Living and working near pipelines.

Portland Natural Gas Transmission System

What you need to know - Natural Gas

Please keep this brochure for future reference in case of an emergency.

Why are you receiving this brochure?

This brochure contains important safety information about natural gas pipelines, and you live or work near the Portland Natural Gas Transmission System (PNGTS), operated by TC Energy. This brochure includes basic information such as the following:

- What you can do to ensure safety around pipelines
- How to recognize a pipeline in your area
- Recognizing the signs of a pipeline leak
- What kind of activities are permitted on a pipeline right-of-way
- How TC Energy works to ensure the safety of pipelines

To help you understand the role you play in contributing to pipeline safety, we ask that you review the information provided. If you would like more information or have questions, please contact us at **public_awareness@tcenergy.com** or call **1-855-458-6715**.

In the case of a pipeline emergency, please call 911, and then call TC Energy's emergency number at 1-800-830-9865.

En caso de emergencia relacionada con un gasoducto, llame al 1-800-830-9865. Si desea recibir información de seguridad sobre los gasoducto en español, envíe un email a public_awareness@tcenergy.com o llame al 1-855-458-6715.

TC Energy respects your privacy. To find out more about TC Energy's commitment to privacy and protecting your personal information, please see ***www.TCEnergy.com/privacy***

Purpose of pipelines and pipeline facilities

Pipelines are the safest and most efficient method to transport the energy that we need and use every day. Our pipelines and pipeline facilities are built using industry best practices, which include using the highest quality materials during construction and implementing a rigorous pipeline maintenance program. This includes the facilities required to safely operate the pipeline, like meter stations and compressor stations.

Meter stations measure the volume of natural gas transported through the pipeline, both at entry points (receipt station) and delivery points (sales station).

Compressor stations are necessary to maintain controlled and appropriate pressure levels along the length of the pipeline to ensure continuous and safe gas flow.

Prevent an incident, *before* it happens

CALL 811—it's free

The best safety practices stop accidents before they happen. Just like you won't drill into a wall without knowing where the studs are, it makes sense to find out where the underground utilities are located. Unfortunately, digging without a locate is the leading cause of pipeline incidents.

Before conducting any excavation, either by hand or with machinery, contact your local One-Call center at least 2 days in advance by calling '811' – America's national toll-free number for requesting underground utility location.

The One-Call Center will notify the facility owners in your area, who will send representatives to mark these facilities with flags, paint or other marks, helping you to avoid damaging them. Even with a locate, any excavation on a TC Energy right-of-way requires a TC Energy representative present.

A notification to the One-Call Center is required by law in the United States. The service is free and could prevent accidents, injuries or deaths.

Learn more about the One-Call requirements in your state by visiting www.call811.com

Know what utility markings mean

When you request a locate, colored flags and/or paint are used to mark the location and type of underground utility.

Proposed excavation
Temporary survey markings
Electric power lines, cables, conduit and lighting cables
Gas, oil, steam, petroleum or gaseous materials
Communication, alarm or signal lines, cables or conduit
Potable water
Reclaimed water, irrigation and slurry lines
Sewers and drain lines

Recognizing a pipeline in your area

The general location of pipelines can be determined by two characteristics: a pipeline right-of-way (ROW) and pipeline markers.

Right-of-way

- A ROW can usually be recognized as a cleared strip of land in a linear or fairly straight line, cleared of structures and trees.
- The ROW contains the pipeline and a buffer area that usually extends 25 feet or more on either side of the pipeline where certain activities are restricted to ensure the continued safety and integrity of the pipeline.
- The ROW must be kept clear of fences, buildings, trees or any other type of structure. The impact of a fence post, weight of a shed or the roots of a tree can cause either immediate or long-term damage to the pipeline.
- These could also impede access to the area for any required maintenance, repair work, aerial or ground patrols, emergency situations or required federal or state inspections, resulting in safety risks and possible costly impacts to structures on the ROW.

Pipeline markers

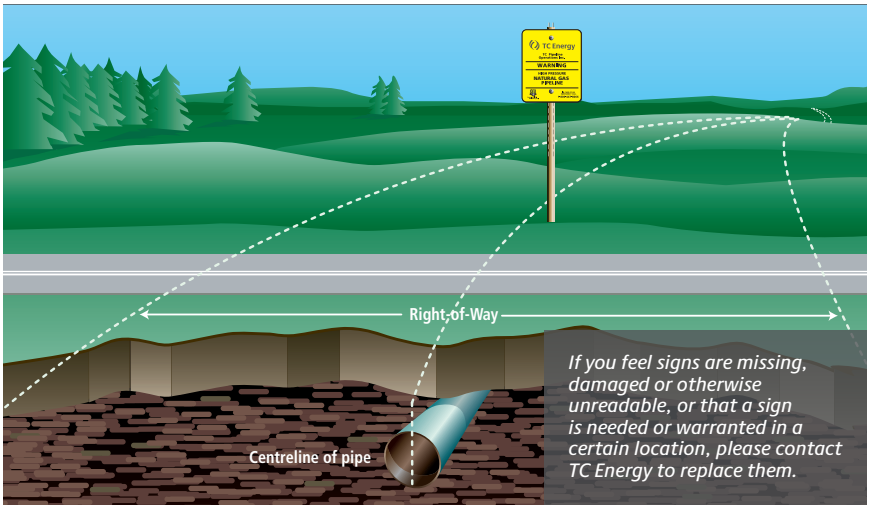
- Found within line-of-sight on a ROW and at locations where the pipeline crosses streets, highways, waterways and railways.
- Markers only show the approximate location of the pipeline, and the depth of the line may vary. **You CANNOT use pipeline markers as a determination of where or where not to dig.**
- Pipeline markers display the pipeline operator, emergency number and the product transported in the pipeline.
- It is against the law to willfully deface, damage, remove or destroy any pipeline sign.
- Only a TC Energy representative can determine the location and depth of the pipeline. Pipelines may not follow a straight course between marker signs.

Warning sign

Line marker

Vent marker

Aerial marker



Recognizing a gas pipeline leak

Although a pipeline leak is rare, it is important to know how to recognize the signs. Use your senses of smell, sight and hearing to detect a potential pipeline leak.

Smell

Natural Gas transmission lines are not usually odorized but can have a slight hydrocarbon smell. Smaller gas distribution lines often have an additive to give it a sulphur or “rotten egg” smell.

Sight

A natural gas leak can cause distinct patches of dead vegetation in normally green areas, bubbles in bodies of water, dirt blowing into the air, or ground frosting in summer. If the leak has been ignited, you may also see possible fire or flames above the ground.

Sound

A leak can result in a hissing noise or a loud roar, depending on the size of the release.

Possible hazards of a gas pipeline leak or rupture

- Dizziness or suffocation if a leak occurs in a confined space or high concentration
- Ignition/Fire if a spark or other ignition source is present
- Potential explosion if the natural gas is mixed with air
- Projectiles from site of leak or rupture propelled by the force of escaping gas

Important information about natural gas

Natural gas is an energy source composed mostly of methane. Natural gas is said to be odorless, but some people detect a slight hydrocarbon smell. If the gas has been odorized, it could smell skunk-like or similar to rotten eggs. Natural gas is highly flammable and explosive.

To review the Safety Data Sheet (SDS) for natural gas, please visit our website at www.tcenergy.com/pipeline-and-operations and review the “MSDS Natural Gas” pdf under “Related Information”.

Responding to a leak or pipeline strike

A “strike” is any contact with a pipeline and can include mechanical equipment like a backhoe, or hand tools such as a shovel. Any contact with a pipeline can affect the pipeline’s integrity or the protective corrosion coating, so it’s important to follow these steps so that a TC Energy representative can inspect the pipeline and its coating for any damage.

If you strike a pipeline or witness any of the typical signs of a leak, or any other unusual sights, sounds or smells near a pipeline location, it is important that you follow these steps:

1. Stop all excavation and construction. Shut off all machinery if safe to do so and move away from the area on foot – warn others to do the same.
2. Do not attempt to repair the pipe or operate any valves.
3. Call ‘911’ as soon as you are in a safe location. Describe the situation and inform the operator of any injuries, leaking product or fire.
4. Call TC Energy’s emergency number (see the back of this booklet) and explain the incident. This number is available on all pipeline marker signs.
5. Do not continue your project until authorized by a TC Energy representative.

If you cause or witness even minor damage to a pipeline or it’s coating, please notify TC energy immediately. A gouge, scrape, dent or crease requires an inspection and possible repairs for the long-term safety of all parties and the surrounding area.

Do not cover a pipeline that has been disturbed, as it will make it more difficult to find the damaged area.

Consequences of unsafe digging

Please familiarize yourself with the potential consequences of unsafe excavation, including the significant financial costs and fines that may apply in your state. In some cases, expenses or fines may be levied even if no damage occurred.

Interrupted services such as electricity, gas and water.
Underground utilities are damaged every two minutes in the United States due to unsafe excavation work*. Some utilities are buried as little as 12 inches below the surface, so even a simple shovel can cause serious damage.

Fines and repair costs to fix the underground utility line(s).
Enforcement guidelines are state-specific, but you can learn more about the rules in your state at www.811.com. Fines can run into the thousands of dollars, and repairs would likely cost much more than your original project.

Risk of serious injuries and death.
Since 2008, the Pipeline and Hazardous Materials Safety Administration (PHMSA) has reported 715 injured workers and 79 fatalities due to damages done to underground infrastructures during excavation work**.

**2017, Common Ground Alliance, DIRT Report*
***2018, https://hip.phmsa.dot.gov/analyticsSOAP/saw.dll?Portalpages*

What if I need to use the Right-of-Way?

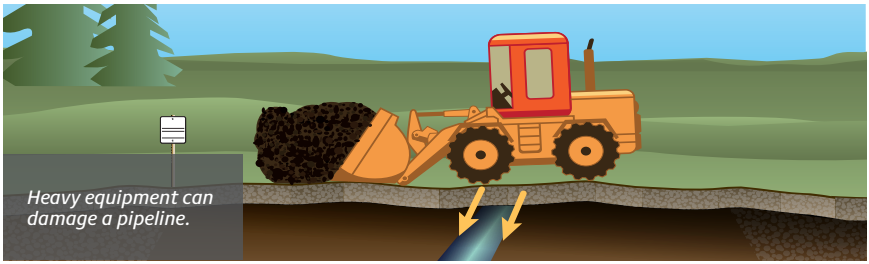
Depending on your plans or activity, it can still be possible for you to work on or use the ROW. Some activities are permitted under normal farming practices, while crossings and encroachments require approval and oversight from TC Energy.

A crossing or encroachment is a temporary or permanent structure across, on, along or under a facility or pipeline right-of-way. A crossing can also mean equipment or machinery crossing over the pipeline right-of-way or facility site. Both need an agreement so that the pipeline operator can understand the scope of work, the risk, and what measures need to be taken to mitigate those risks.

You can learn more about permitted activities and crossing agreements at www.tcenergy.com/safe-digging.

We're here to help. If you think your activity might require a crossing agreement with TC Energy, please contact us by phone at **1-800-562-8931** or by email at **us_crossings@tcenergy.com**. To better serve you and speed up your request, please provide the following information:

- Proposed activity – what are you planning to do?
- Location of proposed work (GPS coordinates are preferred)
- Make and model of any equipment that will cross/encroach the pipeline facilities.
- Proposed activity date
- Axle load (weight)
- Your name and phone number
- Email address



What does TC Energy do to ensure pipeline safety?

TC Energy conducts a rigorous pipeline maintenance program to ensure the integrity and safety of our systems. This includes but is not limited to:

- 24/7 monitoring of our facilities
- In-line inspections of pipelines that can identify the smallest of issues or defects for repair
- Regular patrols of the right-of-way
- Multiple shut-down valves to isolate and limit potential releases
- Cathodic protection to prevent corrosion
- Hydrostatic testing
- Investigative digs
- Ground surveys

In addition to this, TC Energy invests millions every year in R&D to improve and enhance the safety of our pipelines, from smart drone patrolling, fiber optic monitoring, GHG reduction and environmental sustainability. TC Energy's employees are trained to meet all mandated federal requirements for Pipeline Operator Qualifications in the U.S.

In accordance with federal regulations, some segments along TC Energy's pipelines have been designated as High Consequence Areas (HCAs) where extra precautions are taken, known as Integrity Management Programs (IMPS). For information regarding these measures, contact TC Energy at **public_awareness@tcenergy.com.**

"Pipeline Inspection Gauges, or "PIGs" travel through the pipeline to collect information that can then be analyzed to spot imperfections, corrosion, dents or other signs that maintenance may be needed.

TC Energy's response to a pipeline incident

A pipeline incident could involve an uncontrolled or unplanned release of natural gas or oil from the pipeline system. TC Energy's state-of-the-art leak detection systems, elevated safety features and specially trained staff ensure that leaks will be quickly identified and addressed.

In the unlikely event an incident should occur, TC Energy will work with emergency response officials to ensure everyone is familiar with local operations and related safety issues. TC Energy will immediately respond by:

• Shutting down the affected pipeline if necessary

• Isolating the impacted section of the pipeline through either automatic valve shutoff or manual valve operation.

• Dispatching emergency personnel to the location of the incident

TC Energy's operations extend across North America with established offices in various communities. Each region is fully staffed with qualified employees trained in pipeline safety and emergency response to ensure the safe and efficient operation of the facilities in the area. TC Energy will not restart the pipeline until the issue has been addressed and it is safe to do so, with the approval of industry regulators.

TC Energy's policies and practices for emergency response planning go above and beyond the standard regulatory requirements for emergency response.

Emergency responders and TC Energy staff work together at a emergency exercise to ensure all are prepared in the rare event of an emergency.

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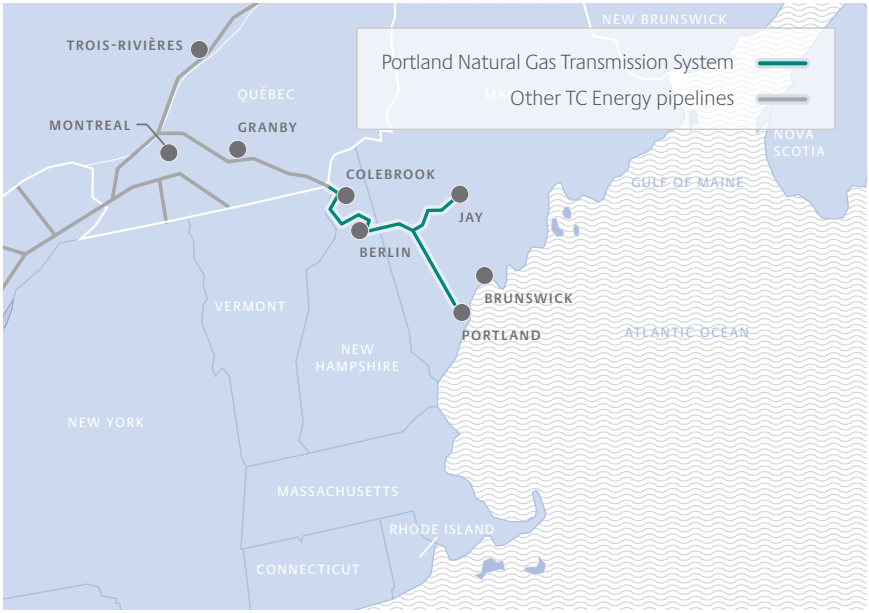

US One Call Center 811
Online requests www.call811.com

General inquiries

Public Awareness 1-855-458-6715
Landowner inquiries 1-877-287-1782
Crossing requests 1-800-562-8931
Crossing email . . . . . us_crossings@tcenergy.com

Emergency numbers

Portland Natural Gas Transmission System 1-800-830-9865

TC Energy is regulated by US Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) in the United States.

Further information regarding pipelines located in your community can be accessed through the National Pipeline Mapping System at ***www.npms.phmsa.dot.gov***

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811 Know what's below. Call 811 before you dig.