



**U.S. Department of the Interior  
Bureau of Land Management  
Colorado State Office**

**Glenwood Springs Energy Office**



**ETC CANYON PIPELINE, LLC  
PLAN OF DEVELOPMENT  
FOR  
SPRUCE CREEK TO MAMM CREEK PIPELINE**



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Drafted by Wagon Wheel Consulting, Inc.  
for the  
Glenwood Springs Energy Office  
2425 South Grand Avenue, Suite 101  
Glenwood Springs, Colorado 81601

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## 1. INTRODUCTION

This Plan of Development (POD) describes measures to be taken by the ETC Canyon Pipeline, LLC (Company) and its contractors (Contractor) during construction, operations, and maintenance of the 10.9 mile proposed Spruce Creek to Mamm Creek Pipeline Project (project). Preparation of the POD is required by the Bureau of Land Management (BLM) with the primary objective being to establish procedures for mitigation of potential environmental impact associated with the project.

### 1.1 PURPOSE AND NEED FOR THE POD

The purpose of this POD is to provide guidelines for the construction and future operations and maintenance of the project in compliance with mitigation measures set forth in the project's Final Environmental Assessment (EA). The audience for the POD consists of construction contractors, environmental and construction inspectors, and operations and maintenance personnel. The POD contains general information on the project and is not intended as a stand-alone document. Detailed information concerning specific project-related activities, such as fire prevention and suppression, soil conservation and erosion control, and stream crossing and wetlands protection are provided in the POD appendices.

### 1.2 OVERVIEW OF THE POD COMPONENTS

The POD contains an introduction, and a detailed discussion of the proposed construction activities. In addition, the following environmental compliance plans are attached to the POD as appendices.

- Appendix A: Environmental Management
- Appendix B: Soil Conservation, Sedimentation, and Erosion Control Plan
- Appendix C: Stream Crossing and Wetland Protection Plan
- Appendix D: Pressure Testing Plan
- Appendix E: Reclamation Plan
- Appendix F: Fire Prevention and Suppression Plan
- Appendix G: Hazardous Materials Management and Spill Prevention and Countermeasure Plan
- Appendix H: Safety Plan
- Appendix I: Project Maps

### 1.3 PROJECT OVERVIEW

The project consists of approximately 8.1 miles of 24 inch and 2.8 miles of 12 inch diameter buried, steel, natural gas pipeline and related valve facilities. The 24" pipeline section begins at an existing 24" pipeline interconnect located in Section 9, Township 7S, Range 94W and terminates at a point in Section 16, Township 7S, Range 93W. The 12" pipeline section will begin at the termination point of the 24" pipe in Section 16, Township 7S, Range 93W and will terminate within Section 29, Township 7S, Range 93 W, on Forest Service Lands. The pipeline will reside totally within Garfield County, Colorado. Of the total 10.9 miles of pipeline, approximately 6.1 miles will be installed on BLM lands and 1.8 miles on Forest Service lands. The remaining 3.0 miles will be on private fee properties. Construction may occur with two construction spreads (one spread

on 12” and one spread on 24”) and is scheduled to start in early summer, 2009, with the completion of construction approximately 14 to 16 weeks later.

ETC Canyon Pipeline, LLC has requested a 40ft permanent ROW width along with an additional 35ft of temporary construction ROW. The pipeline will be installed immediately adjacent to existing pipelines and/or roads where possible. Three temporary, staging areas are proposed for use during mobilization and demobilization of equipment and for the delivery of pipe and materials. ROW agreements, to include one 2 acre staging area located on Savage property. A second staging area is needed at the termination point of the 24” pipeline, near Grass Mesa. ETC is currently negotiating w/ EnCana for the permission to temporarily utilize a portion of an existing well pad for the unloading of pipe during the construction phase. The third staging area will be located on Youberg property near the proposed Beaver Creek bore. A metering facility and launcher/receiver and associated valve set will be installed as above ground appurtenances, on Forest Service lands at the southern termination point of the 12 inch section. A Temporary Use Area (TUA) consisting of an additional 25 feet on either side of the proposed right-of-way is needed for the pipeline construction through Porcupine Creek due to the steepness of the slopes, which require additional workspace for the temporary storage of spoil material and the protection of topsoil. A flume will be installed in the creek channel so as not to impede water flow during construction. The pipeline will be operated on a year-round basis.

The 24 inch and 12 inch diameter pipeline will offset the existing pipeline by a distance of 20 feet and will be installed at a depth so as to allow for 36 inches of cover above the top of the pipe. Where irrigation ditches are encountered, ETC plans to use a “bore” technique to cross under the ditches in order to maintain water flow and to prevent damage to the integrity of the ditch. The bore technique will also be utilized to install the pipeline under Beaver Creek to protect the Rifle Watershed and potential trout habitat. The pipeline will be installed in compliance with all BLM and private landowner stipulations.

#### 1.4 PURPOSE AND NEED

NEED FOR PROPOSED ACTION: ETC Canyon Pipeline is proposing to install a 24-inch and 12 inch gas gathering pipeline to expand the current natural gas gathering infrastructure in order to provide a gathering and transportation system to developing gas producing fields within the area. The total line capacity of the pipeline will be approximately ~300 million standard cubic feet per day. In the initial operating phase, the proposed pipeline will gather and transport ~100 million standard cubic feet per day of natural gas at expected operating pressures. The actual gas volumes will be dependant upon available produced gas and operating pressures. The pipeline will connect to the recently constructed 24 inch ETC South Parachute Loop pipeline, which will deliver produced gas to interconnects located north of Parachute, CO. The proposed 24” & 12” pipeline is designed to handle anticipated increases in natural gas production from wells currently being drilled as well as future wells to be drilled by operators in this area. The larger diameter of the pipeline (24”) will provide increased gathering capacities in order to serve other potential gathering contracts farther to the east as existing pipeline infrastructures continue to experience maximum capacities.

The pipeline alignment selected is immediately adjacent to existing pipelines and roads where possible. Impacts to new disturbed areas will be minimized or avoided where feasible.

TRAFFIC IMPACT: Traffic along private, county and Forest Service roads will increase due to construction activities. Measures will be taken to minimize this impact through scheduling and limiting access to the pipeline right-of-way. Actual construction of the pipeline will take place in four (4) phases. Anticipated “Traffic Impact” for each phase is as follows:

Phase #1 – Right-of-Way Clearing and Trenching:

Construction personnel = 12                      Vehicles = 4  
Inspection personnel = 4                      Vehicles = 4  
Heavy haul Trucks = 3                      Trips = 3 ea.  
Phase #1 Duration = 5 weeks (6days/week, 10 hrs/day)  
Percent of County Rd. 309 impact = 20%  
Percent of County Rd. 320 impact = 20%  
Percent of County Rd 329 impact = 20%  
Percent of County Rd 317 impact = 20%  
Percent of County Rd 319 impact = 20%

Phase #2 – Weld and Install Pipeline

Construction personnel = 72                      Vehicles = 10 (includes 2 buses)  
Inspection personnel = 4                      Vehicles = 4  
Heavy haul Trucks = 6                      Trips = 1 ea.  
Phase #2 Duration = 6 weeks (6 days/week, 10 hrs/day)  
Percent of County Rd. 309 impact = 20%  
Percent of County Rd. 320 impact = 20%  
Percent of County Rd. 329 impact = 20%  
Percent of County Rd. 317 impact = 20%  
Percent of County Rd 319 impact = 20%

Phase #3 – Hydrotest Pipeline:

Construction personnel = 9                      Vehicles = 3  
Inspection personnel = 1                      Vehicles = 1  
Test Water Transport Trucks = 87  
Phase #3 Duration = 2 Days  
Percent of County Rd 309 impact = 20%  
Percent of County Rd 320 impact = 20%  
Percent of County Rd. 329 impact = 20%  
Percent of County Rd 319 impact = 40%

Phase #4 – Right-of-Way Cleanup and Reseeding

Construction personnel = 12                      Vehicles = 4  
Inspection personnel = 4                      Vehicles = 4  
Heavy haul Trucks = 3                      Trips = 3 ea.  
Phase #4 Duration = 3 to 5 weeks (6 days/week, 10 hrs/day)  
Percent of County Rd. 309 impact = 20%  
Percent of County Rd. 320 impact = 20%

Percent of County Rd. 329 impact = 20%  
 Percent of County Rd. 317 impact = 20%  
 Percent of County Rd 319 impact = 20%

All vehicles will be licensed to meet DOT regulations. All permits will be obtained as required by Garfield County for trucking of heavy and/or wide loads. Dust control will be a daily construction activity taken to mitigate any public impact.

**STAGING AREAS:** Right-of-way agreements, which include staging areas, are being obtained on Youberg and Savage Properties for staging of valve set materials, tool trailers, and pipe for construction of the pipeline. An additional staging area is requested on BLM land located in Section 16, in the Grass Mesa area. Equipment will only remain within the staging areas for a minimal time period. Once the pipe has been strung for welding along the right-of-way, the staging areas will no longer be used. Rehabilitation and reseeding measures will be taken on all staging areas following construction.

**AIR FOR PRESSURE-TEST:** Air compressor equipment will be trucked to the ROW by a qualified service company to load and pressure up the pipeline to the required test pressure. The test pressure will be in accordance with DOT specifications in order to achieve a maximum operating pressure (MAOP) of 1220 psi. Once the pressure test has been successfully completed, the air will be vented to the atmosphere at designated locations.

## 1.5 REGULATORY PERMIT REQUIREMENTS

The following sections outline the basic regulatory process that the project must complete prior to the start of construction. Table 1 contains a list of agency permits and actions. A detailed listing of highway crossing permits and other non-discretionary permits is not included.

### 1.5.1 Environmental Compliance Activities

ETC Canyon Pipeline, LLC applied to the U.S. Department of the Interior, BLM for ROW grants and permits to cross federal lands managed by the BLM and Forest Service. The BLM in accordance with the National Environmental Policy Act (NEPA) is preparing an Environmental Assessment addressing construction and operations impacts and appropriate mitigation measure requirements.

### Agency Permits and Actions

<b>Agency Name</b>	<b>Permit/Action driving task</b>	<b>Task</b>
Bureau of Land Management	Finding of No Significant Impact (FONSI) / Notice to Proceed	Application Preparation

Bureau of Land Management	Finding of No Significant Impact (FONSI) / Notice to Proceed	Plan of Development
Bureau of Land Management	Finding of No Significant Impact (FONSI) / Notice to Proceed	Threatened and Endangered Resource Clearances
Bureau of Land Management	Finding of No Significant Impact (FONSI) / Notice to Proceed	Cultural Resource Clearances
Bureau of Land Management	Finding of No Significant Impact (FONSI) / Notice to Proceed	Paleontology Clearances
US Army Corps of Engineers	404 CWA Permit	Verification of coverage under NWP #12
Garfield County	Administrative Permit & Road & Bridge Road Crossing Permits	Application to include Plan of Development and required documentation
Storm Water Discharge Permit	State of Colorado CDPHE	Approved Permit On File
Watershed Permit	City of Rifle	Application to include Plan of Development and required documentation
Road Use Permit	Forest Service	Application pending survey

During construction, operations, and termination of the project, a copy of the complete BLM ROW Grant, including all stipulations and the approved POD, will be available at the construction office. Also, the Environmental Inspector will carry a copy of the complete BLM ROW Grant including all stipulations and the approved POD. The Company will obtain all required federal, state, and local permits. In addition to complying with the requirements in these permits, the project will also abide by the valid existing rights of all permittees, licensees, ROW holders, leases, mining claimants, and any other holders of valid authorizations on BLM lands traversed by the project.

During construction, should the Contractor identify an area requiring additional workspace not previously authorized, the Contractor will provide the company with the

necessary information for submittal to the BLM for a Temporary Use Permit or other authorization as applicable. Contractor will limit ROW clearing and usage to the minimum required area for construction operations.

## 2. PROJECT PARTICIPANTS

### 2.1 PRIMARY PROJECT PARTICIPANTS

Key participants in the project will include personnel from ETC Canyon Pipeline, the BLM (the lead agency), and the Contractor.

#### 2.1.1 Project Personnel

ETC Canyon Pipeline, LLC. has identified specific positions and personnel for the project with authority to receive, act upon, and implement instructions from the BLM.

Overall management of the project will be performed by ETC Canyon Pipeline. The ETC Project Manager will be responsible for all consultants and actions relating to the environmental management program. ETC's Construction Inspector will be responsible for all inspection activities except environmental inspection.

#### 2.1.2 Construction Personnel

The pipeline spread will be constructed by a pipeline contractor who will have a Construction Manager located at the spread's construction yard. The pipeline Construction Manager will coordinate with the ETC Project Manager.

#### 2.1.3 Agency Personnel

The Glenwood Springs Field Offices of the BLM is responsible for all activities on the federal lands. The Glenwood Springs Field Office Authorized Officer is the contact person for the Project.

## 3. PROJECT FACILITIES

The project consists of permanent project facilities as well as temporary project facilities that will be necessary only during construction of the project. A 75-foot wide work area will be required on Federal land during construction, of which 40 feet will be maintained as a permanent pipeline ROW. On private land right of way, a 75-foot wide work area will be required during construction, of which 40 feet will be maintained as a permanent pipeline ROW. Other permanent project facilities include launchers, receivers, block valves, pipeline markers, and CP test stations. Permanent project facilities are discussed in greater detail below.

### 3.1 PERMANENT PROJECT FACILITIES

#### 3.1.1 Facility Siting, Engineering, and Design

An above ground facility, consisting of a launcher/receiver and custody transfer meter is requested at the most southern in of the pipeline, within Section 29. This

facility will reside within the 40' permanent right-of-way. The 12" pipeline will connect to the existing 8" Laramie pipeline at this point.

The pipeline route has been selected to avoid as many areas of special concern as possible. These special areas include areas of critical environmental concern, cultural resource areas, paleontology resource areas, and areas of high visual quality. Other specific measures that have been implemented during the routing of the ROW include the following.

- ♦ The pipeline will be installed adjacent to existing pipeline corridors where possible.
- ♦ When engineering and routing conditions permit, streams will be crossed perpendicular to the channel to minimize length of disturbance.

Current land uses along the ROW include primarily rangeland and pasture lands. The pipeline ROW does not cross recreational land.

The design of the project's pipeline will be in conformance with the requirements of Title 49 Code of Federal Regulations (CFR), Part 192, "Regulations for the Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards" U.S. Department of Transportation (DOT) regulations.

#### 4. CONSTRUCTION ACTIVITIES

The following section provides a description of each phase of standard construction along the ROW.

##### 4.1 CONSTRUCTION SCHEDULE

Construction activities will occur over an estimated 14 to 16 week period. Construction will begin with pipeline ROW clearing in early summer, 2009, and end with pressure testing in October 2009. Assuming a reasonable construction kickoff date, expedient construction progress, and limited weather-related delays, the reclamation and restoration of the ROW should be completed by mid October 2009.

No residential areas are directly affected by the proposed pipeline project, however, construction activities, except for pressure testing, will only occur between the hours of 7 A.M. and 5 P.M., six days a week (usually Monday to Saturday).

##### 4.2 PROJECT AREA SURVEYING AND STAKING

###### 4.2.1 Pre-Construction Phase

Information from pre-construction surveys was used to help locate project facilities. Resources identified include sensitive plant populations; cultural, archeological, paleontological resources; and wetlands and streams. Mitigation for sensitive areas that cannot be avoided is addressed in environmental compliance plans included in this document (e.g., Reclamation Plan, Stream Crossing and Wetland Protection Plan, and other general and site-specific environmental compliance plans).

#### 4.2.1.1 Buried Utility Crossings

Although not anticipated, buried utility crossings may require extra workspace in order to store the additional subsoil material removed to place the pipe below the existing utility. Required utility line separations are determined on a case-by-case basis in coordination with the affected utility company prior to construction.

#### 4.2.1.1 River, Stream, and Wetland Crossings

River, stream, and wetland crossings typically require extra work space areas on both sides of the crossing. These temporary work space areas are required for topsoil separation, pipe storage and additional subsoil storage resulting from grading down of banks. TUA's are also necessary when additional pipe burial depths require deeper trenches, and therefore additional subsoil storage requirements. A TUA, consisting of 25 feet on either side of the right-of-way, has been requested in Porcupine Creek. ETC plans to bore Beaver Creek at an angle which will allow the pull-back section of pipe to be staged within the approved work space.

On perennial stream and wetland crossings on private and state lands, staging areas will be located at least 50 feet from the stream bank or wetland boundary to maintain a buffer zone and avoid water.

#### 4.2.2 Construction Phase

The civil engineering surveys will be performed by Topographic Survey Company, to identify the centerline of the pipeline and the boundaries of both sides of the approved working limits before construction activities occur in an area as follows:

- ♦ On private lands – Chaining stakes will be set at 200-foot intervals along the centerline. In addition to the stakes, flagged or painted lath will be set at 400-foot intervals (maximum), or as required to maintain line of sight, along the proposed centerline. The edges of the work limits will be marked at 200-foot intervals (maximum), or as required to maintain line of sight, with flagged or painted lath. All extra workspace will be marked in a similar fashion and all four corners of each extra workspace will be marked by a flagged or painted lath.
- ♦ On federal lands – Chaining stakes will be set at 200-foot intervals along the centerline. In addition to the stakes, flagged or painted lath will be set at 400-foot intervals (maximum), or as required to maintain line of sight, along the proposed centerline. The edges of the work limits will be marked at 100-foot intervals (maximum), or as required to maintain line of sight, with flagged or painted lath unless greater spacing is granted by the Authorized Officer's field representative. Extra workspace will be marked in a similar fashion and all four corners will be marked by a flagged or painted lath. Extra workspace

on steep slopes (greater than 40 percent) and at staging areas (stream, wetland, and river crossings) will be staked at 50-foot intervals.

Environmental Inspectors will be responsible for verifying that the limits of authorized construction work areas are staked and approved access roads are signed prior to construction.

#### 4.3 PIPELINE CONSTRUCTION SEQUENCE

The following sections include general descriptions of the various pipeline construction phases. Also included in these sections are specific applicable mitigation requirements that will be implemented by the Contractor. The following operations are typical in a construction spread.

##### 4.3.1 Clearing and Grading

Clearing, grading, and other disturbance of soil and vegetation will be limited to the minimum area required for safe construction operations within the approved ROW and extra workspaces. Root systems will be left in place where feasible and where they will not pose a safety concern for workers or an impediment to equipment or rubber-tired vehicle access. The herbaceous vegetative crown will be maintained to the extent possible where blading of the ROW and extra workspaces are not necessary. Once clearing has been performed to remove any obstacles or debris, grading will follow to remove the topsoil and surface rock, and stockpile it within the edge of the ROW for redistribution following construction. Where the ROW parallels existing pipelines, the topsoil will be placed over the existing pipelines so as to insure that topsoils are not mixed with trench spoils.

All brush and other materials that are cleared will be windrowed within the ROW or in temporary use areas. Following construction, these materials will be dispersed over the ROW to impede future access along the ROW and to provide wildlife habitat unless ROW stipulations dictate otherwise. Trees and rocks will be voided of dirt and strategically placed on ROW to impede future access.

##### 4.3.1.1 Clearing and Grading Requirements

The Environmental Inspector will ensure that the Contractor implements the following mitigation measures during clearing and grading operations:

- ♦ Clearing will be performed to preserve roots to the extent practicable, stockpile or dispose of vegetation wastes to maintain stability of the site, and provide erosion control. Trees will be cut with chain saws and/or mechanical shears/saws. Brush will generally be cut with a chain saw or similar equipment. Steep slopes will be graded properly to minimize erosion. Specific erosion control measures to be implemented are detailed in the Soil Conservation, Sedimentation, and Erosion Control Plan.

- ♦ Vegetation cut during clearing operations will be stockpiled on the ROW (timber, etc.). In some cases trees, stumps, or slash may be scattered back over the ROW after seeding to aid in erosion control, and to block access along the ROW.
- ♦ In order to reduce the amount of soil exposed to erosion, the Contractor will 1) minimize cuts and fills, and 2) will not use cut and fill construction techniques unless slopes exceed three percent where feasible. Topsoiling requirements are included in the Soil Conservation, Sedimentation, and Erosion Control Plan.
- ♦ Cleared vegetation will be disposed of as directed by the BLM's field representative on federal lands. Where feasible and when agreed to by the BLM field representative, the Contractor may use slash for on-site reclamation. Placement of slash will not interfere with other reclamation activities including seeding and planting.
- ♦ On state and private lands, cleared vegetation will be disposed of as requested by the property owner and approved by the Environmental Inspector.
- ♦ Pinyon or Juniper tree removal on BLM land may require a permit. The environmental inspector will coordinate with BLM to determine necessity of said permit.

#### 4.3.2 Trenching

Construction methods used to excavate a trench will vary depending on soils, terrain, and related factors. Where possible, rotary-trenching machines will be used. In situations such as steep slopes, unstable soils, high water table, or deep or wide trench requirements, conventional track type backhoes will generally be used.

Measures will be taken to ensure that access is provided for property owners or tenants to move vehicles, equipment, and livestock across the trench where necessary. Adequate precautions will also be taken to ensure that livestock are not prevented from reaching water sources because of the open trench. Measures to be taken include contacting livestock operators, providing adequate crossing facilities, or other measures as needed.

Contractor will also ensure that every half-mile that there is either a natural egress ramp in the trench (stream or road crossing) or a soft or hard plug ramp for wildlife and cattle to escape from the trench.

A typical trench will be excavated approximately 36 inches wide at the bottom and the sides will be sloped to Occupational Safety and Health Administration (OSHA) specifications. The depth of the trench will be approximately 66 to 72 inches deep; however, it will vary with the conditions encountered. The cover from top of pipe to ground level as graded to finish ROW will be in conformance with DOT regulations. Occasionally, the trench will be excavated to depths

greater than the minimum values specified. Greater depths of cover will be required at unpaved road crossings, foreign pipeline crossings, streams, or other obstructions. As a minimum, the trench will be excavated to a depth to allow a clearance of 24 inches between the ETC pipeline and other pipelines or underground facilities. Machine excavation will not be performed closer than 10 feet from any existing pipeline encountered in the ROW unless authorized by the pipeline owners/operators. Existing pipeline locations will be marked in the field and 48-hour prior notification given to the operator of the underground utility.

Pipeline crossings of unsurfaced, lightly traveled, or rural roads will be made with a mechanical ditching machine or a backhoe. Installation at these locations, including cleanup and restoration of road surfaces, will usually be completed within one day. In such cases, provisions will be made to detour or control passage of traffic during construction.

Where rock is encountered, tractor-mounted mechanical rippers or rock trenching equipment may be used to facilitate excavation.

#### 4.3.2.1 Trenching Requirements

ETC Canyon Pipeline, LLC Environmental Inspector will ensure that the Contractor implements the following mitigation measures during trenching operations:

- ♦ Trenching will be performed to minimize disturbance to soils generally by using a backhoe or trenching machine. Topsoiling requirements are included in the Soil Conservation, Sedimentation, and Erosion Plan.
- ♦ No trench within 250 feet of a residence will be left open for more than three days.

#### 4.3.3 Boring

Boring techniques will generally be used under Garfield County roads to avoid disrupting traffic in accordance with the governing agency requirements and permitting agreements. For both cased and uncased crossings, the auger boring technique and the directional boring technique described below will be implemented.

The auger boring technique involves excavating a bore pit on one side of the crossing and a receiving pit on the other side and utilizes an auger and power unit mounted on rails or a side boom suspended boring machine attached to a deadman. The power unit drives the auger inside a heavy wall pipe casing segment until the power unit reaches the leading edge of the bore pit. The power unit is disconnected from the auger, backed up, and a segment of the carrier pipe is welded to the casing segment already driven. Additional auger and carrier pipe segments are added successively until the bore reaches the other side of the crossing in the receiving pit. Soil excavated by the auger is removed from the pit by a backhoe. Once through, the power unit backs out the auger one segment at a

time, leaving the gas pipeline in place under the crossing. In the receiving pit, the casing segment is removed for use at the next crossing.

The directional boring technique involves using a hydraulic powered machine to drill a near horizontal bore hole for great distances. This method utilizes conventional drill bits attached to drill pipe in order to drill a bore hole for the required length. Drilling muds (Bentonite) are pumped through the drill bit and in turn carry cuttings back along the drill pipe and are then recovered into tanks located at the power unit. All drilling muds are then filtered and recycled. Once the bore hole has been drilled to the desired length, the drill bit is removed and a backreamer is attached to the drillpipe. The backreamer is pulled back through the bore hole to clean and size the hole. Multiple sizes of backreamers are pulled through the borehole until the desired hole size is achieved. Once the final backreamer has been pushed through, the pre-welded and tested carrier pipe is then attached to the backreamer and pulled through the bore hole. The carrier pipe is then welded to the main pipeline at each end.

The Beaver Creek crossing will be bored utilizing a conventional, auger bore. Care will be taken not to allow equipment travel across the stream nor will debris or sedimentation be allowed to reach the stream as a result of construction activities.

#### 4.3.4 Pipe Installation

Pipe installation will include stringing, bending for horizontal or vertical angles in the alignment, welding the pipe segments together, x-ray/inspection, coating the joint areas to prevent corrosion, and then lowering-in and padding as described in greater detail below.

##### 4.3.4.1 Stringing

Line pipe will be shipped directly from the manufacturer by trucks to the ROW. Each individual joint of pipe will be unloaded by cranes or tractors equipped with side booms and slings, and strung parallel to the trench. Sufficient pipe for road or stream crossings will be stockpiled at staging areas near the crossings.

Stringing operations will be coordinated with trenching and installation activities to properly manage the construction time at a particular tract of land. Gaps will be left at access points across the trench to allow crossing of the ROW.

##### 4.3.4.2 Bending

After the joints of pipe are strung along the trench but before the joints are welded together, individual joints of the pipe will be bent to accommodate horizontal and vertical changes in direction. Field bends will be made utilizing a hydraulically operated bending machine. Where the deflection

of a bend exceeds the allowable limits for a field-bent pipe, factory (induction) bends will be installed.

#### 4.3.4.3 Welding

After the pipe joints are bent, the pipe is lined up end-to-end and clamped into position. The pipe is then welded in conformance with 49 CFR Part 192, Subpart E. “Welding of Steel Pipelines” and API 1104, “Standard for Welding Pipelines and Related Facilities,” latest edition.

#### 4.3.4.4 X-Ray Inspection

All welds will be visually inspected by a qualified inspector and by non-destructive radiographic methods. At a minimum, radiographic inspection will be conducted in accordance with DOT requirements. A specialized contractor, certified to perform radiographic inspection, will be employed to perform this work. Any defects will be repaired or cut out as required under the specified regulations and standards.

#### 4.3.4.5 Coating

To prevent corrosion, the pipe will be externally coated with fusion bonded epoxy coating prior to delivery. Power Creet coated pipe will be installed in all bore locations. After welding, field joints will be sandblasted, flocked and coated with a synergy coating. Before the pipe is lowered into the trench, the pipeline coating will be visually inspected and tested with an electronic detector, and any faults or scratches (“holidays”) will be repaired.

#### 4.3.4.6 Lowering-In and Padding

Once the pipe coating operation has been completed, a section of the pipe will be lowered into the trench. Side-boom tractors will be used to simultaneously lift the pipe, position it over the trench, and lower it in place. Inspection will be conducted to verify that minimum cover is provided; the trench bottom is free of rocks, debris, etc.; external pipe coating is not damaged; and the pipe is properly fitted and installed into the trench. Specialized padding machines will be used to sift soil fines from the excavated subsoils to provide rock-free pipeline padding and bedding. In rocky areas, padding material or rock shield will be used to protect the pipe.

### 4.3.5 Backfilling

Backfilling will begin after a section of the pipe has been successfully placed in the trench and final inspection has been completed. Backfill will be conducted using a bulldozer, rotary auger backfiller, padding machine or other suitable equipment. Backfilling the trench will generally use the subsoil previously excavated from the trench, except in rocky areas where imported select fill material maybe needed. Backfill will be graded and compacted, where necessary

for ground stability, by being tamped or walked in with a wheeled or track vehicle. Compaction will be performed to 95% maximum density as determined by AASHTO T-99. Backfill of trenches will not be performed where the soil is frozen to the extent that large consolidated masses are formed that will not “break down”. Contractor will then re-spread the topsoil to return the surface to its original grade. In agricultural areas, the Environmental Inspector will test the backfill to ensure that it has been replaced at the same compaction density as the adjacent undisturbed soil. Any excavated materials or materials unfit for backfill will be utilized or properly disposed of in conformance with applicable laws or regulations.

#### 4.3.5.1 Backfilling Requirements

ETC Canyon Pipeline, LLC, Construction Inspector and Environmental Inspector will ensure that the Contractor implements the following mitigation measures during backfilling operations:

- ♦ Trench breakers, to prevent groundwater migration, will be constructed as defined in the project’s Soil Conservation, Sedimentation, and Erosion Control Plan. The project’s Construction Inspectors will approve locations in the field sites.

#### 4.3.5.2 Backfilling Requirement Variance Request

The Contractor will place a mound over the trench approximately 0.5 feet to account for subsidence. On federal lands, a variance is required to eliminate the mound. On private lands, written authorization from the property owner is required to eliminate the mound.

#### 4.3.6 Pressure Testing

The entire pipeline will be tested in compliance with DOT regulations (49 CFR Part 192). Prior to filling the pipeline for a pressure test, each section of the pipeline will be cleaned by passing reinforced poly pigs through the interior of the line. Incremental segments of the pipeline will then be filled with compressed air to the desired maximum pressure, and held for the duration of the test (8hrs. minimum).

The compressed air will be discharged into the atmosphere following the completion of the test.. Notification to all nearby residents as well as the Garfield County Dispatch Center will be made prior to the pressure test and blow down.

#### 4.3.6.1 Pressure Testing Requirements

ETC Canyon Pipeline, LLC, Environmental and Construction Inspectors will ensure that the Contractor implements the following mitigation measures during pressure testing operations:

- ♦ Air compressor equipment will be delivered by an approved service company..
- ♦ Depressurization will be performed in accordance with measures defined in the Pressure Test Plan and project permits.

#### 4.3.7 Cleanup and Restoration

Cleanup and restoration of the surface along the ROW and any temporary workspaces will be performed by removing any construction debris and by performing final grading to the finished contour. Steps will be taken to minimize erosion, restore the natural ground contour, and account for trench settling as described in the Soil Conservation, Sedimentation, and Erosion Control Plan. Restoration seeding and planting will also be performed in accordance with landowner or BLM requirements and as described in the project's Reclamation Plan.

##### 4.3.7.1 Cleanup and Restoration Requirements

ETC Canyon Pipeline, LLC Environmental Inspector will ensure that the Contractor implements the following mitigation measures during cleanup and restoration activities:

- ♦ The Contractor will ensure that rocks larger than four inches in any shape or dimension are removed from all segregated topsoil in agricultural and residential areas.
- ♦ Rocks on the ROW will be removed by the Contractor to approximate pre-construction conditions. Rocks left on the ROW will be scattered in a random manner. Rocks removed from the ROW will be disposed at a project approved disposal site.
- ♦ All existing improvements, such as fences, gates, irrigation ditches, and cattle guards, will be maintained and repaired by the Contractor to at least preconstruction condition and to the satisfaction of the landowner or BLM field representative to minimize disturbance to the public.
- ♦ No topsoil will be used for pipeline padding.
- ♦ No tailings from the proposed boring areas will be spread or stored on federal surface.

#### 4.3.8 Residential Areas

Special construction activities will be enacted when crossing through residential areas. The following construction practices will be implemented:

- ♦ Owners of private roads along the route will be notified at least 24 hours in advance of planned road crossings.
- ♦ Private road crossings will be completed within three hours and roads will be restored to pre-construction condition or better.
- ♦ Access to and from residences will be maintained at all times unless expressed authorization is obtained from the landowner.
- ♦ Construction activities, except for pressure testing, will only occur between the hours of 7 AM and 5 PM, six days a week (usually Monday to Saturday) in residential areas.

- ♦ No trench within 250 feet of a residence will be left open for more than three days. If the trench is left open overnight within 250 feet of a residence, Contractor will fence the area to mitigate safety concerns.
- ♦ In residential areas, topsoil replacement (i.e., importation of topsoil) is an acceptable alternative to topsoil segregation.

#### 4.3.9 Livestock Barrier and Other Livestock Issues:

Prior to construction, Wagon Wheel Consulting, Inc. will meet with affected ranchers to discuss their concerns and to explain pipeline construction activities that may impact livestock. Fences crossing the ROW will be braced, cut, and temporarily fitted with gates to permit passage. Prior to cutting the fences, the Company will notify the ranchers in order to give them the opportunity to be present when the fence is cut. During construction, the opening will be controlled as necessary to prevent the escape of livestock. Existing fences will be replaced and braces left in place upon completion of construction activities. During construction, Contractor will take care not to obstruct or damage gates or cattleguards. Those damaged or made inoperable will be repaired to the agency and/or landowner satisfaction.

Wagon Wheel Consulting will ensure that livestock barriers are in place where the pipeline construction has created possible problems. The preferred method is to create rock faces or other natural barriers where available. Where this will not or may not work in the opinion of the Authorized Officer, a 4-wire let down fence will be constructed as specified in the Reclamation Plan.

##### 4.3.9.1 Livestock Related Requirements

ETC Environmental and Construction Inspectors will ensure that the Contractor implements the following mitigation measures relating to fencing:

- ♦ The Contractor will repair all damaged livestock facilities (fences, water sources) to the landowner's satisfaction. These facilities will be left in as good as or better condition than the pre-construction condition. The Contractor will install temporary fences when necessary to prevent livestock movement across fences temporarily removed for construction.

#### 4.3.10 Health and Safety

##### 4.3.10.1 Health and Safety Requirements

ETC's Construction Inspectors will ensure that the measures included in the Safety Plan and the following measures and relating to health and safety are implemented:

- ♦ Contractor will comply with requirements contained in the Fire Prevention and Suppression Plan.

- ♦ Contractor will cease normal pipeline construction activities by sunset. Nighttime construction will not be permitted unless approved by ETC and the BLM field representative.
- ♦ The Contractor in accordance with federal, state, or local requirements will provide water, or other means, to control dust. Contractor will comply with federal, state, and local air quality emission standards and regulations.
- ♦ Contractor will provide dust control in construction areas within 500 feet of residences and highways as directed by the project's Construction and Environmental Inspectors.
- ♦ If the trench is left open overnight within 250 feet of a residence, Contractor will fence the area to mitigate safety concerns.
- ♦ No dredged or fill material will be discharged in the proximity of a public water supply intake (municipal watersheds).
- ♦ The Contractor will ensure that equipment is properly maintained to reduce emissions.

#### 4.3.11 Waste Disposal

ETC's Construction Inspectors will ensure that the following measures relating to waste disposal are implemented:

##### 4.3.11.1 Waste Disposal Requirements

- ♦ No littering will be allowed on the ROW. Construction and operations sites will be maintained in a sanitary condition at all times. Waste materials at these sites will be disposed of promptly at an appropriate waste disposal site. Contractor will dispose of excess or unsuitable materials at commercial disposal sites, commercial recycling centers, and/or disposal sites.
- ♦ Contractor will comply with the hazardous waste disposal requirements included in the Hazardous Materials Management and Spill Prevention and Countermeasure Plan.
- ♦ Human wastes, temporarily located within self-contained facilities (port-o-pots), will be removed from the ROW and disposed of in accordance with applicable laws and regulations.

## 5. OPERATION AND MAINTENANCE ACTIVITIES

ETC Canyon Pipeline, LLC will be responsible for the monitoring of the operations of the pipeline once construction is completed. Maintenance and operating personnel will be coordinated from the district office along the system so that any area can be reached within a short period in case of an emergency or malfunction. These personnel will be qualified and trained employees of ETC Canyon Pipeline, LLC.

## **APPENDIX A**

# Environmental Compliance

1. Pipeline Environmental Management Process
2. Organizational Overflow
  - 2.1 Project Managers
  - 2.2 Environmental Managers
  - 2.3 Environmental Inspectors
  - 2.4 Threatened
  - 2.5 Biological, Cultural Resources & Paleontological Monitors
  - 2.6 Construction Managers
  - 2.7 Construction Inspectors
3. Orientation and Training

## 1. PIPELINE ENVIRONMENTAL MANAGEMENT PROCESS

ETC Canyon Pipeline, LLC is committed to designing, constructing, and operating the project in compliance with all federal, state, and local permits and requirements. To ensure that this is accomplished, ETC will implement the following strategies as the framework of the project's environmental management program.

- ◆ Environmental Training: Environmental training and awareness programs will be conducted prior to construction on all environmental requirements. All project personnel working on the right-of-way will be required to attend environmental training.
- ◆ Environmental Inspection: ETC's Environmental Inspectors will have a visible presence on the project. During construction, they will observe and document environmental compliance, as well as actively identify and anticipate potential environmental compliance concerns ahead of construction.
- ◆ Open Communication: Environmental and construction representatives will interact daily and will ensure that all verbal discussions and written documentation are responsive at all times. All project personnel will interact as frequently as necessary to ensure that environmental information, concerns, and issues requiring resolution are communicated in a timely manner.

## 2. ORGANIZATIONAL OVERVIEW

ETC Canyon Pipeline, LLC. has filed and will comply with the Bureau of Land Management (BLM) ROW Grant application procedures and associated stipulations and conditions. ETC acknowledges these stipulations as a condition and responsibility for the use of these public lands.

The ETC Canyon Pipeline, LLC Environmental Compliance Management Program roles and responsibilities are summarized below.

### 2.1 PROJECT MANAGER

Responsibilities include:

- ◆ Successful completion of the ETC Canyon Pipeline, LLC ETC project.
- ◆ Coordinating among the Construction Manager and Environmental Manager.
- ◆ Consulting with the appropriate agencies on changes of project work that affect the mitigation program or sensitive resources.
- ◆ Acting as the arbitrator between construction and environmental considerations if an internal conflict arises.
- ◆ The Project Manager will be an ETC employee. The Chief Construction Inspector will report to the Project Manager.

### 2.2 ENVIRONMENTAL MANAGER

The Environmental Manager is the ultimate authority for project environmental compliance and successful implementation of the environmental compliance management

program. The Environmental Manager is responsible for directing the development and implementation of the pre-construction environmental planning, permitting and conformance activities, the environmental inspection program, and environmental training. Other responsibilities include policy and management level communications with ETC Canyon Pipeline, LLC management, federal, state, and local regulatory agencies. Additional responsibilities include:

- ◆ communicating frequently with the Environmental Inspector and Contractor regarding environmental inspection and compliance activities;
- ◆ maintaining communication with regulatory agencies;
- ◆ coordinating with management level jurisdictional agency representatives (BLM, and Garfield County) in issues relating to environmental compliance;
- ◆ advising on the interpretation of environmental compliance requirements;
- ◆ ensuring that sufficient staff resources are available to successfully implement the environmental compliance management program;
- ◆ interfacing with and advising project management regarding environmental compliance,
- ◆ preparing environmental status reports;
- ◆ reporting hazardous material spills in accordance with the Hazardous Materials Management and Spill Prevention and Countermeasures Plan; and
- ◆ Coordinating with various project representatives, as necessary, to resolve issues when performing project troubleshooting on environmental compliance issues.

### 2.3 ENVIRONMENTAL INSPECTOR

The Environmental Inspector will be assigned to the entire environmental compliance inspection process. In addition to performing inspection duties the Environmental Inspector will be responsible for the following:

- ◆ coordinating with the Project Manager and the Chief Inspector on a daily basis;
- ◆ providing key liaison role in coordinating attendees and facilitating agreements in the field, as appropriate, with agency representatives;
- ◆ Overseeing environmental training activities.

The Environmental Inspector will be at work areas during clearing, construction, and reclamation operations, including seeding. The Environmental Inspector will oversee: the construction process as defined in the Plan of Development, environmental permits, and BLM and Garfield County ROW Grant.

The Environmental Inspectors is the key field staff responsible for ensuring pipeline construction activities comply with all applicable mitigation requirements contained in the Plan of Development, environmental permits, and project stipulations contained in the

ROW Grant. The Environmental Inspector will directly represent ETC Canyon Pipeline, LLC and have authority to enforce the environmental requirements of the POD. He will act as a liaison between the construction personnel and agency field representatives. In this capacity, he will coordinate regularly with the various Construction Inspectors to ensure that the Construction Inspectors are apprised of the status of environmental issues in their respective areas. Additionally, the Environmental Inspector will work in conjunction with the construction contractor representatives and agency field representatives.

The Environmental Inspector will have in his vehicle at all times, a copy of the Plan of Development, environmental permits, and project stipulations contained in the ROW Grant. Environmental Inspectors will document construction contractor conformance with project mitigation requirements, permit conditions, and environmental specifications on a daily basis. The Environmental Inspector will be on a peer status with other project construction inspection staff.

The Environmental Inspector will be responsible for determining non-compliance activities and anticipating activities and situations that could result in non-compliance to Plan of Development, environmental permits, and project stipulations contained in the ROW Grant. Environmental Inspectors will have a significant role to play in suggesting methods to bring construction activity into compliance and/or to temporarily halt certain activities that may cause damage to sensitive environmental resources. In this capacity, the Environmental Inspector will work in conjunction with the Construction Inspector as applicable. Under ordinary circumstances, or unless otherwise necessary, the Environmental Inspectors will exercise such “stop work” authority only after consulting with ETCs Chief Inspector. The Environmental Inspectors will use sound professional judgment in exercising these authorities and will not stop work unless there is a situation that could: 1) cause serious injury or harm to persons or property, 2) harm threatened or endangered species or protected cultural resources, or 3) violate certain federal or state codes.

The Environmental Inspector will be equipped with a cellular phone, measuring equipment, and record keeping equipment to perform compliance activities.

#### 2.4 THREATENED AND ENDANGERED SPECIES MONITORS

There are no requirements for separate Threatened and Endangered Species Monitors on the project. Sensitive plant surveys will be conducted in June 2009, prior to the start of pipeline construction. If sensitive plants are found, populations will be flagged and disturbance confined to a specified corridor as directed by BLM.

#### 2.5 BIOLOGICAL, CULTURAL RESOURCE AND PALEONTOLOGICAL MONITORS

At this time, there are no requirements for Cultural or Paleontological Resources Monitors on the project, however, Monitors will be provided if it's determined that monitoring is required.

Responsibilities for these monitors include:

- ◆ monitoring resource protection within specific areas of expertise (i.e. – paleontological);
- ◆ being available at the request of the Lead Environmental Inspector; and
- ◆ observing construction activities, documenting work, and submitting reports to the Environmental Inspector, according to their respective disciplines.

## 2.6 CONSTRUCTION MANAGER

Responsibilities include:

- ◆ completion of the construction project, including the pipeline and meter stations;
- ◆ notifying the Environmental Manager of changes in the project work so that appropriate environmental reviews can take place; and
- ◆ working with the Environmental Inspector to evaluate and improve the implementation of the environmental compliance management program, as construction progresses.
- ◆ coordinating with ETC Canyon Pipeline, LLC, construction contractors, Construction Inspector and Environmental Inspector for all construction-related issues; and
- ◆ supervising compliance with construction, safety, and environmental mitigation measures identified in the Plan of Development.

## 2.7 CONSTRUCTION INSPECTORS

Responsibilities include;

- ◆ conducting quality control construction inspections within area of expertise; and
- ◆ providing support in monitoring and reporting compliance with the environmental compliance management program.

## 3. ORIENTATION AND TRAINING

Training is an integral tool for achieving environmental compliance. The environmental training program will be developed to target every level of the organization (management and workforce). The training program will distribute various products to communicate and reinforce the compliance message, including a quick-reference handbook. Topics to be addressed during training will include biological resources, cultural resources, erosion control, fire prevention, hazardous materials spill prevention and control measures and other project requirements.

In addition to the environmental training program, the Contractor is responsible for providing safety training that includes topics such as construction practices around overhead electrical transmission lines, buried utilities, and other safety related issues.

## **APPENDIX B**

# Soil Conservation, Sedimentation & Erosion Plan

1. Introduction
  - 1.1 Objectives
  - 1.2 Responsibilities
    - 1.2.1 Company
    - 1.2.2 Contractor
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4. Monitoring and Maintenance
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  - 4.2 Post-Construction Monitoring
    - 4.2.1 Post-Construction Maintenance of Temporary Erosion Control Measures

## 1. INTRODUCTION

This Soil Conservation, Sedimentation, and Erosion Control Plan (Plan) describes measures to be taken by the ETC Canyon Pipeline, LLC (Company) and its contractors (Contractor) to protect topsoil; to control and minimize soil erosion and resulting sedimentation, to encourage revegetation, restoration, and stabilization of disturbed soils on the project; and to protect the pipeline from erosion during and after pipeline construction and restoration.

Measures identified in this plan apply to work within the defined project right-of-way (ROW), access roads, all work and storage areas, and other areas used during construction of the project. This plan was developed as the implementing document for relevant mitigation measures for the ETC Canyon Pipeline, LLC project. This plan was also prepared as part of the Storm Water Pollution Prevention Plan as required under Title 40, Code of Federal Regulations (CFR), Parts 122-124. (National Pollution Discharge Elimination System permit for Storm Water Discharges.)

### 1.1 OBJECTIVES

Short-term objectives of this plan are to conserve and protect topsoil, to control erosion and sedimentation, to protect water quality and aquatic resources, to encourage reclamation/revegetation success, and to minimize impacts to adjacent land uses and ecological resources. Properly executed construction practices, and ongoing evaluation by environmental and construction inspectors, and Contractor personnel, will ensure the continued functioning of erosion and sediment control measures.

Long-term objectives include control of erosion and sedimentation, as well as restoration of topography, water resources, soils, and vegetation to a condition similar to that, which existed prior to construction. Monitoring activities during the construction, operations, and maintenance phases will evaluate the success of the erosion control and revegetation efforts. In addition, as described in the Plan of Development (Section 5.2) and the Reclamation Plan (Section 6.3).

### 1.2 RESPONSIBILITIES

#### 1.2.1 Company

The Company will be responsible for ensuring that the Contractor meets the standards defined in this plan to retain topsoil where available and to install and maintain sediment and erosion control measures. Additionally, the Company will be responsible for meeting the long-term restoration and soil stabilization standards after the project is completed.

#### 1.2.2 Contractor

The Contractor will be responsible for conducting grading and topsoil separation activities, installing and maintaining temporary and permanent erosion control measures, and restoring original contours on the ROW according to the standards detailed in this plan and related plans listed in Section 1.4. The Contractor is responsible for monitoring the effectiveness of the installed devices and correcting any conditions that do not meet the specifications of this plan. ETC's

Environmental and Construction Inspectors will ensure that the Contractor properly installs and maintains erosion control measures.

Installation of most erosion control devices will be performed during the construction phase. Erosion control measures implemented during construction may include waterbars, trench breakers, silt fence sediment barriers, straw bale sediment barriers, interim mulching, tackifier application, and culvert installation. Work related to permanent erosion control measures implemented during restoration may include seedbed preparation, seeding, planting, waterbars, trench breakers, permanent mulching, erosion control matting, silt fence sediment barriers, and straw bale sediment barriers.

### 1.3 COORDINATION

This plan has been prepared through consultation and coordination with the Company, regulatory agencies, and landowners. The Company will be responsible for distributing copies of this plan to all appropriate agencies, construction personnel, BLM and, on request, to private landowners. It will be the responsibility of the Company to maintain coordination and communication with the BLM.

### 1.4 RELATED PLANS AND DRAWINGS

This plan is related to other plans contained in the Plan of Development (POD). The Contractor will be responsible for complying with the requirements of all these plans, including:

- ◆ Construction Alignment Sheets
- ◆ Stream Crossing and Wetland Protection Plan
- ◆ Reclamation Plan
- ◆ Hazardous Material Management and Spill Prevention and Countermeasure Plan

## 2. SOIL CONSERVATION MEASURES

### 2.1 GENERAL CONSIDERATIONS

#### 2.1.1 Flagging

As described in Section 4.2.2, “Construction Phase”, of the POD, the Company will flag and/or stake the boundaries of the ROW, extra workspace, ancillary areas and any sensitive areas prior to construction. The Contractor will install additional flagging or fencing as determined by ETC’s Environmental Inspectors and the BLM field representatives to protect sensitive resources located near the ROW, and will ensure that the construction crews clearly understand and respect the flagging, fencing, and/or staking. Flagging spacing intervals, also described in Section 4.2.2 of the POD, will be shortened if necessary to ensure that flagging is visible, especially in areas with rapidly changing topography or dense vegetation. Conversely the BLM’s field representative may issue a variance allowing the Company to increase flagging spacing requirements, especially in areas where there are only low shrubs or grasses, and the stakes are easily visible.

### 2.1.2 Environmental Training

All workers taking part in the project will attend an environmental training program that will include discussion of general erosion and sediment control requirements, proper clearing and grading methods, and the importance of protecting sensitive resources on the project. Crews specializing in erosion control tasks will be given additional training on installation and maintenance methods.

### 2.1.3 Clearing

Clearing requirements are defined in Section 4.3.1, “Clearing and Grading”, of the POD. Trees will be cut with chain saws and/or mechanical shears/saws. Brush will generally be cut with a hydro-axe or similar equipment. Vegetation cut during clearing operations will be removed from the ROW (merchantable timber, posts, etc.) or will be chipped or shredded within the ROW. In some cases trees, stumps, or slash may be scattered back over the ROW after seeding to aid in erosion control, and to block access along the ROW.

The Company and land management agency representatives will coordinate in the field to designate areas where unmerchantable timber can be made available to the public for firewood. This wood will be cut in 6 to 8 ft. lengths, and stockpiled on the ROW or within approved temporary extra workspaces at points where the ROW crosses access roads (in a manner such that the stockpiled wood will not hinder reclamation efforts). ETC Canyon Pipeline, LLC may require approval of additional extra workspace in areas where the land management agency or the landowner requests stacking of firewood especially in areas where construction workspace is limited. Disposition of vegetation (timber, firewood, brush, slash) will meet the requirements of the landowner or BLM. No material will be placed outside the approved work limits on federal land unless a variance is granted by the BLM. Approved work limits are defined as the legal ROW plus approved extra workspace.

Clearing, grading and other disturbance of soil and vegetation will be limited to the minimum area required for safe construction operations within the approved ROW. Root systems will be left in place where feasible and where they do not pose a safety concern for workers or an impediment to equipment or rubber-tired vehicle access. The herbaceous vegetative crown will be maintained to the extent possible where blading of the ROW is not necessary.

In areas of special resource concern as determined in the field by the BLM and Environmental Inspectors during pre-construction reviews, clearing of the ROW may be limited to less than 75 feet to protect significant vegetation.

## 2.2 TOPSOIL CONSERVATION

Topsoil will be salvaged and protected along the pipeline route to facilitate revegetation of the ROW after construction is complete. Areas where the majority of surface material is rock, will not be topsoiled.

All topsoil will be removed to a minimum depth of 6 inches in accordance with the topsoil method specified in each reclamation with, or as directed by the land manager or landowner.

### 2.2.1 Trench Line Only Topsoil Salvage

As detailed in the Stream Crossing and Wetland Protection Plan, topsoil will be salvaged from over the trench line only in wetlands and where subsoil grading is not necessary. This topsoil will be stored separately from trench subsoil and will be replaced over the trench line once backfilling is complete.

### 2.2.2 Trench and Spoil Side Topsoil Salvage

Topsoil will be stripped from over the trench line and the adjacent subsoil storage areas. This method will be specified when subsoil grading is not necessary.

### 2.2.3 Full-Width Topsoil Salvage

This topsoil salvage method will be used if ROW grading is needed to create a level work area (e.g., for a side hill cut, etc.), or if requested by the landowner or BLM. In general, on the BLM, topsoil (or the top 6 inches) will be stripped and separated from trench spoil, for the width of the ROW, or 60 feet. Topsoil will first be stripped from the entire area to be graded and then stored separately from the subsoil. **NO TOPSOIL WILL BE USED FOR PIPELINE PADDING.**

### 2.2.4 General Requirements

The following guidelines apply to salvaging topsoil, unless otherwise approved by the Environmental and Construction Inspector, and the BLM field representative.

- ◆ All available topsoil will be salvaged, up to a maximum of 12 inches, unless otherwise directed by the landowner or BLM.
- ◆ Salvaged topsoil will be kept separate from subsoil and protected throughout subsequent construction activities to prevent mixing that could potentially inhibit reclamation of the ROW.
- ◆ To protect topsoil, dry drainages or washes that cross the ROW will not be blocked with spoil piles. This will be accomplished by placing spoil on the banks of the drainage or by leaving adequate gaps in the spoil piles of wider dry drainages so that the ROW can drain. Where dictated by slope and the proximity of a dry drainage running parallel (or nearly so) to the ROW, either within or immediately adjacent to the ROW, and if deemed necessary by the Environmental Inspector and BLM representative, sediment barriers may be installed to prevent spoil and topsoil from entering the drainage.

## 2.3 RESTORATION

After the final installation of the pipeline, all disturbed portions of the construction areas (including the ROW, travel routes, and staging areas) will be returned to pre-construction grades and contours. Topsoil will then be replaced over the ROW from the area in which it was stripped.

Revegetation will be the primary method to stabilize soils and ensure permanent erosion control over the long term. Revegetation techniques, including decompaction and seeding are presented in detail in the Reclamation Plan. Every effort will be made to complete final cleanup and installation of permanent erosion control measures within 30 days after final backfilling is completed.

Permanent waterbars, berms and/or sediment barriers (e.g., straw bales and/or silt fences) will be installed across the ROW up slope of streams, rivers, and wetlands. Mulch or fiber matting will be applied to disturbed surfaces within 100 feet of the crossing unless otherwise directed by the BLM. Additional details relevant to waterbody and wetland restoration are discussed in the Stream Crossing and Wetland Protection Plan. Information on revegetation procedures at waterbody crossings is presented in the Reclamation Plan.

## 3. EROSION AND SEDIMENT CONTROL

### 3.1 GENERAL CONSIDERATIONS

The following general environmental protection measures will be implemented to minimize environmental impacts during construction and operation of the project.

- ◆ All personnel, vehicles, and equipment will stay in the designated construction area. Access roads outside of the construction area will be designated by the Company. All staking, flagging and exclusion fencing will be respected.
- ◆ Temporary erosion/sediment control devices will be installed immediately after initial soil disturbance and will be maintained throughout construction and restoration, as necessary, until replaced by permanent erosion control measures. If possible, cleanup will be completed and permanent erosion control measures will be installed within 30 days after the trench is backfilled to aid in site stabilization. If circumstances prevent achieving cleanup within 30 days on federal lands, the Company will apply for a variance from the managing agency.
- ◆ An Environmental Inspector will be employed in the field during construction to verify compliance with the environmental protection measures.
- ◆ Disturbance during construction will be limited to the minimum necessary to safely and efficiently complete construction activities.
- ◆ Construction, clean up, and reclamation will be completed as quickly as possible to keep the time period between grading, trench excavation, backfilling, and final restoration/reclamation to a minimum. If weather conditions preclude final reclamation of a site (excluding woody plantings, if applicable) immediately following construction, the Company will meet with agency representatives to discuss viable reclamation alternatives.

- ◆ A stockpile of erosion control materials including straw bales, silt fences, erosion control matting and geotextile fabric will be stored at each of the staging areas during the entire period that construction disturbances are taking place. Materials will be stored for planned use during construction, and additional quantities will be maintained for maintenance and emergency use.

### 3.2 EROSION CONTROL METHODS

Temporary control measures are designed to effectively reduce erosion and sedimentation to sensitive resources during construction. These temporary erosion control measures will be installed concurrently with construction earthwork and will be maintained throughout the course of construction. When necessary, these measures may be left in place along with permanent measures during the post construction period until effective revegetation has been reestablished. Sediment barriers and waterbars (as described below) will be the primary measures for temporary erosion control used on the project.

Interim erosion control measures are designed to temporarily stabilize portions of the disturbed construction area near sensitive resources if construction is delayed for significant periods following disturbance. If final clean up of pipeline construction areas and installation of permanent erosion control measures is not completed in an area within 30 days following backfilling, mulch will be applied on slopes within 100 feet of water bodies (as defined in Section 1.3 of the Stream Crossing and Wetland Protection Plan) and wetlands. Mulch or erosion control matting will also be applied on slopes greater than 30 percent and as determined by the Environmental and Construction Inspector, and BLM field representative if construction or restoration is interrupted for extended periods. Additional discussion of interim mulching is included in the Upland Erosion control, Revegetation, and Maintenance Plan and Section 3.2.5.1 of this plan.

- ◆ Permanent erosion control measures are designed to minimize erosion and sedimentation after construction until revegetation efforts have effectively stabilized the construction area. Installation of permanent erosion control measures should be performed within 30 days following backfilling of the trench.

In general, temporary erosion control measures will be removed after permanent erosion control measures have been installed.

The following sections review materials, installation requirements, and performance criteria for temporary, interim and permanent erosion and sediment control measures.

#### 3.2.1 Sediment Barriers

Straw bale sediment barriers and silt fence sediment barriers are temporary sediment barriers designed to slow down water flow and to intercept suspended sediment conveyed by sheet flow, while allowing runoff to continue down gradient. These installations are used to prevent sediment delivery off of the construction area as well as to divert water off the construction area. Temporary sediment barriers will be installed at the following locations immediately after initial ground disturbance:

- Across the ROW at the base of slopes where the ROW crosses roadways, waterbodies, springs, wetlands, impoundments or other sensitive resources;

- Along the edge of the ROW adjacent to and up slope of roadways waterbodies, springs, wetlands, impoundments, or other sensitive resources;
- Around topsoil or subsoil piles where necessary (e.g., adjacent to waterbodies or wetlands).

The requirement to install a sediment barrier is dependent on the slope angle (when a hillside slopes in multiple directions, the slopes can offset each other and reduce the need for sediment barriers), slope length, and soil type (texture and course fragments content). While typically used only during construction, silt fences and straw bale sediment barriers may be left in place following seeding possibly for a complete growing season.

#### 3.2.1.1 General Requirements

Straw bale or silt fence sediment barriers placed at the toe of a slope will be at least 6 feet from the toe of the slope, where possible, in order to increase ponding volume. The ends of the sediment barrier will be turned upslope to capture sediment.

Sediment barriers will be placed so as not to hinder construction activities and outside of (above the high water mark) active stream channels. If silt fences or straw bale sediment barriers are placed across the construction area (adjacent to waterbodies, wetlands, or roads) where construction traffic is allowed to cross, provisions will be made for traffic flow. An approximately 15-foot-wide gap will be provided along the silt fence or straw bale row, with the ends of the sediment barrier turned slightly upslope. A drivable earth berm, if approved by the BLM field representative will be installed and maintained across the gap immediately upslope of the sediment barrier (ends of the sediment barrier will tie into the drivable earth berm). Alternately, straw bales will be installed across the gap with 24 inches of overlap with the adjacent sediment barrier at the end of each day.

If sediment loading is noted during regular inspections of temporary sediment barriers to be at or greater than 40 percent of barrier capacity, sediment behind the barrier will be spread on the disturbed ROW uphill of the sediment barrier. Loose stakes, loosely abutted bales, damaged bales, or damaged or undermined sections of silt fence will be repaired or replaced as necessary.

### 3.2.1.2 Straw Bales

Straw bale sediment barriers consist of a row of tightly abutted straw bales placed perpendicular to the runoff direction with the ends turned upslope. The barriers are typically one bale high, placed on the fiber-cut edge in a 4-inch trench (tie not in contact with the ground), and anchored securely with two wooden stakes driven through each bale. A small amount of soil is then piled across the upslope side of the straw bale barrier.

When straw bales are used as a temporary substitute for waterbars, the same spacing noted for waterbars will be used (see Section 3.2.2).

### 3.2.1.3 Silt Fences

Commercial filter fabrics, with sufficient strength to prevent failure will be provided by the Contractor. The height of a silt fence will not exceed 36 inches and the fabric will be cut from a continuous roll of fabric with splices only at support posts, with a minimum 6-inch overlap and both ends of fabric securely attached to the post. Support posts will be a maximum of 10 feet apart.

The bottom edge of silt fences will be installed in a trench excavated approximately 4 inches wide by 6 inches deep and refilled with compacted soil, unless on-site constraints dictate otherwise (e.g., rock). Silt fences will be attached to supporting posts by staples or wire.

If additional support is needed to contain spoil, or to provide added protection near a sensitive resource (as determined by the Environmental Inspector and BLM representative), either wire mesh or straw bales may be placed immediately behind the silt fence on the down-gradient side. If wire mesh is used, the wire will be attached to the support posts, prior to installation of the fabric, with heavy duty wire staples at least 1 inch long, wire ties, or hog rings. The wire will be keyed into the trench at least 2 inches, and extended up the posts to the top of the filter fabric.

## 3.2.2 Waterbars

Water bars are utilized in various forms (e.g., drivable berms across travel ways, water bars on slopes) during project construction and after final grade restoration. Waterbars are intended to intercept water traveling down a disturbed slope and divert water off disturbed soil into stable, well-vegetated, or adjacent rocky areas.

Temporary waterbars will be installed concurrently with initial grading operations and will be maintained throughout construction. Permanent waterbars will be installed after the ROW grade is restored.

Waterbars will also be installed near the base of slopes adjacent to wetlands and watercourses except at those specific sites where, in the judgment of the Environmental Inspector and BLM representative, waterbars are not necessary to prevent discharge of sediment into a wetland or watercourse. On slopes, the spacing for temporary and permanent waterbars will be as follows:

Slope (%)	Spacing (feet)
5-15	300
>15-30	200
>30	100

Alternative spacing may be requested by the landowner or BLM for isolated, site-specific areas and conditions (i.e., in areas of highly erodible soils). Waterbar spacing is based on a site-specific evaluation of the ROW and standard construction protective measures. This spacing takes into account the soils, timing of construction, and area of disturbance anticipated for construction of the project. Waterbars will be sited so that they do not outlet into sensitive resource areas (cultural sites, rare plants sites, etc.). On federal land, if waterbar outlet into a sensitive resource area is unavoidable, a variance to this requirement must be obtained. On private and state lands, if a waterbar outlet into a sensitive resource is unavoidable, an Environmental Inspector will ensure that measures are implemented to minimize impacts.

If the situation warrants an increase to the waterbar spacing intervals, variances will be coordinated by the Environmental Inspector with the BLM or landowner, as appropriate. Criteria to be considered for variances will include:

- ◆ slope angle (slopes with effective side-slopes may not require waterbars)
- ◆ slope length (broken terrain may reduce effective slope length)
- ◆ soil type (texture and coarse fragment content)
- ◆ visual sensitivity
- ◆ landowner requests

Except for site-specific situations as determined by the Environmental and Construction Inspector or BLM representative (e.g., extremely long slopes with highly erodible soils), temporary waterbars will not be constructed on slopes with less than five-percent gradient. Waterbars are not typically installed in residential or active agricultural areas.

Waterbars will be constructed of existing suitable material (compacted soil), a series of tightly abutted straw bales, excelsior logs, or burlap bags filled with native soil. The installation angle will be approximately 2 to 5 percent downslope (as measured by a hand-held clinometer or level) and will extend beyond the edge of the disturbed construction area. Where possible, waterbars will discharge into stable, non-erosive (vegetated or rocky) receiving areas.

In isolated instances where waterbars discharge into unstable or highly erosive areas without rock or vegetation, as approved by the Environmental and Construction Inspector, and BLM representative, flow energy dissipaters or “J-hook” shaped sediment barriers will be positioned at the waterbar outlet. However, decreasing waterbar spacing or adjusting the spacing to locate outlets onto a stable site is preferable to using outlet energy dissipaters. Additionally, in highly erodible soils, waterbar spacing may be decreased, as approved by the Environmental or Construction Inspector, and as requested by the BLM. When allowed by existing topographic conditions, and as requested by the Environmental Inspector, the flow energy dissipaters will be offset (staggered) on slopes greater than 20 percent.

The Contractor will regularly inspect and repair waterbars during construction to maintain their effectiveness. Waterbars worn down by heavy construction traffic, or filled with sediments will be repaired as needed, and the sediments will be spread on the disturbed ROW uphill of the waterbar.

### 3.2.3 Trench Breakers

Trench breakers will be installed in the trench to restrict or slow ground water flow along the trench line. Trench breakers will be installed in the trench prior to backfilling on the slopes that drain into waterbodies (natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and ponds or lakes), wetlands, and improved roads. Trench breakers should also be constructed immediately downslope of any location where groundwater could enter and migrate along the trench at any time or year.

- ◆ Trench breakers will be constructed to the specifications contained in the FERC Upland Erosion Control, Revegetation and Maintenance Plan.
- ◆ At the base of slopes adjacent to road crossing until disturbed vegetation has been reestablished.
- ◆ Install temporary sediment barriers at appropriate locations to prevent siltation into waterbodies or wetlands crossed by or near the construction work area.

Trench breakers can be constructed from sandbags or polyurethane foam. If the sandbag method is selected, topsoil will not be used as a fill material.

### 3.2.4 Trench Dewatering

The Contractor will be responsible for proper dewatering of the trench, where necessary. Dewatering discharge will be directed onto a stable surface and will utilize a section of geotextile fabric or plywood to prevent scouring during overland discharges (where no sensitive resources are located nearby), or a sediment bag and/or dewatering structure to minimize sediments when dewatering operations take place near waterbodies or wetlands.

A number of strategies will be implemented to prevent heavily sediment-laden water from reaching sensitive resources. These strategies include:

- Dewatering discharges will be located as far as practicable from waterbodies and wetlands.
- Duration of dewatering discharges will be minimized by scheduling dewatering operation immediately prior to lowering in, tie-ins, or backfilling.
- Disturbance of the trench (i.e., additional digging) will be minimized to the extent practicable until the majority of the water is pumped out.
- Dewatering structures and/or sediment bags will be used to remove heavy sediments from discharges when dewatering near (within approximately 200 feet of) waterbodies, wetlands, or other sensitive resources. – *Typical Straw Bale Dewatering Structure.*

STEP 1

ON LEVEL LAND, DIG A SUMP DEPENDING ON ACTUAL FLOW RATES APPROXIMATELY 200 SQ. FT., WHICH IS 2' DEEP AT THE CENTER. LAY A LAYER OF STRAW BALES AS SHOWN, TO COMPLETELY SURROUND THE SUMP.

STEP 2

INSTALL SILT FENCE ALL AROUND THE HAY BALES (IF LAND IS LEVEL) DIG IN SILT FENCE 6'

STEP 3

INSTALL AN OUTER LAYER OF BALES AROUND THE SILT FENCE, AND SECURE EACH BALE USING EITHER A REBAR OR WOODEN STAKE. COVER THE ENTIRE SUMP WITH HI-VELOCITY EROSION CONTROL FABRIC ICURLEX OR EQUAL BEFORE PUMPING THE WATER INTO THIS FACILITY.

NOTE: PUMP INTAKE HOSE MUST NOT BE ALLOWED TO REST ON THE TRENCH BOTTOM THROUGHOUT DEWATERING. PROVISIONS MUST BE MADE TO ELEVATE THE INLET HOSE TO AT LEAST ONE FOOT ABOVE THE TRENCH BOTTOM UNTIL BOTTOM DEWATERING IS NECESSARY.

**EROSION CONTROL DURING PIPELINE DITCH  
AND PRESSURE TESTING  
FOR LEVEL AREAS WITH SPARSE VEGETATION**

### 3.2.5 Mulching

Mulching is the application of straw or wood fiber to disturbed soils to minimize the effects of wind or rain on exposed soils. During rainy condition, mulch reduces the impact of rainfall and slows the flow of water down the slope. Mulch (as opposed to erosion control mats described in Section 3.2.6) would typically be used across large sections of the ROW to reduce wind erosion and raindrop impact. On the BLM portion of the project, mulching of the disturbed surface may not be desirable, and its use declined, at the discretion of the Authorized Officer.

#### 3.2.5.1 Mulch as Temporary Erosion Control

Application of mulch for temporary erosion control is based on slope surface type and condition (i.e., sand, clay, rock, etc.), slope steepness, and the amount of exposed surface area not covered by plant residue.

During construction, water or non-toxic, organic tackifier will be applied, at the Environmental Inspector's direction, to topsoil storage mounds composed of soils with high wind erodibility. Tackifier will not be applied within 100 feet of a watercourse or wetland. Stored topsoil will be tackified at 120 pounds/acre with a non-toxic, organic tackifier, where determined by the Environmental or Construction Inspector.

If reclamation and seeding is deferred more than 30 days after final grade restoration near waterbodies or wetlands, all disturbed slopes above the waterbody or wetland will be temporarily stabilized by applying 2000 pounds/acre of straw mulch (crimped or tackified) for a minimum distance of 100 feet above the edge of the waterbody or wetland. Similar temporary stabilization may be used on slopes steeper than 30 percent. Interim seeding may be performed as determined by the Environmental Inspector in consultation with the BLM representative. Seedbed preparation, including thinning or removal of the mulch, will be repeated as necessary prior to application of the final seed mix.

#### 3.2.5.2 Mulch as Permanent Erosion Control

After final restoration and seeding, permanent mulch applications will be applied to slopes greater than 30 percent, slopes within 100 feet of waterbodies and wetlands, and other sensitive sites (dry, sandy, steep slopes, etc.) to control erosion as determined by the BLM field representative, or the Environmental and Construction Inspectors.

Where approved by the landowner or BLM and Environmental Inspector, the Contractor will randomly distribute any windrowed shrubs or other remaining vegetation debris over the ROW. Large unmerchantable trees on federal lands may be, as directed by the agency representative, placed on the ROW to provide slope stabilization and erosion control benefits. On steep slopes and other areas where broadcast rather than drill seeding

must be employed, trees and shrubs will be spread or placed during final cleanup and prior to seeding. Where redistribution of adequate mulch from re-spread woody debris occurs, mulch rates may be reduced or eliminated at the direction of the Environmental Inspector and BLM field representative.

#### 3.2.5.3 Straw Mulch

Straw will be anchored into the seedbed using a mechanical crimper specifically designed to crimp mulch to a depth of 2 to 3 inches. The straw will be crimped perpendicular to slope unless otherwise determined by the Environmental Inspector and BLM field representative. Acceptable straw mulch crimpers include:

- Mechanical crimper,
- Backhoe with crimper forks,
- Tracked equipment tracking across slopes (restricted to areas where other methods will not work),
- Hand-punching with round-pointed shovel, or
- Equivalent approved by the Environmental Inspector and agency field representative.

Organic liquid mulch binders may be used in accordance with manufacturer's recommendations. If a straw mulch blower is used, strands of the mulching material will be at least 8 inches long to allow anchoring.

#### 3.2.5.4 Wood Fiber Mulch

Wood fiber mulches will be made of 100 percent wood fiber or equivalent approved by the Environmental Inspector. These will be applied by a hydro seeder with non-toxic, organic tackifier (except within 100 feet of a waterbody or wetland) such as a guar-based tackifier, or equivalent approved by the Environmental Inspector.

#### 3.2.6 Erosion Control Matting

Erosion control matting will be installed after final grade restoration to reduce rain impacts on soils, to control erosion, and to stabilize steep slopes and waterbody banks, where determined by the Environmental or Construction Inspector. Erosion control matting will typically be used on streambanks and short, extremely steep sections of the ROW where aggressive erosion control is required.

On all installations, mat will be furnished in continuous rolls of 30 feet or greater with a minimum width of 4 feet. Staples will be made of wire, 0.091 inch in diameter or greater, and have a "U" shape with legs 8 inches in length and a 2-inch crown. Wire staples will be driven into the ground for the full length of the

staple legs. Alternately, wood pegs (1/2-inch diameter) may be used to secure the erosion control fabric. In areas of livestock grazing, other measures must be taken (see Reclamation Plan).

Installation and stapling of erosion control matting will follow procedures as approved by the Environmental Inspector and BLM field representative. For streambank installations, mats will be laid parallel (upper mat overlapping lower mat in a shingle pattern) to the waterbody to a point above the top of the bank. The erosion control mats identified above for streambank stabilization are designed to handle flow and can be placed under the ordinary high water mark of the streambank. However, matting should not be placed below this mark on federal lands unless it is part of an overall design using other materials to rebuild the streambank. Native materials (rocks, logs, etc.) may be used in conjunction with the matting to aid in stabilization of banks.

During regular erosion control monitoring, erosion control matting will be inspected for washouts, adequate staking, and loss of matting. Damaged or undermined matting will be repaired or replaced as necessary.

### 3.3 DUST CONTROL

Dust control will be implanted by the Contractor in areas of active construction within 500 feet of highways and residences (unless waived by the owner). Dust control will also be implemented on access roads, and as determined by the Company or as required by the Contractor for the health and safety of employees. Dust control will be achieved primarily through application of water or an approved dust palliative. Application rates for the dust palliative will follow the manufacturer's recommendations. All dust palliatives used should be biodegradable unless the only way to achieve adequate dust control is by using a non-biodegradable palliative such as magnesium chloride (MC70). Magnesium chloride will not be used in areas where prohibited by the landowner.

## 4. MONITORING AND MAINTENANCE

The Contractor will be responsible for ensuring that erosion control measures are fully functional and for continually monitoring erosion control measures along the ROW and completing timely repairs of erosion control structures as needed.

In addition, the Environmental Inspectors will be trained and knowledgeable in erosion and sedimentation control methodologies, and will inspect erosion control measures along the ROW as a part of normal daily inspection tasks. The Environmental Inspectors will identify needed repairs and notify the Contractor who will then complete the repairs within 24 hours of notification.

### 4.1 CONSTRUCTION MONITORING

Throughout construction, temporary erosion control structures will be inspected daily in areas of active construction or equipment operation, and in all areas within 24 hours of each 0.5-inch or greater rainfall event, soil and weather condition permitting.

The Environmental Inspector will monitor U.S. Weather Bureau reports and notify the Contractor of impending storm advisories. In the event of impending heavy precipitation (e.g., the U.S. Weather Bureau issues a storm advisory for the work area), the Contractor will reinstate temporary erosion control devices where needed (e.g., areas considered to have greater potential for erosion, areas where cattle may have damaged erosion control measures, and areas of active construction) to ensure that erosion control measures have not been damaged since the last inspection. All temporary erosion control devices found needing repair or new installation will be repaired immediately. During this period, the Contractor will provide additional personnel, vehicles, and materials to repair erosion control structure damage where noted during the inspection.

Should structures clog, deteriorate, fail, be damaged, or require maintenance, the Contractor will conduct repairs or replacements within 24 hours after problems have been identified, weather and soil conditions permitting.

## 4.2 POST-CONSTRUCTION MONITORING

Prior to the completion of construction, the Contractor and Company will verify that all erosion control devices are in place and functional. During the first spring following construction (after snow melt), the Company will conduct surveys to evaluate the stability of the ROW, revegetation progress, and the success of the erosion and sediment control structures. Assessments will be done to evaluate revegetation success and the presence of erosion indicators such as rills, gullies, etc. If erosion control structures fail or require maintenance, or if accelerated erosion is observed, the Company will conduct remedial actions as soon as possible, recognizing weather and soil conditions, and site accessibility. Remedial actions could include supplemental seeding, installation of additional erosion/sediment control materials, maintenance of existing erosion control measures, additional mulching or use of matting.

### 4.2.1 Post-Construction Maintenance of Temporary Erosion Control Measures

Temporary sediment devices not removed by the Contractor during subsidence and/or reseeded activities in the summer or fall of 2009 will be maintained by the Company until revegetation has been determined successful.

Erosion control monitoring and maintenance efforts will continue after project construction until successful revegetation is achieved as defined in the Reclamation Plan. Throughout the first year following construction, erosion control devices will be checked at all locations along the ROW in combination with reclamation and revegetation surveys. Permanent erosion control structures and materials including waterbars, rock rip-rap, and matting will be monitored and maintained to ensure successful stabilization of steep slopes and stream crossings.

## **APPENDIX C**

# **Stream Crossing & Wetland Protection Plan**

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## 1. INTRODUCTION

This Stream Crossing and Wetland Protection Plan (plan) describes measures to be taken by the ETC Canyon Pipeline, LLC (Company) and its contractors (Contractor) for construction activities in and around streams, rivers, and wetlands.

### 1.1 PURPOSE OF PLAN

This plan covers, and is designed to minimize the environmental impacts to all jurisdictional wetlands, flowing streams, river crossings (waterbodies), and dry stream crossings.

### 1.2 RESPONSIBILITIES

#### 1.2.1 Company

The Company will be responsible for meeting the goals and objectives of this plan and for ensuring that the Contractor uses the methods described in this plan. The Company will also ensure that environmental oversight of the project includes preconstruction marking/flagging of all flowing streams, rivers, and wetlands as described in Section 2.2. The Environmental Inspector will ensure that the Contractor constructs through sensitive resources as required in this plan and will also ensure that all marking/flagging remains in place and is visible throughout construction.

The Company will, prior to any ROW clearing and grading, ensure that the Contractor has sufficient environmental protection supplies and materials on hand to initiate installation of erosion control devices. The Company will ensure that the environmental protection supplies meet the specifications contained in this plan and other related plans as listed in Section 1.4. This includes straw bales, silt fence, erosion control matting, hazardous substances spill clean up equipment, and other materials.

#### 1.2.2 Contractor

The Contractor will be responsible for implementing the methods prescribed in this plan to meet site-specific conditions. The Contractor will ensure that all methods employed are installed and maintained correctly. It is the Contractor's responsibility to monitor the effectiveness of the installed devices and to correct any conditions that do not meet the requirements of this plan.

The Contractor will be responsible for ordering and maintaining an inventory of environmental control supplies and materials to meet daily construction requirements as well as meeting emergency conditions.

### 1.3 DEFINITIONS

Waterbody: Includes any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds (both natural and stock ponds) and lakes.

Minor Waterbody: Includes all waterbodies less than or equal to 10 feet wide at the water's edge at the time of construction.

Intermediate Waterbody: Includes all waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water's edge at the time of construction.

Major Waterbody: Major waterbodies are defined as flowing streams and rivers that are greater than 100 feet wide at the water's edge at the time of construction.

Wetland: Includes any area that satisfies the requirements of the current federal methodology for identifying and delineating wetland.

#### 1.4 RELATED PLANS AND DRAWINGS

The following documents include additional requirements specifically relating to construction at waterbodies and wetlands and are referenced throughout this plan.

- ◆ Hazardous Materials Management and Spill Prevention and Countermeasure Plan
- ◆ Reclamation Plan

## 2. CONSTRUCTION METHODS

Specific construction methods will be determined by the Contractor utilizing the requirements of this plan as the minimum acceptable standards.

### 2.1 DRY STREAMS

Dry stream and drainage crossings will be constructed using the same construction methods that will be used along the rest of the ROW, except that spoil will be placed outside the channel to provide unrestricted drainage across the ROW. The Company Environmental Inspector will assist the Contractor, where necessary, in determining the limits of the dry channel. In wide channels, gaps may be left in the spoil piles to allow for the required drainage. During cleanup and reclamation, the preconstruction profiles and contours (including meanders of the streambed) of dry and intermittent streams will be re-established.

### 2.2 MARKING AND FLAGGING

The Company will sign and/or flag the following boundaries at least 72 hours prior to any clearing or grading, or before any construction crew is within 1 mile of any site requiring signs and/or flagging.

- ◆ 60-foot limits of the ROW in waterbodies and wetlands (survey flagging)
- ◆ Edges of wetland boundaries ("Wetland Boundary" sign)
- ◆ Limits of 100-foot buffers for fueling and concrete coating activities ("No Refueling" sign)
- ◆ 10-foot buffers from the water's edge for spoil storage ("No Spoil Storage Beyond This Point" sign)

No activities are permitted outside of approved work areas.

### 2.3 HAZARDOUS MATERIALS

The Contractor will comply with the requirements included in the project's and the Contractor's Hazardous Materials Management and Spill Prevention and Countermeasure Plans. Contractor will not store hazardous materials, chemicals, fuels, lubricating oils, or perform concrete coating activities within 100 feet of any water body or dry drainage, or within any designated municipal watershed area (except at locations designated for these purposes by the BLM and/or Environmental Inspector). Equipment or vehicles that are crossing or working within 100 feet of waterbodies will not be refueled unless a specific exception is given by an Environmental Inspector. If any hazardous materials must be temporarily stored or transferred within 100 feet of a stream (i.e. stationary pumps), then it must be placed within a secondary containment structure as specified in the Hazardous Materials Management and Spill Prevention and Countermeasure Plan.

### 2.4 CLEARING AND GRADING

Clearing and grading at waterbody crossings will be limited to that needed to construct the crossing. During clearing, the root systems will be left in place except over the trench line and in areas that require grading. Root systems may also be removed along the travel lane as determined necessary by the Environmental Inspector to allow safe passage by rubber tired vehicles. Removal of root systems over the travel lane to allow safe vehicle access in areas that do not require grading will require a variance on federal lands. Grading will be limited to the trench line, the banks of streams, and locations with side slopes. Grading within 50 feet of stream banks is restricted to that needed for the equipment crossing, until construction of the actual pipeline crossing has begun.

Prior to or immediately after any ground disturbing activity, temporary sediment control devices such as silt fence and straw bales will be installed at the base of all slopes leading to waterbodies in accordance with the project's Soil Conservation, Sedimentation, and Erosion Control Plan. The Contractor will maintain these devices in functioning order until construction activities, including reclamation activities, have been completed.

### 2.5 VEHICLE AND EQUIPMENT CROSSING

#### 2.5.1 Waterbodies

Only clearing equipment may cross waterbodies prior to the installation of an equipment bridge. Waterbody fording by clearing equipment is limited to one crossing per piece of equipment. Fording will not be used as a crossing method for other vehicles or equipment.

Equipment bridges will be one of the following types:

- ◆ Portable bridges that span the channel
- ◆ Flume(s) and clean rock riprap (with a 20-inch minimum diameter)
- ◆ Timber equipment mates (installed above the waterline) used as a bridge over small waterbodies

Each bridge will be designed to allow for the maximum predicted flows for the time frames that it will be in place, including all expected precipitation events. The Contractor will also maintain bridges so that soil from equipment or the bridge abutment is prevented from entering any waterbody.

All equipment bridges will be removed as soon as possible after permanent seeding.

#### 2.5.2 Wetlands

If the wetland is dry, equipment can use the ROW for access on an as-needed basis with as much traffic as possible routed around the wetland.

For wetlands with standing water or saturated soils, the equipment operating in the wetland will be limited to that needed to construct the wetland crossing. The ROW will not be used as an access route unless it is the only possible method of access.

Foreign material (upland soil, rock, tree stumps, etc.) will not be imported into the wetland to stabilize the working area. If standing water or saturated soils are present, equipment will work from, and access across, timber equipment mats.

### 2.6 WATERBODY INSTALLATION METHODS

There are three general construction methods for installing pipelines across waterbodies:

- 1) Dry Trench Method: routing the flow around the trench during trench excavation, installation of the pipeline and backfilling.
- 2) Open-Cut Method: allowing the stream flow to continue through the work area during trench excavation, installation of the pipeline, and backfilling.
- 3) Directional Bore Method: allowing the pipeline to be pulled into a subsurface bore hole which results in no surface disturbance.

Contractor will use the directional bore method on all major crossings unless otherwise dictated by BLM.

#### 2.6.1 General Requirements

The following requirements apply to all waterbody-crossing methods.

- ◆ Bore pits will be kept to a minimum size
- ◆ Spoil storage from pit excavations will be at least 100 feet from the water's edge and will be located behind sediment barriers.
- ◆ Drilling fluids will be kept contained at all times

#### 2.6.2 Open Cut Construction: Minor and Intermediate Waterbodies

The open cut method applies to minor and all intermediate waterbody crossings.

ETC plans to open cut the section crossing Porcupine Creek. The surrounding terrain with steep slopes is not conducive to utilizing the bore method. Prior to disturbance of the creek banks, a flume pipe will be installed in the creek bottom to allow for continuous water flow during construction. The open trench will be excavated below the flume pipe and will remain dry while the pipeline is being installed. Following the completion of the creek crossing, the flume pipe will be removed and the creek's flow pattern returned to normal.

Grading and trenching of the ROW adjacent to (upslope of) the stream banks, and fabrication and weighting of the pipe section for the crossing will be completed prior to in-stream trenching. Topsoil will be salvaged from the stream banks prior to grading and trenching.

The bore technique will however be utilized for installing the pipeline under Beaver Creek. The existing terrain will allow sufficient working area and has the proper slopes required for a successful bore. Measures will be taken to insure the proper depth of the pipeline and storm water mitigation plans will be initiated to prevent possible contamination of the water flow.

## 2.7 WETLAND CROSSING METHODS

### 2.7.1 Dry Conditions

Prior to trenching, all topsoil up to 12 inches in depth, as determined by the Environmental Inspector, will be stripped from over the trenchline. If the wetland is located on a sidehill, topsoil will be stripped from the entire area being graded. Topsoil will be stockpiled in a location where it will not be mixed with any upland soils or wetland subsoil. Care will be taken to ensure that the area stripped over the trenchline is wide enough to include topsoil over trench sidewalls that may slough off due to high ground water. Sediment barriers will be installed between the spoil piles and the edge of the ROW, where the Environmental Inspector determines that there is a potential for material to leave the ROW. If dewatering is required, the requirements described in Appendix "B", Section 3.2.4, will be followed.

### 2.7.2 Standing Water or Saturated Soil Conditions

If possible, as determined by the Environmental Inspector, all topsoil up to 12 inches in depth will be removed and stockpiled as directed above in Section 2.7.1.

Timber equipment mats, if needed, will be the method of stabilizing the work area. Sedimentation barriers will be placed on the down-slope edge of the ROW if the wetland continues beyond the ROW or both edges of the ROW are flat and there is a potential for material to leave the ROW.

The drag section needed for each wetland crossing will be built in an upland area. If the wetland working space is stable, as determined by the Company

Construction and Environmental Inspector, or is short (less than 200 feet), normal construction techniques utilizing equipment mats will be used for construction. For unstable conditions in larger saturated wetlands a float technique will be used to lay the pipe.

Tie-in locations will be in upland areas, if possible, with a soft trench plug between the tie-in location and the wetland. Tie-in locations that require dewatering will use a dewatering structure that is located outside the wetland boundary, so that no heavily silt-laden waters reach any waterbodies or wetlands.

If trench dewatering is required, implement measures described in Appendix “B”, Section 3.2.4.

### 3. EROSION CONTROL AND RESTORATION

#### 3.1 EROSION CONTROL

Immediately after initial ground disturbance, temporary erosion control measures will be installed. This will include at a minimum, sediment barriers at the base of all slopes along the ROW leading to waterbodies and wetlands. All temporary controls will be maintained until permanent erosion control is in place as defined in the Soil Conservation, Sedimentation, and Erosion Control Plan. After pipe installation, trench breakers will also be placed at the base of slopes leading to waterbodies and where groundwater may migrate along the trench. Waterbars will be placed just below the trench breakers to carry off any excess water into vegetated areas.

Streambanks and other steep slopes around waterbodies may require additional stabilization beyond the replacement of original contours and other normal erosion control requirements (as described in the Soil Conservation, Sedimentation, and Erosion Control Plan). Stabilization of streambanks with on-site materials (e.g. placing felled trees along the streambanks) will be determined on site by the BLM’s field representative and with appropriate permit approvals. Erosion control matting may be required for stabilization above the high water mark for streambanks over 50 percent sloped and as directed by the Company. The matting will extend up the banks 100 feet or until the slope is less than 50 percent, whichever is less. Installation and stapling of erosion control matting will follow procedures specified in the details. For streambank installations, mats will be laid parallel (upper mat overlapping lower mat in a shingle pattern) to the waterbody to a point above the top of the bank. As mentioned above, native materials (rocks, logs, etc.) may be used in conjunction with the matting to aid in stabilization of banks. Below the high water mark, clean riprap may be used on stream banks, as directed by the Company, to prevent bank erosion. Contractor may use excess rock obtained from the ROW for rip-rap, if rock is of sufficient quality and quantity as determined by the Company, or will obtain rock from an approved commercial source.

#### 3.2 RESTORATION

Original meanders, profiles, cross-sections, and other contours of waterbodies and 25 feet up each stream bank will be restored, final cleanup concluded, seeding accomplished, and mulching or erosion control mats installed, prior to the end of the following time frames,

unless otherwise authorized by the Company (private lands) and/or the BLM agency representative (federal lands).

- ◆ Minor streams – 24 hours after initial in-stream disturbance
- ◆ Intermediate streams – 72 hours after initial in-stream disturbance
- ◆ Wetlands – 10 days after backfilling

There are exceptions to these time frames.

- ◆ Temporary bridges or other materials (e.g. timber mats) required for access will not have to be removed until they are no longer needed. All other areas at the crossing, not needed for the bridge abutments, must meet the requirements above.
- ◆ Very steep or incised stream/river banks with the likelihood of further erosion will not have the original contour restored. These stream/river banks will be restored at a 1.5 to 1 slope (horizontal to vertical), which is equivalent to 67 percent slope. Transition from adjacent slopes, to those reclaimed over the ROW will be made so as to prevent erosion between these transitions, and to minimize eddying at the tie of these slopes.

If reclamation and seeding is deferred more than 10 days after final grade restoration near waterbodies and wetlands, all disturbed slopes above waterbodies and wetlands will be temporarily stabilized by applying straw mulch for a minimum distance of 100 feet above the edge of the waterbody or wetland.

Fertilizers, herbicides, and lime will not be used within 100 feet of waterbodies.

## **APPENDIX D**

### Pressure Testing

1. Introduction
2. Purpose
3. Pressure Testing Procedure
  - 3.1 Pre-Testing Requirements
    - 3.1.1 Permits
  - 3.2 Pressure Test Process
    - 3.2.1 Test Medium
    - 3.2.2 Discharge Location
    - 3.2.3 Pumps
    - 3.2.4 Safety Measures
    - 3.2.5 Cleaning the Pipeline
    - 3.2.6 Filling the Pipeline
    - 3.2.7 Testing the Pipeline
    - 3.2.8 Depressurizing the Pipeline
  - 3.3 Records

## 1. INTRODUCTION

The Pressure Testing Plan (plan) identifies measures to be taken by the ETC Canyon Pipeline, LLC (Company) and its contractors (Contractor) to ensure that pressure testing operations are carried out in accordance with the following:

- United States Department of Transportation Code of Federal Regulations (CFR), Title 49, Part 192, Subpart J, entitled “Test Requirements”
- Environmental Protection Agency

Measures identified in this plan apply to work within the project area defined as the right-of-way (ROW) and other areas used during pressure testing of the pipeline.

## 2. PURPOSE

The purpose of this plan is to ensure that necessary measures are implemented during pressure testing of the pipeline to ensure the safety of all pipeline construction personnel and the general public.

This plan describes safety standards and practices that will be implemented during construction of the project to minimize health, safety, and environmental concerns related to pressure testing on the project.

## 3. PRESSURE TESTING PROCEDURES

The following procedures will be implemented by the Contractor during pressure testing operations. This section of the plan describes pre-testing requirements, the typical sequence of activities associated with pressure testing operations, and notifications required by the Contractor and Company.

### 3.1 PRE-TESTING REQUIREMENTS

#### 3.1.1 Permits

The Company is responsible for securing air for the pressure testing of the pipeline and associated appurtenances. The Company will also comply with the rules and regulations of the Colorado Department of Public Health and the Department of Transportation (DOT).

The Company will procure air compression equipment from a qualified service company. Under no circumstances will an alternate medium be used without prior authorization from the Company. There will be designated discharge locations on construction right-of-way. Discharge test air will be vented to the atmosphere at designated blow down valve sets. Precautions will be taken to select blow down locations which will minimize noise impacts to the public.

### 3.2 PRESSURE TEST PROCESS

#### 3.2.1 Air Compression Equipment Delivery

- Pressure test equipment will be delivered to a designated load point located at the starting point of the pipeline, located in Spruce Creek. The Company’s Environmental Inspector will be responsible for

notification of nearby residences or affected governmental agencies, to include Garfield County Dispatch.

### 3.2.2 Discharge Locations

There will be discharge locations located in Spruce Creek, Beaver Creek and Mamm Creek, at pre-constructed valve sets. Discharge test air will be vented into the atmosphere following the successful completion of the pressure test.

### 3.2.3 Portable Compressors

Portable compressors for pressure testing will not be stationed within 100 feet of any residence. All residents, including the Garfield County Dispatch Center, will be notified at least 24 hours in advance of beginning the pipeline loading process.

### 3.2.4 Safety Measures

The Contractor will provide for the safety of all pipeline construction personnel and the general public during pressure test operations by:

- Placing warning signs in populated areas;
- Restricting access to the immediate area involving the pressure test (i.e., test shelter, manifolds, pressure pumps, instruments, etc.) to only those personnel engaged in the testing operations;
- Prohibiting major pipeline work not directly associated with the test operations around the pipeline sections being tested. (While the pipeline facilities are being pressurized and during the test all personnel not required for direct operations (check for leaks, tighten gaskets, check valve status, operating pumps, recording data, etc.) will be restricted from the area where the pipeline is being tested;
- Providing and maintaining a reliable transportation and communication system during the test operations whereby all personnel directly involved in the test will be able to communicate test status or problems that develop during the test;
- Checking all hoses, fittings, connectors, and valves for proper pressure rating;
- Restraining and securing fill and discharge lines/hoses; and
- Having their radiographic inspection subcontractor nondestructively inspect all temporary welds subject to pressure test pressure.

### 3.2.5 Cleaning the Pipeline

Upon completion of the pipe lowering and backfilling operations for each test section of the pipeline and prior to filling and pressure testing, the Contractor will clean the pipeline by running cleaning pig(s) using compressed air to propel the pig(s). The pig(s) will be run completely through the pipeline test section. The Company's representative will be present to approve the cleanliness of the line.

The Contractor will run the brush pigs and squeegees continuously through the line until all solid, dust, and mill scale is removed, unless otherwise approved by the Company's representative. Company's representative will be present for the first and last brush pig run to compare their respective conditions. No red dust will be blowing out of the line when the final brush pig is run. This will assure that all rust has been removed from the interior walls of the pipeline. Foam squeegees will be run after the final brush pig run to enhance the removal of dust mill scale.

### 3.2.6 Filling the Pipeline

Prior to filling a test section with compressed air, the Contractor will make a final check to verify the following:

- Valve body drain plugs have been removed, carefully cleaned, taped (Teflon) and replaced;
- All mainline valves are in open position;
- Valves have been greased, stroked, and the packing tightened; all pipe and bolt connections are tight;
- Test manifolds are properly fabricated and tested;
- Pumps and compressors are in good working condition;
- Instruments are ready for use (proper charts installed, ink pens filled, clocks wound, correct calibration, etc.); and
- Pigs are properly installed.

### 3.2.7 Testing the Pipeline

The official test duration will be 8 hours minimum with the pressure maintained at the minimum specified at all points in the pipeline section. The test will be accepted upon proof of no leakage.

In the event of break during testing, the break will be repaired as directed by the Company and the above test repeated until a satisfactory test is obtained on the section.

### 3.2.8 Depressurizing the Pipeline

As soon as possible, after the test has been presented by the Contractor as a successful test and accepted by the Company Testing Inspector, the pipeline will be depressurized.

### 3.3 RECORDS

The Contractor will keep and furnish complete records of all phases of the testing program including recording charts, deadweight log, pressure, temperature (both pipe and ambient) and weather conditions, and make, style number, and conditions of all pigs used in filling the pipeline.

## **APPENDIX E**

### **Reclamation Plan**

1. Introduction
  - 1.1 Purpose
  - 1.2 Goals & Objectives
  - 1.3 Environmental Training
  - 1.4 Related Plans / Maps
  - 1.5 Responsibilities
    - 1.5.1 The Company
    - 1.5.2 The Contractor
    - 1.5.3 The Environmental Inspector
2. Reclamation Process
  - 2.1 Reclamation Activities
  - 2.2 Rock Disposal
  - 2.3 Final Cleanup
  - 2.4 Topsoil Restoration
  - 2.5 Miscellaneous Agriculture Features
  - 2.6 Seedbed Preparation
  - 2.7 Soil Supplements
  - 2.8 Revegetation
    - 2.8.1 Species Selection and Source
    - 2.8.2 Seed Application Rates & Viability
    - 2.8.3 Seeding Methods & Procedures
      - 2.8.3.1 Drill Seeding
      - 2.8.3.2 Broadcast Seeding
  - 2.9 Permanent Erosion Control
3. Noxious Weed Control
  - 3.1 Weed Control Measures During Construction
4. Worker Safety and Spill Reporting
5. Reclamation Schedule and Documentation
6. Post-Construction Monitoring and Evaluation
  - 6.1 Revegetation and Erosion Control Monitoring
  - 6.2 Evaluating Reclamation Success

## 1. INTRODUCTION

This Reclamation Plan (plan) describes measures to be taken by ETC Canyon Pipeline, LLC (Company) and its construction contractors (Contractor) for topsoil restoration, reseeding, planting, noxious weed control and reclamation monitoring.

### 1.1 PURPOSE

The purpose of this plan is to describe in text and on drawings the prescribed methods for topsoil replacement, reseeding, noxious weed control, and monitoring for reclamation success. This plan is applicable to the construction on right-of-way (ROW) and extra workspace locations.

### 1.2 GOALS AND OBJECTIVES

The short-term goals of reclamation are to control erosion and sedimentation and to minimize impacts to adjacent land uses. Properly executed construction practices and optimum scheduling will mitigate short-term impacts. Long term goals include controlling erosion and sedimentation; protecting water resources and soils; limiting the introduction and spread of noxious weeds; and returning disturbed areas to pre-existing condition. Monitoring during construction and post-construction will ensure that these goals are achieved.

### 1.3 ENVIRONMENTAL TRAINING

The Company will conduct environmental training for all project personnel. Training will include topsoil protection measures and methods for controlling the spread of noxious weeds (e.g., maintaining clean vehicles and equipment).

### 1.4 RELATED PLANS / MAPS

The following documents include additional requirements specifically related to the reclamation of the ROW and ancillary areas:

- ◆ Soil Conservation, Sedimentation and Erosion Control Plan
- ◆ Stream Crossing and Wetland Protection Plan
- ◆ Hazardous Materials Management and Spill Prevention and Countermeasure Plan
- ◆ Alignment Sheets

### 1.5 RESPONSIBILITIES

Responsibilities are detailed below:

#### 1.5.1 The Company

The Company will be responsible for ensuring that the Contractor meets the standards defined in this plan to restore all disturbed areas to pre-construction conditions and to ensure long-term monitoring of restoration success. The Company will take remedial actions as necessary to restore and maintain a stable vegetative cover on the ROW. The Company will provide the Contractor with the

appropriate blended seed mixes developed through consultation with agency representative and landowners.

#### 1.5.2 The Contractor

The pipeline Contractor will be responsible for post-construction re-seeding of the ROW, extra workspaces, and off-ROW ancillary sites following their construction activities. Reclamation will be conducted according to this plan as specified for the Contractor.

#### 1.5.3 The Environmental Inspector

The Environmental Inspector will have the responsibility to ensure field activities are performed in accordance with this reclamation plan by the Contractor and in compliance with all other permits and agreements. The Environmental Inspector will have the authority to make site-specific field changes in certain reclamation procedures within the guidelines of this plan in consultation with the landowner or BLM.

## 2. RECLAMATION PROCESS

The following sections outline the pre-construction planning and sequential steps for restoring the ROW and extra workspaces following installation of the pipe and backfilling of the trench. However, one of the most important factors relating to successful reclamation takes place during the initial grading of the ROW. Topsoil salvage requirements and methods are discussed in detail in the Soil Conservation, Sedimentation, and Erosion Control Plan.

### 2.1 RECLAMATION ACTIVITIES

The Environmental Inspectors with the BLM, Soil Conservation Authority and Landowners will work to determine depth of topsoil, salvage, appropriate seed mixes, and seeding methods.

### 2.2 ROCK DISPOSAL

“Excess rock” is defined as all rock that cannot be returned to the existing rock profile in the trench or graded cuts, or is not needed to restore the ROW surface to a condition comparable to that found adjacent to the ROW. This does not include tailings from boring operations. (**NOTE\*** *Absolutely no tailings from the proposed boring areas will be spread or stored on federal land.*) Excess rock will be randomly distributed across the ROW, piled or windrowed to create or enhance wildlife habitat, or arranged to block use of the ROW by motor vehicles. If not practical, the Contractor will remove other excess rock from the ROW and haul it to an approved disposal site. The Company will coordinate with landowners or the BLM regarding the methods of disposal.

### 2.3 FINAL CLEANUP

Within 30 days after backfilling the trench, the Contractor will make every effort to complete final cleanup and installation of permanent erosion control structures. If circumstances prevent achieving cleanup within 60 days on federal lands, the Company will apply for a variance from the BLM.

The ROW and other project-related areas where soil has been disturbed will be restored as close to pre-excavation grades, compaction, and other conditions as possible, unless a specific exemption has been granted by the landowner or BLM. No solid waste, trash, or vegetative matter will be buried on the ROW.

Final compaction of disturbed areas will be returned to approximate pre-construction conditions. In cases where this is not possible, e.g., steep slopes or rocky areas where full-ROW width topsoil salvage was not required, compaction will not vary more than 10 percent from adjacent off-ROW conditions. The Company will test soil compaction to a depth of 18 inches, if possible, at regular intervals using hand-held penetrometers or equivalent testing equipment and procedures.

The Contractor will take remedial action as directed by the Company at all locations where compaction is not within the previously described 10-percent limit. The Contractor will decompact excessively compacted areas with a paraplow, "Vibrashank," or other deep tillage implement. In areas where topsoil has been segregated, the subsoil will be decompact prior to re-spreading the topsoil.

In areas with a pre-existing rocky surface material, the Contractor will spread rock over the ROW to maintain a surface appearance similar to that of adjacent undisturbed terrain. Spreading rock on the surface will not be used as a method to dispose of excess rock except as described in Section .2.2.

Where approved by the landowner or BLM and environmental Inspector, the Contractor will randomly distribute any windrowed shrubs or other remaining vegetation debris over the ROW. However, this must be accomplished by hand or light equipment (e.g., all-terrain vehicles) after seeding of the ROW so the spread material will not interfere with the performance of seeding equipment and to prevent disturbance of the seedbed.

#### 2.4 TOPSOIL RESTORATION

After the trench has been backfilled and the ROW regraded, the Contractor will redistribute topsoil to the approximate location from which it was originally removed. Restored topsoil will be left in a roughened condition to discourage erosion and enhance the quality of the seedbed. Topsoil will not be handled during excessively wet or frozen conditions as determined by the Environmental or Construction Inspector.

Topsoil will be redistributed as close to original salvage depths as possible. Salvage methods are discussed in Section 2.2 of the Soil Conservation, Sedimentation, and Erosion Control Plan. Segregation of subsoil and topsoil will be maintained throughout final cleanup procedures. The Contractor will be responsible for replacement of lost or degraded (mixed) topsoil with topsoil imported from a Company-approved and weed-free source.

Additional erosion control and soil stabilization will be required in areas adjacent to or within drainages. See the Soil Conservation, Sedimentation, and Erosion Control Plan and Stream Crossing and Wetland Protection Plan for additional information.

## 2.5 MISCELLANEOUS AGRICULTURAL FEATURES

All irrigation ditches, drain tiles, cattle guards, fences, and artificial and natural livestock/wildlife water sources will be maintained and repaired to at least pre-construction conditions. Temporary measures will be provided, as agreed with the landowner or BLM, for any of these facilities that are disrupted during the construction or reclamation process.

All drain tiles crossed by the trench line will be located and restored to the satisfaction of the landowner. Since the exact location or even the existence of drainage system may not be known prior to excavation, all drain tiles unearthed during excavation by the Contractor will be reported to the Company in writing.

## 2.6 SEEDBED PREPARATION

The Contractor will scarify, till, or harrow the seedbed to a depth of 3 to 4 inches or as determined by the Environmental Inspector prior to seeding where needed to improve revegetation potential. Those sites where seedbed preparation is not practical (e.g., steep slopes, rocky areas, etc.) will be left with adequate roughness following topsoil placement to create micro-environments for seed germination and growth, and to reduce the potential for soil movement.

## 2.7 SOIL SUPPLEMENTS

Generally, fertilizer will not be used unless requested by the landowner or recommended by either the Environmental Inspector or a soil conservation authority. At this time, no areas have been identified that require fertilizer.

## 2.8 REVEGETATION

The Contractor will be responsible for seeding the ROW and off-ROW ancillary sites using Company-supplied seed mixes, appropriate seeding methods, and approved application rates. The seeding requirements and scheduling of reclamation activities will be determined in coordination with BLM, Soil Conservation Authority or the appropriate landowner.

### 2.8.1 Species Selection and Sources

Selection of grass and shrub species for revegetation will be based on pre-construction community composition and soil types as well as establishment potential, soil stabilizing qualities, commercial availability of regional varieties, post-construction land use objectives, and agency recommendations. Native species will be utilized to the extent possible unless non-natives are specifically requested by a private landowner or land managing agency. Project seed will be purchased from and blended by qualified producers and dealers.

Certified weed-free or “blue-tagged” seed will be purchased for use on the project, but this status is only available for those native species with named varieties. All other seed will be free of primary noxious weeds. ETC Canyon Pipeline, LLC Oil & Gas (U.S.A.) Inc. will submit the seed for independent

testing prior to its use. The Contractor will be responsible for providing all seed tags to the Environmental or Construction Inspector at the end of each day.

BLM will specify the seed mix requirement as a Condition of Approval (COA) for this project.

### 2.8.2 Seed Application Rates and Viability

Species ratios and Pure Live Seed (PLS) application rates will be developed in consultation with landowners, agency specialists and other regional revegetation consultants. Seeding rates will be determined in PLS pounds per acre and seeds per square foot based on drilled application rates. Broadcast seeding rates will be twice the drill rate.

Seed will be used within 12 months of testing to assure seed viability. If additional seeding is required in the year following construction, additional viability test will be conducted to determine any need for adjustment of application rates.

The Contractor will seed wetlands, when necessary as determined by the Environmental Inspector and BLM. Successful recolonization by wetland species is generally related to effective topsoil salvage methods and sources of seed and rhizomes in adjacent areas.

Streambanks will be seeded immediately upon completion of final cleanup as described in the Stream Crossing and Wetland Protection Plan and independent of other reclamation activities

### 2.8.3 Seeding Methods and Procedures

The Contractor will employ broadcast or drill seeding as determined in the field by the Company. Seeding activities will be contingent upon weather and soil conditions, and subject to evaluation by the Environmental Inspector. Seeding will not be permitted if there is more than 2 inches of snow on the ground unless approved by the Environmental Inspector and BLM field representative. Where approved by the landowner or land managing agency, the Contractor will randomly distribute any windrowed shrubs or other remaining vegetation debris over the ROW by hand or light equipment so as not to disturb the seedbed.

#### 2.8.3.1 Drill Seeding

Drill seeding will be employed wherever soil characteristics and slope allow effective operation of a range drill. Drill seeding will be performed perpendicular to the slope unless otherwise directed by the Environmental Inspector and BLM field representative. The drill will have a seed release mechanism sufficient to allow seeds of various sizes and densities to be planted at the proper seeding depth.

#### 2.8.3.2 Broadcast Seeding

Broadcast seeding will be employed in all areas where drill seeding cannot be performed. Seed will be applied using manually operated cyclone-bucket spreaders, mechanical spreaders, blowers or hydroseeders. Seed will be uniformly broadcast over disturbed areas. Immediately after broadcasting, the seed will be uniformly raked, chained, harrowed, or cultipacked to incorporate seed to a sufficient seeding depth. If it is not possible to cover the seed with mechanical methods, the seeding rates will be doubled.

## 2.9 PERMANENT EROSION CONTROL

Permanent erosion control methods will be utilized as needed for stabilization of slopes and soils as described in the Soil Conservation, Sedimentation, and Erosion Control Plan. Permanent erosion control measures will be installed within 30 days after the trench is backfilled to aid in site stabilization wherever required.

## 3. NOXIOUS WEED CONTROL

Noxious weeds are spread through the dispersal of seeds or the transport of propagative plant parts. It is therefore important to reduce the sources of seed and viable plant material prior to construction disturbance and to prevent its transport or importation during construction. The combination of methods described below will be employed to minimize the potential for expansion of noxious weed populations via the pipeline route.

### 3.1 WEED CONTROL MEASURES DURING CONSTRUCTION

The Company will require that all Contractor vehicles and equipment arrive at the work site clean, to prevent the importation of noxious weeds from a previous work site. Only after the Environmental Inspector has determined it to be free of soil, debris, or other potential sources of noxious weeds will any piece of equipment be allowed initial transport or access to the ROW.

## 4. WORKER SAFETY AND SPILL REPORTING

All contracted herbicide contractors will obtain and have readily available copies of the appropriate application permits and the Environmental Protection Agency Material Safety Data Sheets (MSDS) for the herbicides being used. All reasonable precautions will be taken to avoid spilling herbicides. However, a spill kit will be carried in all herbicide applicator's vehicles to facilitate quick and effective response to a spill, should one occur. Herbicide spills will be reported in accordance with the requirements described in the project's Hazardous Material Management and Spill Prevention and Countermeasure Plan

## 5. RECLAMATION SCHEDULE AND DOCUMENTATION

Reclamation activities will be determined in part by construction schedules and seasonal climatic conditions. Seeding and planting will be coordinated with other reclamation activities to occur as soon after seedbed preparation as possible. Ideally, the Contractor will complete permanent reclamation activities prior to the end of the typical fall planting season (September 1st - October 31st ).

Upon completion of reclamation, the Company's Construction Inspector, Environmental Inspector, and Land Agents, and BLM representatives will perform a final inspection of the ROW and ancillary facilities to verify that pre-construction commitments have been satisfied. A copy of the post-reclamation inspection form will be transmitted to the Contractor if any deficiencies or a need for remedial action is noted.

## 6. POST-CONSTRUCTION MONITORING AND EVALUATION

### 6.1 REVEGETATION AND EROSION CONTROL MONITORING

During the first growing season following construction and reclamation, qualified specialists will conduct intensive surveys to assess revegetation success and determine the need for further reclamation.

Revegetation monitoring will include evaluation of the following parameters as compared to adjacent (off-ROW) vegetation:

- ◆ percent total herbaceous cover (seeded species plus desirable volunteers), and
- ◆ species composition

Where applicable, the following will be evaluated:

- ◆ new or expanded populations of noxious weeds.

Areas with poor germination and/or growth will be evaluated to determine, if possible, the cause of the problem. Reclamation techniques will be modified as necessary to address any identified problems and appropriate remedial measures will be undertaken. The Contractor will be responsible for remediating any problem areas identified by the Company for the first growing season following construction. Thereafter, the Company will be responsible for obtaining a reclamation contractor to perform any necessary work.

Erosion control monitoring will be performed in response to significant weather events and/or concurrently with the revegetation monitoring during the first year following construction. Success criteria for both are discussed in Section 6.2.

Both erosion control and revegetation monitoring will be conducted routinely throughout the life of the pipeline to evaluate long-term survival of reestablished vegetation and the effectiveness of erosion control measures with specific attention to problem sites.

### 6.2 EVALUATING RECLAMATION SUCCESS

The Company is responsible for the stability and revegetation of all areas disturbed as a result of construction for the life of the pipeline. As discussed in Section 6.1, the Company will conduct intensive monitoring after the first growing season and routinely thereafter to assess soil stability and revegetation success.

The Contractor will reseed any portion of the ROW that does not exhibit 50 percent total herbaceous cover (comprised of seeded species plus desirable volunteers) relative to adjacent (off-ROW) vegetation after the first complete growing season. Additional seeding will be completed during the next seeding season (fall or spring). In the event that first year revegetation is affected by precipitation amounts significantly below the

annual average, the Company may request deferment of additional seeding activities until the following seeding window.

The reclaimed ROW will be considered stable when the surface appears similar to adjacent undisturbed land and the following accelerated erosion indicators do not exist:

- ◆ Perceptible soil movement (exceeding pre-construction conditions)
- ◆ Head cutting in drainages
- ◆ Flow pattern development resulting in large (greater than 12 inches in depth) rills or gullies
- ◆ Trench subsidence or slumping

Revegetation will be considered successful when the following criteria are met:

- ◆ Total herbaceous (seeded species plus desirable volunteers) cover is at least 75 percent of that on adjacent land,
- ◆ Species composition comprised of a mix of seeded species and desirable volunteers from adjacent communities, and

## **APPENDIX F**

# Fire Prevention & Suppression

1. Introduction
2. Purpose
3. Responsibilities and Coordination
4. Fire Prevention
  - 4.1 Pre-construction & Construction
    - 4.1.1 Training
    - 4.1.2 Smoking
    - 4.1.3 Spark Arrestors
    - 4.1.4 Parking, Vehicle operation & Storage Areas
    - 4.1.5 Equipment
    - 4.1.6 Road Closures
    - 4.1.7 Refueling
    - 4.1.8 Burning
    - 4.1.9 Fire Guard
      - 4.1.9.1 Fire Guard Communications
    - 4.1.10 Welding
    - 4.1.11 Restricted Operation
    - 4.1.12 Monitoring
5. Fire Suppression
  - 5.1 Suppression
  - 5.2 Monitoring
6. Notification
  - 6.1 Notification Procedures

## 1. INTRODUCTION

The Fire Prevention and Suppression Plan (plan) identifies measures to be taken by ETC Canyon Pipeline, LLC (Company) and its contractors (Contractor) to ensure that fire prevention and suppression techniques are carried out in accordance with federal, state, and local regulations. Measures identified in this plan apply to work within the project area defined as the right-of-way (ROW), access roads, all work and storage areas, and other areas used during construction of the project.

## 2. PURPOSE

The risk of fire danger during pipeline construction is related to smoking, refueling activities, operating vehicles and other equipment off roadways, welding activities and the use of flammable liquids. During pipeline operation, risk of fire is primarily from unauthorized entry onto the ROW. During maintenance operations, risk of fire is from vehicles and pipeline maintenance activities that require welding.

This plan establishes standards and practices that will minimize the risk of fire danger and, in case of fire, provide for immediate suppression.

## 3. RESPONSIBILITIES AND COORDINATION

This plan will be implemented by the Company and the Contractor on the project. The Company and the Contractor have the responsibility for providing all necessary fire-fighting equipment on the project site to their respective employees, and operating under the requirements of this plan. Prior to construction, the Company will contact the appropriate authorities to establish communications, obtain permits (if applicable), and/or fulfill other obligations as directed by fire control authorities. In addition to the above, the Company will:

- Ensure that prevention, detection, pre-suppression, and suppression activities are in accordance with this fire plan and federal, state and county laws, ordinances, and regulations pertaining to fire.
- Accompany agency representatives on fire tool and equipment inspections and take corrective action upon notification of any fire protection requirements that are not in compliance; and

The fire prevention and suppression measures described in this plan will be in effect from June 1 to the end of construction. These dates may change by advance written notice by fire control authorities. However, required tools and equipment will be kept in serviceable condition and be immediately available for fire suppression at all times.

## 4. FIRE PREVENTION MEASURES

### 4.1 PRECONSTRUCTION AND CONSTRUCTION

Methods and procedures that will be implemented prior to and during the construction period to minimize the risk of fire are described below.

#### 4.1.1 Training

Contractor will train all personnel about the measures to take in the event of a fire. Contractor will also inform each construction crewmember of fire dangers, locations of extinguishers and equipment, and individual responsibilities for fire prevention and suppression during regular safety briefings. Smoking and fire rules will also be discussed with the Contractor and all field personnel during the project's environmental training program.

#### 4.1.2 Smoking

Smoking is allowed only in areas that have been cleared and graded and a minimum of 10 feet from either edge of the right-of-way. All burning tobacco and matches will be extinguished before discarding. Smoking is also prohibited while operating equipment or vehicles, except in enclosed cabs or vehicles.

#### 4.1.3 Spark Arresters

During construction, operation, maintenance, and termination of the ROW, all Contractor and Company equipment operating with an internal combustion engine will be equipped with federally approved spark arresters. Spark arresters are not required on trucks, buses and passenger vehicles (excluding motorcycles) that are equipped with an unaltered muffler or on diesel engines equipped with a turbocharger. A BLM fire prevention officer will have full authority to inspect spark arresters on project equipment prior to its use on the project on federal lands and periodically during the construction project.

#### 4.1.4 Parking, Vehicle Operation and Storage Areas

In no case will motorized equipment, including worker transportation vehicles be driven or parked outside of the designated and approved work limits. Equipment parking areas, the ROW, staging areas, designated vehicle-parking areas, and small stationary engine sites, where permitted, will be cleared of all flammable material. Clearing will extend a minimum of 10 feet beyond the edge of the area to be occupied, but not beyond the boundaries of the approved ROW, extra workspace, or ancillary site. Glass containers will not be used to store gasoline or other flammables.

#### 4.1.5 Equipment

All motor vehicles and equipment will carry one long-handled (48-inch minimum) round-point shovel, and one dry chemical fire extinguisher (5 pounds minimum). Individuals using power saws and grinders will have a shovel as described above, and an 8-ounce capacity fire extinguisher immediately available. The Fire Guard will operate a truck equipped with a 125 gallon slip-on pump unit designed for wildfire firefighting. All equipment will be kept in a serviceable condition and readily available.

#### 4.1.6 Road Closures

Contractor will notify the appropriate fire suppression agency of the scheduled closures prior to the open-cut crossing of a road. If required, Contractor will construct a bypass prior to the open-cut installation of a road crossing, unless a convenient detour can be established on existing project approved roads or within project approved work limits. All by passes will be clearly marked by the Contractor. During road closures the Contractor will designate one person, who knows the bypass, to direct traffic. Contractor will minimize, to the extent possible, the duration of road closures.

#### 4.1.7 Refueling

Fuel trucks will have a large fire extinguisher charged with the appropriate chemical to control electrical and gas fires. The extinguisher will be a minimum size 35-pound capacity with B.C. or higher rating.

#### 4.1.8 Burning

No burning of slash, brush, stumps, trash, or other project debris will be permitted on the project.

#### 4.1.9 Fire Guard

Contractor will designate a Fire Guard for the construction spread prior to construction activities. The Fire Guard must be physically able, vigilant, and suitably trained to detect fires and use required fire-fighting equipment. The Fire Guard may not perform other functions during pipeline construction in addition to his/her Fire Guard responsibilities. The Fire Guard will be identified by a hard-hat decal and/or other appropriate designation. An alternate or back-up Fire Guard will be designated to assume responsibility, if the primary guard is unable to perform their duties. Contractor will provide, if required by the Company, additional fire watch-people with radio communication to the Fire Guard should construction activities be too widely spread for one Fire Guard to manage effectively.

4.1.9.1 Fire Guard Communications: The Fire Guard will be responsible for maintaining contact with fire control agencies, and will be equipped with a radio or cellular telephone so immediate contact with local fire control agencies can be made. If cellular phone coverage is not available, the Fire Guard will use the Contractor's frequency to contact their radio base at the Contractor's yard. From there, yard personnel will telephone emergency dispatch.

#### 4.10 Welding

One 5-gallon backpack pump will be required with each welding unit in addition to the standard fire equipment required in all vehicles. All equipment will be kept in a serviceable condition and readily available.

#### 4.11 Restricted Operations

The Contractor will restrict or cease operation on federal lands during periods of high fire danger at the direction of the responsible BLM or USFS Fire Management Officer. The Contractor will restrict or cease operations during periods of high fire danger at the direction of the Mesa County Sheriff's Office Fire Marshal. Restrictions may vary from stopping certain operations at a given time to stopping all operations. The company may obtain approval to continue some or all operations if acceptable precautions are implemented.

#### 4.12 Monitoring

Construction and Environmental Inspectors for the Company will inspect the job site and the Contractor's operations for compliance with all provisions of this plan. In addition, federal, state, and local fire control agencies may perform inspections in areas under their jurisdiction at their discretion.

### 4.2 PIPELINE OPERATION

During pipeline operation, the risk of fire danger is minimal. The primary causes of fire on the ROW result from unauthorized entry by individuals utilizing the ROW for recreational purposes and from fires started outside of the ROW. In the latter case, the ROW can be used by authorities as a potential fire break. During pipeline operation, access to the ROW will be restricted, in accordance with landowner requirements, to minimize recreational use of the ROW.

### 4.3 PIPELINE MAINTENANCE

During maintenance operations, the Company or its Contractor will equip personnel with basic fire-fighting equipment including fire extinguishers, and shovels as described in Section 4.1.5 Equipment. Maintenance crews will also carry emergency response/fire control contact phone numbers.

## 5. FIRE SUPPRESSION

### 5.2 SUPPRESSION

Contractor will take the following actions should a fire occur within the project area during construction.

- Take immediate action to suppress fires using all available manpower and equipment. Notify the Fire Guard.
- Immediately notify the nearest fire suppression agency of the fire location, action taken, and status (refer to Fire Suppression Contacts for a list of fire suppression agencies and emergency phone numbers).
- Relinquish the Fire Guard's direction of fire suppression activities to agency fire management officers upon their arrival.

If a reported fire is controlled, the Fire Guard will note the location and monitor the progress in extinguishing the fire. The Fire Guard, or their designee, will remain at the

fire scene until it is fully extinguished. The extinguished fire will be monitored in accordance with procedures described in Section 5.2 below.

**Fire Suppression Contacts**

<b>Construction</b>	<b>Phone Number</b>	<b>Office Location</b>
<b>BLM Lands, Colorado</b>		
Garfield County	(970) 257-4800	Grand Junction Interagency Fire Dispatch Center
<b>Private and State Lands, Colorado</b>		
Garfield County	(970) 285-9127	Garfield County Sheriff’s Office in Parachute
Rifle Fire Department	911	Rifle, CO
Grand Valley Fire Protection District	911	Parachute, CO
Environmental Inspector- Greg Norton	435-621-0285	Job Site
Fire Guard – Ingrid Norton	801-309-5359	Job Site

**5.2 MONITORING**

Contractor will mark the location and boundaries of all extinguished fires. The extinguished fire site will be monitored by the Contractor for a minimum of 24 hours.

Monitoring includes walking the fire site perimeter, as well as crossing through the site. The Fire Guard will maintain a log of all extinguished fire locations for future reference.

**6. NOTIFICATION**

**6.1 NOTIFICATION PROCEDURES**

Construction crewmembers will report all fires, whether extinguished or uncontrolled, to the Fire Guard. If the fire is uncontrolled, Contractor’s Fire Guard will call the nearest fire suppression agency (refer to Fire Suppression Contacts), and the Company. Information regarding the location of the fire, property ownership, and closest access roads should be provided to the Dispatch Office and the Company.

If a reported fire is controlled, but not extinguished, the Fire Guard will call to notify the nearest fire suppression agency to alert them of the situation. The status of the fire will be monitored by the Fire Guard and when extinguished, the nearest fire suppression agency will be notified. See table for a list of fire suppression contacts.

## **APPENDIX G**

# Hazardous Material Management & Spill Prevention

1. Introduction
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## 1. INTRODUCTION

This Hazardous Materials Management and Spill Prevention and Countermeasure Plan (HAZMAT Plan) describes measures to be taken by the ETC Canyon Pipeline, LLC (Company) and its contractors (Contractor) to reduce the risks associated with the use, storage, transportation, production, and disposal of hazardous materials (including hazardous substances and wastes) and petroleum products. In addition, this plan outlines the required spill prevention and response (cleanup) procedures for the project.

The HAZMAT Plan prepared as part of the Stormwater Pollution Prevention Plan as required by the project's National Pollution Discharge Elimination System (NPDES) permit for stormwater discharges. This plan was prepared in accordance with good engineering practices.

In general, hazardous materials and clean-up equipment will be stored at the construction yard. Materials Safety Data Sheets (MSDS) will be maintained at the Contractor's yard(s) throughout the construction period.

The Contractor will prepare and have the Company review and approve a HAZMAT Plan prior to any storage of hazardous substances or petroleum products. The company will have 10 days to review submitted plans.

### 1.1 PURPOSE OF PLAN

The purpose of this plan is to provide a description of hazardous materials management, spill prevention, and spill response/cleanup measures associated with the construction, operation, and maintenance of the project. In addition this plan provides Contractors with requirements and guidance for the creation of their own HAZMAT Plan.

### 1.2 OVERVIEW OF THE PLAN'S COMPONENTS

This plan includes the following components: (1) an introduction; (2) a description of the spill prevention procedures related to vehicle refueling and servicing and the transportation, storage, and disposal of hazardous materials; (3) guideline for developing the Contractor's HAZMAT Plan; (4) a description of the physical and procedural methods for spill control and cleanup; and (5) an overview of the notification and documentation procedures to be followed in the event of a spill.

### 1.3 PLANS AND MAPS RELATED TO THE HAZMAT PLAN

**Construction Alignment Sheets:** These maps show the locations of drainages, waterbodies (defined as flowing streams and rivers), wetlands, and other sensitive resource areas.

**Fire Suppression and Prevention Plan:** This plan details measures to be taken to reduce the risk of starting a fire, and measures to be implemented in the event a fire does occur within the project construction area.

**Stream Crossing and Wetland Protection Plan:** This plan provides detailed information on measures that will be implemented during construction to avoid and/or minimize project-related impacts to waterbodies and wetlands.

## 1.4 REGULATORY OVERVIEW

Major legislation pertaining to hazardous materials includes the Comprehensive Environmental Response, Compliance, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), the Clean Air Act, and the Clean Water Act.

Numerous other federal, state, and local regulations also govern the use, storage, transport, production, and disposal of hazardous materials. Some of the key requirements of these laws are outlined in the following:

- ◆ Title 29, CFR, Part 1910.1200 (Hazardous Communication Standard). Title 27, CFR, Part 55 (storage and use of explosives)
- ◆ Title 40, CFR, Parts 112, 260 to 263, and 279 (hazardous wastes definitions, standards for hazardous waste generators, and requirements for Spill Prevention Control and Countermeasure Plans)
- ◆ Title 49, CFR, Part 171-180 (hazardous materials transportation)
- ◆ Bureau of Land Management (BLM) Instruction Memorandum 94-253. Title 40, CFR, Part 1910.101 to .111 and .120 (OSHA regulations)
- ◆ Superfund Amendments and Reauthorization Act (SARA) Title III, Section 301-303 (emergency planning), Section 304 (emergency release notification), and Section 311/312 (community right-to-know reporting requirements)
- ◆ Bureau of Land Management (BLM) – GSFO Hazmat Contingency Plan (incident reporting and mitigation protocol)

This plan is intended to comply with and compliment existing regulations pertaining to the safe use of hazardous materials. Persons responsible for handling hazardous materials for this project will be trained in the proper use/management of the materials and will be familiar with all applicable laws, policies, procedures, and best management practices (BMP's) related to them.

## 2. CONTRACTOR'S GUIDELINES FOR DEVELOPING THE HAZMAT PLAN

The following sections provide specific guidelines for the preparation of the HAZMAT Plan by Contractor.

### 2.1 CERTIFICATIONS, ACKNOWLEDGEMENTS AND DESIGNATION OF COORDINATOR RESPONSIBLE PERSON(S)

#### 2.1.1 Certifications

Contractor will certify that all of the information provided in the HAZMAT Plan is accurate and complete to the best of their knowledge. Contractor will also certify that they are committed to implementing the HAZMAT Plan as written. As per the requirements of 40 CFR, Part 112, Contractor will have the HAZMAT PLAN reviewed and certified by a registered Professional Engineer.

### 2.1.2 Amendments

In completing this certification, Contractor will agree to make all necessary and appropriate amendments to the plan and submit any such amendment to the Company and the appropriate county, state, and/or federal authorities within 7 days of finding an amendment is necessary. Amendments to the plan will be necessary under any of the following circumstances:

- ◆ 100 percent or more increase of a previously disclosed material,
- ◆ any handling of a previously undisclosed hazardous material subject to inventory requirements,
- ◆ a change of business address, name, or ownership.

### 2.1.3 Responsible Person(s)

Contractor is responsible for contacting county representatives to determine county requirements for Hazardous Materials Business/Management Plans. Generally counties will provide guidelines and forms for completion and submittal to the county. As required on the applicable county forms that the Contractor will obtain, Contractor will designate a primary emergency coordinator for hazardous materials management and emergency response. Two alternates will also be identified. Business, residential, and cellular or pager telephone numbers will be provided for all three persons as necessary, to allow for contact on a 24-hour basis. Primary and alternate emergency coordinators will be knowledgeable of the chemicals and processes involved in Contractor's operation. They will have full access to all facilities, including locked areas, and must have the authority to commit company resources. They will also have stop work authority to prevent impacts (potential or actual) to environmental resources.

## 2.2 FACILITIES' DESCRIPTION AND INVENTORY OF MATERIALS

Contractor's submittals will be provided to the Environmental Inspector. The Environmental Inspector will provide submitted information to the jurisdictional agencies as appropriate.

### 2.2.1 Site Map

Contractor will complete the relevant county forms related to business information and description. The Contractor is also required to provide a site map/facility map for each construction yard indicating storage and safety precautions for hazardous materials and hazardous wastes. The Contractor's site map will, at a minimum, indicate the following:

- ◆ orientation and scale
- ◆ total land area in square feet
- ◆ access and egress points
- ◆ building and/or temporary trailers

- ◆ parking lots
- ◆ adjacent land uses (if business, indicate business name)
- ◆ surrounding road, storm drains, and waterways (including waterbodies and wetlands)
- ◆ locations of hazardous materials and hazardous waste storage
- ◆ underground and above ground tanks
- ◆ containment or diversion structures (dikes, berms, retention ponds)
- ◆ shutoff valves and/or circuit breakers
- ◆ location of emergency response materials and equipment
- ◆ location of MSDS and HAZMAT PLAN
- ◆ location of emergency assembly area
- ◆ location of clean up equipment within the yard

As noted in Section 3.6 – Storage of Hazardous Materials, hazardous materials will be stored only in designated staging areas 100 feet from streams (dry and wet) and wetlands (dry and wet) and equipment storage yards. Temporary pumps, diesel powered generators, etc., will be located at least 100 feet from the edge of streams (dry and wet), wetlands (including dry or seasonal wetlands), and other sensitive areas defined by the project's Environmental Inspectors. If storage areas cannot be located at least 100 feet from streams and wetlands because of topographic conditions or space, the Contractor will also provide a sketch of where the materials will be stored in relation to the waterbody and location of clean up equipment. Include measures to be implemented for secondary containment as specified in Section 3.6.1, Physical Storage Requirements.

### 2.2.2 Inventory

Contractor will provide a complete inventory to the Company of all hazardous substances that will be used (refer to Title 40, CFR, Parts 116 and 302). All inventory forms required by the relevant county will be provided by the Contractor as part of their HAZMAT Plan.

## 3. HAZARDOUS MATERIALS MANAGEMENT

Construction, operation, and maintenance of the project will require the use of certain potentially hazardous materials such as fuels, and herbicides. By definition, hazardous materials (substances and wastes) have the potential to pose a significant threat to human health and the environment based upon their quantity, concentration, or chemical composition. Generally, hazardous materials will be stored in the Contractor's yard and not on the right-of-way (RO). When stored, used, transported, and disposed of properly as described below, the risks associated with these materials can be reduced substantially.

### 3.1 OVERVIEW OF HAZARDOUS MATERIALS PROPOSED FOR USE

The following project-specific measures pertain to all vehicle refueling and servicing activities as well as the storage, transportation, production and disposal of hazardous materials (substances/wastes). These measures are intended to prevent the discharge of fuels, oils, gasoline, and other harmful substances to waterbodies, groundwater aquifers, and/or other sensitive resource areas during project construction.

Hazardous materials (substances) used during project construction may include solvents and other substances. In addition, petroleum products such as gasoline, diesel fuel, lubricating oils, and hydraulic fluid will be used. Some of these materials will be used in relatively large quantities at staging areas, in storage yards, and on the ROW to operate and maintain equipment during construction. Smaller quantities of other materials such as: herbicides, paints, and other chemicals will be used to control noxious weeds and facilitate revegetation on the row, and to operate and maintain meter stations during the life of the project.

Additional materials will be necessary at other locations along the ROW (e.g., river crossing, hydrostatic test stations) and at off-ROW construction yards. Listings of other hazardous materials that will be used during construction, operation, and maintenance of the project in other locations will be identified on the Contractor's Hazardous Substances Inventory form included in Attachment 1. The Company will compile all Contractors' submittals and update Attachment 1 prior to start of construction. The Company will update the inventory of hazardous materials used/stored on the project as needed throughout the life of the project. This information will be provided to the appropriate regulatory agencies as required (i.e., the BLM requires reporting of all hazardous materials as defined by CERCLA, RCRA, and the Environmental Protection Agency (EPA). A copy of the compiled Attachment 1 will be provided to the BLM).

### 3.2 TRAINING

All project personnel will be required to receive basic spill prevention training. The Company is required to maintain a record of those workers who have received environmental training and ensure that only trained employees are allowed to work on the project. In addition all Contractor personnel who will be involved with the transportation and storage of fuels or hazardous substances, equipment maintenance, and spill response will be required to attend a higher level training class given by the Contractor as described in Section 5.2.

### 3.3 VEHICLE REFUELING AND SERVICING

Construction vehicles (e.g., trucks, bulldozers, etc.) and equipment (e.g., pumps, generators, etc.) will be fueled/serviced in designated upland staging areas at least 100 feet from waterbodies and wetlands (including dry streams and dry or seasonal wetlands, refer to the stream and wetland crossing list in the Stream Crossing and Wetland Protection Plan). If pumps, generators, etc. cannot be located at least 100 feet from streams and wetlands because of topographic conditions or space limitations, special precautions (e.g., placing pumps and small refueling cans in secondary containment structures) will be taken to prevent the spill or release of hazardous materials into the

waterway. Fueling will not occur within 200 feet of private wells or 400 feet of municipal wells. When selecting refueling areas, consideration will be given to slopes and other topographic conditions. Refueling locations will generally be flat to minimize the chance of spilled substance reaching a waterbody. In most cases, rubber-tired vehicles will be refueled and serviced at local gas stations or equipment yards off the ROW. Tracked vehicles will typically be refueled and serviced by fuel/service vehicles on the ROW. Every effort will be made to minimize the threat of a fuel spill during refueling and servicing. Fuel/service vehicles will carry extra plastic, a bucket or plastic pan to catch fuel, and minimum of 20 pounds of suitable absorbent material to handle potential spills. In addition, all vehicles will be inspected for leaks prior to being brought on-site and regularly throughout the construction period. In the event that a leak(s) is found, equipment will not be allowed to operate until all leaks have been repaired. Vehicles will also be equipped with fire fighting equipment as specified in the Fire Prevention and Suppression Plan.

Construction equipment requiring maintenance which might result in the draining or leaking of fluids will be serviced only after a 12 mil plastic liner has been installed between the equipment and the soil. This liner must be placed in such a manner that all fluid is contained.

Washing of construction vehicles (such as concrete trucks) will be allowed only in construction staging areas at least 100 feet from waterbodies and wetlands (including dry streams and dry or seasonal wetlands). Washing areas will be contained with berms or barriers to prevent migration of wastewater and/or sediments into waterbodies. Waste concrete material will be removed and properly disposed of once it has hardened.

### 3.4 EQUIPMENT INSPECTION AND DECONTAMINATION

Prior to moving equipment onto the ROW, the Environmental Inspector will check equipment for leaks while also inspecting the equipment for weeds. All equipment will be cleaned and weed-free prior to being moved to the ROW. Equipment contaminated from fuel or hydraulic line breaks will be cleaned with diapers and the diapers will be disposed of properly.

### 3.5 TRANSPORTATION OF HAZARDOUS MATERIALS

Procedures for loading and transporting fuels and other hazardous materials will meet the minimum requirements established by the Department of Transportation (DOT) and other pertinent requirements. At all times, hazardous materials will be transported in DOT approved containers. Prior to transporting hazardous materials, appropriate shipping papers will be completed. Vehicles carrying hazardous materials will be equipped with shovels, barriers tape, 4 to 6 mil plastic bags, personal protective clothing, and spill pads to contain a small spill should one occur during transport. In addition, vehicles transporting such materials will be properly signed (placarded) and/or marked. Prior to transporting hazardous materials, vehicles will be inspected for leakage and other potential safety problems. The Contractor will ensure that vehicle drivers are properly trained to respond to and report spills, leakage, and/or accidents involving hazardous materials (see Section 5.2 of this plan).

All hazardous materials used for the project will be properly containerized and labeled at all times, including during transportation. Smaller DOT approved containers will be used on-site to transport needed amounts of hazardous materials to a specific location. Transfer of materials from large to small containers will not be done by hand pouring, but will be accomplished using appropriate equipment including pumps, hoses, and safety equipment. These smaller (“service”) containers will also be clearly labeled.

### 3.6 STORAGE OF HAZARDOUS MATERIALS

Hazardous materials will be stored only in designated staging areas 100 feet from streams (dry and wet) and wetlands (dry and wet) and equipment storage yards. Temporary pumps, diesel powered generators, etc., will be located at least 100 feet from the edge of streams (dry and wet), wetlands (including dry or seasonal wetlands), and other sensitive areas defined by the project’s Environmental Inspectors. If storage areas cannot be located at least 100 feet from streams and wetlands because of topographic conditions or space limitations, special precautions will be taken to prevent the spill or release of hazardous materials into the waterway. These precautions will include limiting the quantity and amount of time such materials are stored near the stream or wetland, providing secondary containment, and using trained personnel to monitor activities at the storage site. Storage of greater than 55 gallons of hazardous materials will not be permitted within 100 feet of streams or wetlands. Cleanup materials, including absorbent spill pads and plastic bags, will also be stored in these areas. Hazardous materials will not be stored in areas subject to flooding or inundation.

#### 3.6.1 Physical Storage Requirements

**Security:** Hazardous materials will be stored in secure areas to prevent damage, vandalism, or theft. During construction hours, hazardous materials may be stored temporarily on the ROW but overnight storage on the ROW will be prohibited. All storage containers will remain sealed when not in use and storage areas will be secured (gated, locked, and/or guarded) at night and/or during non-construction periods.

**Storage Containers:** Containers will be compatible with the hazardous materials or wastes stored. If the container leaks or becomes damaged, the substance must be transferred to a container in good condition. Contractor will inspect containers at least weekly to discover any leaks in the containers or the containment systems. Containers used for transportation must comply with the DOT requirements, including those in Title 49, CFR, Part 173.

**Secondary Containment:** Secondary containment will consist of bermed or diked areas that are lined and capable of holding 110 percent of the volume of the stored material plus any potential precipitation accumulation, and will be provided for fuel and oil tanks stored on-site [e.g., in Contractor’s yard(s)].

**Container Management:** Containers holding hazardous substances will be kept closed during transfer and storage, except when it is necessary to add or remove the substance.

Incompatible Wastes: Wastes that are incompatible with other wastes will not be placed in the same container, nor in an unwashed container, that previously held an incompatible material.

Ignitable or Reactive Substances: Substances that may ignite or are reactive must be located at least 50 feet from the construction yard boundary. "NO SMOKING" signs will be conspicuously placed wherever there is a hazard from ignitable or reactive waste. Examples of ignitable wastes are: paint wastes, certain degreasers, thinners and solvents (petroleum distillates), epoxy resins, and adhesives. Examples of reactive wastes that may be found at construction yards include permanganate and manganese wastes from dry cell batteries.

Storm Water: It may be necessary to drain accumulated storm water from within the secondary containment areas that contain the fuel storage tanks. If the storm water has been contaminated, absorbent pads or booms will be used to remove floating petroleum products. After the contamination has been removed, the storm water will be left to evaporate, if possible, otherwise it will be disposed of in an appropriate manner. Prior to disposal, the Environmental Inspector will check for sheen or other evidence of contamination.

### 3.6.2 Container Labeling Requirements for Hazardous Wastes

Contractor will comply with the following labeling requirements for any on-site container (including tanks) used to store accumulated hazardous wastes. The containers will be labeled as required in Title 40 CFR, Part 262 and will contain at least the following information:

- ◆ chemical name (oil, diesel, etc.),
- ◆ the accumulation start date and/or the date the 90-day storage period began; and
- ◆ the words "Hazardous Waste" and warning words indicating the particular hazards of the waste, such as "flammable", "corrosive", or "reactive."

## 3.7 DISPOSAL OF HAZARDOUS WASTES

Contractor will be responsible for ensuring that all hazardous wastes generated during their operations are collected regularly and disposed of in accordance with all applicable laws. Contractor will determine details on the proper handling and disposal of hazardous waste, and will assign responsibility to specific individuals prior to construction of the project.

Hazardous wastes typically include chemicals, spent batteries, and other items. Contractor will ensure that every effort will be made to minimize the production of hazardous waste during the project including, but not limited to, minimizing the amount of hazardous materials needed for the project; using alternative non-hazardous substances when available; recycling usable materials such as paints and batteries to the maximum extent; and filtering and reusing solvents and thinners whenever possible.

Any Contractor (generator) producing more than 100 kilograms per month of hazardous waste must apply for an EPA Identification Number. Contractor (generator) producing less than 100 kilograms per month are considered conditionally exempt small quantity generators. A generator can store hazardous wastes on-site for a period of up to 90 days without having to obtain a permit as a storage facility, or as a small quantity generator up to a total of 1000 kilograms.

### 3.8 CONTAMINATED CONTAINERS

Containers that once held hazardous materials as products or which held hazardous wastes must be considered as potential hazardous wastes due to the residues of hazardous contents that may persist. In order for the container to be handled as non-hazardous waste, regulations require that the container be essentially empty and that certain handling requirements for the empty container be followed, including the following:

- ◆ The containers must be empty, which means as much of the contents as possible have been removed so that none will pour out in any orientation and that they contain less than 1 pound and require special handling because of the waste type.
- ◆ If the empty containers are less than five gallons, they may be disposed of as non-hazardous solid waste or scrapped.
- ◆ If the empty containers are greater than five gallons, they must be handled in the following manner:
  - Returned to the vendor for re-use,
  - Sent to a drum recycler for reconditioning, or – used or recycled on-site.

### 3.9 WASTE OIL FILTERS

Used, metal canister oil filters can be managed as solid waste as long as they are thoroughly drained of “free flowing” oil (oil exiting drop-by-drop) is not considered “free flowing”); the filters are accumulated, stored, and transferred in a closed, rainproof container. Waste oil filters are best drained by puncturing and gravity draining while the filter is still hot.

### 3.10 USED LUBRICATING OIL

Waste lubrication oil, including contaminated soil and rags, have specific requirements for storage, transportation, and disposal. Contractors are considered “Used Oil Generators” and as such must meet the following requirements:

- ◆ Have a HAZMAT Plan certified by a registered Professional Engineer and approved by the Company.
- ◆ Conduct spill prevention briefings frequently enough to assure adequate understanding by all workers.
- ◆ Label all storage containers “Used Oil”.
- ◆ Ensure storage containers do not have visible leaks

### 3.11 INSPECTION AND RECORD KEEPING

Contractor will inspect all storage facilities on a regular basis, but not less than weekly. The Weekly Hazardous Materials/Wastes Inspection Log in Attachment 2 will be used to record the condition of the facility. In addition to the weekly log, Contractor will maintain records for hazardous materials and hazardous wastes as required by all applicable federal, state, and local regulations and permit conditions. Record keeping requirements include:

- ◆ hazardous material/waste inspection log
- ◆ transportation documents
  - ◆ bills of lading
  - ◆ manifests
  - ◆ shipping papers
- ◆ training records
- ◆ release report forms
- ◆ spill history

Environmental Inspectors will monitor, inspect, document, and report on Contractor's compliance with all hazardous materials and hazardous waste management practices.

### 4. POTENTIALLY CONTAMINATED SITES

This general procedure is included as a contingency in the event that unexpected or unknown (pre-existing) contaminated sites are encountered during the course of construction. During the course of construction, some potential exists for encountering contaminated soils, groundwater, or other materials. Should such a situation develop where there is a reasonable basis for believing that contaminated materials have been encountered (where contamination is suggested by visible indications or unusual odors), the Contractor will stop work and immediately notify the Environmental Inspector or the Construction Supervisor. The Environmental Inspector or Construction Supervisor will determine next steps, including notification requirements. The Contractor may not commence work without authorization.

### 5. SPILL CONTROL AND COUNTERMEASURES

The measures described in Section 3.0 of this plan are intended to prevent the spill of hazardous materials during normal project construction, operation and maintenance activities. However, not all potential spill situations can be reasonably foreseen or prevented. In accordance with Section 6.1 – Reporting Criteria, the Environmental Inspector will make a note of minor spills and cleanup in their daily logs. These minor spills will be documented in the daily report. In general, the Contractor will perform all cleanup activities including: (1) specifying in their HAZMAT PLAN specific containment and cleanup procedures; (2) providing necessary materials and labor; and (3) performing all reporting and documentation, as required. Notification and documentation of spills is discussed in greater detail in Section 6.0 of this plan.

## 5.1 PHYSICAL AND PROCEDURAL RESPONSE MEASURES

Physical response actions are intended to ensure that all spills are promptly and thoroughly cleaned up. However, the first priority in responding to any spill is personnel and public safety. Construction personnel will be notified of evacuation procedures, including evacuation routes, to be used in event of a spill emergency. In general, the first person on the scene will:

- ◆ attempt to identify the source, composition, and hazard of the spill or stain;
- ◆ isolate and stop the spill and begin clean up of the spill or stain, if possible (i.e., if it is safe).
  - contain spills or stains, of unknown substances, in a barrel or plastic to prevent migration if rain occurs,
  - properly store, and
  - obtain a sample of the unknown substance for laboratory analysis
- ◆ Notify appropriate personnel and initiate reporting actions; and
- ◆ Initiate evacuation of the area if necessary.

Persons should only attempt to clean up or control a spill if they have received proper training. Untrained individuals will immediately notify the Contractor's primary or alternate emergency coordinators.

If there is a spill of an unknown substance and its identity cannot be determined by observing obvious clues (i.e., labels on containers), or observing obvious sources (e.g., hydraulic lines, fuel tanks, etc.), it would not be considered safe for the average person to contain the spill and obtain sample for laboratory analysis. Any spill of an unknown substance should be treated as a hazard and should be approached, contained and sampled by trained emergency response personnel. General construction personnel should be instructed to contain and cleanup spills of only those substances they can safely identify and that can be safely approached (from upwind and upgradient) and handled, after identifying the materials from a safe distance and location.

In general, expert advice will be sought to properly clean up major spills (defined as any spill over the reportable quantity for that substance). For spills on land, berms will be constructed to contain the spilled material and prevent migration of hazardous materials or petroleum products toward waterways. Dry materials will not be cleaned up with water or buried. Contaminated soils will be collected using appropriate machinery, stored in suitable containers, and properly disposed of in appropriately designated areas off-site. After contaminated soil is recovered, all machinery utilized will be decontaminated, and recovered soil will be treated as used oil if contaminated with petroleum products or hazardous waste is contaminated with hazardous waste. Contaminated cleanup materials (absorbent pads, etc.) and vegetation will be disposed of in a similar manner. For major spills, cleanup will be verified by sampling and laboratory analysis.

If spilled materials reach water, booms and skimmers will be used to contain and remove contaminants. Other actions will be taken as necessary to clean up contaminated waters. In areas where construction activity will cross a small flowing waterbody (25 feet or less), absorbent booms will be placed on the water surface downstream of the construction zone, prior to construction. Clean-up materials including absorbent spill pads and plastic bags will be placed on site at flowing streams and “wet” wetlands when construction is occurring within 100 feet of these areas. For river crossings over 25 feet, cleanup materials will be located on both banks.

#### 5.1.1 On-Site Equipment

The following equipment will be maintained on site with each crew using heavy equipment for use in cleanup situations.

- ◆ shovels
- ◆ absorbent pads/materials
- ◆ personal protective gear
- ◆ fire fighting equipment
- ◆ medical first-aid supplies
- ◆ phone list with emergency contact numbers
- ◆ storage containers
- ◆ communications equipment

#### 5.2 EMPLOYEE SPILL PREVENTION/RESPONSE TRAINING AND EDUCATION

Contractor will provide spill prevention and response training to appropriate construction and inspection personnel. Persons accountable for carrying out the procedures specified herein will be designated prior to construction and informed of their specific duties and responsibilities with respect to environmental compliance and hazardous materials. Contractor is required to maintain a record of those workers who have received training. Note that this training is in addition to the environmental training that will be conducted by the Company. Contractor’s training will be provided to inform appropriate personnel of site-specific environmental compliance procedures. At a minimum, this training will include the following:

- ◆ a review of the Company and Contractor HAZMAT Plan, and discussion of individual responsibilities;
- ◆ an overview of all regulatory requirements;
- ◆ methods for the safe handling/storage of hazardous materials and petroleum products;
- ◆ spill prevention procedures;
- ◆ operation and location of spill control materials;
- ◆ inspection procedures for spill containment equipment and materials;

- ◆ emergency response procedures;
- ◆ use of personal protective equipment (PPE);
- ◆ use of spill cleanup equipment;
- ◆ procedures for coordinating with emergency response teams;
- ◆ standard information regarding a spill to be provided to Company for agency notification (see Section 6.1);

## 6. NOTIFICATION AND DOCUMENTATION OF SPILL PROCEDURES

Notifications and documentation procedures for all spills that occur during project construction, operation, or maintenance will conform to applicable federal, state, and local laws. Adherence to such procedures will be the top priority once initial safety and spill response actions have been taken. The following sections describe the notification and documentation procedures, and should be implemented in conjunction with the response procedures listed in other sections of this plan.

### 6.1 REQUIRED NOTIFICATION

Notification will begin as soon as possible after discovery of a release. The individual who discovers the spill will contact a Company Construction or Environmental Inspector. If the Environmental Inspector determines that the spill meets the criteria for immediate verbal notification of government agencies (see Section 6.1.3, Reporting Criteria) and/or determines that the spill may threaten human health or the environment, he/she will immediately notify Company's Field Supervisor who will make the required agency notifications as described below. On federal lands, all spills greater than 1 gallon will be reported. Prior to beginning the notification process, the individual initiating notification should obtain as much information as possible to clearly document and communicate the situation. See Section 6.1.1 for standard information that will be requested by agencies.

The following mandatory notifications will be made by the Environmental Inspector.

- 911 will be called if the spill is deemed to be an emergency
- BLM, Glenwood Springs Field Office-(970) 947-2800
- BLM, Grand Junction Fire Dispatch-(970) 257-4800
- National Response Center (800) 424-8802 (for amounts exceeding the reportable quantity for that material (see section 6.1.3, Reporting Criteria)
- Colorado Department of Health and Environment (303) 692-3500 non-emergency (303) 756-4455 emergency
- Grand Junction State Patrol/State Hazardous Materials Team, for spill occurring on State Highway rights-of-way (970) 248-7278
- Local Emergency Planning Committee – notified at the following numbers.
- Garfield County Sheriff's Office (Parachute, CO) (970)-285-9127
- City of Rifle – Water plant 970-625-2541

- If the spill or leak has the potential to affect BLM lands, the State Patrol and BLM must be notified immediately (with respect to the State Patrol, this requirement applies only for spills occurring on State Highway rights-of-way).
- If the spill or leak has the potential to affect USFS lands, the State Patrol and USFS must be notified immediately (with respect to the State Patrol, this requirement applies only for spills occurring on State Highway rights-of-way).

#### 6.1.1. Agency Notification

When notifying a regulatory agency, the Environmental Inspector will provide the following information:

- current threats to human health and safety, including known injuries, if any; spill location (legal land description if available), including landmarks and nearest access route; reporter's name and phone number; time the spill occurred;
- type and estimated amount of hazardous materials involved;
- potential threat to property and environmental resources, especially waterbodies and wetlands; and
- status of response actions.

On-site personnel should always consult the Environmental Inspector to clarify regulatory requirements.

#### 6.1.2 Landowner Notification

When a spill poses a direct and immediate threat to health and safety and/or property, the landowners potentially affected by the spill will be directly notified by the Company. The Alignment Sheets delineate land ownership along the entire ROW and will be used to determine affected landowners. Immediate notification of landowners is required for all situations in which the spill poses a direct and immediate threat to health and safety and/or property.

#### 6.1.3 Reporting Criteria

The Contractor will report to the Company Environmental Inspector all hazardous substance releases regardless of size and petroleum product spills which threaten or enter any waterbody, or that are over 1 quart in size. Verbal reports are required immediately following a major spill when doing so would not delay clean up or administration of urgent medical care. The Company Environmental Inspector will determine if the spill meets the following criteria for immediate agency notification. Any release of hazardous material over the applicable reportable quantities (List of Reportable Quantities), or a petroleum product spill which threatens or enters a waterbody must be reported immediately to the National Response Center (NRC), the BLM, state, and local authorities. On federal lands, all spills greater than 1

gallon will be reported. For petroleum spills over 25 gallons which occur in upland areas notification will be made to the BLM, state, and local authorities.

### **Environmental Reportable Quantities for Select Compounds**

Compound Release	Minimum Amt.	Verbal Report	Written Report
Brine Water	210 gal. or 5 bbl	24 hours	10 days
Condensate	210 gal. or 5 bbl	24 hours	10 days
Corrosion Inhibitors	Consult MSDS	24 hours	30 days
Crude Oil	210 gal. or 5 bbl	24 hours	10 days
Diesel Fuel	25 gal	24 hours	30 days
Diethylamine	100 lb (13.3 gal)	Immediately	30 days
Diglycolamine	Consult MSDS	24 hours	30 days
Ethylene Glycol	5,000 lbs (545 gal)	Immediately	30 days
Gasoline	25 gal	24 hours	30 days
Lube Oil	25 gal	24 hours	30 days
Methanol	5,000 lbs (750 gal)	Immediately	30 days
Methyl Mercaptan	100 lbs (14.1 gal)	Immediately	30 days
Mono-ethanolamine	100 lbs (15.6 gal)	Immediately	30 days
Natural Gas Liquids	25 gal	24 hours	30 days
Produced Water	210 gal or 5 bbl	24 hours	10 days
RCRA Hazardous Waste	100 lbs.	Immediately	24 days
Sodium Chromate	10 lbs. (0.81 gal)	Immediately	30 days
Surfatron	MSDS	24 hours	30 days
Triethylene Glycol	Consult MSDS	24 hours	30 days
Waste Oil	25 gal	Immediately	30 days

## 6.2 DOCUMENTATION

Contractors will maintain records for all spills. Agencies that the Company verbally notified of a release will be given written notification by the Company within 30 days. Contractor will provide a written report of all reportable spills requiring agency notification within 24 hours (see Attachment 1).

The Contractor will record spill information in a daily log. The following is a list of items that should be included in the daily log (as appropriate, based on the spill incident):

- ◆ time and date of each log entry;
- ◆ name of individual recording log entry;
- ◆ list of all individuals notified, including time and date;
- ◆ type and amount of material spilled;
- ◆ resources affected by spill;
- ◆ list of response actions taken, including relative success;
- ◆ copies of letters, permits, or other communications received from government agencies throughout the duration of the spill response;
- ◆ copies of all outgoing correspondence related to the spill; and
- ◆ photographs of the response effort (and surrounding baseline photographs if relevant).

Maintaining detailed and organized records during a spill incident is an important and prudent task. One Contractor representative should be designated to manage the records

for an incident. If extensive spill response and cleanup operations are required, the Contractor may choose to assign a bookkeeper to assist in the documentation process. The Contractor's on-site bookkeeper will track and manage all expenditures (i.e., equipment, personnel/labor hours, and associated resources) and will help supplement the information provided in the daily log book.

## **APPENDIX H**

### **Safety Plan**

1. Introduction
  - 1.1 Responsibilities
    - 1.1.1 The Company
    - 1.1.2 The Contractor
  - 1.2 Related Plans
2. Health and Safety Requirements
  - 2.1 Safety Training
  - 2.2 General Requirements
  - 2.3 Working Hours
  - 2.4 Incident Reporting
  - 2.5 Transportation
  - 2.6 Safe Procedures for Prevention of Mechanical Damage to Underground Facilities
  - 2.7 Damaged Pipe
  - 2.8 High Voltage Hazard and Mitigation of Induced Voltage Effects
  - 2.9 Cold Weather Construction

## 1. INTRODUCTION

This Safety Plan (plan) identifies measures to be taken by ETC Canyon Pipeline, LLC (Company) and its construction contractors (Contractor) to minimize hazards to persons working on and visiting the project and to comply with all applicable safety requirements and regulations. The plan also describes safety standards and practices that will be implemented to minimize health and safety concerns related to construction of the project.

### 1.1 RESPONSIBILITIES

#### 1.1.1 The Company

The Company will comply and ensure compliance by its employees, suppliers and visitors with all applicable occupational safety and health laws and regulations. The Company will observe and monitor the Contractor's practices and procedures and will inform the Contractor of violations to the above-mentioned laws and regulations. If the Company becomes aware of a violation that presents immediate danger to human life or property, then the Company Representative (Company employee or Construction Inspector) will order an immediate stoppage of work until unsafe conditions or practices are corrected.

#### 1.1.2 The Contractor

The Contractor will comply and ensure compliance by its employees, subcontractors, suppliers, and visitors with all applicable occupational safety and health laws and regulations and with all of the Company's safety specifications. The Contractor will also take reasonable additional measures necessary to prevent property damage, injury, and death to Company employees, Contractor employees, and general public.

### 1.2 RELATED PLANS

- Fire Prevention and Suppression Plan
- Hazardous Material Management and Spill Prevention and Countermeasure Plan
- Hydrostatic Testing Plan

## 2. HEALTH AND SAFETY REQUIREMENTS

### 2.1 SAFETY TRAINING

Prior to starting the work, the Company will arrange a meeting between the Contractor's Site Supervisors and the Company's Construction Staff to discuss safety aspects of the work, safety hazards particular to the work site, and to outline safety responsibility and authority of the Contractor and Company personnel. It will be the responsibility of the Contractor's supervisory personnel to train workers and keep them up-to-date regarding safety matters. The Contractor will provide pre-job orientation to all workers engaged on the project and ensure all workers are competent to perform any job requested. The Contractor will also make all of its workers available for any required Company orientation or safety training.

## 2.2 GENERAL REQUIREMENTS

The Company Construction Inspectors will ensure that the following measures relating to health and safety are implemented:

- Contractor will ensure that all construction sites are maintained in a sanitary condition.
- Contractor will cease normal pipeline construction activities by sunset. Night time construction will not be permitted unless approved by the Company and the jurisdictional agency(s).
- The Contractor, in accordance with federal, state, or local requirements, will provide water, or other means, to control dust. Contractor will comply with federal, state, and local air quality emission standards and regulations.
- Contractor will provide dust control in construction areas within 500 feet of residences and highways as directed by the project's Construction and Environmental Inspectors.
- If the trench is left open overnight within 100 feet of a residence, Contractor will fence the area to mitigate safety concerns.
- No dredged or fill material will be discharged in the proximity of a public water supply intake (municipal watersheds).
- The Contractor will ensure that equipment is properly maintained to reduce emissions.
- All pipeline construction activities will occur within the ROW, approved access routes, and approved workspace.
- No firearms will be allowed on Company property or the ROW. Hunting is prohibited by construction personnel on the ROW, temporary use areas, and off-ROW project facilities.
- All construction personnel will drive defensively and safely, especially on mountain roads and blind curves. Contractors will be expected to discipline or remove personnel who fail to comply.
- The possession or use of intoxicants or drugs is prohibited on Company property or the ROW.
- The Contractor will ensure that its employees use the proper personal protective equipment as appropriate, including, but not limited to: eye protection, hearing protection, safety harness, and respiratory protection, where needed.
- When radiographic equipment is to be used, the Contractor will ensure that the area is clear and that all personnel are at a safe distance from the radiation source. Radiation warning signs will be placed at the edges of the safe area.
- The Contractor will abide by and adhere to all OSHA, federal, state, county and local trenching regulations.

- The Contractor will comply with all federal, county, and local fire regulations pertaining to the prevention of uncontrolled fires. See the Fire Prevention and Suppression Plan for additional information.
- The Contractor will ensure that all hazardous and potentially hazardous materials are transported, stored, and handled in accordance with all applicable legislation. See the Hazardous Materials Management and Spill Prevention and Countermeasure Plan for additional information.
- Safety precautions will be taken during pressure testing as described in the Hydrostatic Testing Plan.

### 2.3 WORKING HOURS

Working hours will generally be from 7:00 AM to 5:00 PM Monday through Saturday.

### 2.4 INCIDENT REPORTING

All injuries, fires, and accidents will be recorded and reported to the required regulatory agencies within the required time frames.

### 2.5 TRANSPORTATION

At all road crossings or construction near road crossings where crew and equipment are working, approaching traffic will be cautioned to reduce speed by road signs and flag persons. Where lanes of traffic are reduced or impaired by construction activities, flag persons will be employed.

### 2.6 SAFE PROCEDURES FOR PREVENTION OF MECHANICAL DAMAGE TO UNDERGROUND FACILITIES

The Contractor will give adequate advance notification of all work that will be performed within existing pipeline easements, ROW, or property so that site preparation and supervision can be provided. Before commencing any excavation, the Contractor will receive authorization to commence excavating from the Company Representative.

The Company Representative, or his delegate, will locate and stake the centerline and limits of all underground facilities in the area of proposed excavation.

The Company Representative will be assigned to monitor all mechanical excavation being carried out within 10 feet of buried or above ground pressurized gas piping.

### 2.7 DAMAGED PIPE

Any dents, gouges, scratches or other similar defects will be brought to the attention of the Company as soon as they are detected. Detrimental defects will not be accepted and will be repaired or cut out of the line as directed by the Company, regardless as to when or how they may have occurred. Grinding to remove defects within dented areas will not be permitted.

Gouges, grooves, scratches, or tears may be removed by grinding provided that the wall thickness is not reduced to less than 95 percent of the specified nominal wall thickness. Dents other than those described above will be permitted provided they do not exceed the following maximum levels specified for each case.

- As delivered from the pipe mill: maximum depth of 0.5 percent of the pipe diameter and 25 percent of the pipe diameter in any other dimension.
- Allowable damage in the field prior to backfill: maximum depth of 1 percent of the pipe diameter and 50 percent of the pipe diameter in any other dimensions.
- Allowable damage in the field after backfill: maximum depth of 2 percent of the pipe diameter and 75 percent for the pipe diameter in any other dimension. Pounding or jacking to remove dents is prohibited.

Defects greater than those noted above will be cut out as a cylinder and replaced by welding a pup joint to the line.

## 2.8 HIGH VOLTAGE HAZARD AND MITIGATION OF INDUCED VOLTAGE EFFECTS

Generally work will be stopped if one or more of the following conditions prevail:

- during local electrical storms denoted by visible lightning or the sound of thunder; during high winds, wet snow, or freezing rain;

## 2.9 COLD WEATHER CONSTRUCTION

The Contractor will be aware of the special considerations that must be made with respect to cold weather construction including exposure, hypothermia, frostbite, heavy clothing, and adverse driving conditions and will account for these in the completion of the work in order to eliminate personal injury and property damage.