

pipeline awareness

Safety Information for ▶	Local Leaders 	Community Planning 	Emergency Management 
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Left: Excavation equipment breaks up concrete as part of road repair project. Right: Workers pull electric cables underground during construction project in Denver, Colo.

Infrastructure Projects Increase Need for Underground Damage Prevention

The sight of backhoes, construction cones and barricades are becoming even more frequent in our communities, due in part to the Bipartisan Infrastructure Law, signed by President Biden in late 2021.

According to the American Public Works Association (APWA), virtually every community in the United States (U.S.) will benefit over the next five

years. The law includes \$550 billion in new federal spending to rebuild our nation’s infrastructure including roads, bridges, transportation and utility expansion and upgrades.

A vast amount of work will occur in proximity to the nation’s 20 million miles of existing underground infrastructure. Public safety advocates and the underground utility industry

are banding together to remind community leaders, land planners, excavators and others involved in the infrastructure upgrades that increased construction – in particular digging activity – means an increased need for underground damage prevention. Damage to underground utilities can directly impact public safety and critical services.

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Looking for guidance on how to dig safely near pipelines? Scan here for our NEW Safety Checklist!



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COPIES OF MATERIALS PROVIDED TO THE GENERAL PUBLIC OR EMERGENCY RESPONSE OFFICIALS

Pipeline members will send you copies of the public awareness materials they provide to the general public or emergency officials in your area. Email your request to the company contact person listed in the Pipeline Member Directory. Access the directory at: qrco.de/PAPA-Members

Resources for Local Officials



PIPELINE EMERGENCY TRAINING

The Pipeline Association for Public Awareness offers **free training and scenarios** for fire, law enforcement and 911 center personnel online at: qrco.de/PAPA-Training



PIPELINE MAPS & EVACUATION DISTANCE

Access maps that show location of pipelines and evacuation distance considerations at: qrco.de/PipeVision



PIPELINE MAPS FOR PUBLIC OFFICIALS

Register for access to the Pipeline Information Management Mapping Application (PIMMA) at: qrco.de/AccessPIMMA

EVACUATION GUIDANCE

The Pipeline Association for Public Awareness provides emergency response technical guidance on when to shelter-in-place versus evacuate at: qrco.de/Evacuation



PIPELINE MEMBER DIRECTORY

Access contact information for pipeline operators in your community who participate in the Pipeline Association for Public Awareness at: qrco.de/PAPA-Members



Download an electronic version of this publication at: pipelineawareness.org/newsletter

SAFETY CHECKLIST

Download an excavation safety checklist for projects near pipelines at:



qrco.de/diggingchecklist



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If you have questions about the Pipeline Association for Public Awareness, our programs or need more information from any of our members, please visit pipelineawareness.org.



Pipeline Association
for Public Awareness



PIPELINE RIGHT-OF-WAY

FIVE COMMON QUESTIONS



A pipeline right-of-way is the land governed by an easement agreement between a pipeline operator and a landowner or government agency. The right-of-way allows the operator to access the pipeline for maintenance, emergency response and inspections.

1 What requirements are normally included in easement agreements?

Most easement agreements prohibit storing vehicles or flammable materials, require special procedures for digging and limit or prohibit building structures and planting trees on the right-of-way. Exceptions can be granted through a specific encroachment agreement with the pipeline operator.

2 Who maintains the pipeline right-of-way?

The pipeline operator is typically responsible for ensuring the right-of-way is visible from the air and easily accessible on the ground. Maintenance may include mowing, trimming trees or removing trees or structures.

3 How can I help protect people living and working near pipelines?

Planning/zoning officials, city engineers and other public officials can help prevent pipeline emergencies. Encourage builders and developers to consider the location of pipeline rights-of-way in their development plans and encourage property owners to contact 811 and notify pipeline operators before building or digging near the right-of-way.

The Pipeline Informed Planning Alliance (PIPA) provides information and resources for local officials at: qrco.de/PIPA-Info

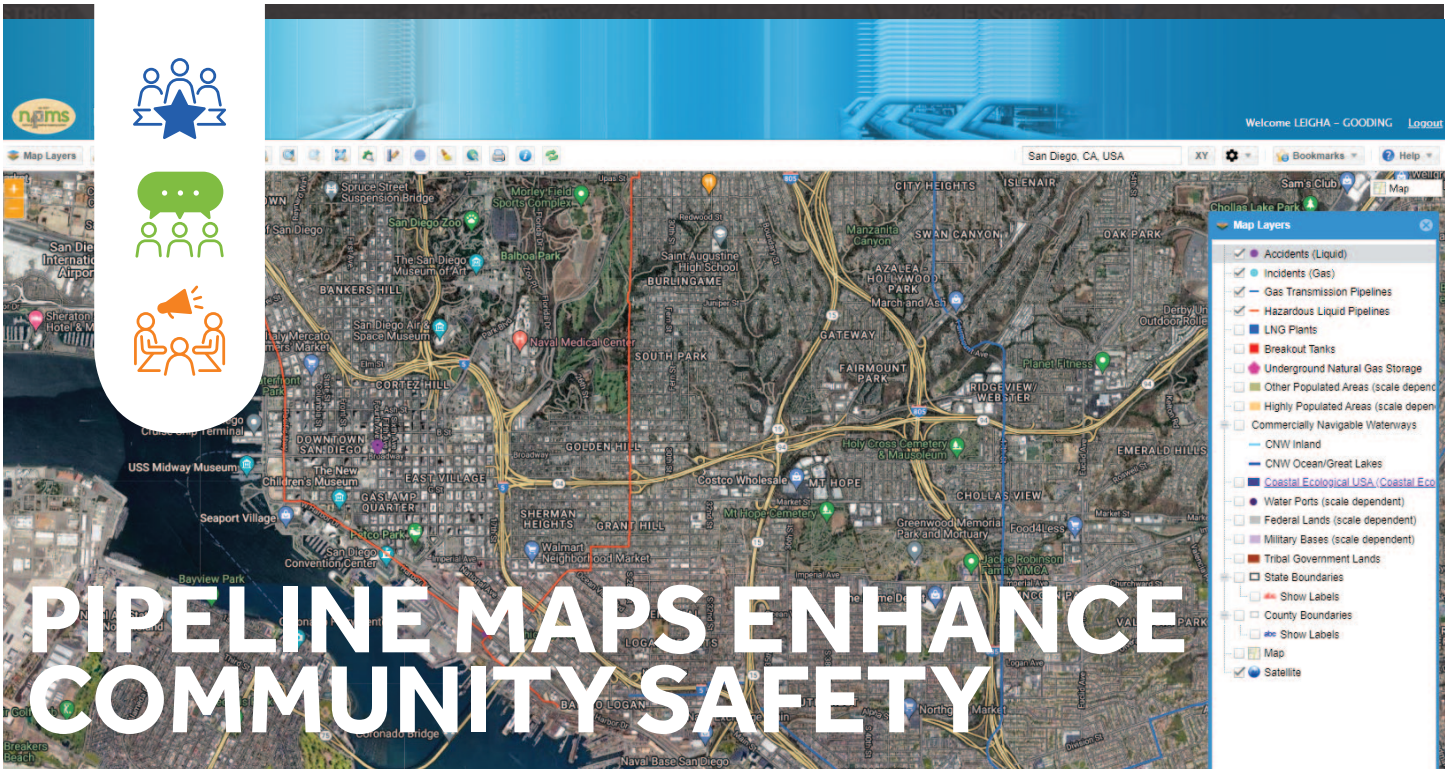
4 How do I help protect important structures, foliage or animals on a right-of-way?

In most cases, issues related to existing structures, foliage or animals on or near the right-of-way are resolved before pipeline construction and addressed within the easement agreement. If not, landowners, permitting, planning, zoning and emergency management officials should contact the pipeline operator to discuss options. This could include relocating a structure, arranging to inspect the right-of-way at ground level, testing or other accommodations.

5 What special procedures may be needed to build roads or install utilities on an existing right-of-way?

Construction plans may require hydro excavation to confirm the location of existing pipelines before installing new roads or utilities. Pipeline operators may request to be onsite during construction activity. Always contact 811 before beginning a project near an existing pipeline right-of-way even if your agency is typically exempt from state One Call requirements.





The Pipeline Information Management Mapping Application (PIMMA), is a restricted-access mapping tool for local public officials. The red line in this image shows the location of a hazardous liquids pipeline in California and it's proximity to roads, neighborhoods and other facilities. The blue line shows the location of gas transmission pipelines. Photo Credit: PHMSA

Want to know the location of pipelines in your community and the products they transport? Access to pipeline maps differs from state-to-state, but the following resources can assist public officials in requesting maps from pipeline operators and accessing available maps online.



NATIONAL PIPELINE MAPPING SYSTEM

The Pipeline and Hazardous Materials Safety Administration (PHMSA) provides access to maps through the National Pipeline Mapping System (NPMS). Local, state, tribal and federal officials can access detailed maps of hazardous liquid and gas transmission pipelines in their jurisdiction by registering for NPMS's Pipeline Information Management Mapping Application (PIMMA). Register for PIMMA access to view maps and request mapping files at: qrco.de/AccessPIMMA



PIPELINE ASSOCIATION FOR PUBLIC AWARENESS

The Pipeline Association for Public Awareness offers its more than 300 pipeline and utility operator members the ability to share pipeline location information with local, state and tribal officials online through the Pipelines Nearby and the password-protected PipeVision application. Access Pipelines Nearby at: qrco.de/PipelinesNearby and Pipe Vision at: qrco.de/PipeVision



STATE ONE CALL CENTERS

The 811 system and state one call centers are a hub for connecting public works departments, community planners and other local and tribal officials with pipeline location information. Learn more about 811 in your state at: qrco.de/811-In-Your-State



NATIONAL ASSOCIATION OF PIPELINE SAFETY REPRESENTATIVES

National Association of Pipeline Safety Representatives (NAPSR) provide regulatory oversight for natural gas and hazardous liquids pipelines and gas utility lines in all states.

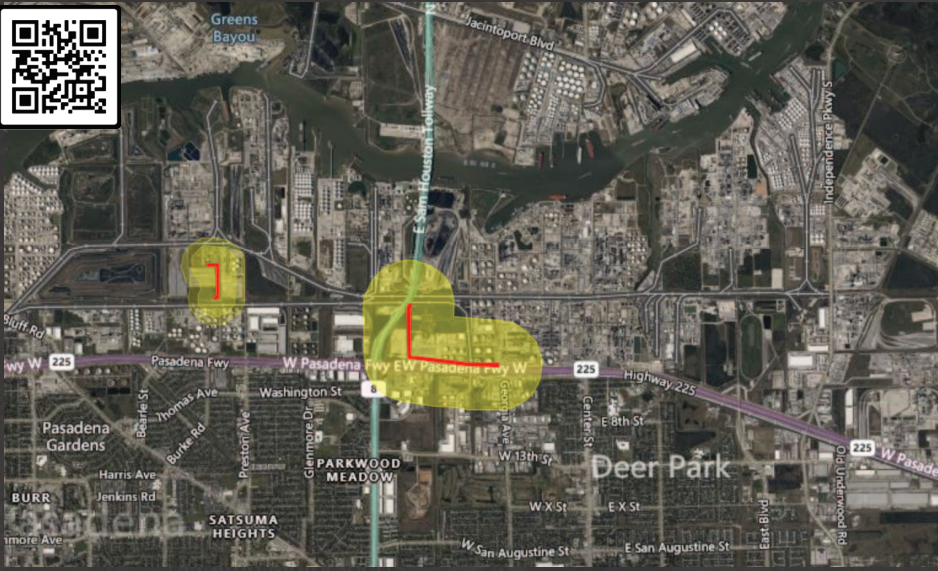
NAPSR members can help state and local government officials access and request pipeline mapping information for their jurisdiction. Contact your state's NAPSR program manager for assistance requesting pipeline maps and for access to state-specific resources at: qrco.de/NAPSR-Resources

PIPELINE MAPS & INFORMATION TOOLS

Pipeline maps are available to local emergency and public officials in a variety of online resources. The table below compares features and information available through four different information sources for local public and emergency officials. Pipeline operators are always the best resource for information about their lines in your community.

Information & Features	npms Public Viewer ¹	npms PIMMA ¹	PIPEVISION ²	Pipeline Markers ³
Includes evacuation distance guidance			✓	
GIS data files available for request		✓		
Includes operator emergency contact information		✓	✓	✓
Includes operator non-emergency contact information	✓	✓	✓	
Includes pipeline product information	✓	✓	✓	✓
Identifies location of transmission pipelines	✓	✓	✓	✓
Identifies location of distribution mains			✓	✓
Identifies location of gathering pipelines			✓	✓
Identifies location of offshore pipelines	✓	✓		✓
Allows local officials to help operators locate identified sites ⁴ near pipelines in their community		✓	✓	✓
Password-protected access to data		✓	✓	
Data is available for the public	✓			✓

- Public Viewer and PIMMA are managed by the Department of Transportation's Pipeline and Hazardous Material Safety Administration as part of the National Pipeline Mapping System (NPMS). Information in NPMS is updated annually and limited to transmission pipelines.
- PipeVision is managed by the Pipeline Association for Public Awareness. PipeVision is limited to data submitted by members of the Association.
- Pipeline markers indicate the approximate, but not exact location of underground lines. Permanent pipeline markers are located along transmission pipelines, but they may not be located continuously along gathering, distribution or offshore pipelines.
- "Identified Sites" refers to indoor or outdoor places near a pipeline where a large number of individuals regularly gather (i.e. parks, stadiums, shopping malls, etc.)



PipeVision includes maps, like the one above, that show the location of pipelines and evacuation distance considerations for emergency and public officials.

FREE MAPPING WEBINAR

Join your peers for a training webinar led by the National Pipeline Mapping System team.

Tuesday
October 10, 2023
2-3:30 p.m. ET

REGISTER:
pipelineawareness.org/webinars

REGISTER

Tips for Safely Building and Maintaining Roads Near Existing Pipelines

According to the U.S. Department of Transportation, there are nearly four million miles of roads in the United States, and most are county and municipal roads maintained by local governments. Beside and underneath these roads is another transportation network—more than 3.3 million miles of energy pipelines.

If you oversee municipal or county road work, protect your road crews and the community by incorporating the following safe excavation steps with your planning and work procedures.

Always Make the Call

If your project includes digging, including clearing or grading, always contact 811 before starting work to have underground lines located and marked. Even if you are exempt from your state's One Call law, contacting 811 protects your work crew and community. Pipeline and utility companies will mark underground lines with stakes, whisksers, flags or paint.

Paved Road Maintenance

Paving and re-paving roads are considered "ground-disturbing activities" and can damage

underground pipelines and utility lines. Having underground utilities located also helps ensure that manholes, valve boxes and other important parts of underground infrastructure are not paved over during the project.

Unpaved Road Maintenance

Box scrapers and grader blades can remove layers of cover above pipelines crossing unpaved roads, exposing them over time. Some state One Call centers offer a special Road Grading Request that can be submitted before annual maintenance.

Equipment Transportation

While asphalt roads are designed to accommodate the weight of heavy vehicles or machinery, pipeline rights-of-way are not. If you plan to move heavy equipment across a buried pipeline, contact the operator to coordinate and ensure buried facilities are not damaged during your project.



Highway construction crews work to replace a section of the roadway as part of ongoing road maintenance projects.



SAFETY IS IN YOUR HANDS.
EVERY DIG. EVERY TIME.



Land-use Permitting & Planning

Public officials can help keep their community safe by incorporating pipeline safety into every level of decision-making and land development approval and permitting processes.

Public Officials involved in planning and zoning can help by verifying that land developers consider the location of pipelines and other buried utilities at the proposed site. If any pipelines exist, ensure the developer has consulted with the utility operator to gather information on the pipeline and how to build safely near it.



The Pipelines and Informed Planning Alliance (PIPA) is an initiative led and supported by the U.S. Department of Transportation's Pipeline and

Hazardous Materials Safety Administration (PHMSA).

PIPA's goal is to reduce risks and improve the safety of affected communities through implementation of recommended practices.

- PIPA focuses on improving safety in communities that surround high-pressure transmission pipelines.
- PIPA's recommended practices are intended to complement existing regulations, laws and zoning restrictions, etc.
- PIPA helps communities make risk-informed decisions for land-use planning and development adjacent to pipelines.

Download PIPA's Risk-Informed Land Use Planning Resources at: qrco.de/PIPA-Resources

EXCAVATION SAFETY

TIPS FOR PUBLIC WORKS, MUNICIPAL & COUNTY OFFICIALS

Public Works and other municipal excavation activities often require coordination with pipeline and utility companies. Encourage work crews to adopt the following critical safety steps when excavating near underground lines.



Always Call or Click 811 Before Digging

Call or click 811 or your state's One Call Center at least 2-3 days before digging, grating or excavating in compliance with state law to request a "dig ticket." For large or unusual projects, request planning tickets, design tickets and meet tickets before starting your project. These tickets are available in most states and can be requested during the project planning phase.



Pre-Mark the Area & Wait for Operators to Mark Lines

Identify the excavation area for line locators by pre-marking or white-lining using white marking paint. Wait to start your job until all pipeline and utility operators mark the location of their lines or indicate "all clear."



Dig with Care & Backfill Properly

Dig with care using appropriate hand and vacuum-digging tools near pipelines and utility lines. Backhoes, augers and other mechanical equipment should not be used to expose underground lines. Maintain temporary flags, stakes or paint marks until you have finished digging. If you expose a pipeline, a pipeline or utility representative will typically request to be onsite to inspect the pipe before you backfill and compact the soil.



Report Damage or Leaks

If a pipeline is dented, scraped or damaged while digging or you suspect a pipeline leak, immediately leave the area and warn others to stay away. From a safe location, call 9-1-1 and notify the pipeline or utility owner. In some states, you may be required to also notify the One Call Center. Do not operate mechanical equipment in an area where you suspect a leak.

SAFETY CHECKLIST

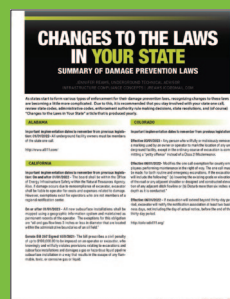


SAFETY CHECKLIST

Download an excavation safety checklist for projects near pipelines at: qrco.de/diggingchecklist

STATE ONE CALL LAW UPDATES

State-specific One Call laws outline requirements for notification systems and set standards for locating and marking pipelines and underground facilities. This guide, produced by the Pipeline Association for Public Awareness, includes updates on laws in 13 states and reference to new bills introduced in Illinois, Indiana, Mississippi, Nebraska, North Dakota, Oklahoma, Tennessee and Virginia. Download the guide at: qrco.de/811-Updates





KNOW THE HAZARDS

PRODUCTS AND FACILITIES SAFETY INFORMATION FOR PUBLIC OFFICIALS

NATURAL GAS

is a naturally occurring resource formed millions of years ago because of heat and pressure acting on decayed organic material. It is extracted from wells and transported through gathering pipelines to processing facilities. From these facilities, it is transported through transmission pipelines to distribution pipeline systems. The main ingredient in natural gas is methane (approximately 94 percent).

Natural gas is odorless, colorless, tasteless and nontoxic in its natural state. An odorant (called mercaptan) is normally added when it is delivered to a distribution system. At ambient temperatures, natural gas remains lighter than air. However, it can be compressed (CNG) under high pressure to make it convenient for use in other applications or liquefied (LNG) under extremely cold temperatures (-260° F) to facilitate transportation.

PETROLEUM GAS

is a mixture of gaseous hydrocarbons, primarily propane, butane and ethane. These products are commonly used for cooking, heating and other industrial applications. They are easily liquefied under pressure and are often stored and transported in portable containers labeled as Liquefied Petroleum Gas (LPG). When transported in transmission pipelines they may also be identified as Highly Volatile Liquids (HVLs) or Natural Gas Liquids (NGLs). Vaporized LPG may also be found in smaller gas distribution systems. Typically, LPG is a tasteless, colorless and odorless gas. When transported via transmission pipelines

it normally will not have odorant added. Odorant is added when LPG is offloaded to a distribution pipeline system or transport tanks to facilitate leak detection. Ethylene and propylene do have a faint natural odor like petroleum.

PETROLEUM LIQUIDS

is a broad term covering many products, including: crude oil, gasoline, diesel fuel, aviation gasoline, jet fuel, fuel oil, kerosene, naphtha, xylene and other refined products. Crude oil is unrefined petroleum that is extracted from beneath the Earth's surface through wells. As it comes from the well, crude oil contains a mixture of oil, gas, water and other impurities, such as metallic compounds and sulfur. Refinement of crude oil produces petroleum products that we use every day, such as motor oils and gasoline. Crude oil is transported from wells to refineries through gathering or transmission pipelines. Refined petroleum products are transported in transmission pipelines to rail or truck terminals for distribution to consumers. Odorant is not added to these products because they have a natural odor.

ANHYDROUS AMMONIA

is the liquefied form of pure ammonia gas. It is a colorless gas or liquid with an extremely pungent odor. It is normally transported through transmission pipelines and is used primarily as an agricultural fertilizer or industrial refrigerant.

CARBON DIOXIDE

is a heavy gas that is normally transported in transmission pipelines as a compressed

fluid. It is a naturally occurring, colorless, odorless and tasteless gas used in various industries, including meat packaging, produce, petroleum, beverage industries. Under normal conditions, carbon dioxide is stable, inert and nontoxic. However, it acts as asphyxiant when released in large concentrations to the atmosphere.

ETHANOL

(also called ethyl alcohol) is a colorless liquid that is widely used as an additive to automotive gasoline. It may be transported in buried transmission pipelines. Ethanol has a natural odor similar to gasoline and will mix easily with water.

HYDROGEN GAS

is commonly produced from the steam reformation of natural gas. It is frequently used near its production site, with the two main uses being petrochemical processing and ammonia production. Hydrogen is a flammable gas that is colorless, odorless and lighter than air. It is nontoxic, but can act as an asphyxiant.

"SOUR" CRUDE OIL & "SOUR" GAS

refer to products containing high concentrations of sulfur and hydrogen sulfide. Products containing little or no sulfur are often referred to as "sweet." Hydrogen sulfide (H₂S) is a toxic, corrosive contaminant found in natural gas and crude oil. It has an odor like the smell of rotten eggs or a burnt match. Exposure to relatively low levels of hydrogen sulfide (500 ppm) can be fatal.

Looking for guidance on when to shelter-in-place or evacuate? Scan here for a technical guide.



LEAK, HAZARD & EMERGENCY RESPONSE INFORMATION

	NATURAL GAS	PETROLEUM GAS	PETROLEUM LIQUIDS	ANHYDROUS AMMONIA	CARBON DIOXIDE	ETHANOL	HYDROGEN GAS	SOUR CRUDE OIL (H ₂ S)	SOUR GAS (H ₂ S)
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INDICATIONS OF A LEAK

SEE – liquid pooling on the ground			●			●		●	
SEE – a white vapor cloud that may look like smoke		●		●					
SEE – fire coming out of or on top of the ground	●	●				●		●	
SEE – dirt blowing from a hole in the ground	●	●		●	●	●		●	
SEE – a sheen on the surface of water		●	●				●		
SEE – an area of frozen ground in the summer	●	●			●	●		●	
SEE – an unusual area of melted snow in the winter	●	●			●	●		●	
SEE – an area of dead vegetation	●	●	●			●	●	●	●
SEE – bubbling in pools of water	●	●			●	●		●	
HEAR – a loud roaring sound like a jet engine	●	●						●	
HEAR – a hissing or whistling noise	●	●		●	●	●		●	
SMELL – an odor like rotten eggs or a burnt match	1	1					●	●	
SMELL – an odor like petroleum liquids or gasoline		●	●			●	●		
SMELL – an irritating and pungent odor				●			●	●	

HAZARDS OF A RELEASE

Highly flammable and easily ignited by heat or sparks	●	●	●			●	●	●	●
Will displace oxygen and can cause asphyxiation	●	●		●	●	●	●	●	●
Vapors are heavier than air and will collect in low areas		●	●	●	●	●	●	●	●
Contact with skin may cause burns, injury or frostbite		●	●	●	●	●	●	●	●
Initial odor may be irritating and deaden the sense of smell							●	●	
Toxic and may be fatal if inhaled or absorbed through skin				●			●	●	
Vapors are extremely irritating and corrosive				●			●	●	
Fire may produce irritating and/or toxic gases	●	●	●	●		●	●	●	●
Runoff may cause pollution			●	●		●	●	●	
Vapors may form an explosive mixture with air	●	●	●			●	●	●	●
Vapors may cause dizziness or asphyxiation without warning	1	1			●	●			
Is lighter than air and can migrate into enclosed spaces	●					●			

EMERGENCY RESPONSE

Avoid any action that may create a spark	●	●	●			●	●	●	●
Do NOT start vehicles, switch lights or hang up phones	●	●	●			●	●	●	●
Evacuate the area on foot in an upwind and/or uphill direction	●	●	●	2	2	●	●	2	2
Alert others to evacuate the area and keep people away	●	●	●	2	2	●	●	2	2
From a safe location, call 911 to report the emergency	●	●	●	●	●	●	●	●	●
Call the pipeline operator and report the event	●	●	●	●	●	●	●	●	●
Wait for emergency responders to arrive	●	●	●	●	●	●	●	●	●
Do NOT attempt to close any pipeline valves	●	●	●	●	●	●	●	●	●
Take shelter inside a building and close all windows				2	2			2	2

1 The majority of these products are naturally odorless and only certain pipeline systems may be odorized. Odorant can also fade or be scrubbed out when leaking products migrate through soil.

2 Sheltering in place is an alternative to evacuation when the products are toxic or the risk of fire is very low. Refer to "Shelter-In-Place or Evacuate Guidance Document" provided online at: qrco.de/Evacuation



Pipeline Incident Lessons Learned

CARBON DIOXIDE PIPELINE RUPTURE PROMPTS EVACUATION

On February 22, 2020, a 24-inch carbon dioxide (CO₂) pipeline ruptured in Yazoo County, near the village of Satartia, Mississippi. The rupture occurred after multiple days of heavy rain fall that resulted in a landslide. The saturated ground caved into a ravine creating excessive strain on a pipeline weld and releasing liquid CO₂ that immediately began to vaporize at atmospheric conditions, according to the Mississippi Emergency Management Agency (MSEMA).

When CO₂ (found commonly in CO₂ pipelines) is released to air, it naturally vaporizes into a heavier than air gas and dissipates. However, the weather conditions and unique topography of the accident site prevented the CO₂ vapor from rapidly dispersing and allowing a plume to form that migrated toward Satartia, according to the Pipeline and Hazardous Materials Safety Administration (PHMSA) Investigation Report release in 2022.



Carbon dioxide pipeline rupture in Satartia, Mississippi. Photo credit: Mississippi Emergency Management Agency.

RESPONSE EFFORTS

Operator's control room was alerted of a drop in pressure through its Supervisory Control and Data Acquisition (SCADA) system and began remotely closing three mainline block valves, two of which were downstream of the rupture.

According to PHMSA's Investigation Report, Yazoo County OEM dispatcher received an initial report of a "foul smell and green fog across the highway." Based

on information received, emergency responders began responding under the assumption that there was a possible chlorine leak and began contacting people from the local water utility company.

Shortly after the initial call, emergency responders received a call from someone hearing a load roar. This led responders to believe that the accident was not chlorine gas related and began to redirect their efforts to a possible CO₂ and hydrogen sulfide release.



SHELTER-IN-PLACE OR EVACUATE?

When people are exposed to a hazardous condition like a pipeline leak, the natural response is to get away from the hazard and evacuate the area. However, sheltering in place may be a safer alternative under certain circumstances. So how does a person know which protective action is best? The answer is, "It depends." Each situation is different and there are many things to consider in evaluating the hazards associated with a pipeline leak. Some of the most significant include: toxicity of the product, potential exposure to fire, wind direction, proximity to the leak, adequacy of the available shelters, and the response capabilities of the affected individuals. Examples of situations where each protective action would be appropriate are shown in the table below.

GENERAL PROTECTIVE ACTIONS FOR VARIOUS PIPELINE LEAKS

Products	Evacuation	Shelter-In-Place
Natural Gas	Any size leak inside a building or enclosed space.	Small leaks in outside areas with no potential for gas migration through soil and a fire would not impact the shelter.
Petroleum Gas Petroleum Liquids Ethanol	Leaks located uphill from available shelter or where a shelter could be adversely impacted by a fire.	Small leaks located downhill (liquid) or downwind (gas) from a shelter where a fire would not impact the shelter.
Anhydrous Ammonia Carbon Dioxide	Leaks located downwind of available shelters.	Large or small leaks upwind of the location.
Products containing Hydrogen Sulfide (e.g. "sour gas")	Small leaks downwind and/or downhill of the location.	Large or small leaks upwind and/or uphill of the location.

Before deciding which protective action may be best in your situation, obtain specific pipeline information from the operators and discuss alternatives with your local Hazmat response team. Additional guidelines such as the U.S. DOT Emergency Response Guidebook should also be consulted. A re-formatted copy of the Evacuation/Shelter-In-Place Decision Guide developed by the Nashua Office of Emergency Management and the Nashua Regional Planning Commission is also available as an additional resource. It addresses the pros and cons of evacuation and shelter-in-place in greater detail. It is available for download here.

SCAN FOR A PDF COPY OF THIS BULLETIN
Or visit <https://qrco.de/evacuation>



SHELTER-IN-PLACE OR EVACUATE?

The Pipeline Association for Public Awareness recently published a technical reference guide to help emergency planning officials and emergency response agencies evaluate when to shelter-in-place and when to evacuate residents and businesses in response to a pipeline leak.

The one-page reference guide also includes a link to additional information including emergency response checklists for both scenarios created as part of a project funded by the US Department of Transportation Pipeline and Hazardous Materials Safety Administration. Download the guide at: qrco.de/Evacuation

EVACUATION EFFORTS

MSEMA worked with the National Weather Services (NWS) to build a predictive plume map based on weather conditions and products characteristics to assist local responders with the evacuation efforts following the rupture. The predictive model indicated the CO2 would move from the release site directly toward Satartia at which point responders called for the evacuation, shut down roads and highways and established incident command.

In all, approximately 200 people were evacuated from the area and forty-five people were taken to local hospitals. No fatalities occurred. Evacuees were allowed to return the following morning after air monitoring confirmed the area was clear. Read the full PHMSA investigative report at: qrco.de/PHMSA-CO2-Incident

CO2 Incident Takeaways:

- Emergency management decisions to evacuate or shelter-in-place require familiarity with the location of pipelines, products transported, potential hazards and other factors including visibility, weather and topography.
- Conversations with pipeline operators may help confirm potential could affect areas based on local responder knowledge of area.
- Ensure emergency response plans include a pipeline emergency action plan specific to products transported in area.
- Identify resources available to assist in responding to a potential pipeline emergency (i.e. National Pipeline Mapping System (NPMS), DOT ERG, training and emergency preparedness materials, etc.).

PIPELINE EMERGENCY RESPONSE – IS YOUR DEPARTMENT PREPARED?

Knowledge of where pipelines are located in your community, the products transported in them, and how to contact and work together with the pipeline operator in the event of an emergency are critical factors to an effective and safe response.

The Pipeline Association for Public Awareness provides FREE emergency response training resources including interactive training scenarios for various pipeline emergency situations, training modules and instructor guides, response and evacuation guidelines, incident response checklist, case studies and more.

Start preparing today by accessing the Emergency Response Training Resources at: qrco.de/PAPA-Training

Online Training, Scenarios and Materials

Pipeline Emergency Response Training Tools & Scenarios



Responding to Utility Emergencies Online Course

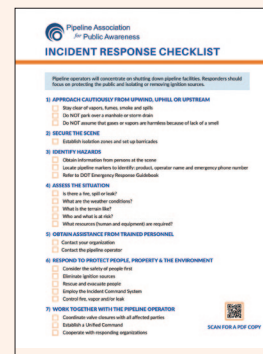
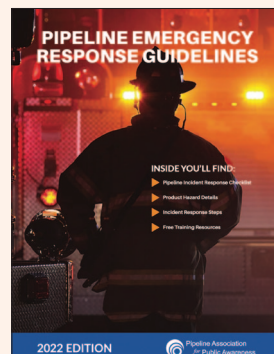


Downloadable Resources, Guidelines and Checklists (more resources available at: qrco.de/PAPA-Training)

Response Guideline: qrco.de/Response-Guideline

Incident Response Checklist: qrco.de/Response-Checklist

Fire Lines Safety Bulletin: qrco.de/Fire-Lines





Regulatory Updates

WILL NEW REQUIREMENTS IMPACT YOUR COMMUNITY?

NEW SAFETY MEASURES TO STRENGTHEN CARBON DIOXIDE PIPELINE REGULATIONS

The Pipeline and Hazardous Materials Safety Administration (PHMSA) announced in 2022, that it is taking steps to implement new safety measures to strengthen its oversight of carbon dioxide (CO₂) pipelines around the country.

PHMSA is working towards initiating a new rulemaking to update safety standards for CO₂ pipelines, including requirements related to emergency preparedness, and response which it plans to propose in June 2024, but has not set a date for a final rule.

In May of 2023, PHMSA held a Carbon Dioxide Pipeline Safety Public Meeting in Des Moines, Iowa. The public meeting served as an opportunity for pipeline stakeholders to help inform pipeline safety-related rulemaking decisions and share information surrounding CO₂ pipeline safety measures. Key stakeholders included members of the public, advocacy groups, state government officials, other federal agencies, industry and international regulators and/or organizations. Read more about this at: www.phmsa.dot.gov/newsroom

PROPOSED RULEMAKING: GAS PIPELINE LEAK DETECTION AND REPAIR

On May 18, 2023, the Pipeline and Hazardous Materials Safety Administration (PHMSA) issued a Notice of Proposed Rulemaking titled Pipeline Safety: Gas Pipeline Leak Detection and Repair that proposed amendments to pipeline safety regulations for gas distribution, gas transmission, gas gathering, underground natural gas storage, and liquefied natural gas storage facilities. The

proposed rulemaking's focus is strengthening existing pipeline safety regulations and oversight. Review the Notice of proposed rulemaking at: www.federalregister.gov/d/2023-13900



NAPSR REPORT ON SAFETY BEST PRACTICES

A report released by the National Association of State Pipeline Safety Representatives (NAPSR) serves as a detailed resource for state and local public officials who are interested in examining pipeline safety best practices in other states.

The report includes discussion of over 1,400 specific initiatives in 23 categories including enhanced reporting, recordkeeping, cathodic protection and design and installation requirements.

According to the report, 45 states have implemented at least one initiative above and beyond the minimum requirements of the Code of Federal Regulations (CFR) that apply to pipeline operators in their state. Read and download NAPSR's Compendium of State Pipeline Safety Requirements & Initiatives at: qrco.de/NAPSR-Compendium



An Xcel Energy technician adjusts a drone before an inspection flight. Photo Credit: Xcel Energy

Maintaining Safe Pipelines

An underground highway comprised of more than **3.3 million miles of gathering, transmission and distribution pipelines** transports energy to homes and businesses every day.

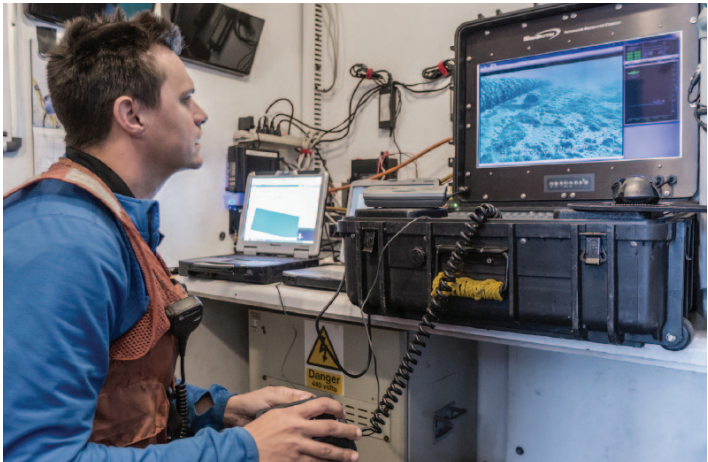
Operators take the safety and reliability of their lines very seriously and maintain detailed integrity management plans, which include:

- Monitoring pressure and flow inside the pipeline
- Adding an odorant with a distinctive smell (normally like rotten eggs or a burnt match) to consumer-ready gas distribution systems so people are able to recognize a leak
- Injecting corrosion inhibitors to prevent corrosion from occurring inside the pipeline
- Participating in local one call notification systems and promoting 811 and “Call Before You Dig” messaging to ensure safe digging
- Making sure that all pipelines are properly marked prior to excavation activities
- Inspecting the interior of the pipeline using current technology at regular intervals
- Maintaining a clear right-of-way around the pipeline to

accommodate periodic inspections (either by foot or by airplane) to identify any signs of a leak, obstruction or encroachment

- Providing training to pipeline employees to meet qualification standards
- Training emergency responders to recognize a potential release and know how to properly respond

You can contact PAPA members to learn more about pipeline integrity management plans through our member directory at: qrco.de/PAPA-Members



Technician inspects portions of an underwater pipeline. Photo Credit: Enbridge

AT-A-GLANCE



Download an electronic version to share at:
qrco.de/Pipeline-Info-2023

SCAN ME



PIPELINES IN YOUR COMMUNITY

Gathering, transmission and distribution pipeline networks safely transport natural gas, gasoline, crude oil and other energy products across the country and to homes and businesses in your community. Gathering lines transport natural gas and other energy products from production sites to processing facilities and connect to transmission lines that carry energy products from one part of the state to another and across the country. Distribution lines are located throughout communities and connect to homes and businesses.



PIPELINE MAPS

Use the National Pipeline Mapping System qrco.de/PipeVision or Pipelines Nearby pipelinesnearby.org to learn more about the pipelines in your community. Pipeline and utility operators also maintain maps of their pipeline system.



PIPELINE MARKERS & METERS

Pipeline markers and gas meters identify the general location of underground pipelines. Markers include the pipeline operator's name, emergency number and product transported. Some but not all distribution lines are identified by pipeline marker signs including curb markers. Gathering lines are generally located in rural areas and may or may not be identified with permanent pipeline markers.



SUSPECT A PIPELINE LEAK?

If you suspect a pipeline leak, leave the area, call 9-1-1 and notify the pipeline or utility operator. Do not operate any device that might cause a spark near a pipeline leak.

Signs of a leak can include:

- Smell of "rotten eggs" (if odorant is added) or a chemical smell
- Hissing, whistling or roaring sound near pipeline or gas appliance
- Sheen on water or continuous bubbling, dying vegetation, dirt spraying in air



KEEPING PIPELINES SAFE

Pipeline and utility operators protect underground lines and host communities through employee training, regular maintenance and testing, corrosion protection, system monitoring, cybersecurity protocols and inspections to check for leaks or other damage. Operators also conduct regular maintenance activities within the pipeline easement, including mowing, trimming and tree removal. Pipeline Integrity Management plans are available for review and outline an operator's ongoing safety and maintenance activities.



EMERGENCY RESPONSE COORDINATION

A pipeline leak can ignite or contaminate water or soil. While first responders secure the area, assess the scene and respond to immediate medical and safety needs, pipeline and utility personnel will restrict the flow of gas or other products and will take action to minimize the impact of the emergency and protect the public. Public safety personnel should not attempt to operate pipeline valves.



ALWAYS CONTACT 811 BEFORE DIGGING

Call or click 811 to request a "dig ticket" at least 2-3 days before starting work in compliance with state law. Wait until all lines are marked and dig with care using non-mechanical tools near underground lines. If a pipeline is damaged, immediately report the damage from a safe location. For more information, visit clickbeforeyoudig.com or call811.com.



Contact the Association or use the membership directory qrco.de/PAPA-Members to contact a pipeline operator representative to discuss upcoming projects near pipelines in your community or for more information about operator-specific pipelines, compressor stations or storage facilities. The federal government also provides access to state-specific and operator-specific pipeline safety information online at: qrco.de/PHMSA-Data

Información en Español disponible en qrco.de/Info-Tuberias-Seguridad



下載電子版，以便在
以下網址分享：

qrco.de/Pipeline-Info-Chinese

SCAN ME

PIPELINE MARKER ANATOMY



WHAT TO KNOW

- Pipeline markers **vary in size, shape and color**, but always include common information about the pipeline or utility line.
- Pipeline markers **do not** identify the exact location, depth or number of pipelines in the area.
- Pipelines **do not** always run in a straight line between markers.
- Pipeline markers are located along transmission pipelines, but they **may not** be located continuously along gathering or distribution lines.
- Pipeline markers **are not** typically used to identify the location of natural gas service lines that connect directly to homes or businesses.
- Pipeline markers **are protected by federal law**, and intentionally damaging or removing one can result in a fine.
- Report missing or damaged pipeline markers to the pipeline operator so they **can be replaced**.



REMINDER THAT SIGNS ARE PROTECTED BY FEDERAL LAW



WARNING TO WORK NEAR PIPELINES WITH EXTREME CAUTION



NAME OF PRODUCT TRANSPORTED



NAME OF THE PIPELINE OPERATOR



EMERGENCY PHONE NUMBER



REMINDER TO ALWAYS CALL OR CLICK 811 BEFORE DIGGING



REQUEST INFO

We want to hear from you. **Contact us** online or by email to request additional information from pipeline companies. Your request will be forwarded to all pipeline member companies operating facilities in your state/county.

ONLINE

pipelineawareness.org/request-info

EMAIL

admin@pipelineawareness.info



FEEDBACK

Complete a short survey and tell us what you found useful in this publication and any topics you'd like us to include in the future. qrco.de/2023-Survey



DID YOU KNOW?

Backhoes cause more accidents that damage pipelines and utility lines than any other type of equipment. (Common Ground Alliance).



SAFETY TIP:

Use non-mechanical digging equipment within the tolerance zone when working near pipelines and utilities.

811

vs

911



Primary Responsibility: Coordinates pipelines/utility line locating and marking prior to excavation projects

During Emergencies: Can alert operators who are near but not directly involved

Contact Instructions: Call prior to excavating, grating or ditch clearing and to comply with damage reporting requirements



Primary Responsibility: Coordinates pipeline emergency notifications and initial response actions

During Emergencies: Can access pipeline maps, pipeline product information and pipeline emergency contact information

Contact Instructions: Call 911 immediately and notify the pipeline operator if you suspect a pipeline leak or witness intentional damage or pipeline vandalism

» CONTINUE READING FROM THE COVER

- According to the Common Ground Alliance (CGA) Damage Information Reporting Tool (DIRT) Report, the annual rate of damages to buried infrastructure in the U.S. costs the U.S. a staggering \$30 billion every year.
- DIRT data from 2021 indicates that roadwork, grading, water, sewage, electric and natural gas utility projects damaged adjacent pipelines and underground utilities in the U.S. an average of 194 times each day.
- Each time damage occurs, it has the potential to cause injuries, loss of life or cut off critical services to communities and businesses.

As infrastructure projects ramp up, public works departments and permitting and planning departments play a key role directly and indirectly in improving excavation safety and reducing damages. Contacting 811 for all projects and safe excavation

within tolerance zones along with implementation of damage prevention best practices before and during projects will be key to limiting damage to underground pipelines, utilities and surrounding facilities.

Public officials can help ensure that underground pipelines and utilities remain safe in your communities and limit damage to infrastructure by:

- Sharing the importance of always contacting 811 before starting a project with public works and municipal departments, excavators and homeowners.
- Encouraging the use of planning, design and meet tickets to contact pipeline and utility representatives to discuss upcoming projects.
- Utilizing CGA's Underground Safety and Damage Prevention Best Practices as a trusted resource for underground damage prevention.
- Sharing this publication, as well as our "Safety Checklist" with your community. The checklist can be downloaded at: qrco.de/diggingchecklist



BEST PRACTICES: UNDERGROUND SAFETY & DAMAGE PREVENTION

The Common Ground Alliance provides free access to best practices for underground safety and damage prevention. Download a copy at: qrco.de/CGA-BP.



ONE CALL REQUIREMENTS

Download a summary of One Call requirements for all states at: qrco.de/One-Call-Laws.