



North American Society for Trenchless Technology
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Pipeline Assessment and Bypass Services Quality Assurance / Quality Control

Pipeline Assessment

Condition assessment of pipelines prior to replacement or renewal provides information on the type of pipe and pipe repairs, the condition of the pipe generally and at specific locations, and the location of laterals and connections. An accurate assessment is important in designing rehabilitation process to be used such as cure-in-place linings, thermoformed liners, slip lining, spot repairs by grouping and patches, or replacement through pipe bursting. Closed Circuit Television (CCTV) coupled with software for recording information on the characteristics and condition of the pipe at exact locations along the pipe is the primary tool for assessing the condition of underground pipes.

Setup and Calibration of CCTV Systems

Prior to inspecting the condition of the pipe, the CCTV systems needs to be calibrated to the diameter of the pipe. Calibration is necessary for accurate location readings. All readings should be measured from inside manhole wall to inside manhole wall. The CCTV system should provide adequate lighting to allow the operator to see well in advance of the location of the CCTV – both too little and too much lighting can hide or obscure detail. And, the camera should be centered in the pipeline during video capture, i.e., at centerline of round pipe and at a 2/3/angle in non-circular pipe.

Pipeline Assessment and CCTV Operator Certification

Education and training programs are available for CCTV operators. Operators are instructed on using a uniform method for locating, and characterizing the condition and properties of the pipeline including locations of laterals and connections, features, faults and debris. The courses are conducted by trained instructors and are available through NASSCO - Pipeline Assessment and Certification Program (PACP) and NAPPI - North American Association of Pipeline Inspectors in Canada.

Assessment and Inspection

During the assessment phase prior to pipe relining, an accurate identification of the location of laterals and connections is essential. These lateral and connections will need to be restored when the pipe is rehabilitated. Defects, grade and diameter changes, debris that settled in the invert, root intrusion and others potential issues that will impact repair or relining are noted. Many technologies utilize CCTV in conjunction with the installation of their materials, including: grouting, point repairs, lateral relining and reinstatement of service connections. Post-installation inspection provides the documentation and some assurance in determining the integrity of the installed renovation or repair.

Pipe Cleaning

Dependent upon the requirements of the rehabilitation technology and specifications of the owner, the pipe will need to be cleaned either prior to being assessed or before the repairs or replacement pipe is installed. The cleaning process should free the host pipe of foreign materials without causing further damage.

Warranty Inspections

As an added component of the project a final CCTV inspection prior to expiration of the warranty can insure that the installation meets the standards specified by the Owner.

Bypass & Pump Services

Pumps are used in a number of trenchless applications from bypassing sections of pipe during replacement, rehabilitation and repair to dewatering excavation pits, pumping and circulating drilling fluids, clean-up and disposal of liquids associated with trenchless projects.

This paper discusses the application of pumps and QA/QC system design considerations associated with bypass pumping. Bypass pumping is a system of pumps, hoses, and pipes that are used to divert the flow from a section of pipe that is being repaired, replaced or rehabilitated.

Pipe Repair, Rehabilitation and Renovation

Pipeline replacement and rehabilitation such as CIPP and pipe bursting requires existing service or flow be diverted during construction. Careful planning and

execution is required to ensure that service is not disrupted and pipeline flows are contained.

Planning a bypass operation should take into account the location of the bypass system that allows for monitoring and repair with minimum exposure to the public. The system needs to be designed to accommodate the flow profile of the system being diverted including peak flows and valves to prevent backup and control flow. Contingency plans should be prepared that include backup pumps, reliable fuel and power supplies for the pumping system, and emergency vacuum and other equipment and materials for spill clean-up and inadvertent discharges. The pumping system must be monitored to ensure that the system is functioning properly.

For More Information on Inspection and Cleaning Please Visit



Booth 505



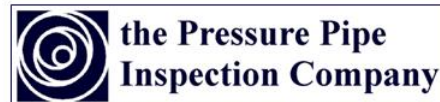
Booth 123 & 125



Booth 612



Booth 716



Booth 501



Booth 726



Booth 529 & 531

For More Information on Bypass Please Visit



Booth 410



Booth 500



Booth 316



Booth 101