



HYDROSTATIC TESTING

A FOCUS ON PIPELINE SAFETY

Energy Transfer has comprehensive Pipeline Safety Management Systems (Pipeline SMSs) that are based on a four-step management policy: **Plan, Do, Check, Act**. This policy defines how we design, construct, operate, and care for our assets.

Our rigorous pipeline safety protocols include using proven technology and employing one of the most skilled pipeline workforces in the industry. Hydrostatic pressure testing is an integral part of our pipeline safety and integrity management programs.



WHAT IS HYDROSTATIC TESTING?

Hydrostatic pressure testing, or hydrotesting, is a controlled process that uses water to test the pipeline's integrity and confirm maximum operating pressure (MOP) in accordance with regulatory standards. In addition, it verifies the quality of the joints and flanges that join the pipe segments. A completed hydrostatic pressure test indicates that a pipeline has been evaluated for quality control purposes and provides confirmation that the pipeline is qualified for service.

WHEN IS HYDROSTATIC TESTING USED?

A hydrotest is performed on all new pipeline construction prior to placing a pipeline into service. The post-construction pressure test verifies the adequacy of the pipeline materials and construction methods. Hydrotesting is also used on existing in-service pipelines for maintenance, inspection, or pipe replacement purposes. In all cases, hydrotests are performed to test and validate the pipeline's integrity and strength.

*Our rigorous pipeline safety protocols include using proven technology and employing one of the most skilled pipeline workforces in the industry. As part of our **focus on pipeline safety**, we use hydrostatic pressure testing to verify a pipeline's integrity.*

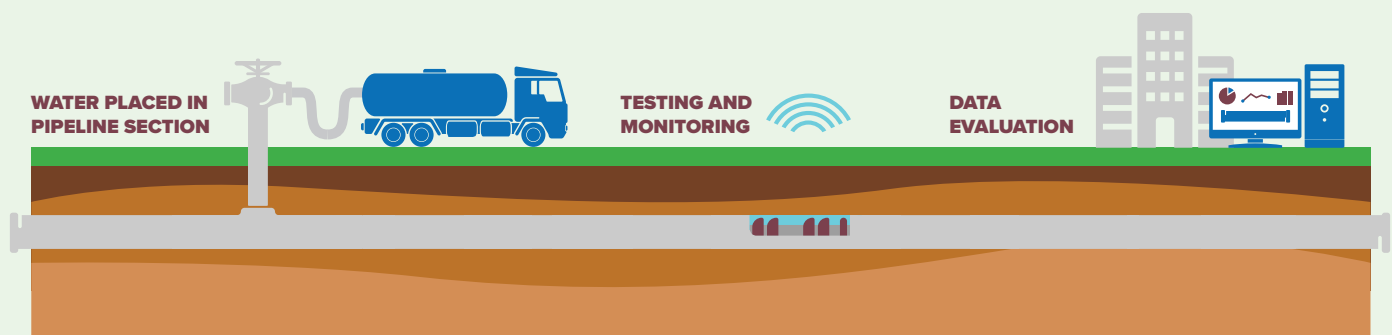
REGULATORY REQUIREMENTS

Integrity management regulations require pipeline operators to periodically conduct integrity assessments of certain pipelines. Pressure testing is one acceptable method of performing these assessments. An integrity assessment pressure test is intended to ensure a liquid or gas pipeline has adequate strength to prevent leaks or ruptures under normal operations and upset conditions.

Hydrotesting liquid pipelines requires testing to at least 125% of the MOP for at least four continuous hours. If the pipeline is underground, the pipeline requires testing of at least 110% of the MOP for an additional four continuous hours. When a pipeline successfully passes a hydrostatic pressure test, it means that no hazardous defects are present in the tested pipe and validates that it is structurally sound.

HOW DOES HYDROSTATIC TESTING WORK?

- Water is placed inside the pipeline section and is pressurized through the use of pumps to a pressure that is greater than the pipeline's MOP.
- This pressure test is closely monitored using advanced data programs and route inspections, maintained and documented for several hours to ensure the integrity of the pipeline.
- Any indication of potential leakage requires the evaluation and repair of the affected section.
- If repairs are needed, the pipeline is re-pressurized and the test repeated until a successful outcome is achieved.
- The operational integrity of field welds and the pipe itself are assured as the pressure test is successfully completed.
- Additionally, a water-soluble, biodegradable colored dye may be injected into a pipe to aid in leak detection.



BENEFITS

The hydrotest offers proof of the pipe's strength and identifies any flaws that may be present, allowing repairs to be made before the pipe is placed into service. As a preventative safety measure, hydrotesting helps to protect our communities, landowners, businesses, and the environment along the pipeline right-of-way.

ABOUT ENERGY TRANSFER

We own and operate one of America's largest and most diversified energy portfolios with nearly 90,000 miles of pipelines in 38 states and Canada. Our core operations include transportation, storage and terminalling for natural gas, crude oil, natural gas liquids, refined products, and liquid natural gas.