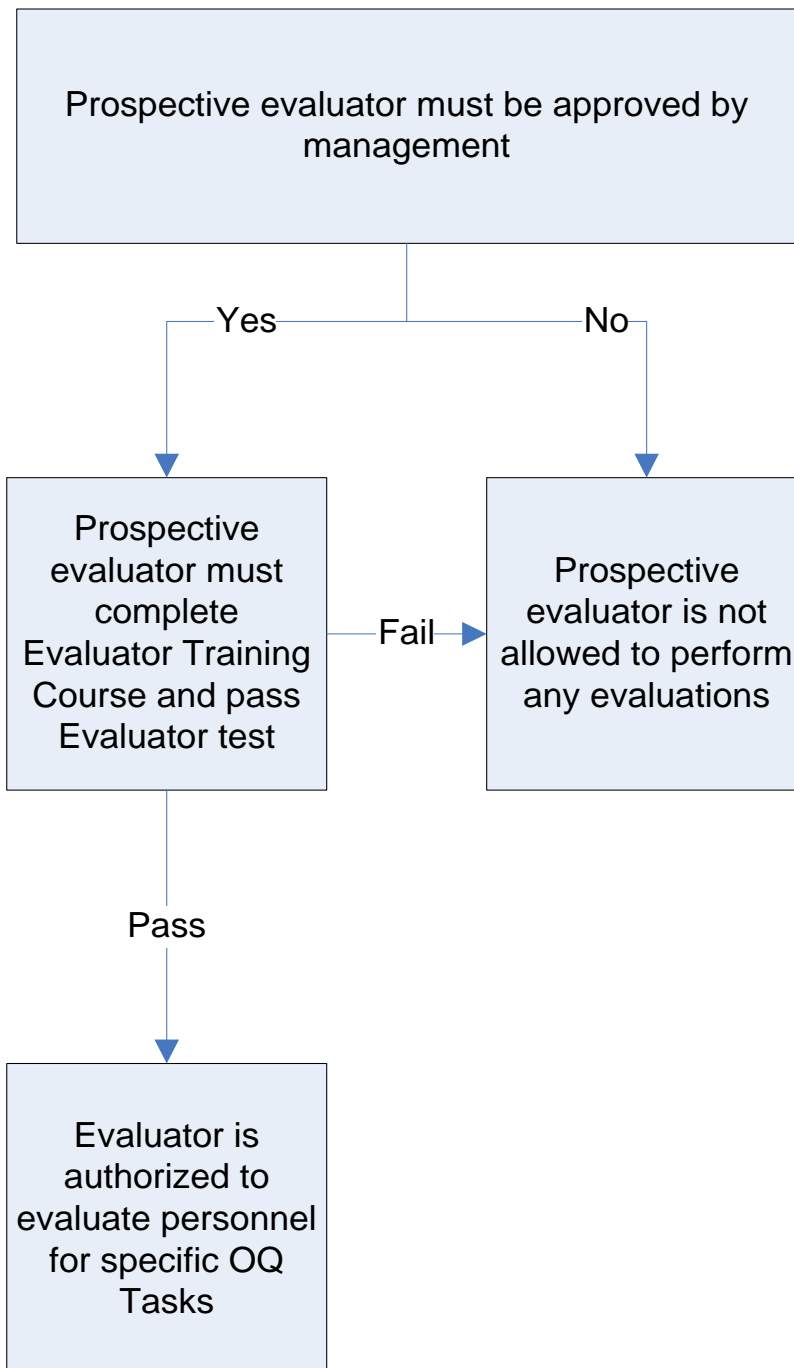
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#	VF Task ID	Task Description	Sub-eval Frequency	Span of Control
	714	Inspect and Maintain Pressure Limiting and Regulating Devices	3 Yrs	1 : 3
	715	Test and Maintain Pressure Switches and Transmitters in Pressure Limiting and Regulating Service	3 Yrs	1 : 3
	716	Inspect, Maintain, and Operate Valves	3 Yrs	1 : 3
	717	Maintaining Vaults With Pressure Regulating and Pressure Limiting Equipment	3 Yrs	1 : 3
	718	Monitoring for Internal Corrosion with Liquid Samples	3 Yrs	1 : 3
	719	Permanent Field Repair Using Composite Materials (Wrapmaster)	1 Yr	1 : 3
	721	Permanent Field Repair Using Composite Materials (Black Diamond)	3 Yrs	1 : 3
	722	Permanent Field Repair Using Composite Materials (Aqua Wrap)	3 Yrs	1 : 3
	724	Permanent Field Repair Using Composite Materials (PipeWrap A+)	1 Yr	1 : 3
	725	Aerial Leakage Survey: Transmission	3 Yrs	1 : 3
	732	Permanent Field Repair Using Composite Materials (RES-Q /Composite Wrap – TDW)	3 Yrs	1 : 2
	733	Permanent Field Repair Using Composite Materials (Composi-Sleeve)	1 Yr	1 : 3
	735	Permanent Field Repair Using Composite Materials (UltraWrap)	1 Yr	1 : 3

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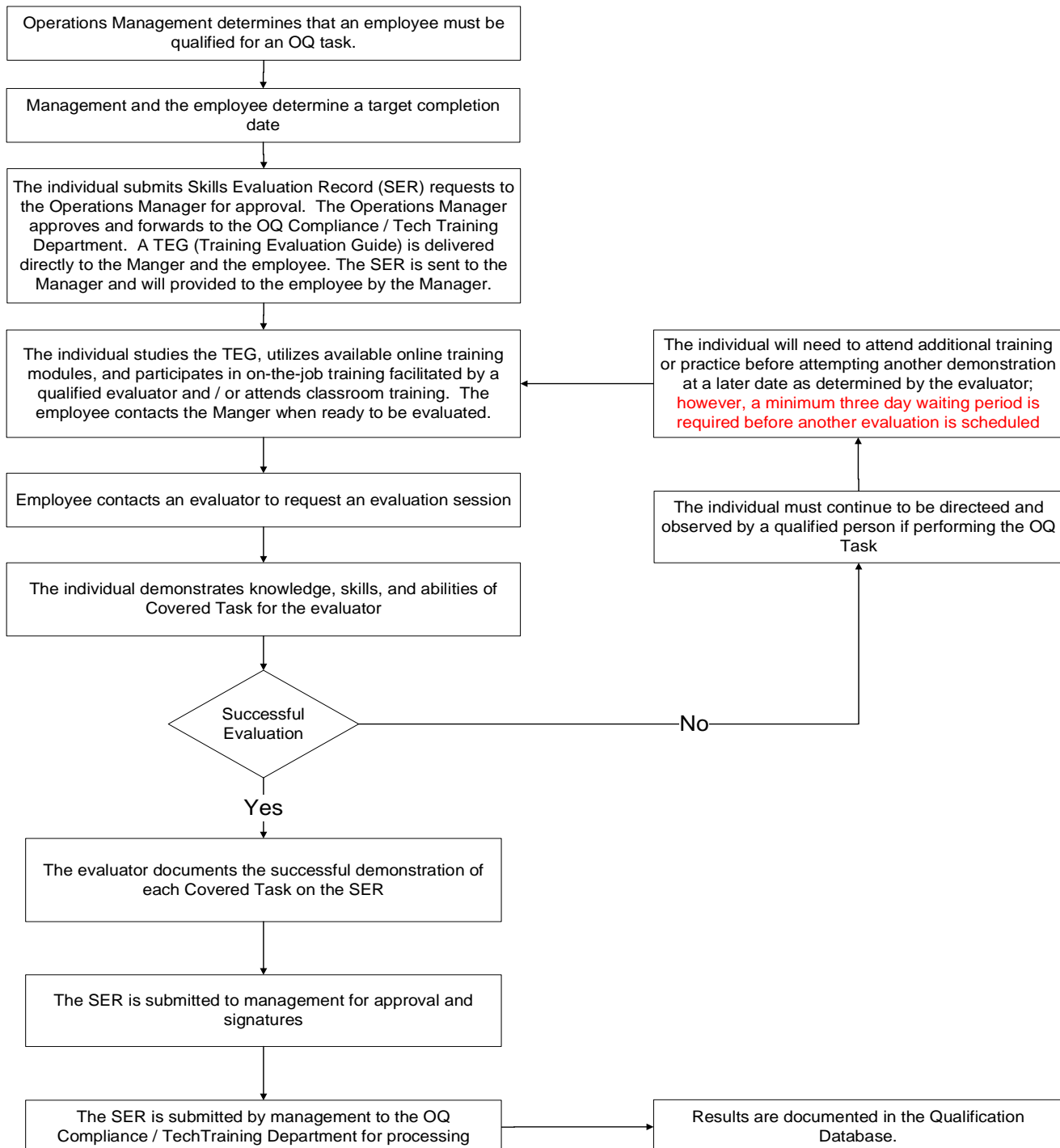
Appendix B: This appendix describes the process of selecting an evaluator.

**Operator
Evaluator Selection
Process**



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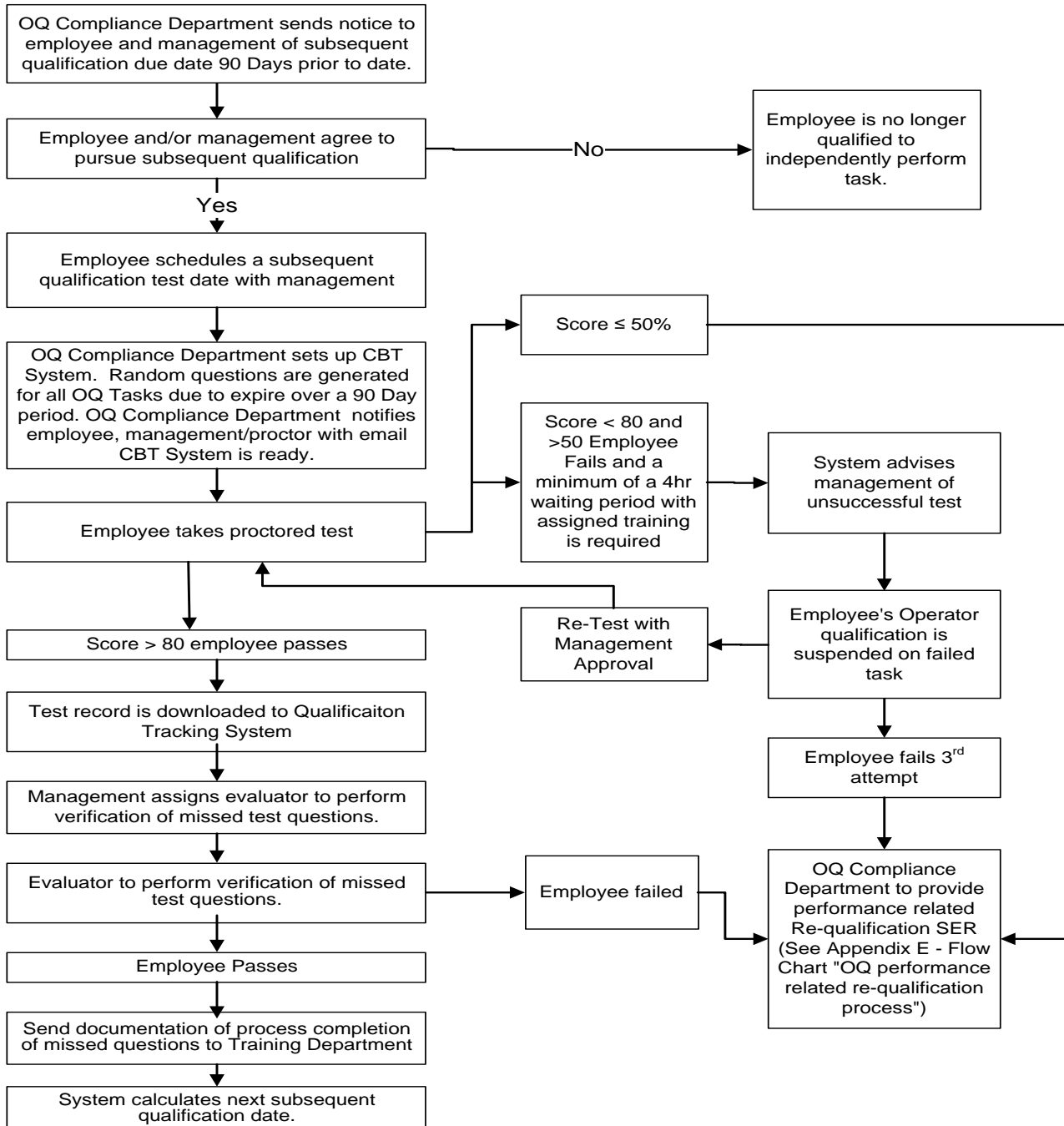
Appendix C: This appendix describes the process of qualifying an individual for OQ Tasks after October 28, 2002.
Operator Qualification



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Appendix D: Subsequent Qualification The following chart describes the process for subsequent qualification. Computer Based Testing Administrative Guidelines for subsequent evaluations are provided on the next page.



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Computer Based Testing Administrative Guidelines for Subsequent Evaluations

The Computer Based Testing (CBT) subsequent evaluation process for OQ qualifications is coordinated by a Company Representative (Operations Manager / Supervisor) and administered by a proctor assigned by Company Management. The roles of the Company Representative and proctor are detailed below.

As the CBT testing sessions are scheduled and proctors are assigned, the OQ / Tech Training Department, will upon request, provide a list of employees by location and associated OQ Tasks / tests listed by employee to the respective Operations Manager for their review. The Operations Manager notifies the OQ / Tech Training Department if any of the tasks / tests are not legitimate for the employee. The Operations Manager coordinates the testing for each employee.

The proctor helps the employee log into the Test Generator and answer questions associated with the process but is not allowed to address any of the test questions or related content.

The CBT based subsequent evaluation is a multi-question test (actual test questions may vary) as determined specifically for each task by OQ Subject Matter Expert (SME) groups, i.e., Corrosion, Pipeline/Welding, Controls / Measurement.

The only reference materials allowed to be present during the test are those deemed appropriate by the SME task group, and the company employee must be observed by a proctor as the exam is taken. No phone conversations or outside contact other than with the proctor is allowed during the testing process.

NOTE: The test administration is the responsibility of the proctor and employee's Operations Manager (OM) / immediate supervisor to ensure the integrity of the test.

The test questions are multiple choice and true/false with the SME groups determining any mandatory and optional questions. The target is 10 questions per OQ task.

The overall pass/fail score for all questions combined is 80% correct.

If the company employee's score is 80% or greater, they are immediately qualified to continue to complete covered task work. Their qualification date is reset in the Qualification Database to reflect passing the subsequent evaluation test and to reset the OQ task expiration date for this employee.

If the employee's score is 80% or greater, the test generator automatically emails the test score and any missed questions along with the correct answers to the effected employee's Operations Manager / immediate supervisor. The Operations Manager / immediate supervisor arranges for the review of those questions missed with the employee at the earliest opportunity to verify complete understanding of the task being tested, not just the questions that were answered correctly.

If the employee scores less than 80% on the CBT exam, the test generator automatically downloads the failed test results to the Qualification Database and he/she is disqualified for that task until the test is passed. If the failed test was between 60% and 70%, the Operations Manager / immediate supervisor arranges remedial training before the employee retakes the test, which can be no sooner than four (4) hours from the each failed attempt. The CBT cannot be attempted by the employee more than three times. If any failed test score is 50% or below, the employee is required to complete any assigned / applicable training and a full evaluation of that task by an SME with a mandatory three day waiting / training period.

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Company Representative Description

The Company Representative (Operations Manager / Supervisor) is a person that coordinates the OQ Subsequent Evaluation CBT tests for the Company.

Role of the Company Representative

The role of the Company Representative (Operations Manager) is to coordinate the OQ Subsequent Evaluation Computer Based tests for the Company field operations employees, i.e.:

- Ninety days prior to each tasks due date, via the Test Generator, the OQ / Tech Training Department provides the Company Representative (Operations Manager) and the employee to be tested, a notification of the specific task test and it's due date for subsequent evaluation
- The Company Representative (Operations Manager) coordinates the OQ Subsequent Evaluation tests with the assigned employees to verify tests are taken before the subsequent evaluation due date, realizing that only 50 people can be logged on to the Test Generator at one time.
- The Company Representative (Operations Manager) contacts the OQ / Tech Training Department if any problems occur with the testing process.

Proctor Description

The proctor is a person assigned by Company Management to administer the OQ Subsequent Evaluation CBT tests. The proctor can be a Director of Operations, Operations Manager, Administrative person, SME, or contract person hired for that specific purpose. The person proctoring the test does not need to be familiar with the discipline being tested, just with the role of the proctor and the CBT Administrative Guidelines.

Role of the Proctor

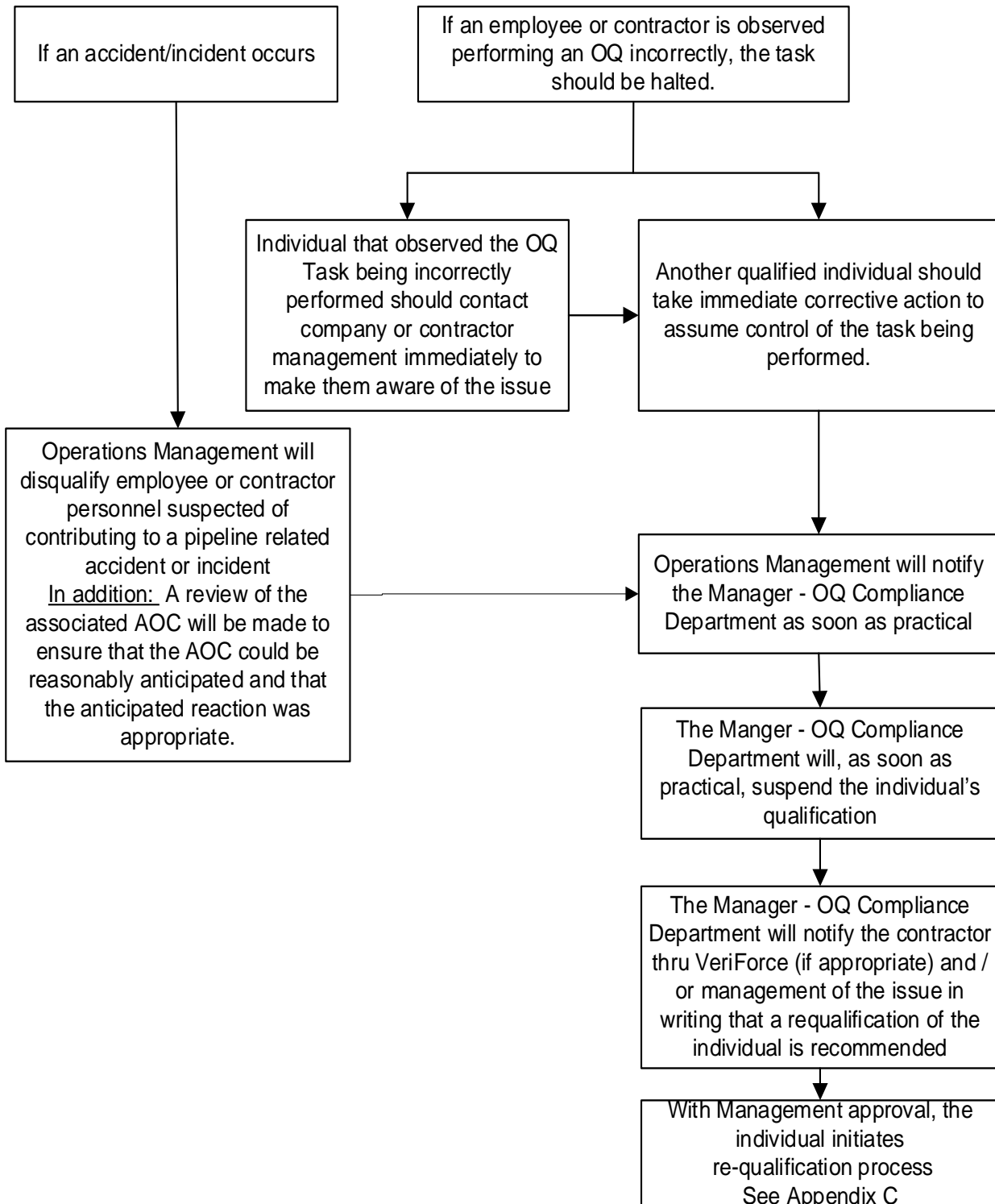
The role of the proctor is to administer and verify the integrity of the OQ Subsequent Evaluation CBT tests, i.e.:

- The Operations Manager provides computers in an appropriate environment for the proctor to administer the CBT test.
- A list of employees needing to take OQ Subsequent Evaluation CBT tests is provided to the proctor.
- The proctor will:
 - check the ID of the employee(s) prior to beginning the test if not already acquainted with him / her
 - explain the Administrative Guidelines for the testing process to the employee(s) taking the test and remain in the room while the employee(s) is testing.
 - help the employee(s) log in to the Test Generator Program and navigate to the proper test
 - log in to the Test Generator Program to document who proctored the tests
 - make sure that only the approved reference materials are available to the employee(s) during the testing process
 - make sure that conversation with the employee(s) is limited to the proctor and only concerning the administration of the test
 - no phone calls, incoming or outgoing (the only exception is for an emergency situation)
 - seek the direction from the OQ / Tech Training Department to answer any questions that may occur during the CBT process that are not covered by the Administration Guidelines.

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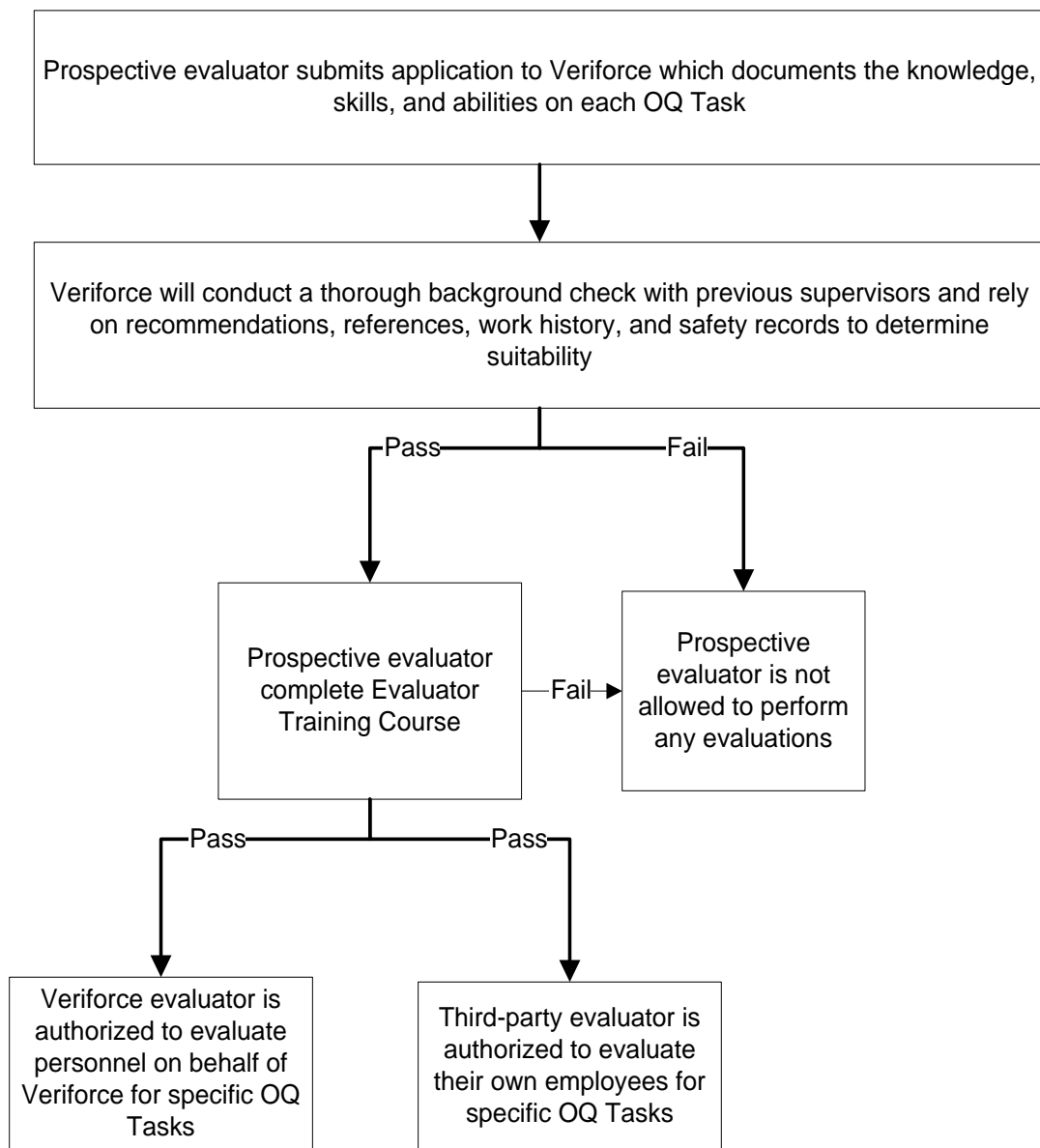
Appendix E: **Performance Related Requalification Process** This appendix describes the process of re-qualifying an individual for OQ Tasks after an individual is involved in an accident or incident or after the individual is observed performing an OQ Task incorrectly.

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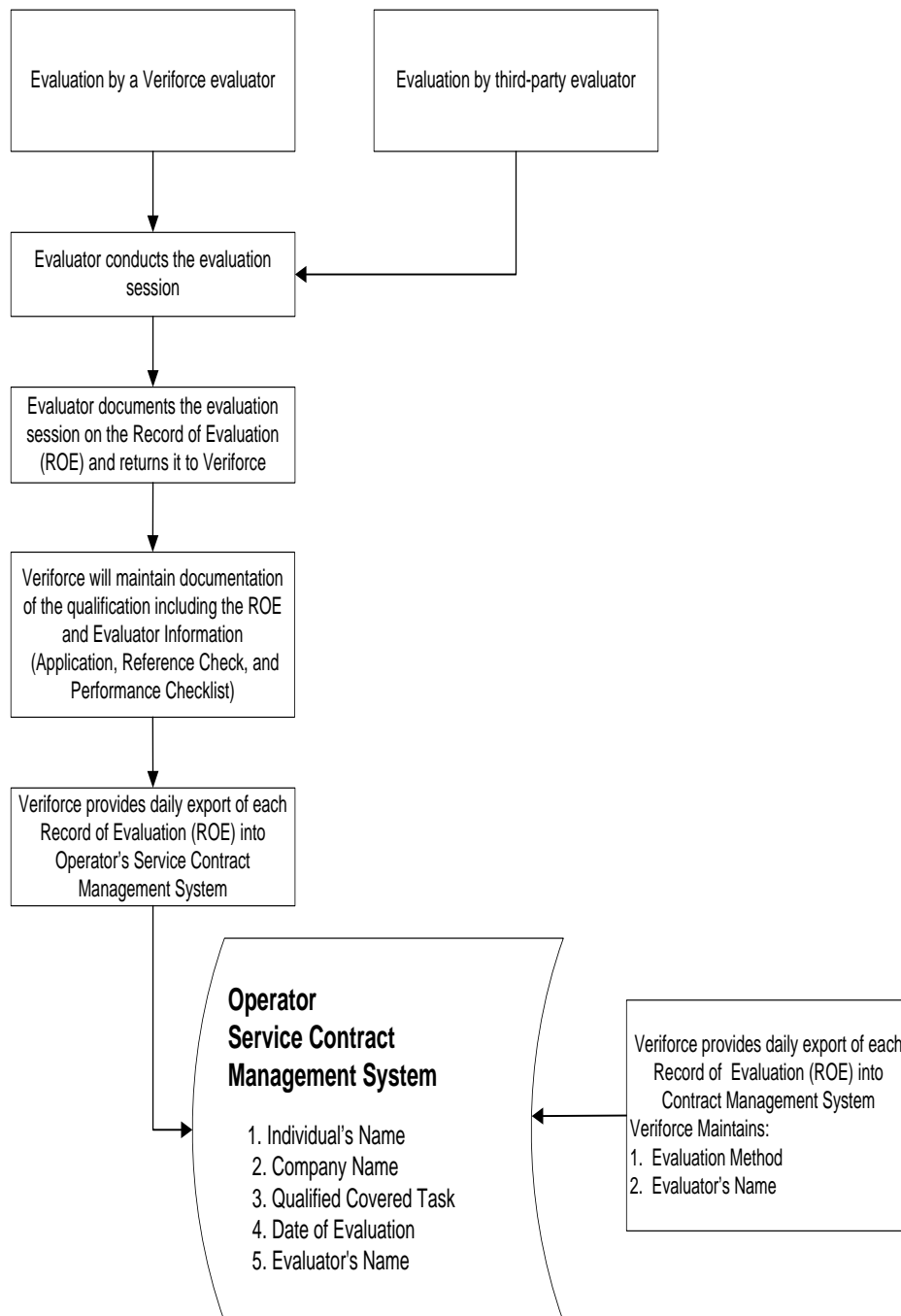
Code Reference :	Procedure No.: HLA.18	
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Appendix F: This appendix describes the process Veriforce uses to authorize evaluators.
Veriforce Evaluator Authorization Process



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Appendix G: This appendix describes how to qualify contractors.
Contractor Qualification Process



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Appendix H: This appendix describes how to create a Work Offer for an OQ Task.
Work Offer Creation - OQ Tasks

