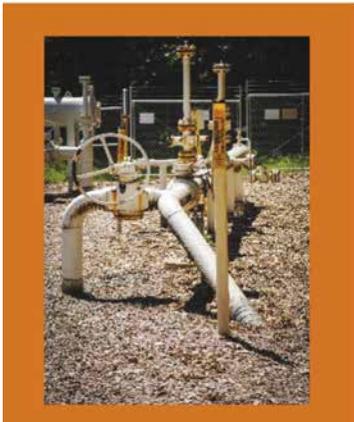


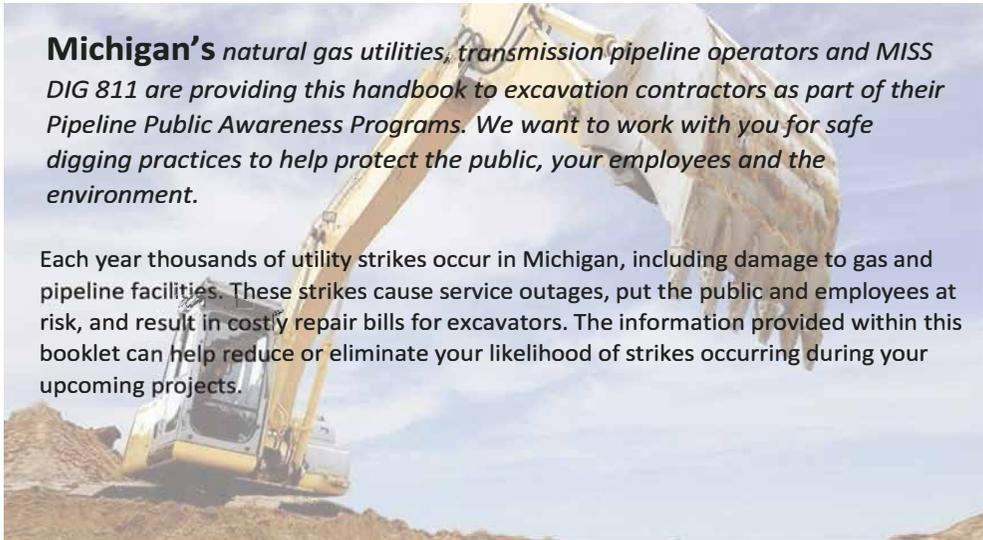
Before you dig, contact MISS DIG 811. Member utilities will mark the approximate location of their underground public facilities free of charge.



**Gas & Liquid Pipeline**

# Excavator Education Program (EEP) Handbook





**Michigan's** natural gas utilities, transmission pipeline operators and MISS DIG 811 are providing this handbook to excavation contractors as part of their Pipeline Public Awareness Programs. We want to work with you for safe digging practices to help protect the public, your employees and the environment.

Each year thousands of utility strikes occur in Michigan, including damage to gas and pipeline facilities. These strikes cause service outages, put the public and employees at risk, and result in costly repair bills for excavators. The information provided within this booklet can help reduce or eliminate your likelihood of strikes occurring during your upcoming projects.

PIPELINE PURPOSE, RELIABILITY, INTEGRITY, AND PREVENTION MEASUREMENTS	
<p>Pipelines are the safest method for transporting:</p> <ul style="list-style-type: none"> <li>• Natural Gas</li> <li>• Natural Gas liquids (NGLs) such as propane, butane, ethane</li> <li>• Crude Oil</li> <li>• Petroleum Gas</li> <li>• Refined Products</li> </ul>	<p>To protect pipelines, they are:</p> <ul style="list-style-type: none"> <li>• Inspected by operators</li> <li>• Maintained for corrosion-control</li> <li>• Surveyed for leaks</li> <li>• Replaced when necessary</li> </ul> <p>Did you know that low voltage is used to reduce or prevent corrosion?</p>
<p>Smart pigs are run inside transmission pipelines to locate wall weaknesses or dents. Gas flow is monitored by pipeline employees to alert them to any abnormal pressure, flow, temperature or quality to allow them to respond quickly to an emergency.</p>	



## GAS AND PERMANENT PIPELINE MARKERS

All pipeline companies, distribution and transmission, are required to use permanent markers to indicate the presence of gas lines in the area. Pipeline markers are yellow or white and red signs that identify the material being transported, an emergency number, and the name of the pipeline operator.

### Important Reminder: Underground facility markers

- ▼ Are not usually set directly over the pipeline.
- ▼ Do not specify the facility depth.
- ▼ Do not indicate a straight line between markers.
- ▼ Do not identify the number of pipelines or facilities in an area.
- ▼ Are found where pipelines and facilities cross a street, railroad, or waterway.



### FACILITY MARKERS ALWAYS INCLUDE:

- ▼ The words Warning, Danger or Caution
- ▼ IMPORTANT: The federal code specifies that either "Gas (or the name of the gas transported) Pipeline" and "Petroleum (or the name of the hazardous liquid transported) Pipeline" must be on the line marker.
- ▼ An emergency phone number
- ▼ The name of the pipeline operator

HOW TO RECOGNIZE A GAS OR PETROLEUM LEAK					
You might see	Natural Gas	Natural Gas Liquids	Petroleum Gas (Heavier than air)	Crude Oil (combustible and may be toxic)	Refined Products (combustible and may be toxic)
Brown patches in vegetation on or near a right-of-way	X	X	X	X	X
Apparent or non-apparent damage to pipes that have been broken, pulled, dislodged, or gouged	X	X	X	X	X
Oily sheen on water surfaces		X		X	X
Liquid on the ground	X	X		X	X
Continuous bubbling in a wet area	X		X	X	X
A white vapor stream or mist-like cloud over the pipeline			X	X	X
Dirt being blown or appearing to be thrown into the air	X		X	X	X
Fire coming from the ground or burning above the ground	X	X	X	X	X
Unexpected frost or ice on the ground	X		X	X	X
An unusual area of melted snow in winter	X	X	X	X	X
Dry spots in moist earth			X		
<b>You might smell</b>					
An odor like gasoline		X	X	X	X
Sulfur or rotten egg odor *	X*		X	X	
<b>You might hear</b>					
A roaring, blowing, or hissing	X	X	X	X	X

Notify the gas/liquid FACILITY owner if you experience any of the above.

\*Natural gas is odorless in its natural state. It can have an added smell that if released into the atmosphere may give off the acidic or unpleasant smell. Some gas gathering pipelines contain a condensate, or "petroleum-like odor." However, some natural gas pipelines in Michigan do not carry odorized gas.

TYPES OF PIPELINES
<p><b>Gathering lines</b> collect oil and gas from areas of production. Are small pipelines, usually 2 to 8 inches in diameter, that move crude oil or gas mixtures from individual wellheads and production locations to processing facilities.</p> <p><b>Distribution pipelines</b> deliver natural gas to people's homes or businesses. Are used to move natural gas from the transmission system and storage facilities directly to residential and industrial consumers.</p> <p><b>Transmission pipelines</b> transport material to and from storage, refining facilities, manufacturing centers, and places of distribution. Are large crosscountry pipelines, usually 20 to 42 inches in diameter, that are used to move product from production and processing facilities to distribution companies and large volume customers.</p> <p><b>Trunk Lines</b> are larger pipelines, usually 8 to 24 inches in diameter, that bring crude oil from gathering centers, oil producing areas, pumping stations and ports.</p>



**IF YOU MAKE CONTACT WITH A PIPELINE**

Stop your excavation and contact the facility company immediately, even if there is no apparent damage. Contacting the facility owner allows the gas or liquid pipeline company the opportunity to investigate and remediate if needed.

A pipeline that is pulled or bumped could break at a location away from the actual excavation site.

## EVACUATION

- DO leave the damaged area Upwind, Uphill or Upstream cautiously.
- DO call 911, if damages resulted in the escape of any gas or liquid.
- DO evacuate/ alert others near the scene.
- DO stay away from the scene.
- DO wait for an all clear signal to return to the area.
- DO contact the facility company.
- DO NOT touch any liquid or vapor that may have come from the pipeline.
- DO NOT initiate any open flame or other potential source of ignition such as an electrical switch or vehicle ignition or lighting a match.
- DO NOT smoke.
- DO NOT start motor vehicles or electrical equipment.
- DO NOT ring doorbells to notify others of the leak. Knock with your hand to avoid potential sparks from knockers.
- DO NOT drive into a leak or vapor cloud while leaving the area.
- DO NOT attempt to operate any pipeline valves yourself. You may inadvertently route more product to the leak or cause a secondary incident.
- DO NOT attempt to extinguish a petroleum product or natural gas fire. Wait for local firefighters and other professionals trained to deal with such emergencies. Burning gas will NOT explode.
- DO NOT cover the damaged pipe with dirt as a means of stopping the leak.
- DO NOT crimp plastic gas facilities.
- DO NOT attempt to plug damaged pipes.

## DAMAGE REPAIRS

When a pipeline or pipeline coating has been damaged, an experienced crew will be dispatched to make repairs. Only facility company personnel, using proper safety equipment and materials, shall repair or replace damaged gas or liquid facilities.

## AWARENESS OF HAZARDS

Liquid and gas pipelines are built with safety and reliability as top priorities while following state and federal guidelines, regulations, and specifications.

However, you should know that strikes to underground facilities can create these potential consequences:

- Fire.
  - Environmental Damage.
  - Explosion.
  - Loss of service.
  - Fines & Penalties.
  - Asphyxiation.
- (Natural gas displaces oxygen in confined spaces)

## THESE HAZARDS CAN BE CAUSED BY:

- Rupturing, nicking or puncturing a pipeline.
- Uncontrolled escaping gas or fuel.
- Extreme natural events such as floods, tornadoes and earthquakes.
- Heavy ice on outside meters or other facilities.
- Fire or explosion near or directly involving a pipeline facility.
- Collapsed buildings and trees that break or damage pipelines.
- Civil disturbances such as riots.
- Water main breaks weaken roadways and pavement, damaging pipelines.
- Under-pressure or over-pressure in the pipeline system.
- Equipment failure.
- Human error.

## FACTS ABOUT NATURAL GAS & LIQUEFIED PETROLEUM GAS (LPG)

Natural gas is almost 40 percent lighter than air. Natural gas rises and quickly spreads out in open areas. However, inside, natural gas displaces air first at ceiling level, then moves down towards the floor.

LPG (propane and butane) is much heavier than air. LPG sinks and quickly spreads out in open areas. However, inside a room or building, LPG will displace air first at the floor level, then moves up toward the ceiling.

Natural and propane gas is not toxic. However, it can displace the air in enclosed spaces and suffocation can occur.

Natural propane gas can ignite from sources such as a pilot light, a lighted match, or an electric arc from a light switch, motor, doorbell or telephone.

If natural or propane gas does ignite, let it burn. Do not attempt to put out the flame, until the source of gas is eliminated.

## EVACUATION

In an emergency of gas escaping, an excavator needs to:

- Contact 9-1-1 to notify emergency officials.
- Evacuate the occupants and leave the doors open.
- Tell people they must not return to the building for any reason.
- DO NOT operate light switches, doorbells, or use telephones in the building.
- PROHIBIT smoking in the area.
- Keep people away from the leak area.
- PROHIBIT the operation of machinery.
- Notify the utility owner.

Prompt action may save lives!



## EXCESS FLOW VALVE NOTICE

Beginning in February 1999, gas distribution facilities owners in Michigan began installing excess flow valves (EFVs) in new and replacement residential services. EFVs close when gas flow exceeds the valve's design limits. This might occur when a gas service line is severed by damage or by a natural disaster. These valves are typically installed near the connection of the gas service to the gas main.

## WHAT IS MISS DIG 811?

The MISS DIG System (MISS DIG 811) is a statewide, one-call notification system, which was formed in 1970 in Oakland County by four major Michigan facility companies. The MISS DIG System was created to provide excavators and the general public with the ability to inform multiple owners of underground facilities of intended non-emergency and emergency excavation with a single telephone call.

MISS DIG 811's members are responsible for maintaining their underground public facilities, maintaining all records of their facility locations and marking the approximate location of their underground public lines, free of charge.

MISS DIG 811 is available 24 hours a day, 7 days a week by dialing 8-1-1

to process emergency and non-emergency location requests. Requests can also be made online by clicking Submit Locate Request from the home page of the MISS DIG 811 website at MISSDIG811.ORG.

**MISS DIG 811 does not mark underground utility lines.**

## WHEN TO USE MISS DIG 811

Michigan law requires anyone who is responsible for the planning or performing of any type of excavation e.g.; grading, demolition, cultivating, auguring, blasting, or boring to provide advance notice of at least three full working days. MISS DIG 811 must be contacted prior to excavation.

## RESPONSE TIMES

**Normal Dig Notice:** Three (3) business days after ticket is submitted.

**Request for additional assistance:** Three (3) business hours.

**Destroyed Markings:** 24 hours or later, as indicated on ticket.

*\*Timeframes exclude weekends and holidays observed by MISS DIG 811.*

**Remember:** Every Digging project requires contacting MISS DIG 811, even if you have contacted MISS DIG 811 previously for a similar project.



## TYPES OF REQUESTS HANDLED BY MISS DIG 811

MISS DIG 811 processes several types of requests

- Normal Notice - 72 hours but not more than 14 calendar days prior to excavation.
- Emergency Notice - Sudden or unforeseen occurrence.
- Re-Marking Requests - Markings damaged/removed.
- Additional Assistance - Unmarked facilities on job site or unable to find marked line when soft excavating.

## TICKET LIFE

Normal Jobs - 21 days.

Long Term jobs - 180 days.

Excavation must commence within 14 calendar days.

## PREPARING FOR A LOCATE REQUEST FROM MISS DIG 811

- Pertinent information is gathered.
- The system software looks for overlap between the defined work site and a facility owner operator's defined facility location which generates a ticket.
- Facility owner operators in the areas of the work location receive a ticket electronically and ticket is reviewed by trained personnel.

## INFORMATION REQUESTED BY MISS DIG 811 FOR A TICKET WILL INCLUDE:

- ▼ The name and phone number of the caller.
- ▼ The name of the company doing the work.
- ▼ The type of work being done.
- ▼ The field contact.
- ▼ The date & time when the contractor will begin working.
- ▼ The geographic location-city, village or township and county-of the work area.
- ▼ The exact location where digging will be done; GPS coordinates, address, lot number, subdivision name, pole numbers.

## MAPPING ACCURACY IS IMPORTANT

When mapping, it's extremely important to encompass the entire work location on the MISS DIG 811 map. The MISS DIG 811 system software looks for overlap between the defined work site and a facility owner operator's defined facility location. If the entire work site is not encompassed on the MISS DIG 811 mapping system, it is possible that a member facility owner/operator may not be notified.

When precisely drawn, the polygon is used as a description of the dig site in place of written instructions. This is referred to as electronic or virtual white lining.

## WHAT HAPPENS AFTER THE REQUEST IS MADE?

Members will be notified if their facilities are in the area of the request. A field locator will locate and mark the excavation site with paint, stakes and/or flags using the Uniform Color Code.

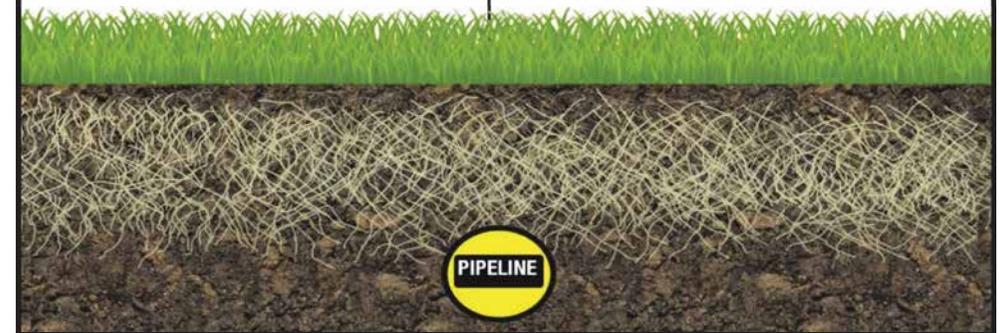
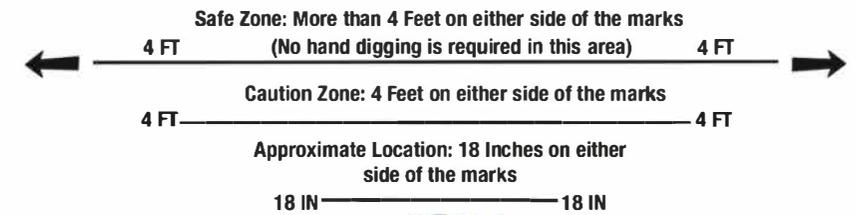
The facility owner operator must provide a Positive Response noting the status of the markings.

No digging can occur until after facilities have been marked or underground facility operators indicate "001-No Conflict" in Positive Response.

## RESPONSIBILITIES OF THE EXCAVATOR REGARDING THE REQUEST

1. Contact MISS DIG 811 online or by phone
2. Wait at least 3 business days for utilities to be marked.
3. Check status online to confirm all utilities have been marked
4. Hand dig when digging within 4ft. of paint or flags
5. Dig with care.

**Do not dig until the Work Legal Start Date on the ticket has arrived.**



### CAUTION ZONE:

The Caution zone is an area which is at least 48 inches on either side of the facility markings. An excavator shall expose all marked facilities in the caution zone by soft excavation. If conditions make complete exposure of the facility impractical, an excavator shall consult with the facility owner or facility operator to reach agreement on how to protect the facility.

### APPROXIMATE LOCATION:

Approximate location means a strip of land at least 36 inches wide, but not wider than the width of the marked facility plus 18 inches on either side of the facility marks.

### SAFE ZONE:

The Safe zone is an area which is more than 4 feet on either side of the facility markings. No hand digging is required. An excavator can use mechanical equipment in this area.

### WHITE LINING:

If your project cannot be sufficiently described on a one call ticket, the area must be white lined prior to contacting MISS DIG 811 to clarify the scope of the excavation area.

## Know The Colors...

The nationally adopted Uniform Color Code is used to mark the approximate location of underground facilities. The markings appear as flags, paint, or both.



Proposed Excavation



Potable Water



Sewer And Drain Lines



Temporary Survey Markings



Electric Power Lines, Cables, Conduit, And Lighting Cable



Gas, Oil, Steam, Petroleum, Or Gaseous Materials



Communication, Alarm, Or Signal Lines, Cables, Or Conduit



Reclaimed Water, Irrigation, Brine And Slurry Lines, And Hazardous Waste



## DEPTH OF FACILITIES

The facility owners themselves generally will not provide depth information. While it is true that the facility owners follow certain depth requirements or guidelines when installing lines, they have no control over depth variations caused by human intervention.

In addition to human intervention, the effects of weather (i.e. erosion, changes in the frost line, etc.) can affect the depth of underground facilities. Staking equipment depth readout information is not accurate enough to rely on. Therefore, the facility owner will not provide depth information.

## DAMAGE AND SAFETY ALLIANCES

Excavators can support damage prevention efforts by reporting any suspicious activities they may witness on or near facilities or pipeline rights-of-way and by reporting any signs of damage to facilities or any observed conditions that could threaten the integrity of such facilities. Examples are sinkholes, dead vegetation, or unstable soils.

There are several regional associations dedicated to promoting utility damage prevention and safety. More information can be found at [MISSDIG811.org](http://MISSDIG811.org). Select Excavation Pros ^ Excavator Training scroll to Damage and Safety Alliance.

Establish a DSA in your area

If you are interested in establishing a DSA meeting in your local area, please feel free to contact the Education Department at [education@missdig811.org](mailto:education@missdig811.org) for suggestions. A member of the Education Team will participate in several of your DSA meetings throughout the year to provide educational information, updates, and helpful material. We will also promote your efforts on our website, through emails, and in our newsletters.

## DISPUTE RESOLUTION BETWEEN STAKEHOLDERS

A person seeking to file a complaint with the Michigan Public Service Commission (MPSC) must contact and provide relevant background information on an adverse party to begin the settlement process. This is a requirement of the MISS DIG 811 Underground Facility Damage Prevention and Safety Act, 2003 PA 174; MCL 460.731(2) MISS DIG 811 has no role or responsibility in the settlement. However, MISS DIG 811 will assist the excavator with facility owner contact information.

Planning to perform any type of excavation such as grading, demolition, cultivating, auguring, blasting, or boring? MISS DIG 811 must be contacted prior to excavation in order to comply with the state statute.



## THE NATIONAL PIPELINE MAPPING SYSTEM (NPMS)

NPMS provides information regarding the general location of transmission pipelines

Step 1... Visit: [www.npms.phmsa.dot.gov](http://www.npms.phmsa.dot.gov).

Step 2 ... Click on: "Use Public Map Viewer."

Step 3 ... Search by State and County.

Step 4 ... Search by State, County, or Zip Code.

You still need to contact 811 before starting any projects that involve digging.

### YOU MUST CONTACT MISS DIG 811 AGAIN IF:

- ▼ Excavation does not begin within 14 days of the dig start date on the ticket.
- ▼ No Positive Response has been received.
- ▼ There is evidence of a facility with no visible marks.
- ▼ There is positive response from a facility owner or the operator that indicates the presence of a facility with no visible marks.
- ▼ The location of a marked facility within the approximate location cannot be determined.
- ▼ The markings are destroyed or covered.
- ▼ Excavation activity is not complete by the Ticket Life/ expiration date noted on the ticket.

*\*Allow at least 3 business days to renew a ticket and 24 hours for a destroyed markings request on an existing ticket. (Not including weekends and holidays)*

## ADDITIONAL RESOURCES

### One Call Notification Center in Michigan:

#### MISS DIG 811 (MISS DIG System, Inc.):

Dial 811 or 1-800-482-7171 • [www.missdig811.org](http://www.missdig811.org)

### Enforcement Agencies & Resources:

#### Michigan Public Service Commission:

1-517-284-8100 • [www.michigan.gov/mpsc](http://www.michigan.gov/mpsc)

### Pipeline & Hazardous Materials Safety Administration (PHMSA):

<https://www.npms.phmsa.dot.gov/>



### NOTICE TO EXCAVATORS

This information is being provided to Michigan excavators in part to fulfill certain requirements of Pipeline Operator Members of the MISS DIG System as outlined in the Michigan Gas Safety Code R460.14614 and U.S.D.O.T. 49 CFR 192-614.

The complete mailing list of excavators receiving this publication will be kept on file by the MISS DIG System, Inc.

This construction safety information is part of MISS DIG System, Inc.'s Excavators Education Program, as outlined in the Michigan Gas Safety Code R460.14616 and U.S.D.O.T. 49 CFR 192-616, and the enclosed material is distributed free as an information service only. MISS DIG 811 makes no warranties, expressed or implied, with regard to these materials.

AmeriGas (LPG)	<a href="http://www.amerigas.com">www.amerigas.com</a>
BP Pipelines (North America)	<a href="http://www.bppipelines.com">www.bppipelines.com</a>
BreitBurn Operating, LP	<a href="http://www.breitburn.com">www.breitburn.com</a>
Buckeye Partners, LP	<a href="http://www.buckeye.com">www.buckeye.com</a>
Citizens Gas Fuel Company	<a href="http://www.citizensgasfuel.com">www.citizensgasfuel.com</a>
Consumers Energy	<a href="http://www.consumersenergy.com/pipelinesafety">www.consumersenergy.com/pipelinesafety</a>
DCP Midstream, LLC	<a href="http://www.dcpmidstream.com">www.dcpmidstream.com</a>
DTE Energy Gas	<a href="http://www.dteenergy.com">www.dteenergy.com</a>
Enbridge Energy	<a href="http://www.enbridge.com">www.enbridge.com</a>
Marathon Pipe Line LLC	<a href="http://www.marathonpipeline.com">www.marathonpipeline.com</a>
Marysville Hydrocarbons LLC	<a href="http://www.dcpmidstream.com">www.dcpmidstream.com</a>
Merit Energy Company	<a href="http://www.meritenergy.com">www.meritenergy.com</a>
Michigan Gas Utilities	<a href="http://www.michigangasutilities.com">www.michigangasutilities.com</a>
Northern Natural Gas Company	<a href="http://www.northernnaturalgas.com">www.northernnaturalgas.com</a>
Omimex Energy/ Basin Pipeline	<a href="http://www.omimex.com">www.omimex.com</a>
SEMCO Energy Gas Company	<a href="http://www.semcoenergygas.com">www.semcoenergygas.com</a>
TC Energy/ANR Pipeline Co	<a href="http://www.tcenergy.com">www.tcenergy.com</a>
TC Energy/Great Lakes Transmission	<a href="http://www.tcenergy.com">www.tcenergy.com</a>
Vector Pipeline	<a href="http://www.vector-pipeline.com">http://www.vector-pipeline.com</a>
Wisconsin Public Service	<a href="http://www.wisconsinpublicservice.com">www.wisconsinpublicservice.com</a>
Wolverine Pipe Line Company	<a href="http://wplco.com">http://wplco.com</a>



In the event of an Emergency Please Contact:

AmeriGas (LPG)	1-866-453-4271
BP Pipelines (North America)	1-800-548-6482
BreitBurn Operating, LP	1-888-250-1681
Buckeye Partners, LP	1-800-331-4115
Citizens Gas Fuel Company	1-800-982-2831
Consumers Energy	1-800-4 77-5050
DCP Midstream, LLC	1-888-233-8360
DTE Energy Gas	1-800-477-4747
Enbridge Energy	1-800-858-5253
Marathon Pipe Line LLC	1-800-537-6644
Marysville Hydrocarbons LLC	1-888-233-8360
Merit Energy Company	1-972-701-8377
Michigan Gas Utilities	1-800-401-6451
Northern Natural Gas Company	1-888-367-6671
Omimex Energy/ Basin Pipeline	1-231-845-7358
SEMCO Energy Gas Company	1-888-427-1427
TC Energy/ANR Pipeline Co	1-800-44 7-8066
TC Energy/Great Lakes Transmission	1-800-44 7-8066
Vector Pipeline	1-888-427-7777
Wisconsin Public Service	1-800-450-7280
Wolverine Pipe Line Company	1-888-337-5004

Please participate in a survey to provide feedback by going on line to submit at:  
<https://fs30.formsite.com/missdig/xr8fuzhs4o/index.html>

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