



MarinerEastNews

AUGUST 2017

Pipeline Construction Update

On Aug. 9, the Pennsylvania Environmental Hearing Board approved a consent order that will allow Sunoco Pipeline to proceed with horizontal directional drilling on the Mariner East 2 pipeline in a manner that demonstrates our commitment to the commonwealth and our neighbors to protect Pennsylvania's natural resources during construction. We will continue to adhere to the strict conditions of our permits, including the enhanced standards for planning, outreach and reporting included in the order, which is meant to minimize inadvertent returns of drilling mud and impacts to water supplies.

Horizontal directional drilling has restarted on 16 drills throughout the state, and other drills will be restarted in phases according to the conditions of the consent

order. The agreement will put hundreds of workers back on the job as we complete this transformational infrastructure project.

Traditional open trench construction and conventional road boring continue, with the safety and protection of Pennsylvania's environment as our first priorities.

To date, we have made significant progress on the construction of this project. On the pipeline, approximately 80 percent of the pipe has been strung, more than 70 percent is welded and over half has been lowered in and backfilled. We expect to have Mariner East 2 in service in the fourth quarter of 2017. ●

Pipeline Construction

Horizontal Directional Drilling

Horizontal directional drilling is a steerable, trenchless method of installing underground pipe in an arc along a prescribed path. This construction method is used to install pipelines underneath waterways, wetlands, sensitive habitats, culturally sensitive areas, congested areas and roads.

HDD is a safe, commonly used technology; however, there are challenges associated with this construction method because of varying geology along the project footprint. When using HDD, there is the possibility of having what is commonly referred to as an inadvertent return. An inadvertent return occurs when drilling mud – composed of potable water and nontoxic bentonite clay – seeps to the surface due to geology

along the bore path. In other words, there may be an existing crack in the bedrock where the water-bentonite mix can escape.

As part of the permitting process for Mariner East 2, the Pennsylvania Department of Environmental Protection (DEP) has outlined strict parameters we must follow to protect water resources during construction. These include on-site environmental inspectors, who constantly monitor construction activities, as well as inadvertent return contingency plans for every HDD location. Under the comprehensive HDD plans, we will contain, remove and recycle any drilling mud that escapes during drilling activities, in close coordination with the DEP.

What is Bentonite Clay?

Bentonite is a naturally occurring, nontoxic clay. The directional drilling of pipelines involves using a nonhazardous drilling mud that consists of potable water and bentonite. Any additive used in the bentonite clay mix must comply with the NSF/ANSI 60 standard for safe drinking water.

Bentonite is common in a variety of household products that we use every day, such as wine, sugar, honey, creams and lotions, baby powder and hand soaps. It can be used as a natural remedy for bee stings, an essential ingredient for food-grade face masks and a treatment for diaper rash. ●

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.

Contact Sunoco Pipeline

Mariner East 2 Project

525 Fritztown Road
Sinking Spring, PA 19608

855-430-4491

www.marinerpipelinefacts.com
Twitter - @SunocoPipeline



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 300,000 hours. Construction activities include:

- The majority of clearing activities within the right of way, access-road areas and additional workspace areas are completed and continue in progression.
- Right-of-way grading and topsoil segregation are preparing sites to begin open-cut or horizontal directional drilling.
- Crews continue to progress in stringing, bending and welding the 20-inch and 16-inch pipelines 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 completing grading activities and pipeline fabrication work at valve site locations.
 - Aboveground valve sites are installed along our pipeline system to provide an additional way of controlling product flow.

– The valves normally are open, but when a section of pipeline requires maintenance, operational engineers close the valves to isolate that section of the pipeline.

- Six horizontal guided boring machines are deployed to safely install the 20-inch and 16-inch pipeline beneath roads and some highways.
- With the exception of road-bore activities, the majority of the construction of the 16-inch pipeline is in the early stages.

Crews continue to work with each municipality to answer and resolve questions from the community.

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. ●

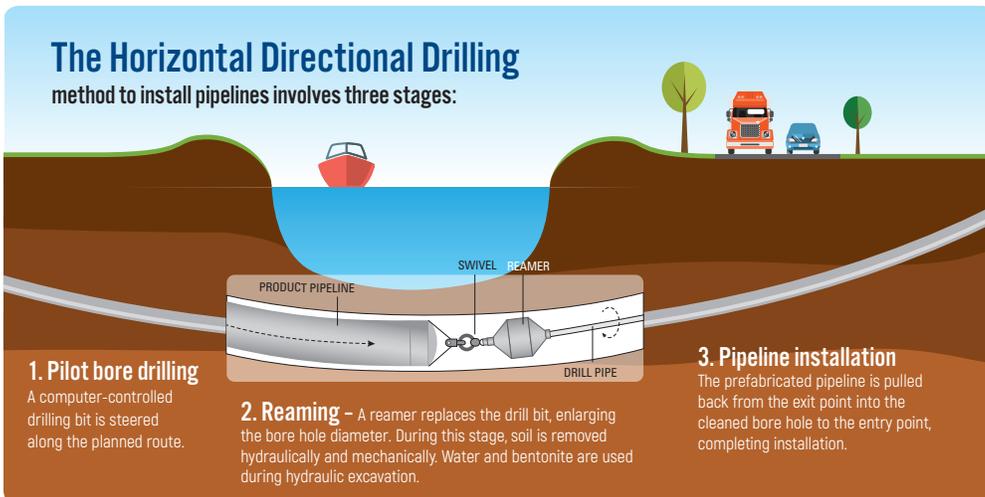
Did You Know?

CPV Fairview is making a \$900 million investment to build the Fairview Energy Center, a 1,050-megawatt electric generating station in Cambria County that could be the first in the United States to generate electricity using natural gas and ethane.

Direct access to Sunoco’s Mariner East 2 pipeline will enable the facility to supply about 20 percent of the center’s fuel, depending on the needs at any given time. The facility is expected to come online in 2020 and is projected to provide enough energy to meet the needs of 1 million Pennsylvania homes. CPV Fairview is just one example of how Mariner East 2 will provide direct benefits to Pennsylvanians by expanding access to ethane, propane and butane.

The Horizontal Directional Drilling

method to install pipelines involves three stages:



1. Pilot bore drilling

A computer-controlled drilling bit is steered along the planned route.

2. Reaming – A reamer replaces the drill bit, enlarging the bore hole diameter. During this stage, soil is removed hydraulically and mechanically. Water and bentonite are used during hydraulic excavation.

3. Pipeline installation

The prefabricated pipeline is pulled back from the exit point into the cleaned bore hole to the entry point, completing installation.

FOR MORE INFORMATION CONTACT: IVANA WOLFE • Ivana.Wolfe@energytransfer.com • 855-430-4491
www.marinerpipelinefacts.com • @SunocoPipeline



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