



MarinerEastNews

OCTOBER 2017

Pipeline Construction Update

Pipelines are a proven safe mode of transportation for energy products that are central to our everyday lives and essential to the nation's economy. We are committed to safety at the highest level and work tirelessly to meet or exceed all requirements of regulatory agencies, including the U.S. Pipeline and Hazardous Materials Safety Administration.

We start by working closely with the companies that design, build and coat the pipelines during construction.

- All new pipe is thoroughly tested and inspected to ensure it meets all regulatory requirements.
- All newly installed steel pipelines are treated with a protective bonded-epoxy coating to prevent corrosion.
- Cathodic protection systems, which further inhibit corrosion, are placed along the pipeline.

- As the sections of pipeline are being welded, an independent, third-party inspector must approve each weld using X-ray technology to ensure that each section is securely connected.
- Once the pipeline is installed, we will test it with water pressures at least 25 percent above the top pressure at which the line will be operating. This confirms the pipeline's strength and integrity.

When the pipeline is operational, we use the most advanced technologies available to analyze its condition and monitor its operation in real time. Certified controllers closely monitor the pipeline's pressure, temperature and flow, 24 hours, seven days a week, from a control center dedicated exclusively to the safe operation of our pipelines. They can shut down pipeline operations remotely.

We also patrol the pipeline right of way, on the ground and by air, and we reach out to neighbors, contractors and first responders to educate them about the pipelines in their communities. See all the ways we exceed federal safety requirements in the attached fact sheet. ●

Did You Know?

Sunoco Partners Marketing and Terminals, a subsidiary of Energy Transfer Partners L.P., is the first company in the U.S. to provide refrigerated liquid ethane for truck delivery. The service meets a demand for various ethane

uses, from energy research and development to cooling and other industrial applications. Our new truck-loading facility at the Marcus Hook Industrial Complex can load two trucks at once and is expandable to handle additional demand.

Gas Innovations is Sunoco Partners' first customer at the facility and will provide ethane to companies throughout the U.S., as well as international customers, for numerous uses.

Until now, Gas Innovations has been forced to buy its ethane in Europe. Ethane is transported to the Marcus Hook Industrial Complex from the shale fields of western Pennsylvania via the Mariner East pipeline system. ●

The first truck enters the loading pad for the new ethane distribution rack at Sunoco Partners Marketing and Terminals' Marcus Hook Industrial Complex in Marcus Hook, Pa., on Sept. 21. The facility's 300,000 barrel chilled ethane tank is in the background.



Photo: Energy Transfer Partners, L.P.

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Mariner East 2 – Chester and Delaware Counties

Sunoco Pipeline has segmented the construction of the 350-mile pipeline into seven sections from Ohio to southeast Pennsylvania. In keeping with our commitment to regular communication with local leaders and the community, each construction “spread” has an individual point of contact for community affairs.

Spread 6 is approximately 35 miles and includes communities in Chester and Delaware counties.

Construction Update

Construction continues in every municipality within Segment 6, and crews continue to make significant progress. Our construction crews in Segment 6 along the Mariner East 2 pipeline have worked more than 750,000 hours.

Construction activities include:

- Parts of western Chester County, including Elverson Borough, West Nantmeal Township, East Nantmeal Township and Wallace Township, are largely completed and approaching the restoration process. The pipe segment from Elverson to Fairview will be hydrotested in October to confirm the pipe's integrity post-construction phase. Hydrotesting involves filling the pipeline with water at pressures higher than those that it ever would be subjected to in normal operations to confirm the pipeline's strength and integrity.

- Crews are making significant progress on lowering in, backfilling and tying in the 20-inch pipeline.
- Crews continue to string, bend and weld the 20-inch pipeline along the right of way. Stringing is the laying out of pipe segments along the right of way, and bending is the shaping of pipe segments to fit the contours of the route.
- Crews are continuing grading activities and pipeline fabrication work at valve site locations in Segment 6.
- Five conventional boring machines are deployed to safely install the 20-inch and 16-inch pipeline beneath roads and some highways.
- A number of horizontal directional drills are in progress in Segment 6, and six have been completed with pipe in the ground.
- Horizontal directional drills are active in the following townships: Upper Uwchlan, Uwchlan, West Whiteland, East Goshen, Thornbury and Middletown. Additionally, a drill is being mobilized and rigged up to start in Edgmont.

Crews continue to work primarily daytime hours, six days a week. Notification to individual municipalities will be made where and when night or Sunday work may be needed.

We are deeply committed to our core values of safety, security and environmental stewardship, and these values will guide everything we do during construction of Mariner East 2.

We will continue to provide regular updates to local stakeholders in addition to this construction newsletter. ●

Sunoco Pipeline is dedicated to providing project information and construction updates to residents and local officials in the communities where we live and operate our Mariner East system. This regular publication will provide project updates; interested recipients may sign up at www.marinerpipelinefacts.com.



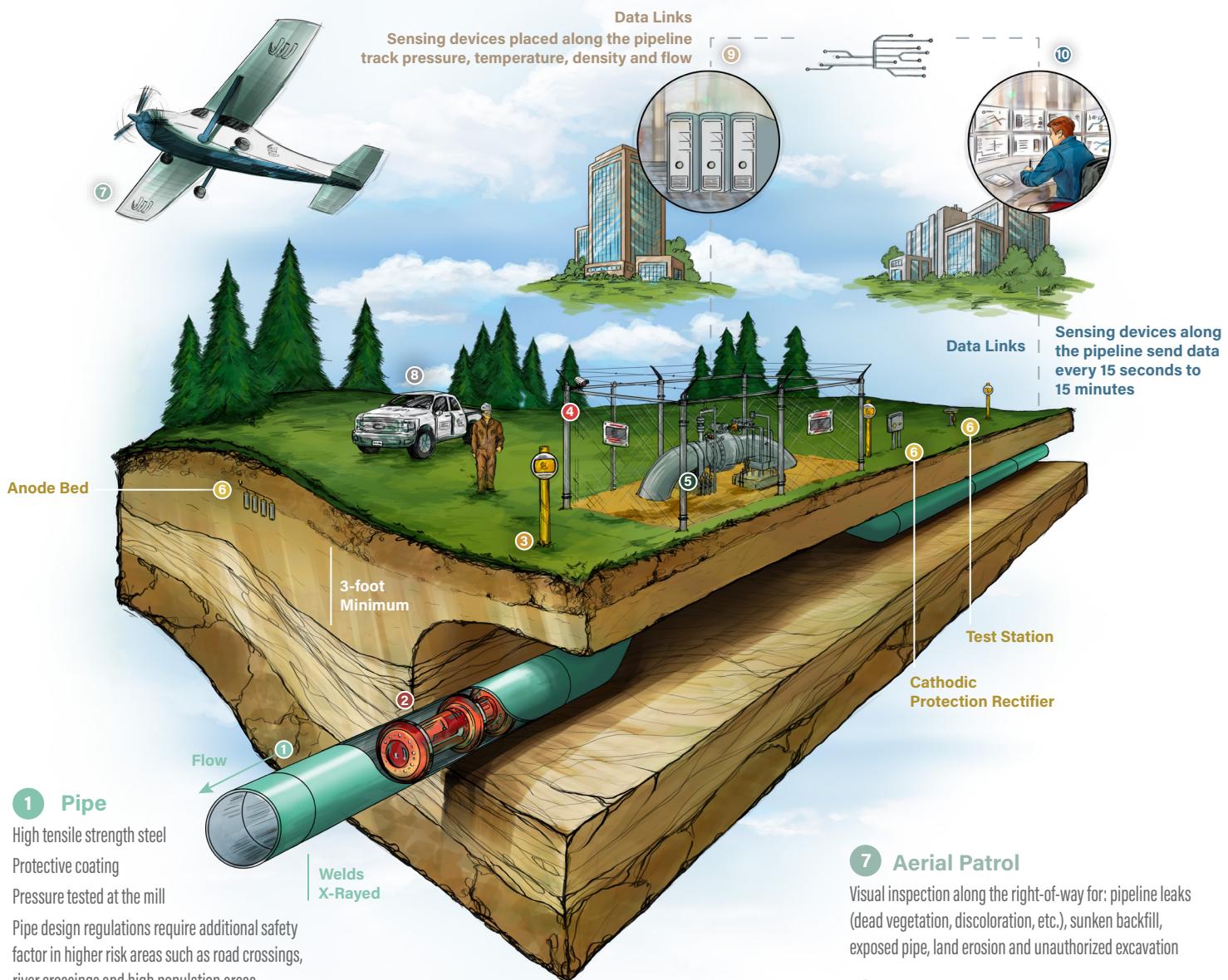
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SUNOCO PIPELINE
An ENERGY TRANSFER Partnership

Energy Transfer has a comprehensive pipeline integrity program that enables us to monitor our assets 24 hours a day, 7 days a week, 365 days a year.

Pipeline operations personnel are trained and qualified in accordance with pipeline safety regulations. Qualifications cover all aspects of operations and maintenance and are periodically reassessed as required.



1 Pipe

High tensile strength steel

Protective coating

Pressure tested at the mill

Pipe design regulations require additional safety factor in higher risk areas such as road crossings, river crossings and high population areas

All welds 100% x-rayed or NDE inspected

Pressure tested at a minimum of 125% of maximum operating pressure

2 In-Line Inspection Tools

There are various tool technologies that may be used to identify and measure metal loss from corrosion and gouges, identify dents and other deformations, and detect longitudinal cracks and crack-like defects

3 Warning Signs

Pipeline markers and warning signs indicate approximate location of the pipeline

Located at frequent intervals along the pipeline right-of-way
List product, name of the pipeline operator, and operator's telephone number in case of an emergency

Display 811 "Call Before You Dig" notification phone number

4 Security

Chain link security fencing

Security camera and monitoring

5 Valves

Both automated and manual valves are strategically placed along the pipeline

Can be used to stop flow along a certain section of pipe

Inspected periodically in accordance with regulations

A variety of valves are used both above and below ground

6 Cathodic Protection

Inhibits corrosion by application of electrical current with anode bed

Effective protection requires very low DC voltage

Entire pipeline is protected below ground

Inspected and tested annually, rectifier inspected every other month

Test stations approximately one mile apart

7 Aerial Patrol

Visual inspection along the right-of-way for: pipeline leaks (dead vegetation, discoloration, etc.), sunken backfill, exposed pipe, land erosion and unauthorized excavation

8 Ground Patrol

Visual inspections and surveillance of the pipeline along the right-of-way

Maintenance and inspections of equipment and valves

9 Supervisory Control and Data Acquisition (SCADA) Systems

Control system that uses computers and networked data
Sends critical information to pipeline operations teams
Automates data logging and processing

10 Control Center

Centralized control center to immediately and easily adjust flow rates in the pipeline

Pipeline engineers know exactly what is happening along the pipeline at all times

Can quickly react to equipment malfunctions, leaks, or any other unusual activity along the pipeline