

OVERLAND PASS PIPELINE PICEANCE LATERAL

APPENDIX 8

HYDROTEST PLAN

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JULY 1, 2008

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1.0 INTRODUCTION

This Hydrostatic Test Plan (Plan) identifies measures to be taken by Overland Pass Pipeline Company LLC (OPPC) and its contractors (Contractor) to ensure internal cleanliness, strength of pipeline and facilities, and ensure that no leaks exist. The Plan will be carried out in accordance with the following:

- United States Department of Transportation (DOT), 49 CFR Part 195, Subpart E – Pressure Testing
- Colorado Department of Public Health (CDPHE)-Water Quality Control Division (WQCD)
- CDPHE-Division of Water Resources (DWR)
- Wyoming Department of Environmental Quality (WDEQ) – Water Quality Division (WQD)

Measures identified in this Plan apply to work within the project area defined as the right-of-way and other areas used during hydrostatic pressure testing of the pipeline and facilities.

OPPC and Contractor personnel are to be thoroughly familiar with this Plan and its contents prior to initiating strength testing operations on the project.

1.1 Purpose

The purpose of this Plan is to define the necessary measures that are to be implemented during strength testing to ensure the safety of 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 (particularly water quality) concerns related to strength testing on the project.

2.0 HYDROSTATIC TESTING PROCEDURES

The following procedures would be implemented by the Contractor during hydrostatic testing operations. This section of the Plan describes pre-testing requirements, the typical sequence of activities associated with the hydrostatic testing operations, and notifications required by OPPC and the Contractor.

OPPC would be responsible for securing the necessary permits from the governing authorities for the use and disposal of test water. OPPC would also comply with the rules and regulations of the DOT, CDPHE WQCD, and WDEQ WCD. OPPC would provide Contractor with a copy of the withdrawal/discharge permits and Contractor would keep copies onsite at all times during the testing operations.

The hydrostatic test water withdrawn and discharged by the Contractor would be in compliance with regulatory notification requirements and sufficient notice would be provided to OPPC to make water sampling arrangements as necessary.

2.1 Water Sampling

Hydrostatic test water sampling, if required, would be performed in accordance with CDPHE WQCD permit requirements. Prior to any filling operations, OPPC's Environmental Inspector would obtain any required water samples from each source to allow time for lab analysis.

Whenever water sampling is required, sample bottles will be obtained from a certified testing laboratory. Analysis of the samples would be in accordance with permit requirements. Each bottle would be marked with:

- source of water with pipeline station number,
- date taken,
- laboratory order number, and
- name of person taking sample.

OPPC's Environmental Inspector will be notified at least 72 hours prior to obtaining water and/or discharging water and the Contractor will provide the Environmental Inspector access for sampling.

2.2 *Water Sources*

Water used for the hydrostatic testing would be obtained from approved sources such as the White, Yampa, and Little Snake rivers where the pipeline crosses the water channel. With surface water being used, OPPC will use screens on the intake hoses to prevent the entrapment of fish or other aquatic species. Common industry practice is to cover the end of the intake hose with ¼ - inch mesh hardware cloth, secured with a pipe clamp to prevent uptake of debris. OPPC would monitor the appropriation rate (approximately 500-1000 gpm) to ensure that an adequate downstream flow is maintained to support aquatic life.

2.3 *Discharge Locations*

Hydrostatic test water discharge would comply with requirements of the CDPHE WQCD permit requirements. Discharge locations have been agreed upon in consultation with private landowners and Bureau of Land Management (BLM) and are located at or near the point of original intake on the banks of the White, Yampa, and Little Snake rivers. Discharged water will be filtered through a dewatering structure constructed of silt fence and straw bales near the banks of the rivers, allowing for the filtered water to return to the river system.

2.4 *Pumps*

If pumps for hydrostatic testing were to be used within 200 feet of any waterbody or wetland, secondary containment measures (such as bermed depressions lined with visquene plastic, plastic troughs, or other containment structure) would be implemented to prevent any spilled fuels or oils from reaching the waterbody or wetland.

2.5 *Safety Measures*

The Contractor would provide for the safety of pipeline construction personnel and the general public during hydrostatic test. The Contractor would:

- Place warning signs in or near populated areas.
- Restrict access to the area involving the hydrostatic test (i.e. test shelter, manifolds, pressure pumps, instruments, etc.) to only those personnel engaged in the testing operations.
- Prohibit 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, personnel not required for direct operations (checking for leaks, tightening gaskets, checking valve status, operating pumps, recording data, etc.) will be restricted from the area where the pipeline is being tested.
- Provide and maintain a reliable transportation and communication system during the test operations whereby personnel directly involved in the test will be able to communicate test status or problems that develop during the test.
- Check hoses, fittings, connectors, and valves for proper pressure rating.
- Restrain and secure fill and discharge lines/hoses.

2.6 Test Sections and Pressures

Each pipeline section will be strength tested to prove its integrity and substantiate the Maximum Allowable Operating Pressure (MAOP). All pressure tests will meet the requirements of 49 CFR 195, Subpart E.

Due to the test water pressure gradient caused by the difference in elevation along the proposed routes, the pipeline would have to be tested in 11 sections to maintain hydrostatic tests within the established test pressures. To ensure test integrity, leak determination, and repair capability, the maximum allowable test pressure of each section would not exceed 100% of specified minimum yield strength or 1.5 times the pressure rating of the lowest American National Standard Institute rated valve or flange in the system. The hydrostatic tests would normally be performed in sequence, transferring water from one test section to another as practical.

2.7 Cleaning the Pipeline

Upon completion of the pipe lowering and backfilling operations and prior to filling the pipeline for a hydrostatic test, each section of the pipe to be tested would be cleaned.

The Contractor cleans the pipeline by air blowing a wire brush type pig(s) through the interior of the line a sufficient number of times to clean any rust, scale, slag, dirt or other debris which may be in the pipeline. Next, the pipeline would be cleaned using a compressed air-propelled reinforced poly type pig. The cleaning pig will be run through each test section until each section has been cleaned before filling the pipeline with water for testing. OPPC's Test Inspector will be present for the first and last brush pig run to compare their respective conditions and will be present to approve the cleanliness of the line.

2.8 Filling the Pipeline

Prior to filling a test section with water, the Contractor would 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; valve stops are properly set; 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, clocks wound, correct calibration, etc.); and
- pigs are properly installed.

A pipeline pig would be placed ahead of the water to separate the remaining air in the line from the hydrostatic test water.

Approximately 3,599,000 gallons of water will be used to test the pipeline; 858,000 gallons from the White River, 1,147,000 gallons from the Yampa River, and 1,594,000 from the Little Snake River. Should conditions at the Little Snake River not allow for this amount of withdrawal, the necessary water would be taken from the Yampa River and pushed up to the northern test sections.

Water from each river would be held for approximately 8-10 days before being returned to the original point of origin.

After completion of the filling operation, the pipeline water temperature and turbulence would be allowed to stabilize. The Contractor would check the pressure on each end of the test section and compare with calculated pressures to confirm the specified test pressure for the section.

2.9 *Testing the Pipeline*

The duration of the test will be not less than 8 hours, with the pressure maintained at or above the minimum test pressure at all points in the pipeline section. The test will be accepted upon proof of no leakage.

In the event of a leak during testing, the leak would be repaired as directed by OPPC's Test Inspector and the above test repeated until a satisfactory test is obtained on the section.

2.10 *Depressurizing the Pipeline*

After the test has been presented by the Contractor as a successful test and accepted by OPPC's Test Inspector, the pipeline would be depressurized as soon as practical.

2.11 *Dewatering the Pipeline*

The Contractor would be responsible for discharging the test water in accordance with the CDPHE WQCD Minimal Industry Discharge Permit. The WRFO will be contacted at least one day before discharging hydrotest water into the White River.

The Contractor would utilize an energy-dissipating device (ex. straw bale and silt fence/filter cloth structure) to prevent scour, erosion, and damage to vegetation and the rate of discharge will be monitored to prevent the device from being ineffective. Discharging would occur at or near the original point of withdrawal and the water will be filtered through a dewatering structure constructed of silt fence or filter cloth and straw bales near the banks of the rivers, allowing for the filtered water to return to the river system. The rate and volume of water being discharge at one time will be controlled in such a manner as not to overwhelm the dewatering structure, ultimately causing failure and in addition, will be controlled so as not to cause erosion problems on the river banks. Discharge lines would be sufficient in strength and would be securely supported and constrained at the discharge end to prevent whipping during the dewatering operation. Water must be disposed of using good engineering judgment so that federal, state, and local environmental requirements are met. When required, test water would be sampled during discharge in accordance with the CDPHE WQCD Minimal Industry Discharge Permit.

2.12 *Drying the Pipeline*

Following the dewatering of individual pipeline sections, these sections would be cleaned of loosely adhered mill scale, rust, dirt, and other debris by the use of air propelled pigs. To facilitate drying, several sections of pipeline may be welded together, cleaned, and dried in one continuous section.

3.0 RECORDS

In accordance with applicable regulations, the Contractor will maintain complete and comprehensive records of all hydrostatic tests and of related activities such as filling, pressuring, stabilizing, dewatering, etc. Records will be clearly identified with respect to the specific piping systems to which they apply and records will be accurately dated. In addition to the general requirements above, such forms will at a minimum include:

- a description of the facility tested and the test apparatus;
- logs showing dead weight pressure readings and ambient temperature readings, with the date and time of each reading. Any other activities or events pertinent to the test will be noted on the log sheets, including the following:
 - date and time of test,
 - identification of piping system,
 - test medium, pressure and duration,
 - automatic 24 hour pressure-time and temperature-time recording chart, including

- manual recording of pressure gauge readings at each additional station,
- test medium temperature at definite time intervals,
- a summary of leaks and repair methods, and
- the names and company affiliation of persons recording the test data;
- pressure and temperature recorder charts showing the date and time stop and start of recording;
- weather conditions during testing;
- elevation variations, whenever significant for the particular test (over 100' for liquids line);
- calibration certificates for dead weight gauges and records of field calibrations of pressure and temperature instruments;
- make, style number, and condition of pigs used in filling and dewatering; and
- any remarks pertinent to any phase of the test.

Results of the hydrotest will be provided to the BLM upon request at the conclusion of the project.