MISSOURI

CORE®
COORDINATED RESPONSE EXERCISE

COORDINATED RESPONSE EXERCISE®

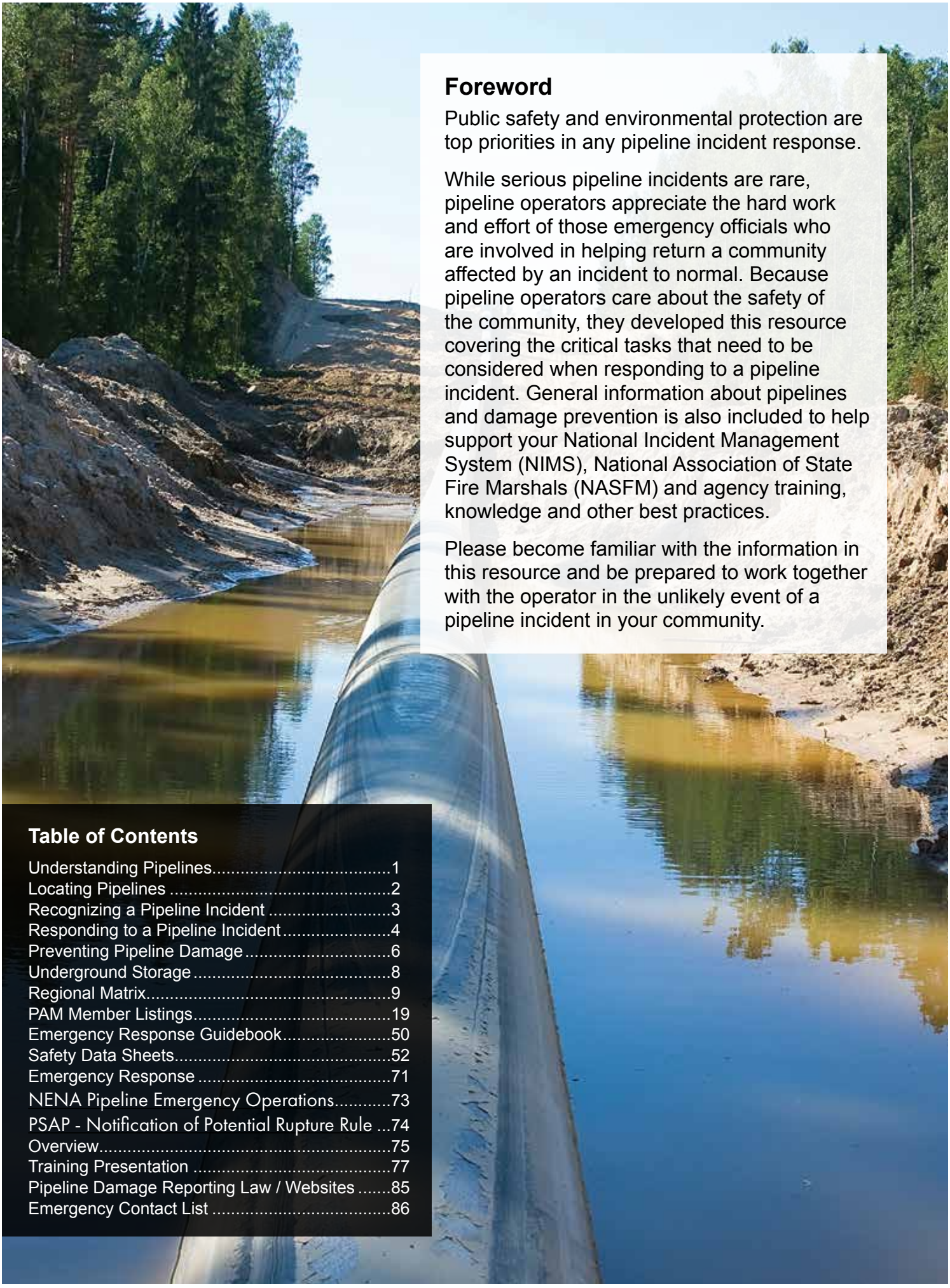
Pipeline Safety Training For First Responders

EMERGENCY RESPONSE MANUAL

Overview
Operator Profiles
Emergency Response
NENA Pipeline Emergency Operations
Signs of a Pipeline Release
High Consequence Area Identification
Pipeline Industry ER Initiatives
Pipeline Damage Reporting Law

2024

PAM
Pipeline Association of Missouri



Foreword

Public safety and environmental protection are top priorities in any pipeline incident response.

While serious pipeline incidents are rare, pipeline operators appreciate the hard work and effort of those emergency officials who are involved in helping return a community affected by an incident to normal. Because pipeline operators care about the safety of the community, they developed this resource covering the critical tasks that need to be considered when responding to a pipeline incident. General information about pipelines and damage prevention is also included to help support your National Incident Management System (NIMS), National Association of State Fire Marshals (NASFM) and agency training, knowledge and other best practices.

Please become familiar with the information in this resource and be prepared to work together with the operator in the unlikely event of a pipeline incident in your community.

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What is a Pipeline?

The term **pipeline** as referenced in this guide, includes **transmission, local distribution and gathering systems. Transmission** pipelines for natural gas, liquid petroleum (diesel, gasoline, or crude oil), and liquid natural gas (propane, butane, or anhydrous ammonia) move products from the production area or refinery to outlets such as bulk storage terminals or loading facilities. **Local distribution systems** may also transport liquid petroleum and natural gas. Liquid petroleum distribution systems transport product from the bulk storage facility by rail car or tank trucks. **Local natural gas distribution companies (LDCs)** use pipelines to move natural gas from a city gate or town border station to distribution systems. Local distribution systems transport natural gas through mains that are usually located along or under city streets to service lines that connect to homes and businesses. **Gathering** pipelines link the production areas to central collection points.

The Pipeline System

America's energy transportation network consists of more than 2 million miles of pipelines operated by more than 3,000 companies, large and small. Although these pipelines exist in all 50 states, most people are unaware that the vast network even exists. This is due to the strong safety record of pipeline operators and the fact that most of the pipelines are located underground.

The U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA), which administers the nation's pipeline safety program through the Office of Pipeline Safety (OPS) along with state regulatory agencies, is responsible for the oversight of natural gas and hazardous liquid pipelines. Their mission is to ensure the safe and reliable operation of the nation's pipeline transportation system, all the while protecting the people, property and environments located around the pipelines. Pipeline operators are equally committed to public safety and environmental responsibility. As a result, pipelines are considered the safest, cleanest, and most economical way to transport large quantities of natural gas, oil, and other chemicals to businesses and homes across the United States.

In an ongoing effort to improve public safety, environmental health, and damage prevention, nearly all pipeline operators in Missouri have joined together to sponsor training and educational programs that raise community awareness about pipelines. The operators' goal is to work with local emergency officials, public officials, and excavators to improve the effectiveness of pipeline safety and incident response efforts.

Pipeline marker signs are located at road, railroad, and navigable waterway crossings. These markers identify the approximate location of a pipeline at numerous points along the pipeline right-of-way. Each operator's marker may look different, but the purpose and information on the marker is the same. Markers tell you the:

- Approximate location of a pipeline
- Material transported
- Emergency phone number
- Pipeline operator

Markers are placed near pipelines, but not necessarily on top of them. The signs **do not** provide information on the exact location, depth or diameter. In addition, a pipeline may not follow a straight line between adjacent markers. For these reasons, you need to look around for a pipeline marker when responding to any incident you suspect may involve a pipeline, then contact the operator identified on the pipeline marker.

It is a federal crime to damage or remove a pipeline marker; however vandals, construction crews and others who do not recognize their significance sometimes remove, knock down or obstruct the markers. Suspect a pipeline is nearby if you see the following:

- A pipeline marker sign
- A buried pipeline that's exposed and visible
- A pipeline facility and equipment, i.e. wellhead or pump/compressor station
- A regulator or meter setting
- A refinery, processing plant, distribution station

- Painted metal or plastic posts
- Signs located near roads, railroads & along pipeline right-of-ways
- Pipeline casing vent
- Marker for pipeline patrol airplane

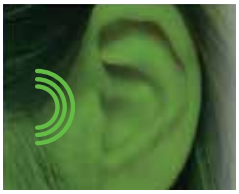
A pipeline incident exists when there is a pipeline leak, fire, explosion, natural disaster, accidental release or operational failure that disrupts normal operating conditions.

Pipeline control center personnel keep a watchful eye over potential incidents by constantly monitoring the daily operation of pipelines. As a result, pipeline operators are able to minimize the impact of leaks and prevent incidents by remotely initiating emergency shutdowns, starting and stopping pumps, and opening and closing valves.

Despite the industry's best efforts to monitor and protect pipelines, incidents can happen. Pipelines that were built years ago in rural areas may now lie beneath populated areas. A minor scrape or dent from construction and excavation activities can cause a break or leak in these pipelines.

Sight

Smell
Strange and unusual gaseous or chemical odors



Sound
A hissing, whistling or roaring noise

Petroleum on the ground

Mist or cloud of vapor

CO2 vapor cloud

Fire or explosion

Look for Signs of a Pipeline Release

As an emergency official, you can recognize a pipeline incident by using your senses of sight, sound and smell, or through the use of electronic detection equipment.

Dying vegetation on green corridor

Sheen or film on water

Water bubbling or standing in unusual areas

If a pipeline incident occurs, the emergency response team needs to immediately:

- Confirm the presence and identity of the pipeline product.
- Initiate protective actions.
- Secure the area.
- Request the assistance of qualified personnel.

Meanwhile, the pipeline operator will focus on the pipeline damage and on bringing the incident to a conclusion as quickly and safely as possible.Their personnel are trained to recognize dangers and respond appropriately to minimize and control pipeline-incident hazards.

911 Dispatch personnel play a critical role in effective response to pipeline incidents. For correct and prompt response in the event of a pipeline incident, it is important to know who the companies are in your respective jurisdictions, their contact information and the products being transported. Actions taken by dispatchers can save lives, direct the appropriate emergency responders to the scene and protect our nations' infrastructure from additional issues that can be caused by an improper response. Follow these simple guidelines in the case of a pipeline incident:

– Gather the proper information (if possible)
– Company, product, phone numbers on markers/signs and characteristics of any product being released
– Know the appropriate response to each product
– Know the wind direction at the time
– Warn of ignition sources if possible
– Dispatch appropriate emergency responders
– Contact the pipeline company

Approach cautiously from upwind

- Do not drive or enter into a leak or vapor cloud area.
- Do not park over a manhole or storm drain.

Identify the problem

- **Pipeline type, product, and nature of incident –** Determine the identity of the product via pipeline marker, facility documents, monitoring and detection equipment, and your senses of sight, sound and smell.
- **Exposures**
  Identify structures and occupancies in the area and any special needs for people located there.
- **Environmental conditions**
  Identify weather conditions that may affect the incident. Determine whether the pipeline product may release into a water system or other environmentally sensitive area and take action to prevent contamination.
- **Safety considerations**
  Identify any unique safety hazards or considerations associated with the incident.
- **Pipeline isolation**
  Determine whether the pipeline can be isolated.

Consult product information documents and the ***Emergency Response Guidebook*** published by PHMSA/DOT to learn about the specific hazards associated with and emergency responses to the products transported through pipelines in your community.

- **Incident potential**
  Identify the potential for the incident to escalate into a more serious event.

Establish site control

Site management and incident control involve managing and securing the physical layout of the incident area. You want to employ the Incident Command System (ICS). From a command post, the emergency response team can assess the situation, evaluate the hazards and risks, and determine whether or not officials should intervene. Continually reassess the situation and modify the response accordingly.

Respond to protect people, property and the environment from hazards

- **Employ public protective actions.**
  – Evacuate or protect-in-place.
  – Provide medical assistance.
  – Refer to product information documents to identify health and fire hazards and personal safety precautions. Use monitoring equipment to evaluate atmospheric conditions and determine whether it is safe to enter the area. Do not attempt to enter the area without appropriate personal protective equipment.
- **Secure the area.**
  – Set up barricades to control crowds and traffic.
  – Eliminate ignition sources. Do not light a match, start an engine, use a cell phone or a telephone, switch lights on/off, or do anything that may cause a spark.
- **Do not operate pipeline equipment.**
- **Notify the railroad authority of any vapor cloud over or near a railway.**

Use the information in this resource to make initial decisions upon arrival at the scene of a pipeline incident. It should not be considered a substitute for emergency response training, knowledge, or sound judgment. Contact the pipeline operator or the National Association of State Fire Marshals to learn more about pipeline incident prevention and response. And, for emergency response to pipeline hazards, please consult the Emergency Response Guidebook.

Employ the National Incident Management System (NIMS), a consistent, nationwide approach for federal, state, tribal, and local governments to work effectively and efficiently together to prepare for and respond to all hazards, including acts of terrorism. Visit www.fema.gov/emergency/nims/index.shtm for more information.

- **Control spills (confinement).**
  - Prevent the entry of liquid products into waterways, sewers, basements, or confined areas. Divert the spill to an open area, if possible.
  - If flammable liquids are involved, use Class B firefighting foams for vapor suppression.
  - Conduct air monitoring.
  - Cover storm drains and sewers ahead of the release.
  - Do not touch, breathe, or make contact with leaking liquids!
- **Control leaks (containment).**
  - Do not operate pipeline equipment. Attempting to isolate or operate pipeline valves unless under the direction of the pipeline operator may create additional problems that are worse than the original event.
  - Do not touch natural gas plastic piping. It may generate a static spark that could act as an ignition source.
  - Do not ignite a vapor cloud.
- **Control fires.**
  - Flammable liquids and gases give off a tremendous amount of radiant heat. Protect exposures as appropriate.
  - Never extinguish a flammable gas fire. Always control or isolate the source of the leak.
  - Permit the fire to self-extinguish and consume any residual fuel that may remain inside or around the pipeline.
  - Eliminate ignition sources, such as engines, electric motors, pilot lights, burn barrels, cell phones, cigarettes, ungrounded tools, and emergency radios.

When responding to a pipeline incident, you can help protect your community by understanding the hazards associated with the products transported through pipelines. Refer to product information provided with this resource or from the operator, and use the Emergency Response Guidebook.

Contact the pipeline operator

Communication provides for timely and effective management, coordination, and dissemination of all pertinent information to all the stakeholders. Call the pipeline operator as soon as possible!

Be prepared to provide your contact information, location, and information about the incident, such as the size, characteristics and behavior of a leak. Also, notify the operator of any change in the incident conditions, such as a vapor cloud moving or enlarging.

**Per federal requirements, pipeline companies are required to communicate important information to all agencies and departments that may respond to a pipeline emergency. In addition to educating emergency responders when to notify operators they are required to "identify the types of gas pipeline emergencies of which the operator notifies the officials". Emergency Responders need to know that "pipeline operators will contact emergency officials in the event of an emergency". Some examples of when an operator may notify responders include, but are not limited too: Leak, fire, explosion, natural disaster, bodily injury, accidental release or operational failure that disrupts normal operating conditions.*

Coordinate response efforts with the pipeline operator

Work together to ensure the incident priorities are accomplished in a safe, timely and effective manner.

When the pipeline operator's area representatives arrive, they will identify themselves, establish contact with the incident commander, and may request continued assistance with incident control. Operator representatives are trained to minimize hazards and determine when the incident is over. The pipeline operator will take the following steps to ensure public safety and environmental protection:

- Shut down the pipeline
- Close valves to isolate the problem.
- Identify hazardous areas.
- Dispatch personnel to the scene.
- Take steps to protect the environment.
- Excavate and repair the damaged pipeline.
- Work with emergency officials and the public in the affected area.

Pipeline Operator Efforts

In response to federal regulations and in accordance with corporate commitments to protect our communities, pipeline operators use several damage prevention measures to monitor and ensure safe pipeline operation.

These include:

- Regular internal maintenance inspections
- Ongoing pipeline maintenance programs
- Routine patrol and visual inspection of pipeline right-of-ways
- Satellite and other remote communication technologies
- Constant pipeline monitoring
- Participation in state one-call underground damage prevention program
- Pipeline marker program
- Pipeline Integrity Management Plan (IMP)
- Emergency response plans

Though operational disruptions are infrequent, pipeline operators go to great efforts to be prepared for any type of incident. Pipeline operators:

- Develop emergency response and crisis management plans
- Accumulate manpower and equipment necessary to respond to incidents quickly
- Develop extensive training and drill programs
- Work closely with federal, state and local agencies to prepare for and respond effectively to an incident

As a result of regular damage prevention activities and response planning, pipeline operators are able to ensure pipeline integrity, achieve safety goals, and comply with applicable laws and regulations.

Smart Pig: An internal inspection tool

Federal codes regulate the planning, design, operation, maintenance, inspection and testing of pipelines.

Integrity Management

Operators use Integrity Management Plans (IMPs) to prevent pipeline leaks and spills, respond to emergency incidents, determine which pipelines could affect High Consequence Areas (HCAs), and identify opportunities to lower the operating risks of a pipeline. HCAs are segments along transmission pipelines that require supplemental hazard assessment and prevention programs because, in the event of a release, they could result in greater consequences to health and safety or the environment.

Contact your local pipeline operators to determine if HCAs are located in your area of responsibility.

Emergency Official Efforts

It's always better to prevent an accident than to respond to an incident. You can help prevent damage in your community by being aware of pipeline locations, promoting pipeline awareness and damage prevention, and watching for suspicious activities near pipelines:

- **Be aware of pipelines in your area.**
  - Search the Pipeline Integrity Management Mapping Application (PIMMA) on the National Pipeline Mapping System (NPMS) website: www.npms.phmsa.dot.gov. Learn who operates pipelines in your area and know how to contact them.

  - Look for pipeline marker signs and learn who operates the pipelines.
  - Contact local pipeline operators to discuss the pipelines and emergency response plans in your area.
- **Promote the use of the state one-call.**
  - State law requires everyone in your community to contact the one-call at least two days prior to excavation, excluding Saturday, Sunday and legal holidays, prior to excavation. The pipeline operator will mark its underground facilities, including any pipelines in the excavation area, and may remain on site during excavation near a pipeline. Remind excavators to use this free service – it's the law!
- **Report suspicious activities on or near a pipeline, exposed pipe, or damaged facilities to the pipeline operator.**
  - In our nation's time of heightened security, it is more important than ever to guard pipelines against damage or attack. Homeland Security and infrastructure protection is a shared responsibility. Help protect these valuable assets.

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

Emergency Response for Public Safety Personnel

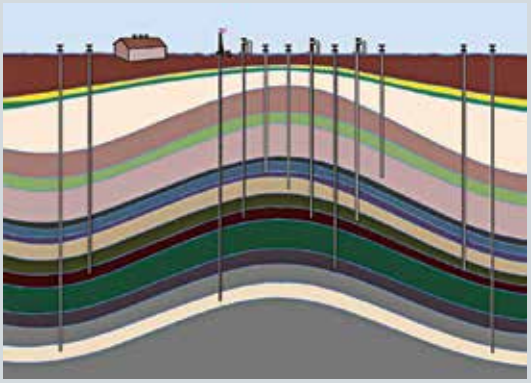
When responding to a storage field incident, your first job as an emergency responder is to take all necessary actions to safeguard the public. Such action should include immediately clearing the area of people, barricading the area and standing by at a safe distance. Your next step will be to contact the storage field operator. Keep in mind when setting up emergency response, a storage field incident may involve the release of product for several days until the specialized emergency response equipment, coordinated by the storage field operator, becomes available. It is also important for emergency responders to know and understand the type of product being released.

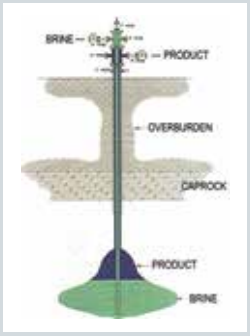
If ignition has not occurred, precautions should be taken to prevent ignition, such as rerouting vehicle traffic, air traffic and shutting down nearby railroads. When ignition has occurred, prevent the spread of fire but do not attempt to extinguish the burning product.

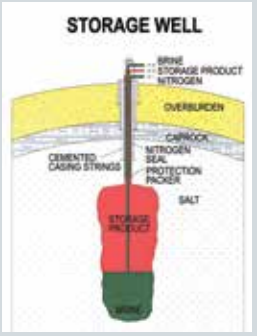
It is important for emergency responders to know where all storage fields are located within your response area and the products they contain. As well, emergency responders need to know who the storage field operators are and to meet on a regular basis to discuss emergency response.

What Should I Do If I Suspect An Emergency?

- ☑ Notify storage field operator as soon as possible
- ☑ Always be aware of wind direction
- ☑ Walk into the wind, away from possible hazardous fumes.
- ☑ Do not drive into a leak or vapor cloud
- ☑ Monitor combustible atmosphere, if equipment is available
- ☑ Determine hazardous area and escape routes
- ☑ The emergency phone number can be found on all pipeline markers and all wellhead locations



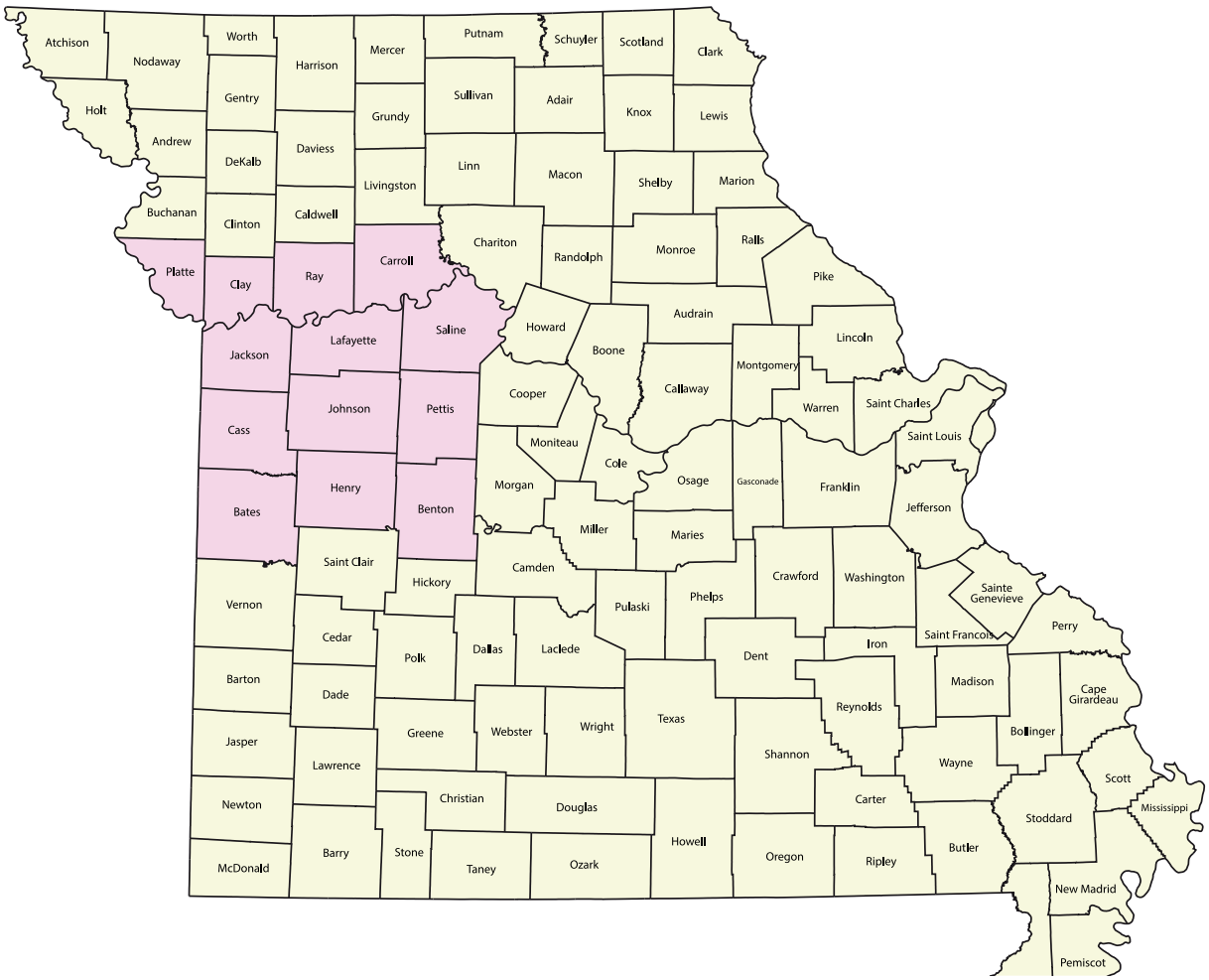




Emergency Contact Numbers by Homeland Security Region and County

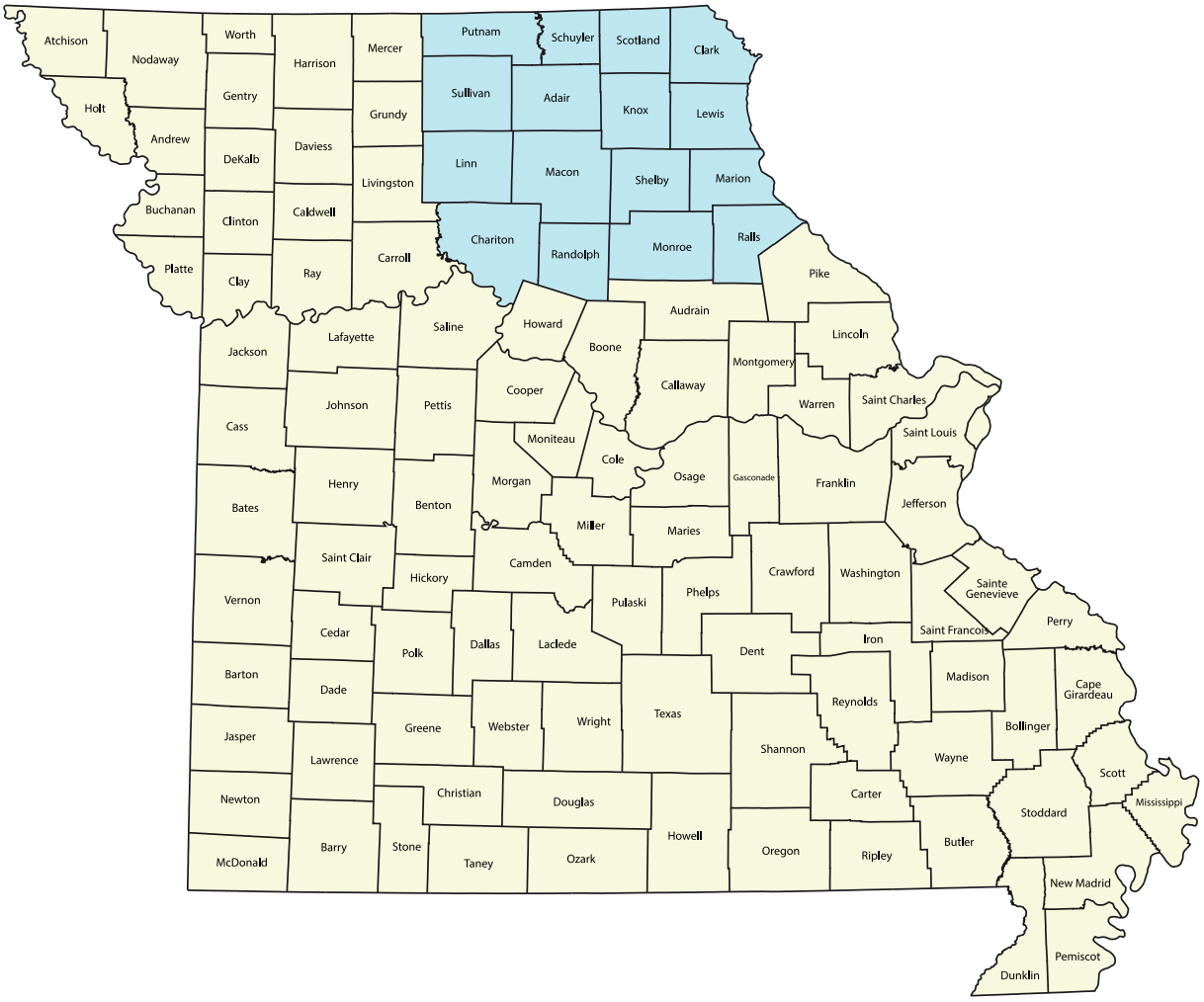
Region A

Pipeline Company	Emergency Contact	Bates	Benton	Carroll	Cass	Clay	Henry	Jackson	Johnson	Lafayette	Pettis	Platte	Ray	Saline
Buckeye Partners, L.P.	1-866-514-8380					X		X					X	
Empire District Gas Company	1-800-406-9220						X		X	X	X	X	X	X
Enbridge / Platte Pipe Line Company / Texas Eastern Transmission LP	1-800-858-5253	X		X	X				X	X				X
	1-800-231-7794													
Enterprise Products Operating LLC (Mid-America)	1-888-883-6308			X		X						X	X	
HF Sinclair Midstream	1-877-748-4464			X				X					X	
Magellan Midstream Partners, L.P.	1-800-720-2417		X			X	X	X			X	X		
Panhandle Eastern Pipe Line	1-800-225-3913				X		X	X	X		X			
Phillips 66 Pipeline LLC	1-877-267-2290				X				X		X			
Spire	1-800-582-1234				X			X				X		
	1-800-887-4173													
Summit Natural Gas	1-800-883-3181		X								X			
Tallgrass Energy (Rockies Express Pipeline)	1-877-436-2253			X										
Tallgrass Energy (Tallgrass Interstate Gas Transmission)	1-888-763-3690				X			X						
TC Energy Liquids	1-866-920-0007			X										



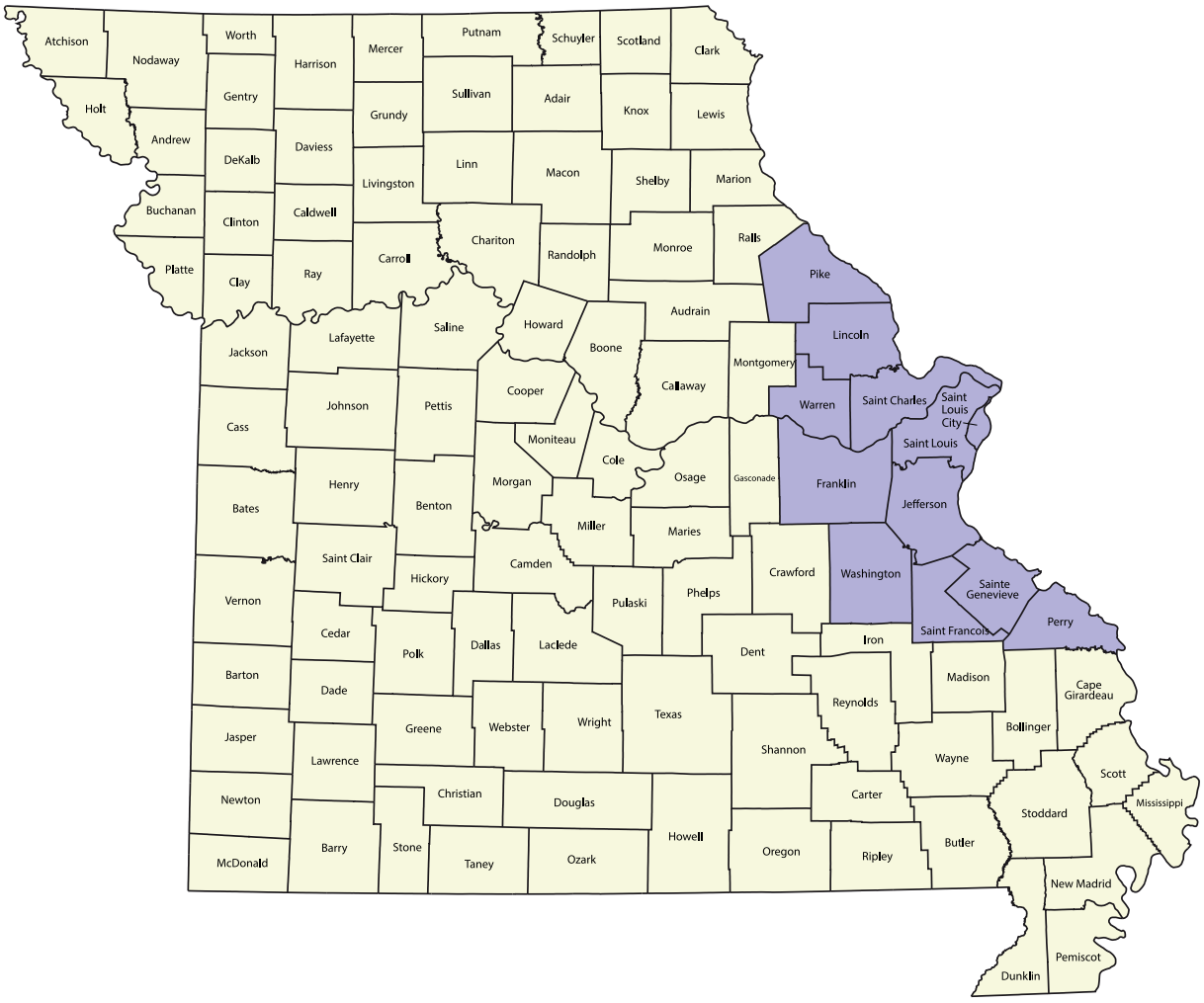
Region B

Pipeline Company	Emergency Contact	Adair	Chariton	Clark	Knox	Lewis	Linn	Macon	Marion	Monroe	Putnam	Ralls	Randolph	Schuyler	Scotland	Shelby	Sullivan
Buckeye Partners, L.P.	1-866-514-8380										X						X
Enbridge / Platte Pipe Line Company / Texas Eastern Transmission LP	1-800-858-5253		X			X		X	X				X			X	
	1-800-231-7794																
Enterprise Products Operating LLC (Mid-America)	1-888-883-6308	X	X		X		X	X					X	X	X		X
Flint Hills Resources	1-800-688-7594						X	X		X			X				X
HF Sinclair Midstream	1-877-748-4464	X	X	X	X		X	X							X		
Magellan Midstream Partners, LP	1-800-720-2417								X	X		X					
NuStar Pipeline Operating Partnership L.P.	1-800-759-0033			X		X			X			X					
Panhandle Eastern Pipe Line	1-800-225-3913								X			X	X				
Phillips 66 Pipeline LLC	1-877-267-2290									X							
Tallgrass Energy (Rockies Express Pipeline)	1-877-436-2253		X									X	X				
TC Energy Natural Gas	1-800-447-8066										X			X			
TC Energy Liquids	1-866-920-0007		X										X				



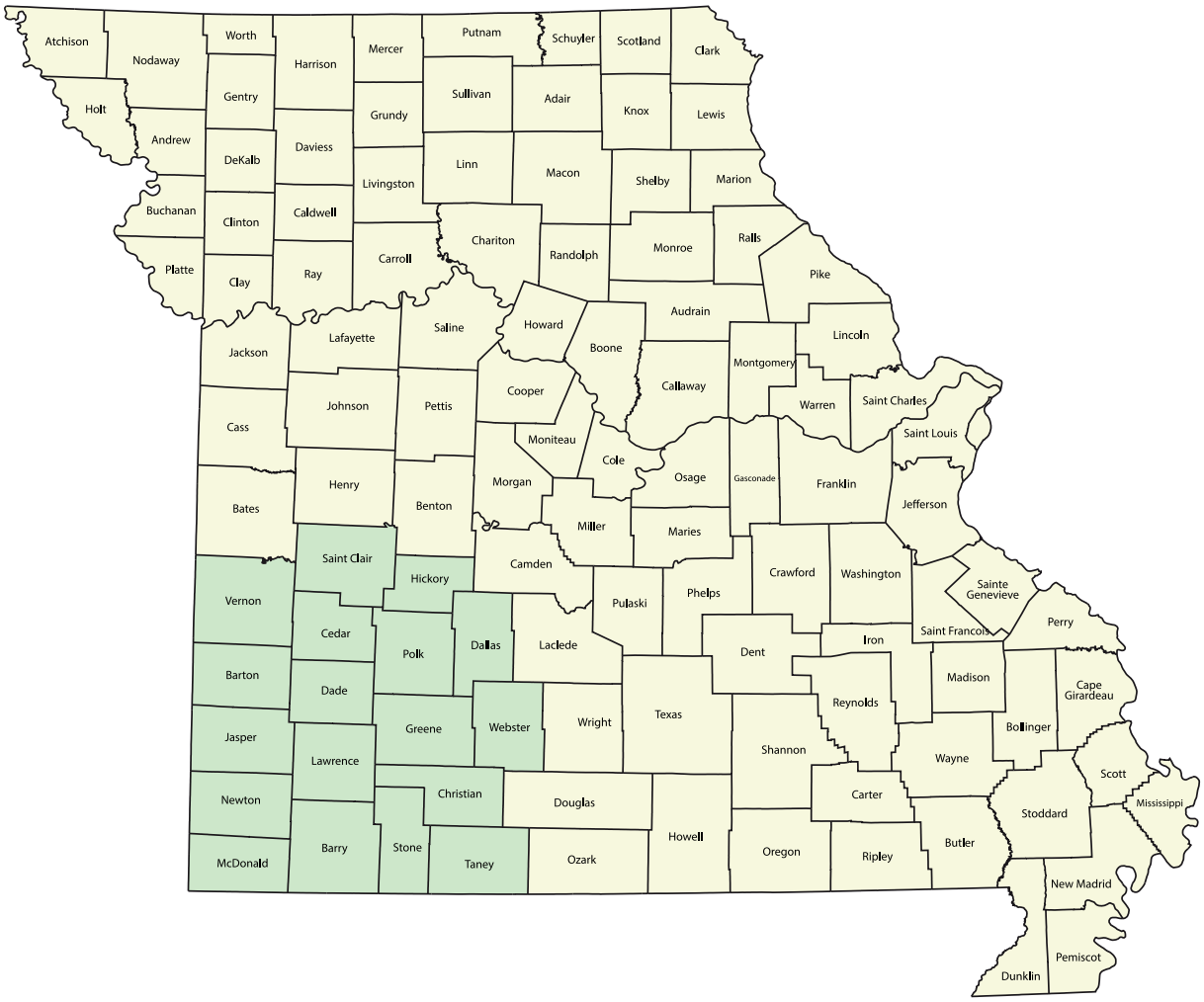
Region C

Pipeline Company	Emergency Contact	Franklin	Jefferson	Lincoln	Perry	Pike	Saint Charles	Saint Francois	Sainte Genevieve	Saint Louis	Saint Louis City	Warren	Washington
Buckeye Partners, L.P.	1-800-331-4115						X			X	X		
	1-866-514-8380												
Enable Mississippi River Transmission	1-800-325-4005		X					X	X	X	X		
Enbridge / Platte Pipe Line Company / Texas Eastern Transmission LP	1-800-858-5253			X			X						
	1-800-231-7794												
Explorer	1-888-876-0036	X					X				X		
Flint Hills Resources	1-800-688-7594			X			X						
Magellan Midstream Partners, LP	1-800-720-2417						X						
NuStar Pipeline Operating Partnership L.P.	1-800-759-0033					X	X					X	
Panhandle Eastern Pipe Line	1-800-225-3913					X							
Permian Express Partners	1-800-753-5531				X								
Phillips 66 Pipeline LLC	1-877-267-2290	X	X							X			
Spire	1-800-582-1234	X					X			X	X		
	1-800-887-4173												
Spire MoGas Pipeline LLC	1-800-282-4916	X		X		X	X						
Tallgrass Energy (Rockies Express Pipeline)	1-877-436-2253					X							
TC Energy Liquids	1-866-920-0007			X			X						



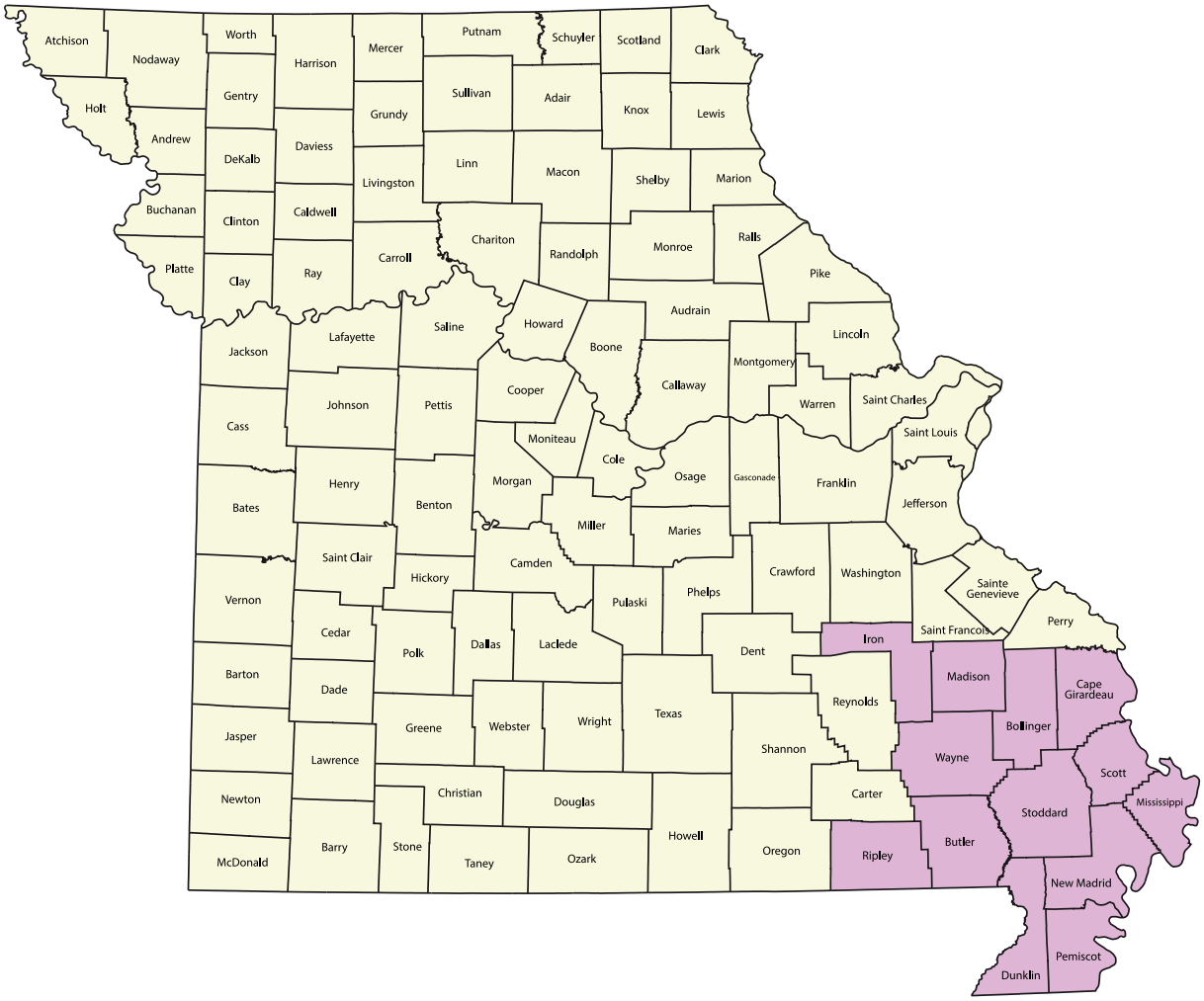
Region D

Pipeline Company	Emergency Contact	Barry	Barton	Cedar	Christian	Dade	Dallas	Greene	Hickory	Jasper	Lawrence	McDonald	Newton	Polk	Saint Clair	Stone	Taney	Vernon	Webster
Enable Gas Transmission	1-800-474-1954											X							
Explorer	1-888-876-0036					X	X	X		X	X		X	X					
Magellan Midstream Partners, LP	1-800-720-2417	X	X	X				X		X	X	X			X			X	
Phillips 66 Pipeline LLC	1-877-267-2290									X	X		X		X				
Summit Natural Gas	1-800-883-3181	X						X			X					X	X		X



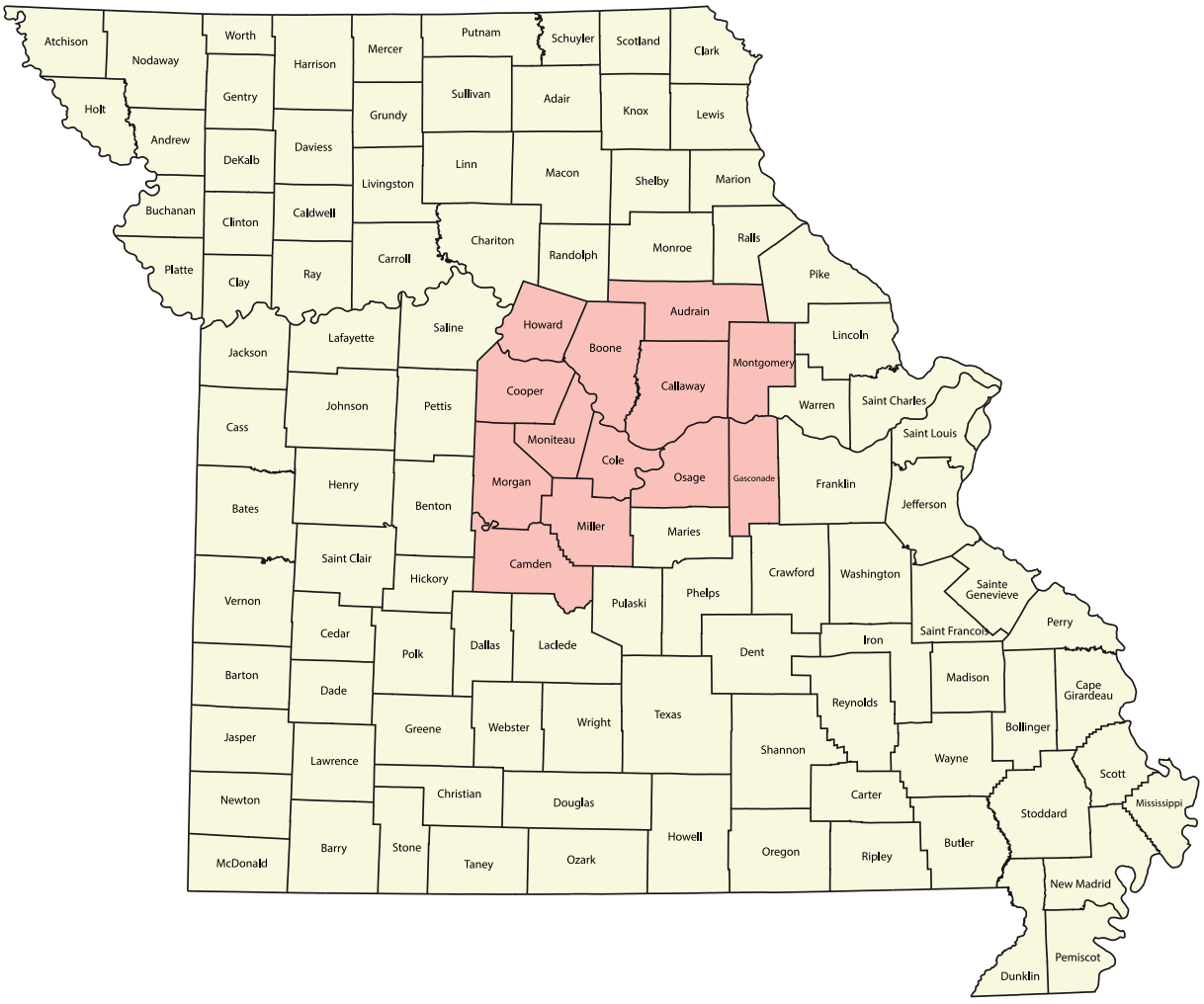
Region E

Pipeline Company	Emergency Contact	Bollinger	Butler	Cape Girardeau	Dunklin	Iron	Madison	Mississippi	New Madrid	Pemiscot	Ripley	Scott	Stoddard	Wayne
BBT Ozark Gas Transmission LLC	1-844-940-3077				X									
Enable Mississippi River Transmission	1-800-325-4005		X			X	X				X		X	X
Enbridge / Platte Pipe Line Company / Texas Eastern Transmission LP	1-800-858-5253 1-800-231-7794		X		X							X	X	
Enterprise Products Operating LLC (TE Products)	1-888-883-6308		X		X							X	X	
Permian Express Partners	1-800-753-5531	X					X				X			X



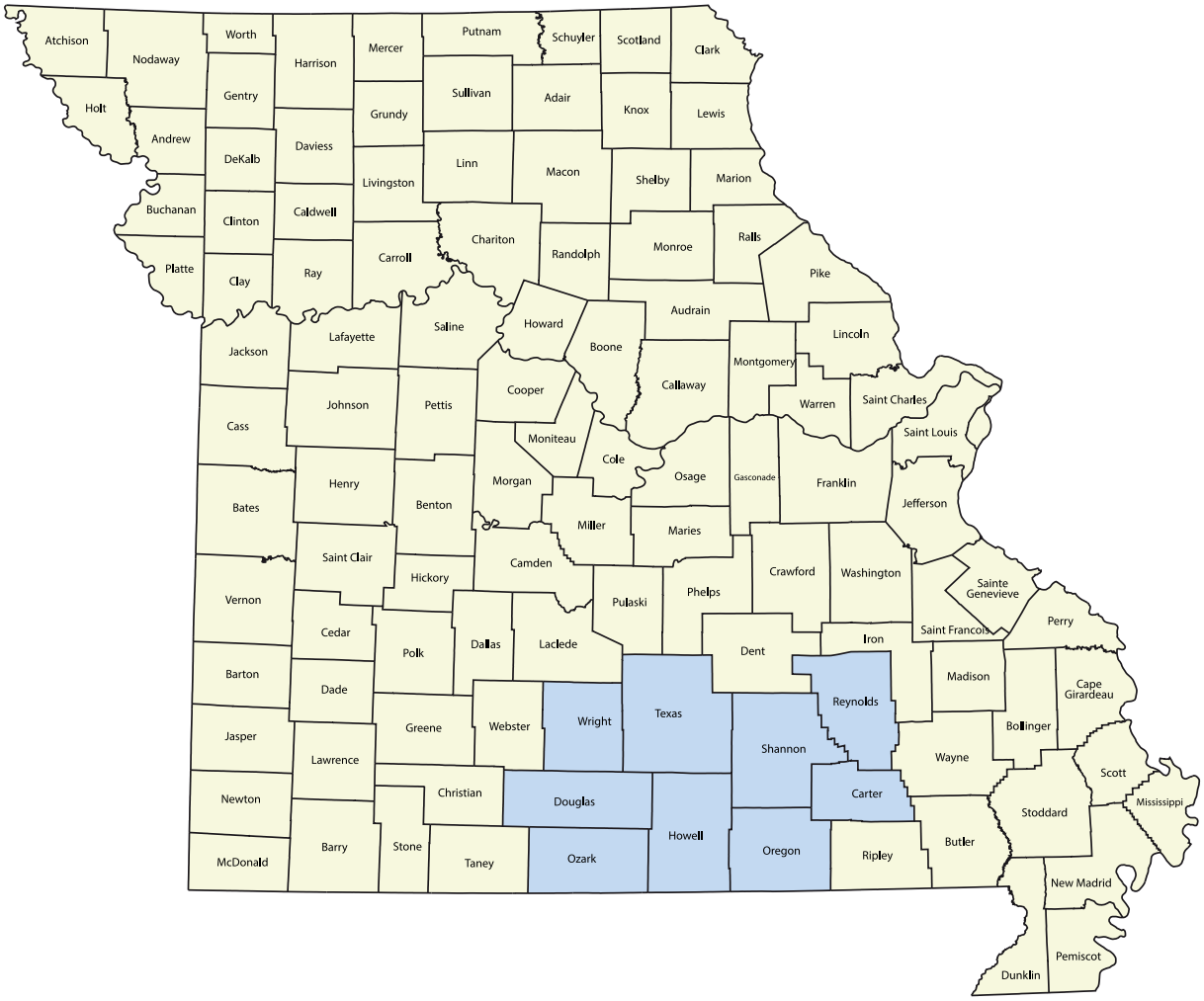
Region F

Pipeline Company	Emergency Contact	Audrain	Boone	Callaway	Camden	Cole	Cooper	Gasconade	Howard	Miller	Moniteau	Montgomery	Morgan	Osage
City of Fulton	1-573-592-3170			X										
	1-573-592-3180													
Enbridge / Platte Pipe Line Company / Texas Eastern Transmission LP	1-800-858-5253	X										X		
	1-800-231-7794													
Explorer	1-888-876-0036				X			X						
Flint Hills Resources	1-800-688-7594	X										X		
Magellan Midstream Partners, LP	1-800-720-2417	X	X	X			X				X		X	
NuStar Pipeline Operating Partnership L.P.	1-800-759-0033	X						X				X		
Panhandle Eastern Pipe Line	1-800-225-3913	X	X	X		X	X		X		X	X		
Phillips 66 Pipeline LLC	1-877-267-2290					X		X			X		X	X
Spire MoGas Pipeline, LLC	1-800-282-4916							X						
Summit Natural Gas	1-800-883-3181				X					X			X	
Tallgrass Energy (Rockies Express Pipeline)	1-877-436-2253	X												
TC Energy Liquids	1-866-920-0007	X										X		



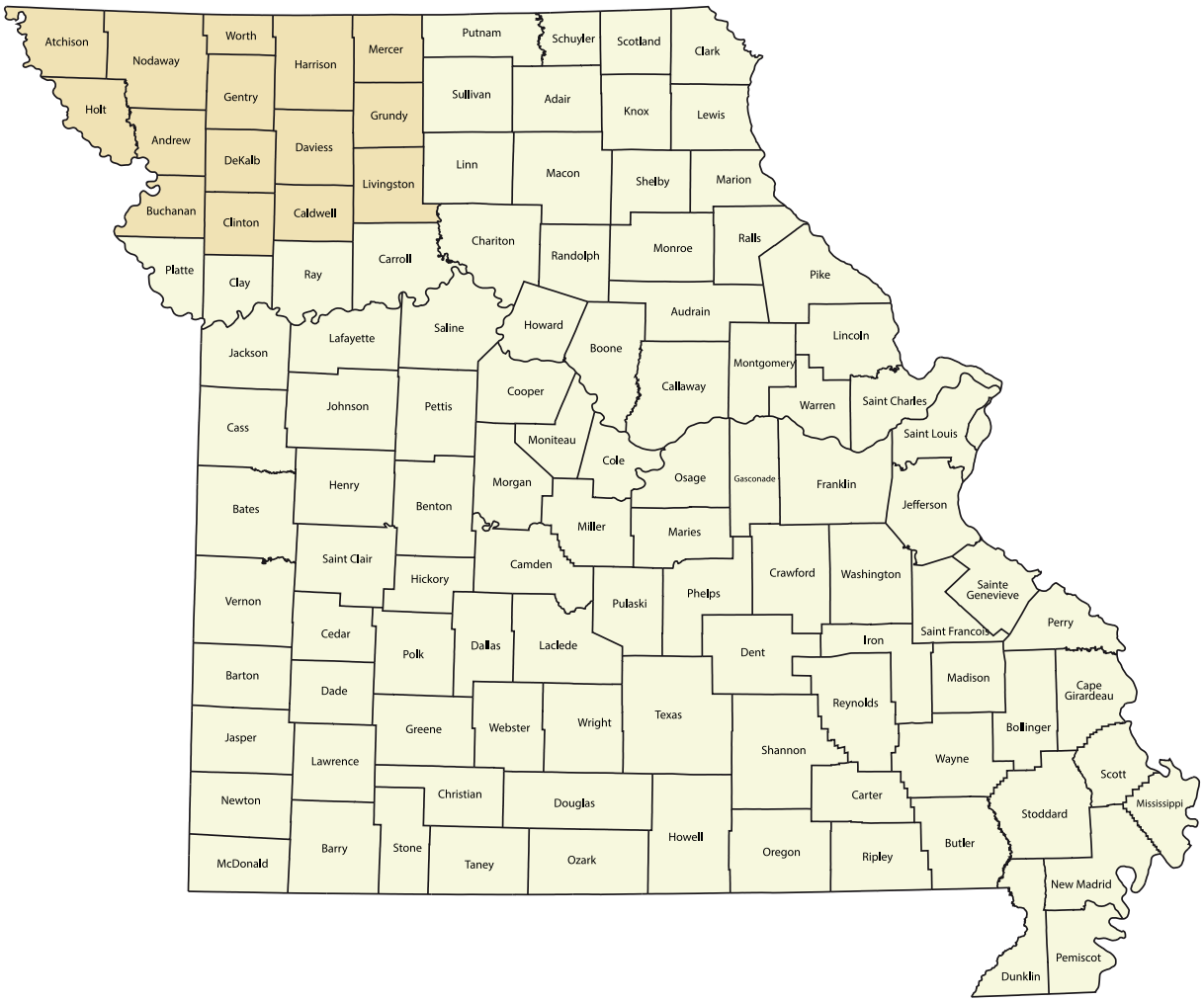
Region G

Pipeline Company	Emergency Contact	Carter	Douglas	Howell	Oregon	Ozark	Reynolds	Shannon	Texas	Wright
NuStar Pipeline Operating Partnership L.P.	1-800-759-0033			X					X	
Permian Express Partners	1-800-753-5531	X								
Summit Natural Gas	1-800-883-3181		X	X					X	X



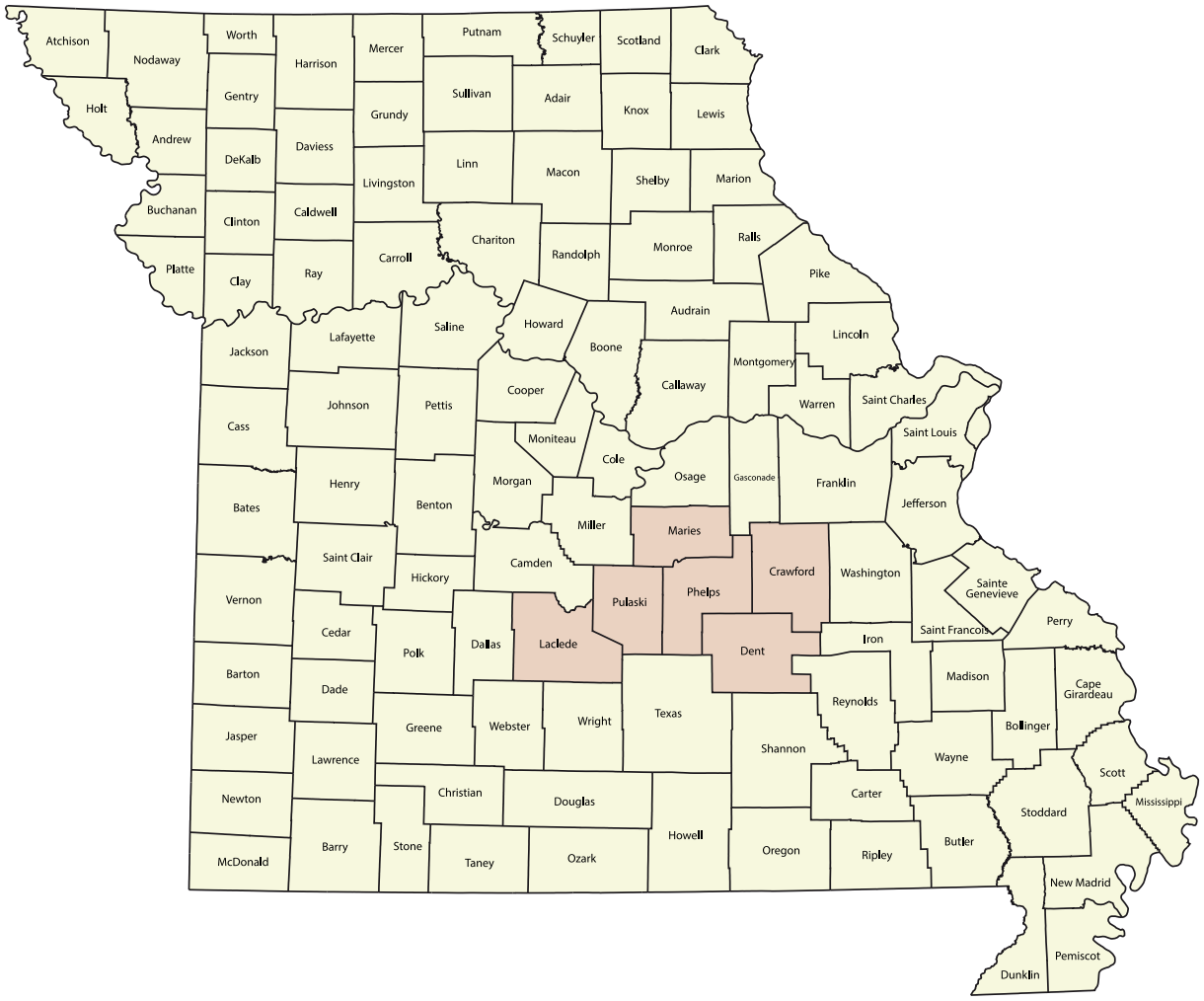
Region H

Pipeline Company	Emergency Contact	Andrew	Atchison	Buchanan	Caldwell	Clinton	Daviess	DeKalb	Gentry	Grundy	Harrison	Holt	Livingston	Mercer	Nodaway	Worth
Buckeye Partners, L.P.	1-866-514-8380	X	X	X	X	X	X			X			X		X	
Enbridge / Platte Pipe Line Company / Texas Eastern Transmission LP	1-800-858-5253			X	X	X										
	1-800-231-7794															
Enterprise Products Operating LLC (Mid-America)	1-888-883-6308				X	X							X			
Flint Hills Resources	1-800-688-7594									X	X			X		
Magellan Midstream Partners, LP	1-800-720-2417	X				X	X	X	X		X				X	X
Summit Natural Gas	1-800-883-3181				X		X				X					
Tallgrass Energy (Rockies Express Pipeline)	1-877-436-2253			X	X	X										
TC Energy Natural Gas	1-800-447-8066								X		X	X		X	X	X
TC Energy Liquids	1-866-902-0007			X	X	X										



Region I

Pipeline Company	Emergency Contact	Crawford	Dent	Laclede	Maries	Phelps	Pulaski
Explorer	1-888-876-0036			X	X		X
Spire MoGas Pipeline, LLC	1-800-282-4916	X	X			X	X
NuStar Pipeline Operating Partnership L.P.	1-800-759-0033	X	X			X	
Omega Pipeline Company LLC	1-573-329-3382						X
Summit Natural Gas	1-800-883-3181			X			



Note: The enclosed information to assist in emergency response planning is delivered by Paradigm Liaison Services, LLC on behalf of the above sponsoring companies. Visit the National Pipeline Mapping System at **www.npms.phmsa.dot.gov** to determine additional companies operating in your area.

BLACK BEAR
TRANSMISSION

1501 McKinney Street
Suite 800
Houston, TX 77010
Website: blackbearllc.com

WHO IS BLACK BEAR TRANSMISSION

Black Bear Transmission LLC transports and delivers natural gas from various pipeline receipt points to power generation, industrial and utility customers in the Southeast United States. The company includes 12 regulated natural gas pipelines stretching more than 2,300 miles with total delivery capacity of more than 2.6 Bcf/d. The pipelines are connected to 18 major long-haul pipelines ensuring reliable gas supply to customers across Alabama, Arkansas, Louisiana, Mississippi, Missouri, Oklahoma and Tennessee. Black Bear Transmission is headquartered in Houston, TX.

PIPELINE SAFETY

System failures occur infrequently along the nation's network of interstate natural gas pipeline facilities, and many of these are caused by damage from others digging near the pipeline. We watch for unauthorized digging, but we request your help to notify us.

ALWAYS CALL 811 BEFORE YOU DIG!

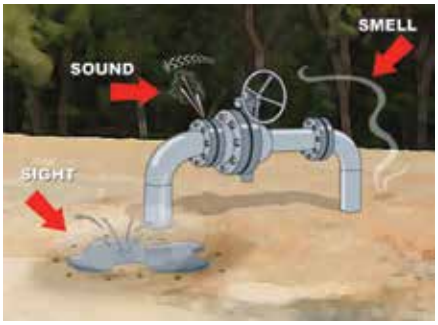
811
Know what's **below.**
Call before you dig.

MAINTAINING SAFETY AND INTEGRITY OF PIPELINES

Our pipelines are monitored through a combination of systems and safety programs, including inspections on foot, and evaluation by state officials to ensure that operators are meeting regulatory requirements and making necessary repairs. Black Bear Transmission, LLC is committed to the safety of the public and care of the environment. We take great pains to follow the highest industry standards in order to provide top-quality services.

RECOGNIZING A PIPELINE

Line markers are placed at intervals along pipeline right-of-ways. Our markers give an approximate location of the pipeline system and display our telephone numbers. More specific inquiries about the location of our pipelines can be directed to Black Bear Transmission, LLC.



SIGNS OF A PIPELINE LEAK

Sight - Blowing gas, dead or dry vegetation, or bubbles in the water near the pipeline.

Sound - Whistling, hissing or roaring noise.

Smell -Odorized to smell like rotten eggs.

WHAT TO DO IF YOU SUSPECT A PIPELINE LEAK?

Your personal safety should be your first concern:

- Immediately leave the area. If possible, turn off any vehicles or equipment being used in or near the suspected leak. Abandon any equipment being used and move upwind from the suspected leak.

EMERGENCY CONTACT:
1-844-940-3077

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:

Natural Gas	1971	115

MISSOURI
COUNTIES OF OPERATION:

Dunklin

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

- From a safe location, call Black Bear Transmission, LLC. Give your name, phone number, location, and a description of the leak.
- Warn others to stay away when possible.

WHAT NOT TO DO IF YOU SUSPECT A PIPELINE LEAK?

- **DO NOT** touch, breathe or make contact with the leaking gas. Stay upwind if possible.
- **DO NOT** light a match, start an engine, use a telephone, turn on/ off any type of electrical switch or do anything that may create static or a spark.
- **DO NOT** attempt to extinguish any pipeline fire that may start.
- **DO NOT** drive into a leak or vapor cloud area. Automobile engines may ignite the vapors.
- **DO NOT** start or attempt to operate valves.

EMERGENCY RESPONSE PLANS

An Emergency Response Plan is developed for each pipeline facility to contain, control and mitigate the various types of emergency conditions/situations that could occur at one of our facilities. For more information regarding Black Bear Transmission emergency response plans and procedures, contact us directly.

Scan to visit our website!

Contact Information
Public Awareness Non-Emergency Phone Number: (866) 432-4960
Public Awareness Email Address: PublicAwareness@buckeye.com
Public Awareness Website: buckeye.com/public-awareness

BUCKEYE PARTNERS

6161 Hamilton Blvd | Allentown, PA | 18106

ABOUT BUCKEYE PARTNERS, L.P.

Buckeye Partners, L.P. (Buckeye) provides mid-stream energy logistics services. Buckeye owns and operates one of the nation's largest independent petroleum products common carrier pipeline networks providing refiners, wholesalers, marketers, airlines, railroads, and other commercial end-users with dependable, all-weather transportation of liquid petroleum products through over 5,000 miles of pipelines. Buckeye transports liquid petroleum products by pipeline principally in the Northeastern and upper Midwestern states. Buckeye also operates and maintains pipelines it does not own, primarily in the Gulf Coast region, under contracts with major oil and petrochemical companies. The combination of experienced and responsive professional staff, technical expertise, and modern transportation facilities has earned Buckeye a reputation for providing high-quality, safe, reliable, and efficient pipeline transportation services.

In addition to pipeline transportation services, Buckeye provides terminalling, storage, and liquid petroleum product distribution services. Buckeye owns more than 130 liquid petroleum products terminals with an aggregate storage capacity of approximately 130 million barrels, and markets liquid petroleum products in certain regions served by its pipeline and terminal operations. Buckeye's flagship marine terminal in the Bahamas, Buckeye Bahamas Hub, is one of the largest crude oil and petroleum products storage facilities in the world, serving the international markets as a premier global logistics hub.

To learn more about Buckeye, log on to www.buckeye.com. **To view the approximate location of pipelines in your area, visit the National Pipeline Mapping System at www.npms.phmsa.dot.gov**. For general information about pipelines, visit www.pipeline101.com.

COMMITMENT TO HEALTH, SAFETY, AND THE ENVIRONMENT

Buckeye is committed to preventing hazards to the public, to the environment, and to Buckeye's facilities. Buckeye utilizes various programs to ensure the safety of its pipelines. Our control centers operate 24 hours a day, 7 days a week monitoring our pipeline leak detection system. Our Integrity Management Program consists of corrosion control, risk engineering, geographic information systems, and pipeline inspection. We also perform pipeline patrols and various other inspections. Our Public Awareness Program is designed to establish communications and provide information necessary to help the public understand that pipelines are the major transportation system for petroleum products and natural gas in the United States, how pipelines function, and the public's responsibilities to help prevent damage to pipelines. Accordingly, heightened awareness and a better understanding by the public of Buckeye's pipeline operations will supplement and enhance our current maintenance, operations, and safety policies and procedures. For more information about these programs, please visit Buckeye's website listed above or call **Buckeye's non-emergency Public Education number at 866-432-4960**.

EMERGENCY RESPONSE

Since pipelines are the safest and most efficient method of transporting petroleum products, pipeline incidents are rare. Buckeye appreciates the hard work and effort of the many emergency responders that may be involved in helping us return the community to normal in the event of an incident. In an emergency, Buckeye may utilize the Incident Command System during a response to a pipeline incident. The following are examples of critical tasks would need to be considered during a pipeline release:

EMERGENCY CONTACT:
1-866-514-8380 for Northern MO
1-800-331-4115 for St. Louis Area

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:		
Diesel Fuel	1202	128
Gasoline	1203	128
Heating Oil	1202	128
Jet Fuel	1863	128
Kerosene	1223	128

MISSOURI
COUNTIES OF OPERATION:

Andrew	Livingston
Atchison	Nodaway
Buchanan	Putnam
Caldwell	Ray
Clay	St. Charles
Clinton	St. Louis City
Daviess	St. Louis County
Grundy	Sullivan
Jackson	

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

- Public Safety / Evacuation
- Responder Safety
- Traffic Control
- Vapor Suppression
- Site Security
- Firefighting
- Product Containment

Federal regulations require specific qualifications to operate pipeline equipment; therefore, Buckeye employees will perform these duties. DO NOT attempt to operate any pipeline equipment, such as valves, because doing so could make the situation worse.

Additional information on how to respond to incidents involving pipelines is available by contacting Buckeye or by obtaining training materials from the National Association of State Fire Marshals' sponsored Pipeline Emergencies Program. This training can be found at https://nasfm-training.org/pipeline/.

BUCKEYE'S RESPONSE IN AN EMERGENCY

Buckeye is engaged in constant activity to maintain safe pipeline operations. In the event of a pipeline release, Buckeye will take the following steps to ensure public safety and protect the environment:

- Shut down the pipeline
- Close valves to isolate the problem
- Identify hazardous areas
- Dispatch personnel to the scene
- Excavate & repair the damaged line
- Work with emergency responders and the public in the affected area.

Buckeye's emergency response plan is available upon request.

ACTIVITY ON THE RIGHT OF WAY

Always be sure to contact 811 before any digging activities occur. Accidental damage caused by excavation, construction, farming activities, and homeowner projects is one of the greatest threats to pipeline safety. For more information on safe digging, see www.call811.com. If you hit a pipeline, you must report it to the pipeline operator. Even if damage looks minor or nonexistent, it is critical that the operator inspects the pipeline. A minor scratch, scrape, gouge, or dent to the pipeline or coating has the potential to cause a safety issue in the future. Also, if you see suspicious activity on or near the pipeline right of way, immediately notify your local law enforcement agency. Lastly, if you see power lines down on or near Buckeye's pipeline right of way, immediately call Buckeye's emergency number listed on this page. Electricity discharging to the ground can damage buried pipelines.

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

CONTACT

Wesley Pekarek
1315 North Sterling Ave.
Sugar Creek, MO 64054
Phone: (219) 713-6913

CITY OF FULTON
PROUDLY SERVING YOU

1303 Westminster Ave.
Fulton, MO 65251
Phone: 573-592-3170
Fax: 573-592-3179
Website: http://fultonmo.org

The City of Fulton owns and operates a municipal natural gas system that serves approximately 4,000 customers. The city installed the first natural gas meter in the year 1936. The city purchases natural gas from the Kansas and Oklahoma natural gas fields and transports the gas by contract over the Panhandle Eastern Pipe Line (PEPL) to the City's connection to PEPL near Hatton, Missouri. The natural gas is then transported on an 8-inch steel coated pipeline owned and maintained by the City of Fulton (see attached map). The natural gas is transported on this line at a pressure of 340 psi (pounds per square inch) to the City's north town border station.

Once the natural gas is transported to the City, 10 regulator stations reduce the pressure for the distribution system. The pressure is reduced at 1 regulator station 440 psi to 52 psi, 4 regulator stations 340 psi to 55 psi and 5 regulator stations 55 psi to 25 psi. Once the natural gas reaches the customer's meter it is once again reduced in pressure. The City serves residential customers at 1/4 psi, and commercial and industrial customers from 1/4 psi to 2 psi depending on individual loads.

The City owns and maintains approximately 116 miles of natural gas mains. In the early 1970's the City began installing plastic pipe gas mains on all new construction. The City has replaced all cast iron and ductile iron gas mains with plastic mains as part of the City's gas main replacement program.

COMMITMENT TO SAFETY, HEALTH & ENVIRONMENT

The City of Fulton's goal is to provide safe, reliable, and efficient gas service to our customers.

- Our pipeline falls under the regulatory oversight of the Office of Pipeline Safety and the U.S. Department of Transportation and Missouri Public Service Commission.
- Visual inspections are taken on a regular basis with above ground markers along the pipeline route.
- Rectifiers are used to protect the pipeline for cathodic protection.

EMERGENCY CONTACT:
573-592-3170
(Between 7:30 AM and 4:00 PM CST)
573-592-3180
(After hours or on weekends)

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:

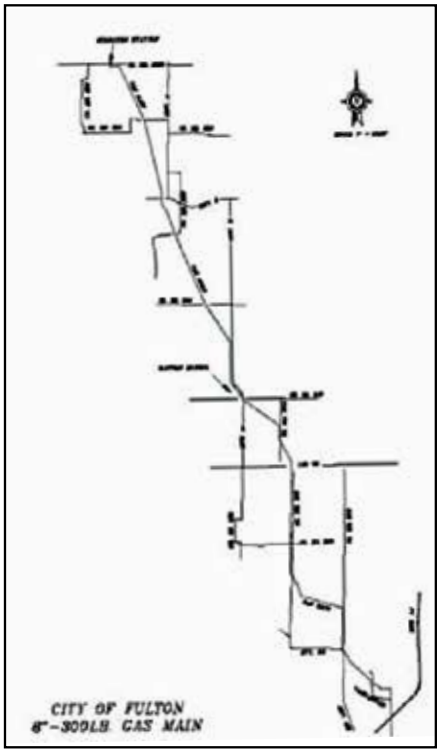
Natural Gas	1971	115

MISSOURI
COUNTIES OF OPERATION:

Callaway

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

- The City of Fulton is a member of the Missouri State One Call program.
- Emergency preparedness and planning measures are in place at the City of Fulton in the event of an emergency.
- The City Gas Department has tools available to shut down gas lines in case of an emergency



1300 Main St.
Houston, TX 77002
Phone: (713) 989-7000
Website: www.energytransfer.com

ENERGY TRANSFER

Energy Transfer Partners, a Texas-based energy company founded in 1996 as a small intrastate natural gas pipeline company, is now one of the largest and most diversified master limited partnerships in the United States.

Strategically positioned in all of the major U.S. production basins, the company owns and operates a geographically diverse portfolio of energy assets, including midstream, intrastate and interstate transportation and storage assets. Energy Transfer operates more than 125,000 miles of natural gas, crude oil, natural gas liquids and refined products pipelines and related facilities, including terminalling, storage, fractionation, blending and various acquisition and marketing assets in 44 states.

The **Enable** system consists of approximately 10,000 miles of pipeline that transports crude oil, natural gas, and natural gas liquids throughout the nation's Mid-Continent and Gulf Coast regions.

McDonald county:
Chad Rainwater
Operations Manager
479-648-2338 (w), 479-226-1803 (m)
chad.rainwater@energytransfer.com

Butler, Iron, Jefferson, Madison, Ripley, St. Francois, St. Louis, St. Louis City, Ste. Genevieve, Stoddard, and Wayne counties:
Matt Young
Operations Manager
618-491-6571 (w), 618-550-8064 (m)
matt.young@energytransfer.com

EMERGENCY CONTACT:
Enable Mississippi River Transmission
1-800-325-4005
Enable Gas Transmission
1-800-474-1954

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:

Natural Gas	1971	115

MISSOURI
COUNTIES OF OPERATION:

Butler	St. Francois
Iron	St. Louis
Jefferson	St. Louis City
Madison	Ste. Genevieve
McDonald	Stoddard
Ripley	Wayne

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

915 N. Eldridge Parkway, Suite 1100
Houston, TX 77079
Public Awareness: 1-877-799-2650
Email: uspublicawareness@enbridge.com
Website: www.enbridge.com

Life takes energy: to heat our homes, to feed our families, to fuel our vehicles. Enbridge connects people to the energy they need to help fuel their quality of life.

In the United States alone, more than two million miles of pipelines deliver petroleum and natural gas products. Every year, Enbridge invests in the latest technology and training to meet the high environmental and safety standards our neighbors expect, and to keep pipelines the safest, most efficient and most reliable way to move energy resources.

Call or click before you dig
811 and **ClickBeforeYouDig.com** are free services designed to keep you safe when digging. Calling or clicking is always the safest option anytime you are moving dirt. At least two to three business days before your project (depending on state law), simply call 811 or visit **www.ClickBeforeYouDig.com** with important details about your work, including:

- The type of work you'll be doing and a description of the area
- The date and time your project will begin
- Your worksite's address, the road on which it's located and the nearest intersection
- Driving directions or GPS coordinates
- Within two to three business days, professional locators will mark underground utility lines—including pipelines (marked with yellow flags or paint)—so you can work around them, saving yourself from possible injury or property damage.

Pipeline location and markers
All pipeline markers provide the name of the pipeline operator, product being transported and a telephone number for reporting pipeline emergencies. These markers should never be used as a reference for a pipeline's exact location. You can also find out where other companies' pipelines are in your area by going to the National Pipeline Mapping System website at **https://www.npms.phmsa.dot.gov.**

Emergency responder education program

Enbridge offers a free online education program to provide public safety and local public officials with the information needed to safely and effectively respond to a pipeline emergency. This program focuses on information specific to the disciplines of firefighting, law enforcement, 9-1-1 dispatch, emergency medical services, emergency management and local government. Additionally, course completion may count for state-level continuing education (CE) credits. Register for the training at **www.mypipelinetraining.com**.

Marker appearance may vary in your area.

What if there is an emergency?
Enbridge facilities are designed to be quickly isolated with block valves for rapid containment in the event of an emergency. We have pre-arranged plans with local emergency personnel and periodically conduct emergency drills with these groups.

Incident Command System
Enbridge utilizes the Incident Command System (ICS) for managing a response to an emergency.

EMERGENCY CONTACT:
1-800-858-5253 (Liquids)
1-800-231-7794 (Gas)

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:

Crude Oil	1267	128
Natural Gas	1971	115

MISSOURI COUNTIES OF OPERATION (LIQUIDS)

Audrain	Clinton	Montgomery
Bates	Johnson	Randolph
Buchanan	Lafayette	Saline
Caldwell	Lewis	Shelby
Carroll	Lincoln	St. Charles
Cass	Macon	
Chariton	Marion	

MISSOURI COUNTIES OF OPERATION (GAS)

Butler	Scott
Dunklin	Stoddard

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

The ICS organizational structure is designed to coordinate with other responding agencies and to include those agencies inside a unified Command Post for a coordinated response.

In the event of an emergency
1. Abandon any equipment being used in or near the area, moving upwind of the product release
2. Warn others to stay away
3. **If emergency services have not been notified, call 911 and then call the 24-hour pipeline emergency number for your area**
4. Follow instructions given to you by local emergency responders and Enbridge

Actions Specific to Emergency Officials
1. Secure the site and determine a plan to evacuate or shelter in place
2. Monitor for hazardous atmospheres
3. Control and redirect traffic as needed
4. Provide immediate access to Enbridge Pipeline representatives
5. Implement your local emergency plan

1100 Louisiana
Houston, TX 77002
Public Awareness: 1-888-806-8152
Email: publicawareness@eprod.com
Website: www.enterpriseproducts.com

COMPANY INFORMATION, ASSETS & PRODUCTS TRANSPORTED

Enterprise Products Partners L.P. is a leading North American provider of midstream energy services to producers and consumers of natural gas, Natural Gas Liquids (NGL), crude oil, refined products and petrochemicals. Enterprise transports natural gas, NGLs, petrochemicals and crude oil through a network of pipelines throughout the United States.

The Mid-America Pipeline (MAPL) System operates approximately 400 miles of pipelines throughout the state of Missouri transporting Ethane/Propane mix and Propane.

The TE Products Pipeline System extends over 9,000 miles of NGL pipelines through 13 states. In Missouri, it operates approximately 140 miles throughout the state. The products transported through this system include: Ethane, Iso-Butane, Normal Butane, Diesel, Gasoline, Jet Fuel, Naphthalene, Natural Gasoline, Propane and Raffinate. For additional information about Enterprise, visit www.enterpriseproducts.com.

LOCATING ENTERPRISE PIPELINES – PIPELINE VIEWER TOOL

To find more information regarding location and products transported in our pipelines within one (1) mile of a specific address, visit our website at: www.enterpriseproducts.com/pipelineviewer. Please note the asset map and pipeline viewer tool are for informational purposes only.

You can also find out where other companies' pipelines are in your area by going to the National Pipeline Mapping System website at www.npms.phmsa.dot.gov.

EMERGENCY RESPONSE PLAN

An Emergency Response Plan (ERP) is developed for each pipeline facility to contain, control and mitigate the various types of emergency conditions/ situations that could occur at one of our facilities. For more information regarding Enterprise Products emergency response plans and procedures, contact us at publicawareness@eprod.com.

EMERGENCY RESPONSE CAPABILITIES

The Company's qualified personnel are trained in safe operations and emergency response activities and participate in exercises reflecting various types of emergency scenarios and environmental sensitivities.

EMERGENCY CONTACT:
1-888-883-6308

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:		
Diesel	1202/1993	128
Ethane	1035	115
Ethane Propane Mix	1961	115
Gasoline	1203	128
Iso-Butane	1075	115
Jet Fuel	1863	128
Naphthalene	1334	133
Natural Gasoline	1203	128
N-Butane	1075	115
Propane	1075	115
Raffinate	1203	128

MISSOURI COUNTIES OF OPERATION:

Mid-America Pipeline System

Adair	Livingston
Caldwell	Macon
Carroll	Platte
Chariton	Randolph
Clay	Ray
Clinton	Schuyler
Knox	Scotland
Linn	Sullivan

TE Products Pipeline System

Butler	Scott
Dunklin	Stoddard

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

The Company utilizes the First Responder/Emergency Response Team concept to handle emergency incidents at its facilities. Employees receive hands on training in fire fighting, hazardous material spill response and rescue/ medical/first aid training. In addition, we maintain a well trained team of employees from various Company locations as members of the Corporate Emergency Organization. This team, as well as an array of emergency response equipment (including, but not limited to, cell phones, fire extinguisher, supplied breathing air, and air monitoring equipment), can be mobilized and deployed to assist in handling emergency situations that may occur at a Company facility or pipeline location.

Enterprise Products utilizes its 24-hour/365 day a year, Pipeline Operations Control Center (888-883-6308) as a hub of communications in emergency response situations. Our manned control center monitors the flow, pressure, temperatures, and other conditions throughout the pipeline systems and is an integral part of our communication during emergency situations.

ENTERPRISE PRODUCTS' RESPONSE IN AN EMERGENCY

- We will immediately dispatch personnel to help handle the emergency at the site.
- We will provide information to public safety officials to aid in their response to the emergency.
- We will take necessary operating actions such as closing and opening valves to minimize the impact of the leak.
- Public safety personnel and others unfamiliar with the pipeline should not attempt to operate any of the valves on the pipeline, unless instructed to do so by Enterprise Products personnel. Improper operation of the pipeline valves could make the situation worse and cause other accidents to happen.

INCIDENT COMMAND SYSTEM

Enterprise Products utilizes an expandable Incident Command System. Depending upon the size and complexity of an incident, additional Company or contract personnel may be added as needed. Additional federal, state or local agencies may be integrated into the Incident Command System by utilizing a Unified Command Structure.

SPILL RESPONSE EQUIPMENT CAPABILITIES

We maintain emergency response equipment at some of our facilities. We also have agreements with various oil spill response organizations to provide the appropriate level of response with spill response equipment including trailers containing spill booms, sorbent materials, boats, motors, hand tools, power tools, pumps, hoses, personal protective equipment, first aid and miscellaneous supplies. These companies also have expert personnel trained in emergency response and cleanup methods.

CONTACTS

TE Products System
Derek A. Kingston
10653 State Hwy N
Scott City, MO 63780
Station: 573-519-4230
Work Cell: 573-233-9717
Email: dakingston@eprod.com

Mid-America Pipeline System
Robert Hornung
1015 N. Jefferson St
Kearney, MO 64060
Phone: 816-858-7801
RHornung@eprod.com

P.O. Box 2650
Tulsa, OK 74101
Phone: 918-493-5100
Emergency Contact: 1-888-876-0036
Email: row@expl.com
Website: www.expl.com

Explorer Pipeline is a common carrier pipeline transportation company who operates approximately an 1,872-mile system transporting refined petroleum products and other products including refinery feedstocks and diluent from the Gulf Coast through the Midwest. Explorer is based in Tulsa, Oklahoma and also serves Houston, Dallas, Fort Worth, St. Louis and Chicago.

Through connections with other products pipelines, Explorer serves more than 70 major population centers in 16 states. Major tankage and terminals are located at Port Arthur, Houston, Arlington, Greenville and Grapevine, Texas; Glenpool, Oklahoma; Wood River, Illinois and Hammond, Indiana.

Explorer's 1,872-mile system begins with a 28 inch pipeline in Port Arthur, Texas then runs through Houston, Texas and on to Tulsa, Oklahoma. At Tulsa the line becomes a 24 inch pipeline and runs through St. Louis, Missouri on its way to the Chicago suburb of Hammond, Indiana. Our capacity is augmented with a 10-inch pipeline which stretches between Houston and Arlington, Texas along with many lateral lines for connections to delivery points throughout the system. Explorer currently transports refined products with more than 72 different product specifications for over 60 different shippers. The company does not buy or sell petroleum products; it only provides transportation services.

Explorer Pipeline Company and its management are fully committed to operating a safe and reliable hazardous liquids pipeline. Explorer is also committed to meeting or exceeding the guidelines set forth by API RP 1162 for public awareness. The Public Awareness Plan receives management's full support throughout the organization. Top-level management involved itself in the development of the program, and participates in its administration and the evaluation of the program's effectiveness.

Explorer developed a comprehensive damage prevention program to address an increasing threat to the safety of its pipeline operations and the communities it serves. Explorer Pipeline's Damage Prevention Program is not only in place to educate third parties about safety when working around pipelines, but to educate its employees on the importance of delivering the safety message throughout its system.

Our company values are: Safety, Doing the right thing; Being a good neighbor; Serving our customers' needs; Meeting or exceeding all regulatory standards; Respecting and valuing each other's contributions and differences.

- ***Name of system***: Explorer Pipeline Company
- ***Name of owner and operator:*** Explorer Pipeline Company
- ***Type of system:*** Transmission system
- ***Length of system (Missouri):*** 295 miles
- ***List of products transported in system:*** Diesel Fuel, Diluent, Gasoline, Jet Fuel, Naptha, Raffinate, Toluene.
- ***Range of diameter of pipelines in system:*** Pipe diameter can vary from 3", 6", 8", 10", 12", 14", 16", 20", 24" & 28".

In effort to make our maps, contact information and emergency response plan information available to you, please access Explorer Pipeline's emergency portal at **http://response-planning.com/explorer**

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

EMERGENCY CONTACT:
1-888-876-0036

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:		
Diesel Fuel	1202/1993	128
Diluent	1203	128
Gasoline	1203	128
Jet Fuel	1863	128
Naptha	1268	128
Raffinate	1203	128
Toluene	1294	130

MISSOURI
COUNTIES OF OPERATION:

Camden	Lawrence
Dade	Maries
Dallas	Newton
Franklin	Polk
Gasconade	Pulaski
Greene	St. Charles
Jasper	St. Louis City
Laclede	

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

EMERGENCY RESPONSE INFORMATION FOR GOVERNMENT AND SAFETY OFFICIALS

During a pipeline emergency on the Explorer Pipeline system, take the following steps:

- Notify Explorer Pipeline at (888) 876-0036 of the type (leak, rupture, fire, etc.) and location of the emergency.
- Establish a safety zone around the emergency site and control access. If necessary, evacuate people within the safety zone.
- Be aware of wind direction and potential ignition sources.
- Do not attempt to operate pipeline valves.
- Do not light a match, start an engine, use a telephone, turn light switches on/off or do anything that may make a spark.
- Do prevent release from entering waterways, sewers, basements, or confined spaces.
- Do divert the release to an open area, if possible.
- Do cover storm drains and sewers ahead of the release.

Explorer Pipeline will:

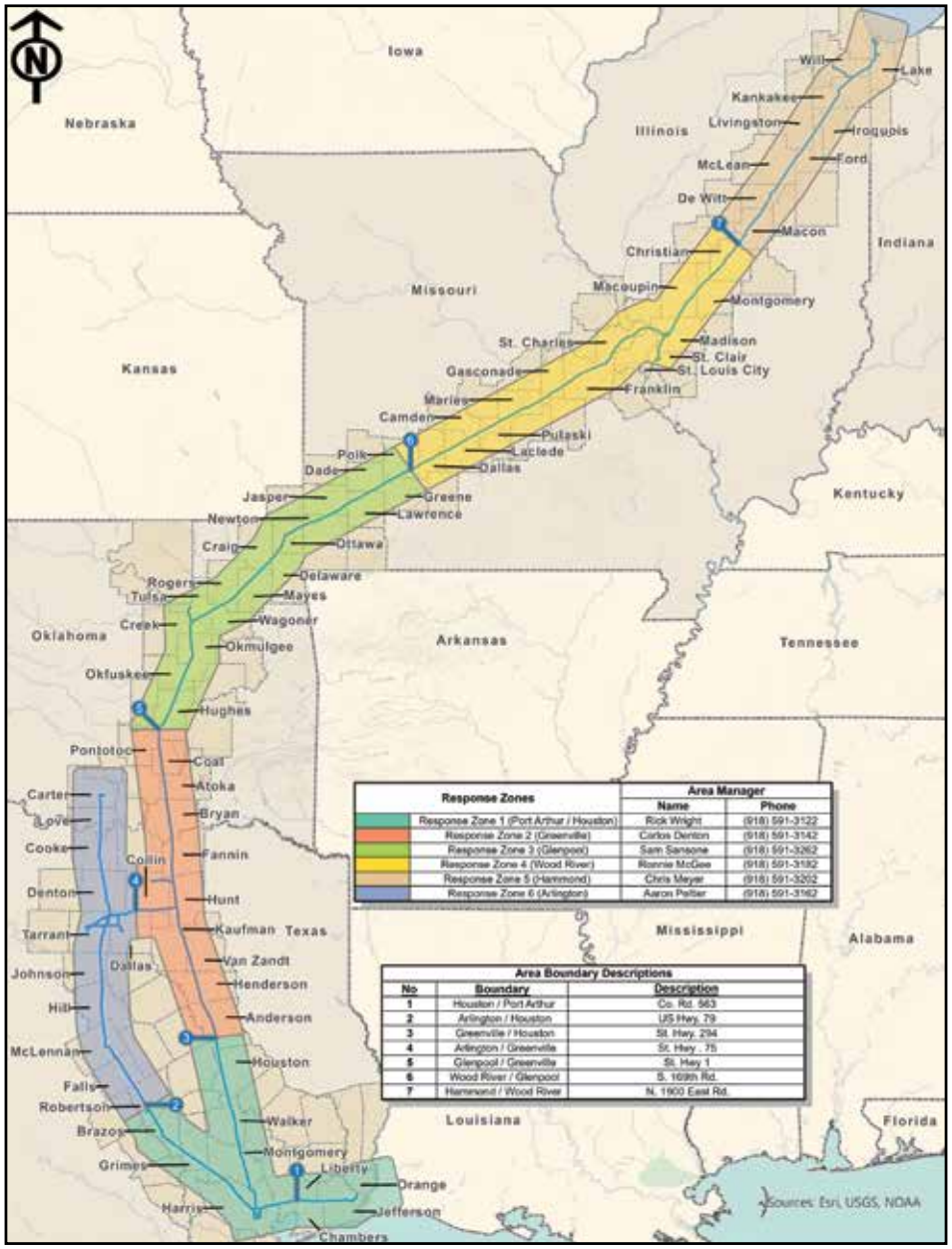
- Eliminate the flow of petroleum.
- Immediately dispatch trained personnel to the site to help handle the situation and provide information to public safety officials.
- Do what needs to be done to protect lives and property

For online training, visit National Association of State Fire Marshalls website: https://nasfm-training.org/pipeline/

To learn more please contact the following:

Sam Sansone
(918) 798-7305
1312 West 126th Street South
Jenks, OK 74037

Ronnie McGee
(618) 567-8089
1355 Robbins Road
Hartford, IL 62048



FLINT HILLS resources®

4111 E 37th St N
Wichita, KS 67220
Telephone: 855-831-6353
Email: pipelinesafety@fhr.com
Website: www.fhr.com

Flint Hills Resources owns and/or operates over 4,000 miles of pipeline systems that transport crude oil, refined petroleum products, chemicals and natural gas liquids, efficiently, reliably, and safely. In Missouri, Flint Hills Resources operates the Wood River Pipeline system which stores and transports crude oil and refined petroleum products.

FLINT HILLS RESOURCES INTEGRITY MANAGEMENT PROGRAM

Flint Hills Resources is committed to maintaining the highest standards in safety. Flint Hills Resources has an Integrity Management Program that is designed to protect the mechanical integrity, safety, and reliability of its pipelines. Flint Hills Resources adheres to federal and state regulations and also partners with local emergency responders to verify that this integrity management plan is appropriate for each section of its pipelines.

EMERGENCY CONTACT:
1-800-688-7594

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:		
Crude Oil	1267	128
Gasoline	1203	128

MISSOURI COUNTIES OF OPERATION:

Audrain	Linn	Montgomery
Grundy	Macon	Randolph
Harrison	Mercer	St. Charles
Lincoln	Monroe	Sullivan

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

Contact the Missouri one call center by calling 811 at least 48 hours, but not to exceed 14 calendar days before you want to dig. The one call center will notify Flint Hills Resources and other utilities of your intent to dig.

Wait for facility owners to mark their underground facilities using paint, flags and/or stakes.

Confirm that all facilities have been marked. If you know or believe that facilities have not been properly marked, you must make another call to the one call center before beginning any excavation work.

When digging within 25 feet of a Flint Hills Resources pipeline, a representative from the company must be present during the excavation.

Expose the underground facility by carefully hand-digging or using other non-mechanized equipment until the location and route is confirmed.

Continue to use caution even after the facility is exposed. Obey safe excavating practices and your state laws.

RECOGNIZE

Your sense of sight, sound and smell may help you recognize the signs of a pipeline leak.

Sight – Seeing a pool of liquid, a white cloud or fog, discolored vegetation, flames or vapors, oily sheen or water bubbling near a pipeline without obvious reason.

Sound – Hearing a hissing, roaring or bubbling sound from the ground or water near a pipeline.

Smell – Smelling a strange or unusual smell, such as a strong petroleum odor or "rotten eggs" near a pipeline.

REACT

DO stop work immediately.
DO turn off and leave equipment and vehicles.
DO immediately leave the area, on foot, in an upwind or crosswind direction, away from any vapors or fumes.
DO warn others to stay away.

DO NOT do anything that might ignite the leaking product, including making a phone call, starting an engine or driving a vehicle, lighting a match, or even switching on or off a light.
DO NOT operate any pipeline valves.
DO NOT touch or inhale the product.

REPORT

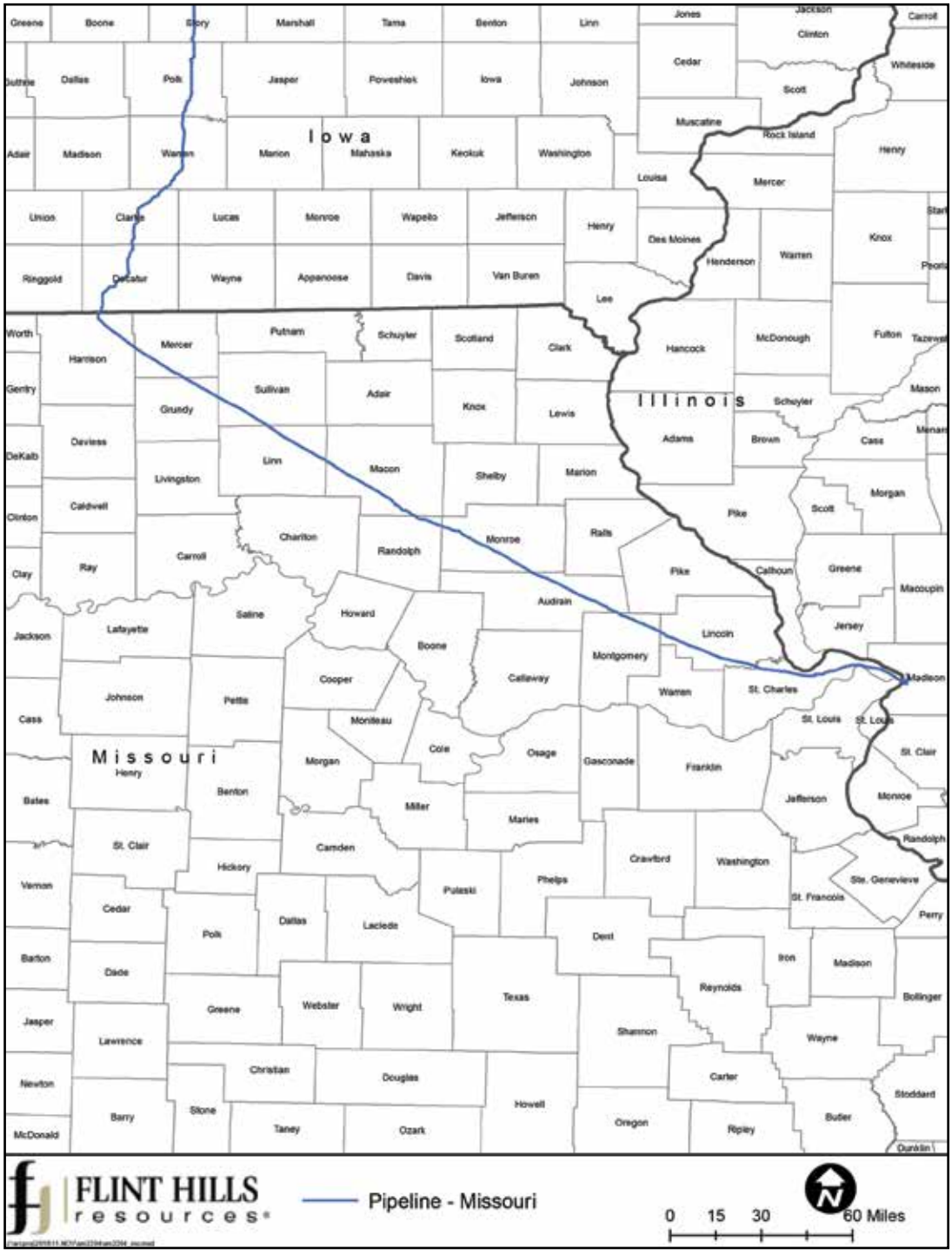
- Call 911 or the local fire or police department.
- When it is safe to do so, call the Flint Hills Resources 24-hour emergency number 1-800-688-7594

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

CALL BEFORE YOU DIG

Before you dig, drill, blast, or move any ground near a pipeline, call 811. This free call notifies your local one call center to have representatives of underground utilities come out and mark their facilities at no charge to you. Required by law, calling 811 can save your life and decrease the cost and damage to our underground pipeline transportation system.

One Call Center	Phone Number	Website
811 National	811	www.call811.com
Missouri One Call	1-800-344-7483	www.mo1call.com



HF Sinclair MIDSTREAM

On December 1, 2023, Holly Energy Partners, L.P. (“HEP”) merged with, and is now, a wholly owned subsidiary of HF Sinclair Corporation.

1602 W. Main St.
Artesia, NM 88210
Phone: (877) 748-4464
Website: www.hfsinclair.com/about-us

ABOUT US - HEALTH, SAFETY AND THE ENVIRONMENT

HF Sinclair Midstream dedicates significant time, effort and resources to ensure our petroleum pipelines and terminals continue to operate safely. Ongoing efforts by our employees keep the operation of our pipelines, terminals, and other associated facilities operating efficiently and compliant under the guidance of federal, state, and local requirements.

To achieve the highest level of protection for the communities in which we operate and our employees, we focus our efforts on implementing industry standards and Best Practices in addition to compliance with applicable rules and regulations.

SYSTEM INTEGRITY AND RELIABILITY

In an effort for HF Sinclair Midstream to successfully meet our goal of protecting communities, our people and the environment, we assess risks and identify actions to mitigate those risks to ensure the highest level of integrity and reliability for our pipelines. Our Integrity Management Programs guide us in preventing releases from our facilities and pipelines. This is achieved by determining those operations which could affect High Consequence Areas (HCA’s) such as populated areas and areas that are sensitive to environmental issues. We inspect our pipelines regularly using technologically advanced inspection equipment. Our pipelines are monitored 24 hours a day 7 days a week by trained personnel in a central control center using advanced technology, communication and computer systems.

811 CALL BEFORE YOU DIG

HF Sinclair Midstream is a member of the One-Call system in each state in which we operate. This is a free service which informs underground utilities and pipeline owners of planned excavation activities that potentially affect our pipelines. We investigate and manage all One-Calls according State requirements and encourage the use of 8-1-1 to all excavators to promote safe digging practices.

EMERGENCY PREPAREDNESS AND RESPONSE

In order to maintain peak preparedness for an emergency response, HF Sinclair Midstream maintains relationships with local emergency responders and public officials. Whenever operating conditions change, we are alerted to the situation, and the condition is investigated. If warranted, we will shutdown the pipeline and isolate as necessary. In the event of an emergency, HF Sinclair Midstream personnel will take the appropriate actions to minimize the impact of a release from the pipeline to people, property and the community.

PRODUCTS TRANSPORTED

Product: Hazardous Liquids (Such as: Crude Oil, Diesel Fuel, Jet Fuel, Gasoline and other refined products)

EMERGENCY CONTACT:
1-877-748-4464

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:

Diesel Fuel	1202/1993	128
Gasoline	1203	128

MISSOURI
COUNTIES OF OPERATION:

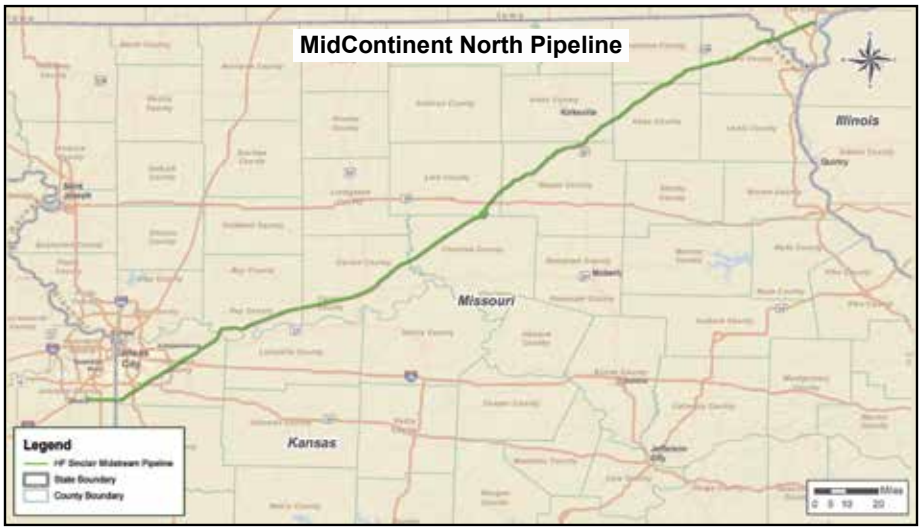
Adair	Knox
Carroll	Linn
Chariton	Macon
Clark	Ray
Jackson	Scotland

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

Leak Type: Liquid

Vapors: Initially heavier than air and spread along ground and collect in low or confined areas. Vapors may travel to source of ignition and flash back. Explosion hazards indoors, outdoors or in sewers.

Health Hazards: Inhalation or contact with material may irritate or burn skin and eyes. Fire may produce irritating, corrosive and/or toxic gases. Vapors may cause dizziness or suffocation. Runoff from fire control or dilution water may cause pollution.



MAGELLAN MIDSTREAM PARTNERS, L.P.

Magellan Pipeline Company, LP
Magellan Crude Oil Pipeline Company LP
Magellan Pipelines Holdings LP
Magellan Terminals Holdings LP
Magellan Operating Company, LLC

One Williams Center
Tulsa, OK 74172
(Headquarters) (800) 574-6671
(Local Toll Free) (800) 772-0480
Website: www.magellanlp.com

SYSTEM OVERVIEW

Name of system:
Magellan Midstream Partners, L.P.

Name of operator:
Magellan Midstream Partners, L.P.

Type of system: Transmission

List of products transported in system: Butane, Propane, Refined Petroleum Products (Diesel Fuel, Gasoline), and Jet Fuel.

OPERATOR OVERVIEW

Magellan Midstream Partners, L.P., a wholly owned subsidiary of ONEOK, Inc., is a publicly traded limited partnership , principally engaged in the transportation, storage and distribution of refined products and crude oil. Magellan operates a 9,800 mile refined products pipeline system with 54 connected terminals and two marine terminals (one of which is owned through joint venture) and a 2,200 mile crude oil pipeline system.

Our pipeline markers can be typically identified by the black and red bands at the top.

COMMITMENT TO SAFETY, HEALTH & ENVIRONMENT

Magellan Midstream Partners, L.P. operates with a focus on safe, reliable, environmentally responsible, legally compliant and sustainable operations. Our pipelines are designed, installed, tested,operated, and maintained according to strict standards employed by our company, the pipeline industry and the federal government. Safety, honesty, responsibility, and efficiency are at the core of Magellan's business.

FREQUENTLY ASKED QUESTIONS

1. **How can an emergency responder or LEPC obtain maps of the pipeline?**

   Emergency responders and local planning/zoning authorities may obtain detailed maps of our system from field operations staff or contact us directly via email at: damageprevention@ magellanlp.com or call 888-945-2255. In addition, the National Pipeline Mapping System (www.npms.phsa.dot.gov) provides a list of pipeline operators in your community as well as the location of pipelines and other information.

2. **How will Magellan and response agencies work together during Pipeline Emergencies?**

   Local response agencies are expected to play a key role in the first few hours of a response, protecting the public, isolating the area and using local materials such as dirt or sand to help safely contain the event. Magellan personnel will join a Unified Command and can provide key response equipment such as air monitors, vacuum trucks, emergency spill contractors, heavy construction equipment and specialized command post contractors

EMERGENCY CONTACT:
(800) 720-2417

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:		
Butane	1075	115
Diesel Fuel	1202/1993	128
Gasoline	1971	115
Jet Fuel	1863	128
Propane	1075/1978	115

MISSOURI
COUNTIES OF OPERATION:

Andrew	Daviess	Moniteau
Audrain	Dekalb	Monroe
Barry	Gentry	Morgan
Barton	Greene	Nodaway
Benton	Harrison	Pettis
Boone	Henry	Platte
Callaway	Jackson	Ralls
Cedar	Jasper	St. Charles
Clay	Lawrence	St. Clair
Clinton	Marion	Vernon
Cooper	McDonald	Worth

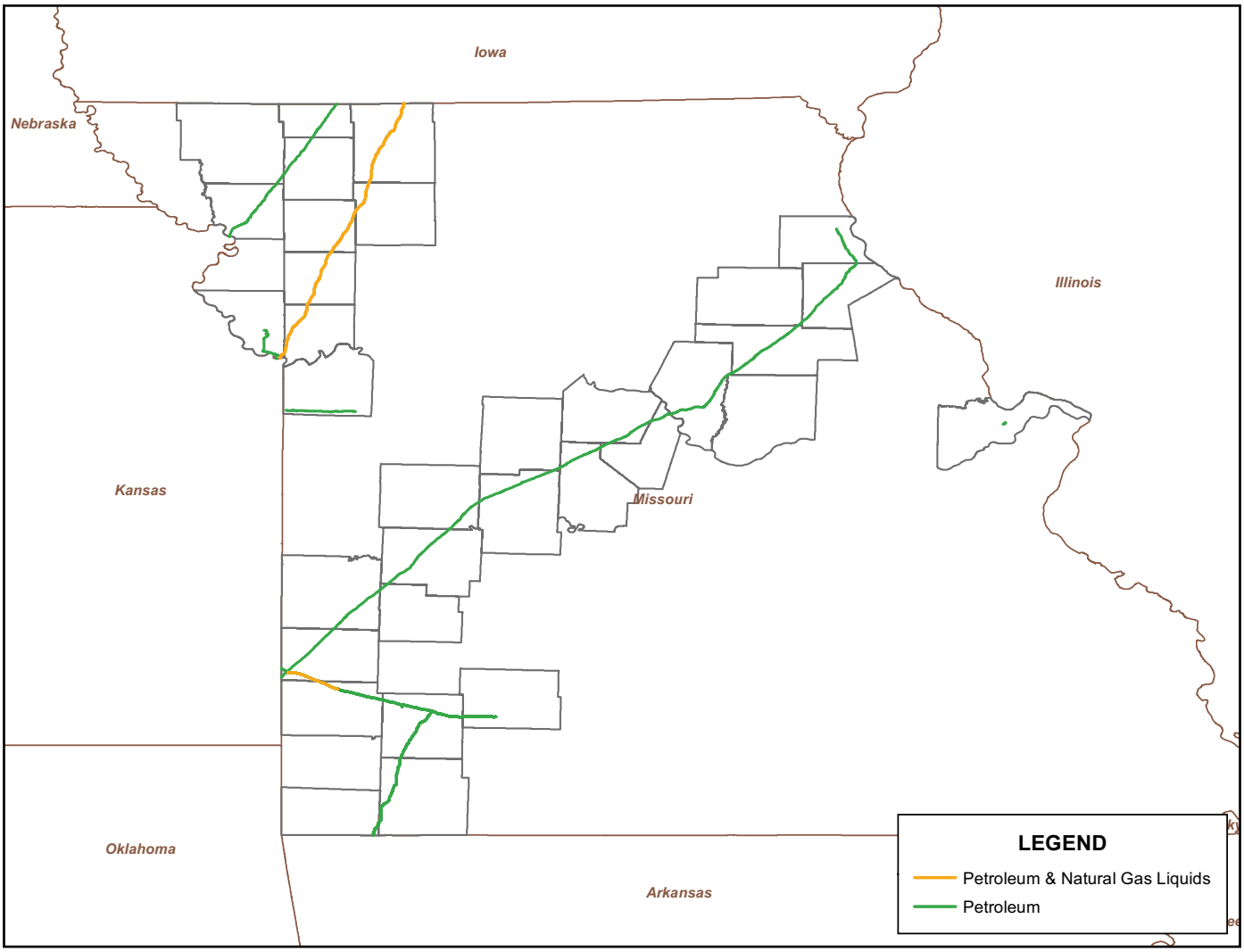
Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

3. **How can an emergency responder learn more about the company's official emergency plans?**

   If interested in learning more about our facility response plan, please contact your local Magellan field representative or contact Magellan Corporate directly via email at: damageprevention@ magellanlp.com.

4. **How can responders learn more about pipeline responding training opportunities?**

   Visit www.pipelineemergencies.com. or visit www.magellanlp.com for more information and additional resources.


Iowa
Nebraska
Illinois
Kansas
Missouri
Oklahoma
Arkansas
LEGEND
Petroleum & Natural Gas Liquids
Petroleum

NuStar Pipeline Operating Partnership L.P.

NuStar Energy - Central East Region
7340 W. 21st North, Suite 200
Wichita, KS 67205
Phone: 316-773-9000
PublicAwarenessCE@nustarenergy.com
Website: www.nustarenergy.com

ABOUT NUSTAR PIPELINE OPERATING PARTNERSHIP L.P.

The goal of the NuStar Energy Pipeline Public Awareness Program is to enhance safety and environmental protection through increased public awareness and knowledge. Public awareness programs should raise the awareness of the affected public and key stakeholder audiences of the presence of pipelines in their communities and increase their understanding of the role of pipelines in transporting energy.

NuStar Pipeline Operating Partnership L.P. is a subsidiary of NuStar Energy L.P. Our business unit consists of pipeline systems, ranging between 3" to 16" in diameter, that transports refined petroleum products, including gasoline, diesel, and propane throughout Kansas, Nebraska, Iowa, South Dakota, North Dakota, and Minnesota. We also operate an anhydrous ammonia pipeline system in Louisiana, Arkansas, Missouri, Illinois, Indian, Iowa and Nebraska ranging between 3" to 10" in diameter. Anhydrous ammonia is primarily used as agricultural fertilizer and used as a feedstock to a number of industrial applications.

Please read and keep these important safety messages located in the brochure and company profile provided in the event you need to reference them in the future.

Contact us for more information about our Integrity Management Program or Emergency Response Plan.

COMMITMENT TO SAFETY, HEALTH & ENVIRONMENT

At NuStar, the health and safety of our personnel, customers, and neighbors and the protection of the environment are core business values. NuStar is committed to achieving health, safety and environmental (HSE) excellence throughout the organization. NuStar emphasizes its HSE commitment through internal audits, public awareness, damage prevention, pipelines integrity management, emergency response preparedness, and other programs. In addition, most of NuStar's pipelines are operated via satellite communication systems from a central control room located in San Antonio, TX. This control center is equipped with state-of-the-art computer systems designed to continuously monitor real-time operational data, operate equipment associated with the delivery of crude oil, refined products, and anhydrous ammonia, and control safety measures to ensure smooth and safe operation of our pipelines.

EMERGENCY CONTACT:
1-800-759-0033

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:

Anhydrous Ammonia	1005	125

MISSOURI
COUNTIES OF OPERATION:

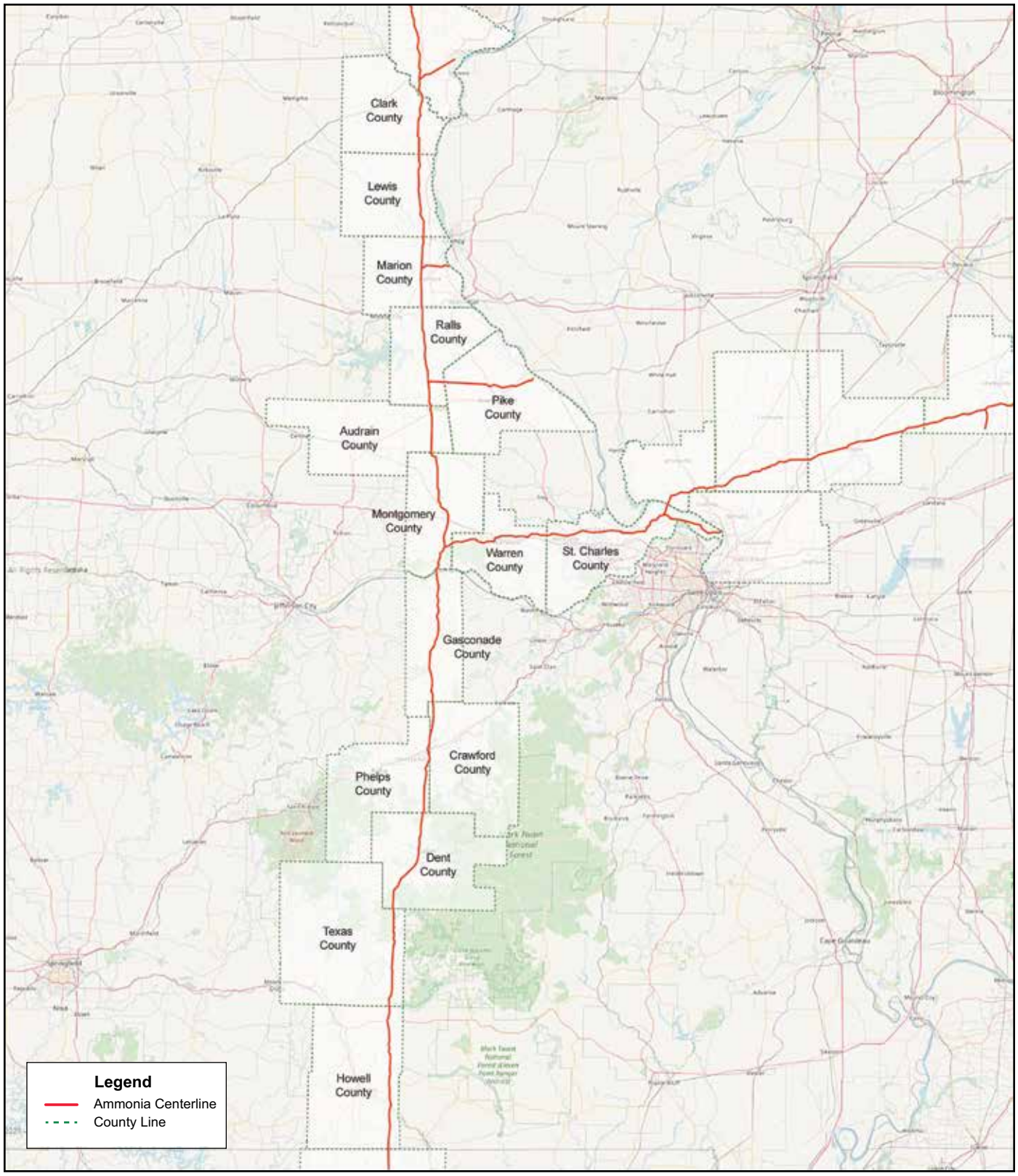
Audrain	Montgomery
Clark	Phelps
Crawford	Pike
Dent	Ralls
Gasconade	St. Charles
Howell	Texas
Lewis	Warren
Marion	

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

ERP™
EMERGENCY RESPONSE PORTAL

BE PREPARED

Please visit Emergency Response Portal to register for access to more information about NuStar's Emergency Response Plan including how to contact us directly from the site. If you are already registered, you will receive email notifications when there are additional resources in your area of jurisdiction.



Base map courtesy of openstreetmap.org

299 Ordinance Road Building 2570
PO Box 2861
Fort Leonard Wood, MO 65473-2861
Phone: 573-329-3382
Website: SpireEnergy.com/Omega-Pipeline-Company-LLC

Omega Pipeline Company, LLC (Omega) is a local distribution company which owns and operates the natural gas pipeline and propane air plant on the Fort Leonard Wood military installation in Central Missouri. Omega also provides gas marketing services to nearby towns and industrial customers.

COMMITMENT TO SAFETY, HEALTH & ENVIRONMENT

Omega is committed to providing safe and reliable natural gas products and services to its customers while working to protect the environment. The Company strives to be a partner in the community in part by providing training and education to customers, safety officials and end users of the natural gas it transports. Omega is proud of its safety record and continually strives to exceed both customer and regulatory expectations.

The gas supplied to Omega is transported across Missouri through a high pressure underground pipeline. Upon entering Omega's system, the pressure is reduced and sent through Omega's distribution system to end users. Omega's distribution system is primarily comprised of underground pipe with above ground pressure reducing stations and meter sets. In addition to transporting and distributing natural gas, Omega operates a propane air plant that can provide synthetic natural gas in times of peak demand. Natural gas supplied by Omega is routinely used for heating commercial and residential buildings, as well as for creating steam needed in industrial processes.

- Omega has a 24 hour answering service that monitors all incoming gas calls and notifies Omega personnel of any gas related issues or concerns. Omega personnel are available 24 hours a day, 7 days a week to respond to any gas situations that may arise.
- Omega's field personnel conduct routine maintenance on the pipeline and facilities year round. Additionally, Omega's pipeline and facilities are inspected annually by the Missouri Public Service Commission. Omega complies with applicable state and federal regulations.
- Omega meets with and provides training for emergency response personnel as well as participating in various safety programs. In addition, Omega provides educational materials and brochures covering natural gas related topics such as gas safety measures to new personnel and their families.
- Omega aims to reduce third-party damage caused by various types of digging and excavation activities, the leading cause of pipeline accidents in the US, by installing numerous pipeline markers indicating approximate locations of gas lines, and participating in public awareness programs. These pipeline markers provide information about whom to contact if you need additional information about a pipeline location. Omega participates in the "Dig Rite" or Missouri One Call System which allows for line locator services to be provided upon request. In addition Fort Leonard Wood excavation permits are required before any digging is performed. Please contact DPW for additional information.

EMERGENCY CONTACT:
1-573-329-3382

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:		
Natural Gas	1971	115
Propane/Synthetic Natural Gas	1978	115

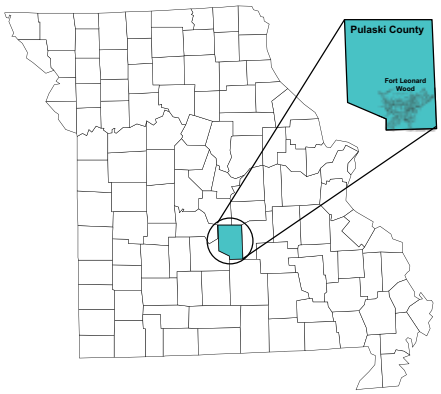
MISSOURI COUNTIES OF OPERATION:

Pulaski

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

- Whenever Omega is required to dig up part of its underground pipeline, the Company aims to maintain its work site in a manner that best protects public safety. In addition, Omega will return all work sites to their original states at completion of a project.

Omega aims to continually improve its performance and to exceed customer and community expectations. Omega encourages feedback and works to incorporate suggestions to provide constantly improving performance. If you have questions or concerns about the Omega pipeline or natural gas safety, please do not hesitate to contact us.



PANHANDLE EASTERN PIPE LINE
An ENERGY TRANSFER Partnership

1300 Main St.
Houston, TX 77002
Phone: (713) 989-7000
Website: www.energytransfer.com

Energy Transfer Partners, a Texas-based energy company founded in 1996 as a small intrastate natural gas pipeline company, is now one of the largest and most diversified master limited partnerships in the United States.

Strategically positioned in all of the major U.S. production basins, the company owns and operates a geographically diverse portfolio of energy assets, including midstream, intrastate and interstate transportation and storage assets. Energy Transfer operates more than 125,000 miles of natural gas, crude oil, natural gas liquids and refined products pipelines and related facilities, including terminalling, storage, fractionation, blending and various acquisition and marketing assets in 44 states.

Panhandle Eastern Pipe Line Company is an approximately 6,000-mile natural gas pipeline system with access to diverse supply sources and extends from producing areas in the Anadarko Basin of Texas, Oklahoma and Kansas through Missouri, Illinois, Indiana, Ohio and into Michigan. Our Midwest customer base includes some of the nation's largest utility and industrial natural gas users.

For more information about local operations of **Panhandle Eastern Pipe Line**, please contact us:

Mark Shedd
Area Director
913-937-4711 (w), 573-819-1475 (m)
mark.shedd@energytransfer.com

Audrain, Boone, Callaway, Howard, Marion, Montgomery, Pike, Ralls and Randolph counties:
Dan Barton
Operations Manager
217-734-3221 (w), 217-430-2511 (m)
daniel.barton@energytransfer.com

Cass, Jackson and Johnson counties:
Brian Andersen
Operations Manager
913-937-4721 (w), 913-669-1887 (m)
brian.andersen@energytransfer.com

Cole, Cooper, Henry, Howard, Johnson, Moniteau and Pettis counties:
Kenneth Pullam
Operations Manager
660-568-1221 (w), 407-415-7056 (m)
kenneth.pullam@energytransfer.com

EMERGENCY CONTACT:
1-800-225-3913

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:

Natural Gas	1971	115

MISSOURI
COUNTIES OF OPERATION:

Audrain	Johnson
Boone	Marion
Callaway	Moniteau
Cass	Montgomery
Cole	Pettis
Cooper	Pike
Henry	Ralls
Howard	Randolph
Jackson	

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

1300 Main St.
Houston, TX 77002
Phone: (713) 989-7000
Website: www.energytransfer.com

Energy Transfer Partners, a Texas-based energy company founded in 1996 as a small intrastate natural gas pipeline company, is now one of the largest and most diversified master limited partnerships in the United States.

Strategically positioned in all of the major U.S. production basins, the company owns and operates a geographically diverse portfolio of energy assets, including midstream, intrastate and interstate transportation and storage assets. Energy Transfer operates more than 125,000 miles of natural gas, crude oil, natural gas liquids and refined products pipelines and related facilities, including terminalling, storage, fractionation, blending and various acquisition and marketing assets in 44 states.

Permian Express Partners is an approximately 1,700-mile crude oil pipeline system and extends from producing areas in the Permian Basin of Texas through to Louisiana, Arkansas, Missouri and Illinois. Permian Express, a joint venture, is operated by Sunoco Pipeline.

For more information about local operations of **Permian Express Partners**, please contact us:

Bollinger, Carter, Madison, Perry, Ripley and Wayne counties:
Jeffrey McKinney
Operations Manager
903-291-6940 (w), 903-353-1111 (m)
jeffrey.mckinney@energytransfer.com

EMERGENCY CONTACT:
1-800-753-5531

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:

Crude Oil	1267	128

MISSOURI
COUNTIES OF OPERATION:

Bollinger	Perry
Carter	Ripley
Madison	Wayne

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

PHILLIPS 66 PIPELINE LLC

Corporate Headquarters:
Phillips 66 Pipeline LLC
2331 Citywest Blvd
Houston, TX 77042
www.phillips66pipeline.com

PHILLIPS 66 PIPELINE LLC OWNS OR OPERATES APPROXIMATELY 560 MILES OF PIPELINE AND 5 STORAGE TERMINALS IN OR VERY NEAR MISSOURI.

Operating with Integrity

Pipelines are one of the most reliable methods to move energy products, helping to meet our nation's growing economic and energy needs. They operate under many government regulations and industry standards. These measures address all aspects of pipeline operation, such as where and how they are built, operated and maintained -- and Phillips 66 Pipeline LLC applies best practices that often exceed requirements.

Committed to Safety and Reliability

Our commitment to safety goes further, with the goal that everyone who lives or works near our assets is aware of our lines and facilities, adopts safe digging practices, learns the signs of a potential pipeline leak and knows how to quickly respond if he or she suspects a problem. As part of our on-going damage prevention program, we employ many tactics to ensure the safety of our communities.

Emergency Response Capabilities

Phillips 66 Pipeline LLC has committed resources to prepare and implement its emergency response plans and has obtained, through contract, the necessary private personnel and equipment to respond to a worst case discharge, to the maximum extent practical.

Communications

Phillips 66 Pipeline LLC employs a 24-hour Control Center as a hub of communication in emergency response situations. On-site communications are conducted using cellular phones; and portable radios and/or land-line telephone systems from facilities and offices.

Incident Command System

Phillips 66 Pipeline LLC utilizes an expandable Incident Command System. Personnel and federal, state and local agencies may be integrated into the Unified Command Structure, scalable to the size and complexity of an incident.

Spill Response Equipment

Phillips 66 Pipeline LLC maintains emergency response trailers and equipment at strategically-located facilities. Response equipment may include spill boom (as needed and of various types, sizes and lengths), absorbent materials, boats, motors, hand and power tools, pumps, hoses, personal protective equipment (PPE), first aid and miscellaneous supplies. Each trailer is inspected; equipment is deployed during drills on a regular basis.

Oil Spill Contractors

Certified Oil Spill Response Organizations (OSROs) are under contract by Phillips 66 Pipeline LLC for use in this area. Oil Spill Response Limited (OSRL) and associated STAR Contractors are used globally.

The Phillips 66 Pipeline LLC Emergency Response Action Plan (ERAP) contains specific contact and resource information for these companies. In addition, these OSROs are invited to participate in training and pre-planning exercises with Phillips 66 Pipeline LLC local and regional response teams. OSROs and Co-Ops can be relied upon for an appropriate level of response, with spill response equipment and trained personnel.

EMERGENCY CONTACT:
1-877-267-2290

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:		
Butane	1011	115
Diesel Fuel	1202	128
Ethanol	1170	127
Gasoline	1203	128
Jet Fuel	1863	128
Naptha	1334	133
Propane	1075	115

MISSOURI
COUNTIES OF OPERATION:

Cass	Moniteau
Cole	Monroe
Franklin	Morgan
Gasconade	Newton
Jasper	Osage
Jefferson	Pettis
Johnson	St. Louis
Lawrence	St. Clair

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

Response Plans and Maps

To view and download emergency response plans and procedures, visit https://my.spatialobjects.com/erpp/home

To view and obtain GIS map files of our locations, visit https://www.phillips66pipeline.com/maps/

Base map courtesy of openstreetmap.org

ADDITIONAL INFORMATION AND RESOURCES

Visit the following industry and government sites for important safety references and educational materials.

National Association of State Fire Marshal's "Pipeline Emergencies"
www.pipelineemergencies.com

PHMSA Emergency Response Guidebook
www.phmsa.dot.gov/hazmat/erg/emergency-response-guidebook-erg

National Pipeline Mapping System
www.npms.phmsa.dot.gov

Phillips 66 Pipeline LLC ERAP Portal
https://my.spatialobjects.com/erpp/home

Pipelines and Informed Planning Alliance
http://primis.phmsa.dot.gov/comm/pipa/landuseplanning.htm

CONTACT
PHILLIPS 66 PIPELINE LLC

Phillips 66 Pipeline LLC Headquarters
2331 CityWest Blvd.
Houston, TX 77042
www.phillips66pipeline.com

Non-Emergency Phone Number
800-231-2566

Non-Emergency Email
Resource.Publicawareness@p66.com

This document is for informational purposes only and does not replace, substitute or preempt any interaction or agreements with Phillips 66 Pipeline LLC or its representatives. For specific information, including state-specific questions, contact 800-231-2566.

Spire Inc.
700 Market Street
Saint Louis, MO 63101
Website: www.SpireEnergy.com

WORKING TOGETHER TO KEEP OUR COMMUNITIES SAFE

Every day, we have the pleasure of serving millions of people with our five natural gas delivery businesses. We also maintain an underground natural gas storage field and a liquid propane pipeline.

We know it's our responsibility to keep those we serve along our pipelines safe. And though underground pipes are the safest most reliable way to transport natural gas and other petroleum products, accidents can always happen.

That's why we routinely monitor, patrol and inspect our pipelines via aircraft, vehicles and on foot. We also work to promote safety and pipeline awareness through first-responder training courses and many customer communications like bill inserts, customer guides and more.

We do all this—and so much more—because at Spire, safety is a value. And our values drive everything we do. So our promise is to always work with the communities we serve and our first responder partners to keep our pipelines safe.

With that in mind, here's a look at where our pipelines are located, how they're marked and who to call should you ever be in an emergency situation.

EMERGENCY CONTACT:
1-800-582-1234
Kansas City and Western Missouri
1-800-887-4173
St. Louis and Eastern Missouri

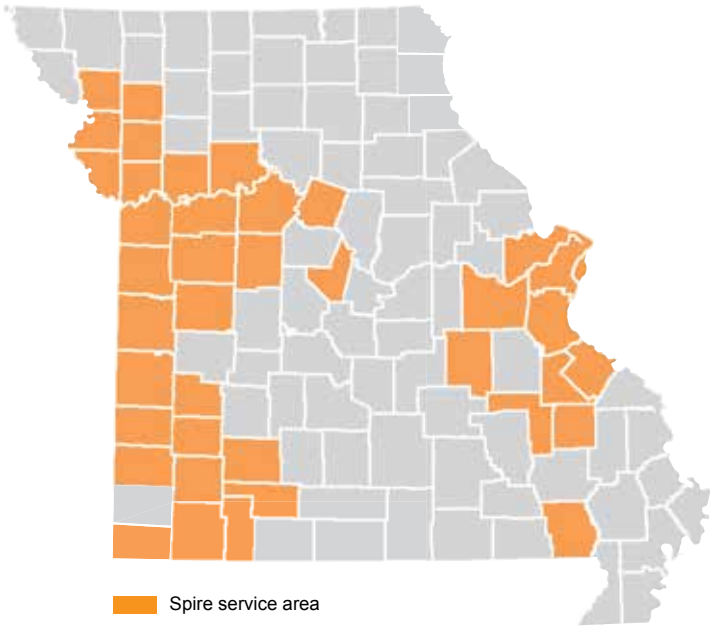
PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:

Natural Gas	1971	115
Propane Vapor	1978/1075	115
Liquid Propane	1978/1075	115

MISSOURI
COUNTIES OF OPERATION:

Cass	St. Charles
Franklin	St. Louis
Jackson	City of St. Louis
Platte	

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.



329 Josephville Road
Wentzville, MO 63385
Phone: 1-636-856-8035
Website: SpireEnergy.com/Spire-MoGas-Pipeline

Spire MoGas Pipeline, LLC is a limited liability company based in Wentzville, Missouri. The company operates 263 miles of high pressure natural gas transmission pipeline located in eastern and south central Missouri and western Illinois, ranging in diameter from 4" to 16". The company's primary mission is to take receipt of natural gas from interstate pipelines and to redeliver natural gas to suburbs of St. Louis and communities along Interstate 44.

COMMITMENT TO SAFETY, HEALTH & ENVIRONMENT

Dedicated to striving towards excellence in our Health, Safety, and Environment (HSE) programs, Spire MoGas Pipeline, LLC, views HSE as a fundamental core value. Aiming to achieve the safe uninterrupted supply of natural gas throughout eastern and south central Missouri, all operations are managed in a manner that protects the environment, maintains the health and safety of employees, contractors, and the public, and complies with applicable laws and regulations.

Spire MoGas Pipeline, LLC realizes these commitments by implementing and adhering to programs such as public awareness, pipeline integrity management, and operator qualification programs. These programs mandate pipeline operators take the necessary steps to make their pipelines safe and avoid incidents. Some examples of how Spire MoGas Pipeline, LLC takes action against unintended incidents and other threats to safety include:

- A Supervisory Control and Data Acquisition (SCADA) system that gathers and analyzes real time operational data 24-hours a day, 365 days a year
- Continuous ROW inspection, including foot patrol and aerial inspection
- Internal inspection of pipelines to identify anomalies in need of remediation
- Cathodic protection systems to mitigate corrosion
- Emergency response training with local emergency responders
- Employee qualification programs to ensure procedures are correctly followed

If an emergency responder would like more information about our emergency response plan, please contact Spire MoGas Pipeline, LLC via our website or phone number. Finally, because Spire MoGas Pipeline, LLC operates in both Missouri and Illinois, we would like to remind the public of the appropriate One Call numbers to contact depending upon location:

- Missouri One Call: 1-800-344-7483 (811) or http://www.mo1call.com/
- Illinois One Call: 1-800-892-0123 (811) or http://www.illinois1call.com/

EMERGENCY CONTACT:
1-800-282-4916

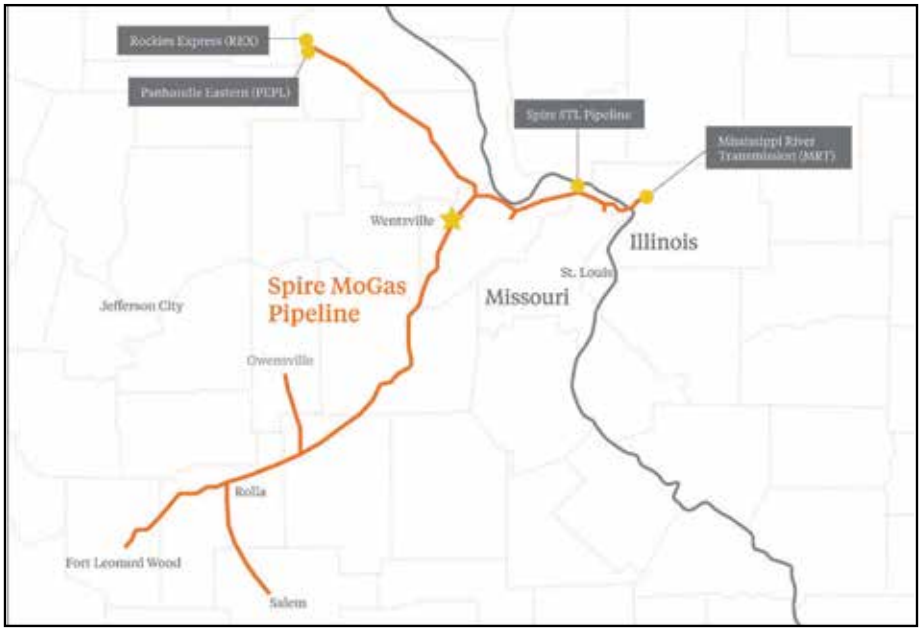
PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:

Natural Gas	1971	115

MISSOURI COUNTIES OF OPERATION:

Crawford	Phelps
Dent	Pike
Franklin	Pulaski
Gasconade	St. Charles
Lincoln	

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.



116 Chiefs Court
Branson, MO 65616
Phone: 1-800-927-0787
Website: www.SummitNaturalGas.com

ABOUT SUMMIT NATURAL GAS (SNG-MO)

We operate nearly 1,277 miles of odorized distribution and 177 miles of odorized transmission, and approximately 24,193 service lines.

Natural Gas is an important source of energy for America's homes and businesses. SNG-MO is privileged to provide energy to our customers in Missouri by transporting natural gas through a network of underground pipelines. Year after year, pipelines prove to be one of the safest and most reliable modes of energy transportation. SNG-MO is dedicated to the continued safe operation of our pipelines for your protection and the protection of the environment. We are committed to an outstanding safety record. We maintain 24-hour surveillance and perform routine inspections, computer monitoring, corrosion protection, maintenance/ testing programs, and employee training.

WHAT DOES SUMMIT NATURAL GAS DO IF A LEAK OCCURS?

To prepare for the event of a leak, SNG-MO regularly communicates, plans and trains with local emergency responders. Upon the notification of an event or leak SNG-MO will immediately dispatch trained personnel to assist emergency responders.

SNG-MO Personnel and emergency responders are trained to protect life, property and facilities in the case of an emergency.

SNG-MO Personnel will also take steps to minimize the amount of leakage and to isolate the pipeline emergency.

MAINTAINING SAFETY AND INTEGRITY OF PIPELINES

SNG-MO works hard to maintain the integrity and safety of our pipeline systems. We stay in touch with industry and government organizations to monitor potential threats and study new technologies that will help keep our facilities as safe and secure as possible.

Neighbors like you can help us maintain a safe, secure and reliable pipeline system. If you observe any unusual or suspicious activities near our pipeline facilities, or in the unlikely event an emergency occurs, please call us immediately at **1-800-883-3181**.

HOW TO GET ADDITIONAL INFORMATION

If you need general information, more information on Pipeline Safety and Integrity or have a non-emergency question, please go to www.SummitNaturalGas.com, call us at 1-800-927-0787, or email us at PublicAwareness@summitutilities.com

FOR EMERGENCY RESPONSE OFFICIALS

The following guidelines are designed to ensure the safety of those in the area if a natural gas pipeline leak is suspected or detected:

Possible actions to secure the area around the leak

- Evacuating people from homes, businesses, schools and other locations.
- Erecting barricades to prevent access to the emergency site.

Possible steps to prevent ignition of a pipeline leak

EMERGENCY CONTACT:
1-800-883-3181

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:		
Natural Gas	1971	115

MISSOURI
COUNTIES OF OPERATION:

Barry	Lawrence
Benton	Miller
Caldwell	Morgan
Camden	Pettis
Daviess	Stone
Douglas	Taney
Greene	Texas
Harrison	Webster
Howell	Wright
Laclede	

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

- Re-routing traffic, shutting off electricity and residential gas supply by qualified individuals.
- Preventing ignition sources from entering the emergency site.

Contact SNG-MO

- Contact SNG-MO as quickly as possible at **1-800-883-3181**.

- Pipeline markers provide our name, phone number and product (natural gas) within the pipeline.
- Do not operate any valves; this action could escalate the emergency.
- SNG-MO will dispatch personnel to aid in the response of the emergency.

911 Telecommunications

Dispatch personnel play a critical role in effective response to pipeline emergencies. A Dispatcher's actions can save lives, protect property, and direct the appropriate emergency responders to the scene. Follow these simple guidelines in the case of a pipeline emergency involving SNG-MO facilities:

- Gather the information (if possible), about release characteristics such as burning or blowing
- Know the appropriate response for release of natural gas
- Know the wind direction at the time
- Warn of ignition sources if possible
- Dispatch appropriate emergency responders
- Contact SNG-MO immediately

FOR CONTRACTORS AND EXCAVATORS

One of the leading causes of pipeline failure is from someone damaging the pipeline when they're digging near it. SNG-MO watches for unauthorized digging, but we are also asking for your help in preventing and reporting pipeline failure.

Signs of a Natural Gas Pipeline Leak

Any one of the following could be a sign of a leak:

- Blowing or Hissing sound
- Gaseous or "rotten egg" odor
- Flames, if a leak has ignited
- Dead or discolored vegetation in an otherwise green area
- Dust blowing from a hole in the ground
- Continuous bubbling in wet or flooded areas

What to Do If You Suspect a Pipeline Leak

- Leave the area and try to prevent anyone from entering.
- Abandon any equipment being used in or near the area.
- Avoid any open flames or smoking material.
- Avoid introducing any sources of ignition to the area (such as cell phones, pagers and two-way radios).
- Do not start or turn off motor vehicles or electrical equipment.
- Do not attempt to extinguish a natural gas fire.

- Do not attempt to operate any pipeline valves.
- Call 911 from a safe location or contact your local fire department or law enforcement personnel.
- Notify SNG-MO by calling 1-800-883-3181 or the emergency number listed on the pipeline marker.

ALWAYS CALL 811 BEFORE YOU DIG

Missouri has established a one-call notification center and requires by law that you call 48 hours before digging. Simply dial 811 to reach the one-call center for your area to ensure your safety. If you're unable to reach your state's one-call center by dialing **811, call Missouri One-Call at 800-344-7438**.

To request a line locate online Call 811 or click Missouri-811.org.

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

EMERGENCY RESPONSE PLANS

If you need general information, more information on Pipeline Safety and Integrity or have a non-emergency question, please go to www.SummitNaturalGas.com, call us at 800-927-0787, or email us at PublicAwareness@summitutilities.com.

Rockies Express Pipeline
Tallgrass Interstate Gas Transmission

TALLGRASS

ROCKIES EXPRESS PIPELINE

Rockies Express Pipeline (REX) is one of the United States' largest pipelines and is the nation's northernmost bi-directional natural gas header system. The pipeline is jointly owned by Tallgrass Energy (75 percent) and Phillips 66 (25 percent). REX became fully operational in 2009 and stretches about 1,700 miles from northwestern Colorado and Wyoming to eastern Ohio. Built with 42- and 36-inch diameter steel pipe, REX taps major supply basins in the Rocky Mountain and Appalachian regions and serves energy markets across a vast segment of North America. REX has a long-haul capacity of 4.4 billion cubic feet per day of natural gas and an MAOP of 1,480.

TALLGRASS INTERSTATE GAS TRANSMISSION

Tallgrass Interstate Gas Transmission (TIGT) owns and operates approximately 4,650 miles of natural gas transportation pipelines in Colorado, Wyoming, Kansas, Nebraska and Missouri. To help balance seasonal loads, TIGT also owns the Huntsman natural gas storage facility, located in Cheyenne County, Neb., which has approximately 16 billion cubic feet of storage capacity. The pipeline is constructed of between 2- and 24-inch steel pipe, and has an average MAOP of 750. TIGT serves, through local distribution companies (LDCs), largely rural residential, commercial and agricultural customers in Colorado, Kansas, Nebraska, Wyoming and Missouri. TIGT also delivers natural gas for a significant number of commercial and industrial loads, including ethanol and power plants.

COMMITMENT TO SAFETY, HEALTH AND ENVIRONMENT

Tallgrass takes seriously its responsibility to ensure the health and safety of our employees, the general public and the environment. We comply with all federal, state and local laws and regulations, and we meet or exceed industry standards and best practices. Highly trained and experienced personnel monitor our pipelines 24 hours a day, 7 days a week using sophisticated Supervisory Control and Data Acquisition (SCADA) systems so we have real-time information regarding the safety and integrity of our pipeline. We patrol our pipelines by foot,

EMERGENCY CONTACT:
Rockies Express Pipeline
1-877-436-2253
Tallgrass Interstate Gas Transmission
1-888-763-3690

PRODUCTS/ DOT GUIDEBOOK ID#/ GUIDE#:

Natural Gas	1971	115

MISSOURI
COUNTIES OF OPERATION:

Rockies Express Pipeline (REX)

Audrain	Clinton
Buchanan	Pike
Caldwell	Ralls
Carroll	Randolph
Chariton	

Tallgrass Interstate Gas Transmission (TIGT)

Cass	Jackson

Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.

vehicle and aircraft to ensure safety and identify potential concerns such as encroachments.

We have emergency shut-down systems that can isolate anomalies anywhere in our system quickly and safely. As part of our ongoing education efforts, we work regularly with first responders – using tools such as tabletop exercises and hands-on mock drills – to ensure they are familiar with our assets and know what to do in the unlikely event of an emergency. In addition, Tallgrass is an active member of Common Ground Alliance, working together to educate stakeholders on pipeline safety and to promote safe excavation.

For more information about our commitment to safety and our public awareness, damage prevention and emergency preparedness activities and resources, visit tallgrass.com or contact Tallgrass directly at 303-763-2950.

Map is available upon request.

Missouri:
Counties of operation

Audrain, Buchanan, Caldwell, Carroll, Chariton, Clinton, Lincoln, Montgomery, Randolph, St Charles, Gentry, Harrison, Holt, Mercer, Nodaway, Putnam, Schuyler, Worth.

About TC Energy

For more than 70 years, TC Energy has been safely operating pipelines, storage facilities and power-generation plants in the U.S., Canada and Mexico. We operate more than 57,900 miles of natural gas pipelines and 3,000 miles of liquids (crude oil) pipelines, transporting the energy that Americans use every day.

Contact information

For more detailed information, please contact our Public Awareness team at:

1-855-458-6715

public_awareness@tcenergy.com

www.tcenergy.com/sustainability/safety/safe-digging/

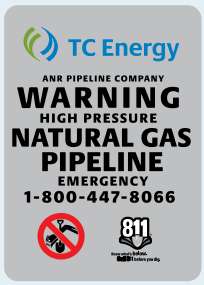
You can obtain access to view maps for TC Energy pipeline and facilities by following instructions at:

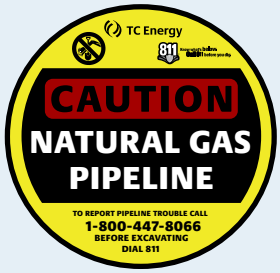
www.npms.phmsa.dot.gov

Right-of-way signs

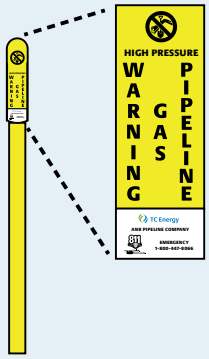
Pipeline marker signs are placed along the right-of-way at road crossings, railway crossings and watercourse crossings. They display the name of the operator, product and emergency contact number.

MARKER SIGNS





MARKER "BULLET" POST

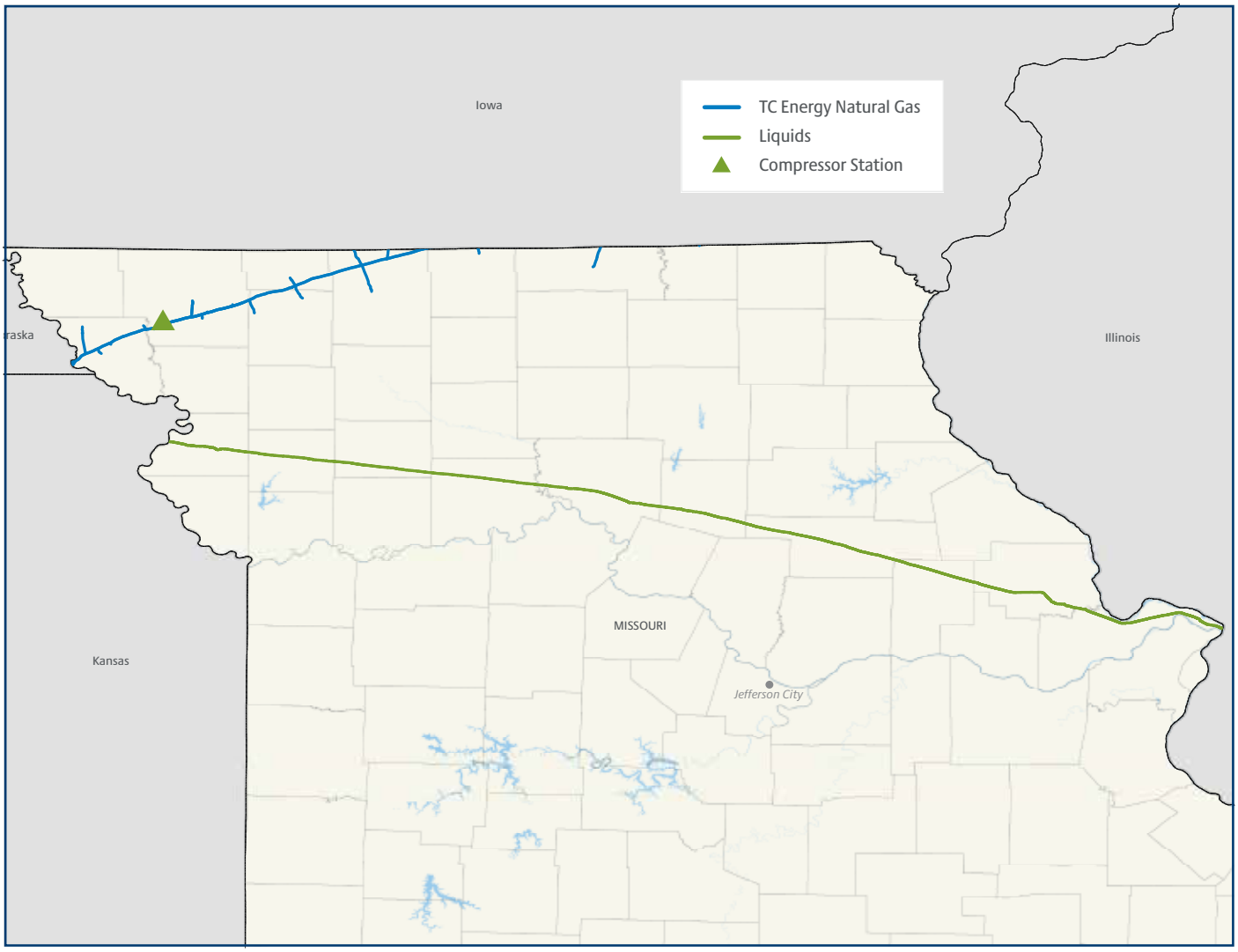


MARKER "SLAT" POST

EMERGENCY CONTACTS:
See Map On Next Page

TC Energy

Missouri:
TC Energy Operations Map

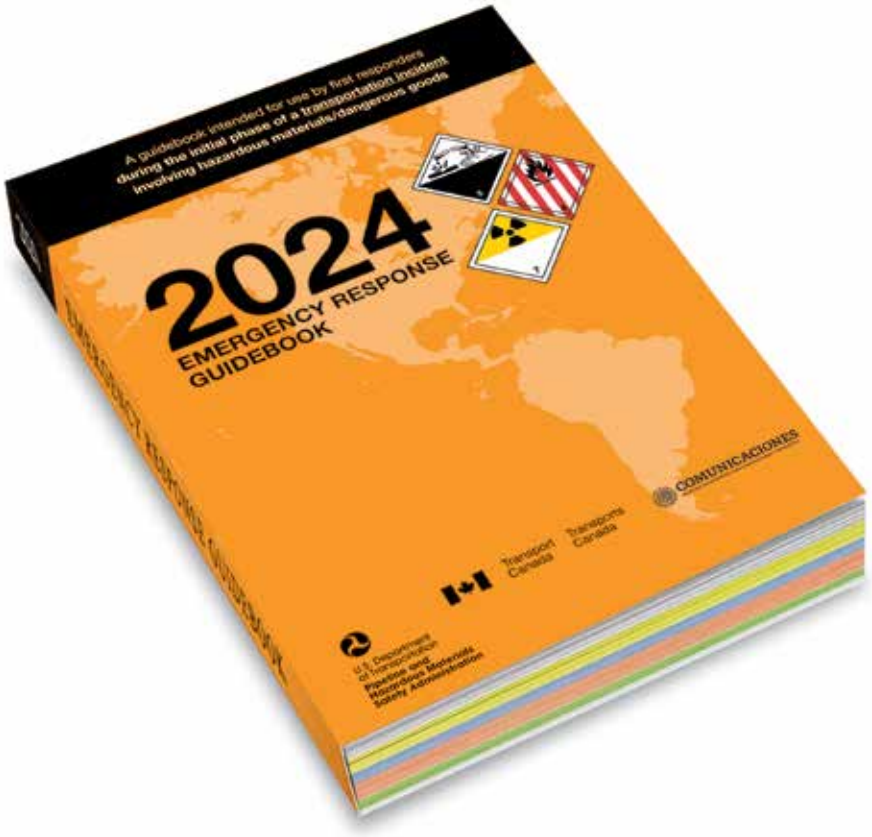


Emergency numbers

Use the map above to find the emergency number for pipelines in your area. In the case of an emergency, if you dial the wrong number, your call will be directed to the appropriate operator.

TC Energy Natural Gas 1-800-447-8066
Liquids 1-866-920-0007

Product INFORMATION



The Emergency Response Guidebook is available at:
https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2024-04/ERG2024-Eng-Web-a.pdf

ANDROID APP ON Google play

Download on the App Store

This app is only available on the App Store for iOS devices.

Safety Data Sheets contained in this section have been compiled from the Emergency Response Guidebook and only include the products transported by the operators represented. Information contained in these sheets is believed to be up-to-date and correct at the time of printing.

Further product-specific information may be found in the US Department of Transportation (DOT) Emergency Response Guidebook for First Responders. The Guidebook is available at:
https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2024-04/ERG2024-Eng-Web-a.pdf

POTENTIAL HAZARDS

HEALTH
- **TOXIC; may be fatal if inhaled, ingested or absorbed through skin.**
- Vapors are extremely irritating and corrosive.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control may cause pollution.

FIRE OR EXPLOSION
- Some may burn but none ignite readily.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Some of these materials may react violently with water.
- Cylinders exposed to fire may vent and release toxic and/or corrosive gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

EVACUATION
Spill
- See Table 1 - Initial Isolation and Protective Action Distances for highlighted materials. For non-highlighted materials, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

EMERGENCY RESPONSE

FIRE
Small Fire
- Dry chemical or CO2.

Large Fire
- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.
- Do not get water inside containers.
- Damaged cylinders should be handled only by specialists.

Fire involving Tanks
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

DOT GUIDEBOOK ID #: 1005
GUIDE #: 125

CHEMICAL NAMES:
- Ammonia
- Liquid Ammonia
- Nitrol-Sil
- Spirit of Hartshorn
- NH_3

CHEMICAL FAMILY:
Inorganic Base (Gas)

COMPONENTS:
N/A - PURE NH3, USUALLY 99-100%

SPILL OR LEAK
- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Do not direct water at spill or source of leak.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Isolate area until gas has dispersed.

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- In case of contact with Hydrogen fluoride, anhydrous (UN1052), flush skin and eyes with water for 5 minutes; then, for skin exposures rub on a calcium/jelly combination; for eyes flush with a water/calcium solution for 15 minutes.
- Keep victim warm and quiet.
- Keep victim under observation.
- Effects of contact or inhalation may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- **EXTREMELY FLAMMABLE.**
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and spread along ground. **CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966) and Methane (UN1971) are lighter than air and will rise. Hydrogen and Deuterium fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.)**
- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH

- Vapors may cause dizziness or asphyxiation without warning.
- Some may be irritating if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

EMERGENCY RESPONSE

FIRE

- DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. **CAUTION: HYDROGEN (UN1049), DEUTERIUM (UN1957) AND HYDROGEN, REFRIGERATED LIQUID (UN1966) BURN WITH AN INVISIBLE FLAME. HYDROGEN AND METHANE MIXTURE, COMPRESSED (UN2034) MAY BURN WITH AN INVISIBLE FLAME.**

Small Fire

- Dry chemical or CO2.

DOT GUIDEBOOK ID #: 1011/1075

GUIDE #: 115

CHEMICAL NAMES:

N-BUTANE:
- "Normal" Butane
- Butyl Hydride
- LP Gas
- LPG
- Liquefied Butane

ISO-BUTANE:
- 2-Methylpropane
- "Iso"

CHEMICAL FAMILY:

Petroleum Hydrocarbon, Aliphatic Hydrocarbon, Alkane, Paraffin

COMPONENTS:

Butane: n-Butane, Iso-Butane, Propane, Butylenes, Pentane and heavier Hydrocarbons Iso-Butane: Iso-Butane, n-Butane, Propane, Butylenes

Large Fire

- Water spray or fog.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Prevent spreading of vapors through sewers, ventilation systems and confined areas.
- Isolate area until gas has dispersed. **CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.**

FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a **"P"** may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.
- **If molten aluminum is involved, refer to GUIDE 169.**

HEALTH
- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

EVACUATION

Large Spill
- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

FIRE

CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.

Small Fire
- Dry chemical, CO_2, water spray or regular foam.

Large Fire
- Water spray, fog or regular foam.

DOT GUIDEBOOK ID #: 1267

GUIDE #: 128

CHEMICAL NAMES:
- Crude Oil - "Sour" (Contains H_2S, please see Hydrogen Sulfide fact sheet)
- Crude Oil - "Sweet" (No H_2S)
- Petroleum
- Mineral Oil, Rock Oil, Coal Oil, Seneca Oil, Earth Oil

CHEMICAL FAMILY:
Petroleum Hydrocarbon Mixture: Chiefly of Paraffins (Alkanes), Cycloparaffins, Cyclic Aromatic Hydrocarbons, Benzene Hydrocarbons, Inorganic Compounds

COMPONENTS:
Hydrocarbons (Aromatic & Paraffinic), Benzene, Hydrogen Sulfide, Nitrogen Compounds, Sulfur Compounds, Oxygenated Compounds

- Use water spray or fog; do not use straight streams.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a “P” may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.
- **If molten aluminum is involved, refer to GUIDE 169.**

HEALTH
- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available appropriate telephone numbers can be found in the Emergency Response Guidebook.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters’ protective clothing will only provide limited protection.

EVACUATION

Large Spill
- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

FIRE

CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.

Small Fire
- Dry chemical, CO2, water spray or regular foam.

Large Fire
- Water spray, fog or regular foam.
- Use water spray or fog; do not use straight streams.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

DOT GUIDEBOOK ID #: 1202/1993

GUIDE #: 128

CHEMICAL NAME & SYNONYMS:
- Diesel Fuel
- No. 2 Diesel
- Motor Vehicle Diesel Fuel
- Locomotive/Marine Diesel Fuel

CHEMICAL FAMILY:
Petroleum Hydrocarbons, Paraffins (Alkanes), Aromatic Hydrocarbons

COMPONENTS:
Petroleum distillate (Predominately, Hydrocarbons ranging from C10 -C16) Naphthalene, Xylene

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

Large Spill
- Dike far ahead of liquid spill for later disposal.

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- **EXTREMELY FLAMMABLE**
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and spread along ground. **CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966) and Methane (UN1971) are lighter than air and will rise. Hydrogen and Deuterium fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.)**
- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH
- Vapors may cause dizziness or asphyxiation without warning.
- Some may be irritating if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

EVACUATION

Large Spill
- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

EMERGENCY RESPONSE

FIRE
- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. CAUTION: Hydrogen (UN1049), Deuterium (UN1957) and Hydrogen, refrigerated liquid (UN1966) burn with an invisible flame. Hydrogen and Methane mixture, compressed (UN2034) may burn with an invisible flame.**

Small Fire
- Dry chemical or CO2.

Large Fire
- Water spray or fog.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Prevent spreading of vapors through sewers, ventilation systems and confined areas.
- Isolate area until gas has dispersed. **CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.**

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

DOT GUIDEBOOK ID #: 1035

GUIDE #: 115

CHEMICAL NAMES:
- Ethane
- Bimethyl
- Dimethyl
- Methyl Methane
- Ethyl Hydride

CHEMICAL FAMILY:
Petroleum Hydrocarbon, Aliphatic Hydrocarbon, Paraffin, Alkane

COMPONENTS:
Ethane, Methane, Carbon Dioxide, Propane, Propylene, Ethylene, Iso-Butane, n-Butane, Higher Hydrocarbons

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- **EXTREMELY FLAMMABLE**
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and spread along ground. **CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966) and Methane (UN1971) are lighter than air and will rise. Hydrogen and Deuterium fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.)**
- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH
- Vapors may cause dizziness or asphyxiation without warning.
- Some may be irritating if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

EVACUATION

Large Spill
- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

EMERGENCY RESPONSE

FIRE
- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. CAUTION: Hydrogen (UN1049), Deuterium (UN1957) and Hydrogen, refrigerated liquid (UN1966) burn with an invisible flame. Hydrogen and Methane mixture, compressed (UN2034) may burn with an invisible flame.**

Small Fire
- Dry chemical or CO2.

Large Fire
- Water spray or fog.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Prevent spreading of vapors through sewers, ventilation systems and confined areas.
- Isolate area until gas has dispersed. **CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.**

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

DOT GUIDEBOOK ID #: 1961
GUIDE #: 115

CHEMICAL NAMES:
- ETHANE
  Bimethyl, Dimethyl, Methyl Methane, Ethyl Hydride
- PROPANE
  Propyl Hydride, Dimethyl Methane

CHEMICAL FAMILY:
Petroleum Hydrocarbons, Paraffins, Alkanes

COMPONENTS:
Ethane
Propane
Possibly: Methane, Iso Butane, n-Butane, Propylene and higher hydrocarbons

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a “P” may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.
- **If molten aluminum is involved, refer to GUIDE 169.**

HEALTH
- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters’ protective clothing will only provide limited protection.

EVACUATION

Large Spill
- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

FIRE

CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.

Small Fire
- Dry chemical, CO2, water spray or regular foam.

Large Fire
- Water spray, fog or regular foam.
- Use water spray or fog; do not use straight streams.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

Large Spill
- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

DOT GUIDEBOOK ID #: 1203

GUIDE #: 128

Leaded Regular, Regular Unleaded, Premium Unleaded, Silver Lead-Free, Ultimate Lead-Free Premium

CHEMICAL NAMES:
Gasoline, Petrol, Petroleum Naphtha, Light Petroleum Distillate, Benzin

CHEMICAL FAMILY:
Petroleum Hydrocarbon Mix: Paraffins (Alkanes), Olefins (Alkenes), Cycloalkanes, Aromatic Hydrocarbons, Naphthenes, Alcohols and Ethers

COMPONENTS:
Alkanes, n-Hexane, Cycloalkanes, t-Butyl Methyl Ether, Alkenes, Pseudocumene, Aromatic Hydrocarbons, Cyclohexane, Xylenes, Ethylbenzene, Toluene, Naphthalene, Benzene

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a “P” may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.
- **If molten aluminum is involved, refer to GUIDE 169.**

HEALTH
- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available appropriate telephone numbers can be found in the Emergency Response Guidebook.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters’ protective clothing will only provide limited protection.

EVACUATION

Large Spill
- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

FIRE

CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.

Small Fire
- Dry chemical, CO2, water spray or regular foam.

Large Fire
- Water spray, fog or regular foam.
- Use water spray or fog; do not use straight streams.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

DOT GUIDEBOOK ID #: 1202

GUIDE #: 128

CHEMICAL NAME & SYNONYMS:
- Heating Oil, Light
- High Sulfur No. 2 Heating Oil
- Fuel Oil No. 2
- Heating X-Grade Oil

CHEMICAL FAMILY:
Petroleum Hydrocarbons, Paraffins (Alkanes), Aromatic Hydrocarbons

COMPONENTS:
Petroleum distillate (Predominately, Hydrocarbons ranging from C10 -C16) Naphthalene, Xylene

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

Large Spill
- Dike far ahead of liquid spill for later disposal.

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

JET FUEL (A, JP, TURBINE FUEL)

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a "P" may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.
- **If molten aluminum is involved, refer to GUIDE 169.**

HEALTH
- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

EVACUATION

Large Spill
- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

FIRE

CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.

Small Fire
- Dry chemical, CO_2, water spray or regular foam.

Large Fire
- Water spray, fog or regular foam.
- Use water spray or fog; do not use straight streams.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

DOT GUIDEBOOK ID #: 1863

GUIDE #: 128

CHEMICAL NAMES:
• Kerosene Mix

CHEMICAL FAMILY:
Petroleum Hydrocarbon Mix: Alkanes, Alkenes, Aromatic HC's, Naphthenes

COMPONENTS:
Jet Fuel (A)
Kerosene
Naphthalene
Xylene
Bicyclic & Tricyclic-Hydrocarbons
Jet Fuel (JP, Turbine Fuel)
Kerosene
Hydrotreated Naphtha (Heavy)
Naphtha (Light)
Minor Additives
Benzene
Naphthalene
Xylene

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a “P” may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.
- **If molten aluminum is involved, refer to GUIDE 169.**

HEALTH
- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available appropriate telephone numbers can be found in the Emergency Response Guidebook.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters’ protective clothing will only provide limited protection.

EVACUATION

Large Spill
- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

FIRE

CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.

Small Fire
- Dry chemical, CO2, water spray or regular foam.

Large Fire
- Water spray, fog or regular foam.
- Use water spray or fog; do not use straight streams.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

DOT GUIDEBOOK ID #: 1223

GUIDE #: 128

CHEMICAL NAME & SYNONYMS:
- Kerosene
- Kerosine
- Coal Oil
- Fuel Oil #1
- Turbine Fuel

CHEMICAL FAMILY:
Petroleum Hydrocarbons, Paraffins (Alkanes), Aromatic Hydrocarbons

COMPONENTS:
Petroleum distillate (Predominately, Hydrocarbons ranging from C10 -C16) Naphthalene, Xylene

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

Large Spill
- Dike far ahead of liquid spill for later disposal.

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- **EXTREMELY FLAMMABLE.**
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and spread along ground. **CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966) and Methane (UN1971) are lighter than air and will rise. Hydrogen and Deuterium fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.)**
- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH
- Vapors may cause dizziness or asphyxiation without warning.
- Some may be irritating if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available appropriate telephone numbers can be found in the Emergency Response Guidebook.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

EVACUATION

Large Spill
- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

EMERGENCY RESPONSE

FIRE
- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. CAUTION: Hydrogen (UN1049), Deuterium (UN1957) and Hydrogen, refrigerated liquid (UN1966) burn with an invisible flame. Hydrogen and Methane mixture, compressed (UN2034) may burn with an invisible flame.**

Small Fire
- Dry chemical or CO2.

Large Fire
- Water spray or fog.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Prevent spreading of vapors through sewers, ventilation systems and confined areas.
- Isolate area until gas has dispersed. **CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.**

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

DOT GUIDEBOOK ID #: 1075
GUIDE #: 115

CHEMICAL NAME & SYNONYMS:
- Liquid Propane
- LP Gas
- LPG, Y-Grade
- Demethanized Gasoline
- "Raw Feed"
- Demethanized "Raw Feed Mix"

CHEMICAL FAMILY:
Petroleum Hydrocarbon Mix: Aliphatic Hydrocarbons, Paraffins (Alkanes), Cycloparaffins, Aromatic Hydrocarbons

COMPONENTS:
Complex combination consisting primarily of saturated aliphatic hydrocarbons ranging from C1 to C12, Benzene, Cyclohexane, Xylene, Toluene

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a (P) may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.

HEALTH

- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available appropriate telephone numbers can be found in the Emergency Response Guidebook.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

FIRE

CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.

Small Fire

- Dry chemical, CO2, water spray or regular foam.

Large Fire

- Water spray, fog or regular foam.
- **Do not use straight streams.**

DOT GUIDEBOOK ID #: 1268

GUIDE #: 128

CHEMICAL NAME & SYNONYMS:

- Light Naphtha
- SNG Naphtha
- Light Cat Naphtha
- Sweet Virgin Naphtha
- Light CR Gasoline

CHEMICAL FAMILY:
Aromatic Hydrocarbon

COMPONENTS:
N - Pentane > 70%
2 - Methylpentane > 1%
3 - Methylpentane > 1%
Cyclopentane > 1%
2,2 - Dimethylbutane > 1%

- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

Large Spill

- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- Flammable/combustible material.
- May be ignited by friction, heat, sparks or flames.
- Some may burn rapidly with flare burning effect.
- Powders, dusts, shavings, borings, turnings or cuttings may explode or burn with explosive violence.
- Substance may be transported in a molten form at a temperature that may be above its flash point.
- May re-ignite after fire is extinguished.

HEALTH
- Fire may produce irritating and/or toxic gases.
- Contact may cause burns to skin and eyes.
- Contact with molten substance may cause severe burns to skin and eyes.
- Runoff from fire control may cause pollution.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

EVACUATION
Large Spill
- Consider initial downwind evacuation for at least 100 meters (330 feet).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

FIRE
Small Fire
- Dry chemical, CO_2, sand, earth, water spray or regular foam.

Large Fire
- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.

Fire Involving Metal Pigments or Pastes (e.g. "Aluminum Paste")
- Aluminum Paste fires should be treated as a combustible metal fire. Use DRY sand, graphite powder, dry sodium chloride based extinguishers, G-1® or Met-L-X® powder. Also, see GUIDE 170.

Fire involving Tanks or Car/Trailer Loads
- Cool containers with flooding quantities of water until well after fire is out.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch or walk through spilled material.

Small Dry Spill
- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

Large Dry Spill
- Wet down with water and dike for later disposal.
- Prevent entry into waterways, sewers, basements or confined areas.

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Removal of solidified molten material from skin requires medical assistance.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

DOT GUIDEBOOK ID #: 1334
GUIDE #: 128

CHEMICAL NAMES:
- Petroleum Naphtha
- Petroleum Spirits
- Benzin
- Ligroine

CHEMICAL FAMILY:
Aromatic Hydrocarbon

COMPONENTS:
N - Pentane > 70%
2 - Methylpentane > 1%
3 - Methylpentane > 1%
Cyclopentane > 1%
2,2 - Dimethylbutane > 1%

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- **EXTREMELY FLAMMABLE.**
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and spread along ground. **CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966) and Methane (UN1971) are lighter than air and will rise. Hydrogen and Deuterium fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.)**
- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH
- Vapors may cause dizziness or asphyxiation without warning.
- Some may be irritating if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

EVACUATION

Large Spill
- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

EMERGENCY RESPONSE

FIRE
- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. CAUTION: Hydrogen (UN1049), Deuterium (UN1957) and Hydrogen, refrigerated liquid (UN1966) burn with an invisible flame. Hydrogen and Methane mixture, compressed (UN2034) may burn with an invisible flame.**

Small Fire
- Dry chemical or CO2.

Large Fire
- Water spray or fog.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Prevent spreading of vapors through sewers, ventilation systems and confined areas.
- Isolate area until gas has dispersed. **CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.**

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

DOT GUIDEBOOK ID #: 1971

GUIDE #: 115

CHEMICAL NAMES:
- Natural Gas
- Methane
- Marsh Gas
- Well Head Gas
- Fuel Gas
- Lease Gas
- Sour Gas*

CHEMICAL FAMILY:
Petroleum Hydrocarbon Mix: Aliphatic Hydrocarbons (Alkanes), Aromatic Hydrocarbons, Inorganic Compounds

COMPONENTS:
Methane, Iso-Hexane, Ethane, Heptanes, Propane, Hydrogen Sulfide*, (In "Sour" Gas), Iso-Butane, Carbon, Dioxide, n-Butane, Nitrogen, Pentane Benzene, Hexane, Octanes

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- Danger Extremely Flammable!
- Highly flammable vapors, which are heavier than air, may accumulate in low areas.
- Vapors may travel long distances to a point of ignition and flashback.
- Liquid propane will vaporize rapidly at well below ambient temperatures and readily form flammable mixtures with air.
- Flames impinging on product storage vessels above the liquid level will cause sudden vessel failure, resulting in a BLEVE (Boiling Liquid Expanding Vapor Explosion), unless the vessel surfaces are kept cool with water.
- Toxic carbon oxides and/or sulfur oxides may be released when burned.

HEALTH
- H2S can cause systemic toxicity and rapid death due to respiratory paralysis.
- Eye: Vapor acts as a slight to moderate irritant. H2S in condensate can cause eye irritation. Liquid can burn eyes.
- Skin: Prolonged or repeated contact with the skin can lead to skin irritation, defatting, dermatitis or skin tumors.
- Inhalation: High vapor concentrations may irritate nose, throat and respiratory tract or cause dizziness or headaches. H2S may be present which can cause loss of consciousness and death at concentrations greater than 300 ppm.
- Ingestion: May irritate the mouth, throat and stomach leading to nausea and vomiting. Aspiration into lungs can produce chemical pneumonia.
- Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to condensate.
- Contains Benzene, a carcinogen that may cause leukemia and other blood diseases after prolonged or repeated exposures at high concentration.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available appropriate telephone numbers can be found in the Emergency Response Guidebook.**
- Evacuate the area.
- Ventilate to avoid accumulation of explosive vapors. Equipment must be explosion proof.
- If H2S is present, additional evacuation and/or site security measures around the release area may be warranted.

PROTECTIVE CLOTHING
- Wear NIOSH or MSHA approved self-contained breathing apparatus (SCBA) if vapor or mists are present or whenever H2S may be present.
- Firefighters must use proper protective equipment including self-contained breathing apparatus (SCBA) in enclosed areas, high fume, vapor and/or smoke concentrations.
- Wear goggles and/or face shield for spray or mist or if splashing is possible.
- Wear gloves and footwear that is resistant to chemicals and petroleum distillates.

EMERGENCY RESPONSE

FIRE
- Extinguishing media: Use dry chemical powder, foam or carbon dioxide (CO2).
- Water may be ineffective on flames but should be used to cool fire-exposed containers. Flames impinging on product storage vessels above the liquid level will cause sudden vessel failure, resulting in a BLEVE (Boiling Liquid Expanding Vapor Explosion), unless the vessel surfaces are kept cool with water.

DOT GUIDEBOOK ID #: 1972
GUIDE #: 115

CHEMICAL NAME & SYNONYMS:
- Natural Gas Liquids
- Casinghead Gasoline
- Condensate
- Drip Gas

CHEMICAL FAMILY:
Petroleum Hydrocarbons, Aliphatic Hydrocarbons, Alkanes, Paraffins, Cycloparaffins, Aromatic Hydrocarbons

COMPONENTS:
Complex combination consisting primarily of saturated aliphatic hydrocarbons ranging from C4 to C12Benzene, Cyclohexane

SPILL OR LEAK
- Remove all ignition sources. Use explosion-proof equipment and non-sparking tools in areas where explosive vapors may form.
- Stop flow and contain spill if possible.
- Prevent entry into sewers and waterways.
- Avoid breathing vapors.Wear self-contained breathing apparatus, if necessary.
- Use water spray to disperse vapors and to provide protection for personnel attempting to stop the leak.
- Materials that have absorbed this product may release flammable vapors and should be properly stored/disposed of to prevent spontaneous combustion or fire in the presence of an ignition source.

FIRST AID
- Inhalation: Move victim to area of fresh air. For respiratory distress, administer cardiopulmonary resuscitation if needed. Seek medical attention. Victim should be kept quiet and warm until medical care is obtained.
- Eye: Flush eyes gently with water for at least 15 minutes while holding eyelids open. Seek medical attention.
- Skin: Thoroughly wash affected skin with soap and water. If irritation persists, seek medical attention.Wash contaminated clothing thoroughly before reuse. Properly discard clothing or leather goods that cannot be cleaned.
- Ingestion: Do not induce vomiting. Seek immediate medical attention. Never give anything by mouth to an unconscious or convulsing victim.of the material(s) involved and take precautions to protect themselves.

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- **EXTREMELY FLAMMABLE..**
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and spread along ground. **CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966) and Methane (UN1971) are lighter than air and will rise. Hydrogen and Deuterium fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.)**
- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH
- Vapors may cause dizziness or asphyxiation without warning.
- Some may be irritating if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

EVACUATION

Large Spill
- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

EMERGENCY RESPONSE

FIRE
- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. CAUTION: Hydrogen (UN1049), Deuterium (UN1957) and Hydrogen, refrigerated liquid (UN1966) burn with an invisible flame. Hydrogen and Methane mixture, compressed (UN2034) may burn with an invisible flame.**

Small Fire
- Dry chemical or CO2.

Large Fire
- Water spray or fog.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Prevent spreading of vapors through sewers, ventilation systems and confined areas.
- Isolate area until gas has dispersed. **CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.**

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

DOT GUIDEBOOK ID #: 1075
GUIDE #: 115

CHEMICAL NAMES:
- Propane
- Propyl Hydride
- Dimethylmethane
- LP Gas
- LPG
- Liquefied Petroleum Gas
- Commercial-Grade Liquefied Propane
- "P-Rich Furnace Feed"

CHEMICAL FAMILY:
Petroleum Hydrocarbon, Aliphatic Hydrocarbon, Paraffin, Alkane

COMPONENTS:

Propane	Propylene
Butane	Iso-Butane
Ethane	Ethyl Mercaptan
Sulfur	

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- **EXTREMELY FLAMMABLE..**
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and spread along ground. **CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966) and Methane (UN1971) are lighter than air and will rise. Hydrogen and Deuterium fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.)**
- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH
- Vapors may cause dizziness or asphyxiation without warning.
- Some may be irritating if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

EVACUATION

Large Spill
- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

EMERGENCY RESPONSE

FIRE
- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. CAUTION: Hydrogen (UN1049), Deuterium (UN1957) and Hydrogen, refrigerated liquid (UN1966) burn with an invisible flame. Hydrogen and Methane mixture, compressed (UN2034) may burn with an invisible flame.**

Small Fire
- Dry chemical or CO2.

Large Fire
- Water spray or fog.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Prevent spreading of vapors through sewers, ventilation systems and confined areas.
- Isolate area until gas has dispersed. **CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.**

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

DOT GUIDEBOOK ID #: 1978
GUIDE #: 115

CHEMICAL NAMES:
- Synthetic Natural Gas
- SNG
- Mixture of ethane, propane & n-butane

CHEMICAL FAMILY:
Alkane Hydrocarbon

COMPONENTS:
Propane
Propylene
Butane
Iso-Butane
Ethane

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a “P” may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.
- **If molten aluminum is involved, refer to GUIDE 169.**

HEALTH
- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters’ protective clothing will only provide limited protection.

EVACUATION

Large Spill
- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

FIRE

CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.

Small Fire
- Dry chemical, CO2, water spray or regular foam.

Large Fire
- Water spray, fog or regular foam.
- Use water spray or fog; do not use straight streams.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

DOT GUIDEBOOK ID #: 1203

GUIDE #: 128

CHEMICAL NAMES:
- Light Iso-Siv
- Heavy Iso-Siv
- Iso-Siv Blend
- Paraffinic Naptha
- Petroleum Paraffin

CHEMICAL FAMILY:
Paraffinic Hydrocarbon

COMPONENTS:
Cyclohexane
Ethylbenzene
Hexane
Toluene
Xylene

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

Large Spill
- Dike far ahead of liquid spill for later disposal.

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a **"P"** may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.

HEALTH
- May cause toxic effects if inhaled or absorbed through skin.
- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire will produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

PUBLIC SAFETY
- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

EVACUATION

Large Spill
- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

FIRE

CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

Small Fire
- Dry chemical, CO2, water spray or regular foam.

Large Fire
- Water spray, fog or regular foam.
- **Do not use straight streams.**
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

Large Spill
- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

FIRST AID
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

DOT GUIDEBOOK ID #: 1294

GUIDE #: 130

CHEMICAL NAMES:
- Methylbenzene
- Toluol
- Phenylethane
- Methacide

CHEMICAL FAMILY:
Aromatic Hydrocarbon

COMPONENTS:
Negligible - Chemical grade 99% pure product

Emergency Response Plans for Gas and Hazardous Liquid Pipeline Operators

Federal regulations for both gas and hazardous liquid pipelines require operators to have written procedures for responding to emergencies involving their pipeline facility. Because pipelines are often located in public space, the regulations further require that operators include procedures for planning with emergency and other public officials to ensure a coordinated response. Please contact your local pipeline operators for information regarding their company specific emergency response plan.

Natural Gas

Each operator shall establish written procedures to minimize the hazard resulting from a gas pipeline emergency. At a minimum, the procedures must provide for the following:

- Receiving, identifying, and classifying notices of events which require immediate response by the operator.
- Establishing and maintaining adequate means of communication with appropriate fire, police, and other public officials.
- Prompt and effective response to a notice of each type of emergency, including the following:
  1. Gas detected inside or near a building.
  2. Fire located near or directly involving a pipeline facility.
  3. Explosion occurring near or directly involving a pipeline facility.
  4. Natural disaster.
- The availability of personnel, equipment, tools, and materials, as needed at the scene of an emergency.
- Actions directed toward protecting people first and then property.
- Emergency shutdown and pressure reduction in any section of the operator's pipeline system necessary to minimize hazards to life or property.
- Making safe any actual or potential hazard to life or property.
- Notifying appropriate fire, police, and other public officials of gas pipeline emergencies and coordinating with them both planned responses and actual responses during an emergency.
- Safely restoring any service outage.
- Each operator shall establish and maintain liaison with appropriate fire, police, and other public officials to:
  1. Learn the responsibility and resources of each government organization that may respond to a gas pipeline emergency;
  2. Acquaint the officials with the operator's ability in responding to a gas pipeline emergency;
  3. Identify the types of gas pipeline emergencies of which the operator notifies the officials; and
  4. Plan how the operator and officials can engage in mutual assistance to minimize hazards to life or property.

**Reference 49 CFR 192.615*

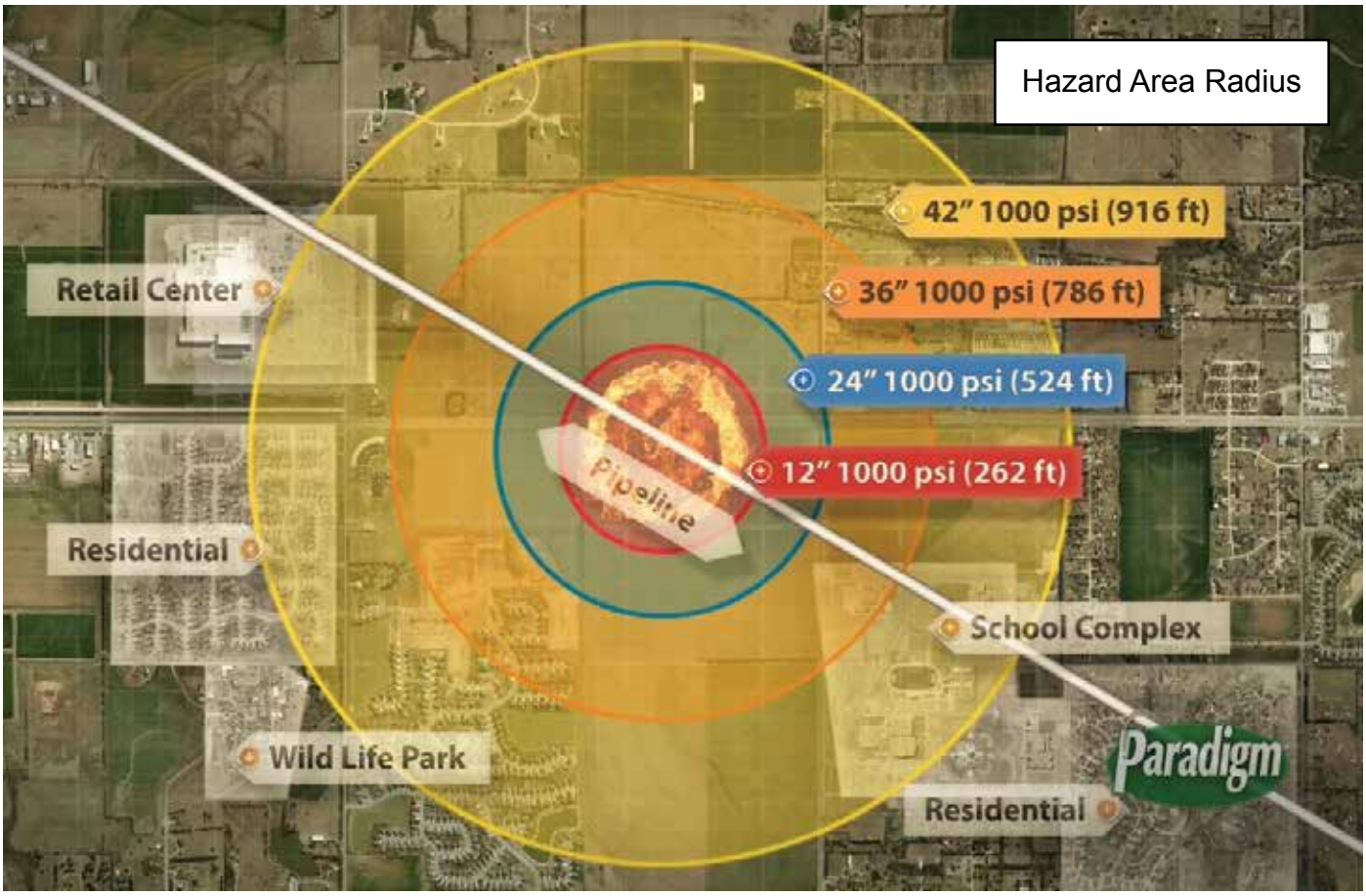
Hazardous Liquids

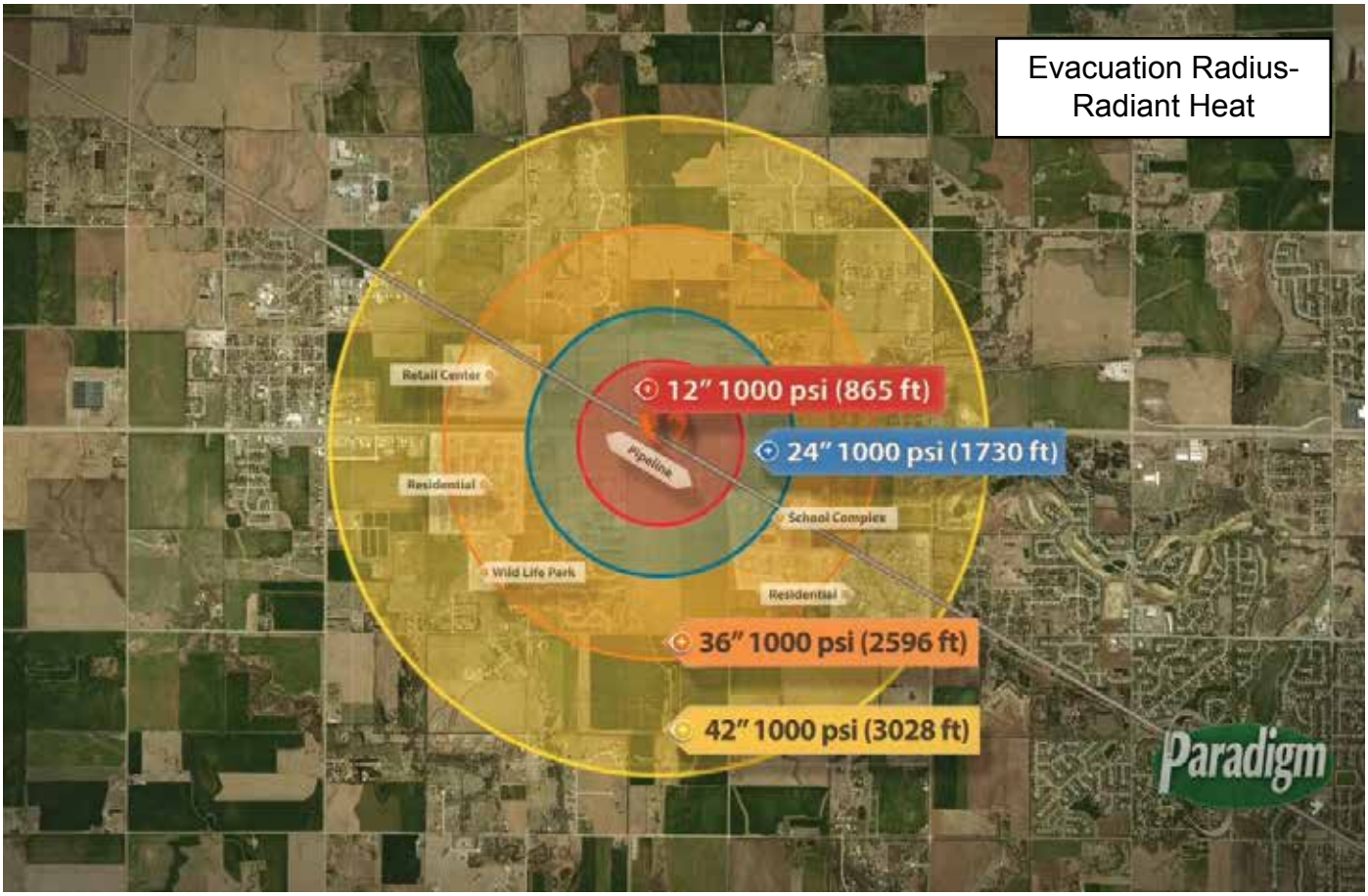
(a) General: Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.

Emergencies. The manual required by paragraph (a) of this section must include procedures for the following to provide safety when an emergency condition occurs:

- Receiving, identifying, and classifying notices of events which need immediate response by the operator or notice to fire, police, or other appropriate public officials and communicating this information to appropriate operator personnel for corrective action.
- Prompt and effective response to a notice of each type emergency, including fire or explosion occurring near or directly involving a pipeline facility, accidental release of hazardous liquid or carbon dioxide from a pipeline facility, operational failure causing a hazardous condition, and natural disaster affecting pipeline facilities.
- Having personnel, equipment, instruments, tools, and material available as needed at the scene of an emergency.
- Taking necessary action, such as emergency shutdown or pressure reduction, to minimize the volume of hazardous liquid or carbon dioxide that is released from any section of a pipeline system in the event of a failure.
- Control of released hazardous liquid or carbon dioxide at an accident scene to minimize the hazards, including possible intentional ignition in the cases of flammable highly volatile liquid.
- Minimization of public exposure to injury and probability of accidental ignition by assisting with evacuation of residents and assisting with halting traffic on roads and railroads in the affected area, or taking other appropriate action.
- Notifying fire, police, and other appropriate public officials of hazardous liquid or carbon dioxide pipeline emergencies and coordinating with them preplanned and actual responses during an emergency, including additional precautions necessary for an emergency involving a pipeline system transporting a highly volatile liquid.
- In the case of failure of a pipeline system transporting a highly volatile liquid, use of appropriate instruments to assess the extent and coverage of the vapor cloud and determine the hazardous areas.
- Providing for a post accident review of employee activities to determine whether the procedures were effective in each emergency and taking corrective action where deficiencies are found.

**Reference 49 CFR 195.402*


Hazard Area Radius
42" 1000 psi (916 ft)
36" 1000 psi (786 ft)
24" 1000 psi (524 ft)
12" 1000 psi (262 ft)
Pipeline
Retail Center
Residential
School Complex
Wild Life Park
Residential
Paradigm


Evacuation Radius-
Radiant Heat
12" 1000 psi (865 ft)
24" 1000 psi (1730 ft)
36" 1000 psi (2596 ft)
42" 1000 psi (3028 ft)
Pipeline
Retail Center
Residential
School Complex
Wild Life Park
Residential
Paradigm

In accordance with NENA Pipeline Emergency Operations Standard/Model Recommendation NENA 56-007 (https://www.nena.org/?page=PipelineEmergStnd)

GOALS FOR INITIAL INTAKE:

1. Obtain and Verify Incident Location, Callback and Contact Information
2. Maintain Control of the Call
3. Communicate the Ability to HELP the Caller
4. Methodically and Strategically Obtain Information through Systematic Inquiry to be Captured in the Agency's Intake Format
5. Recognize the potential urgency of situations involving the release of dangerous gases or liquids related to pipelines or similar events of this nature and immediately begin the proper notifications consistent with agency policy
6. Perform all Information Entries and Disseminations, Both Initial and Update

FIRST RESPONSE CALL INTAKE CHECKLIST

The focus of this Standard is on the first minute of the call intake process. Actions taken during this time frame significantly impact the effectiveness of the response and are critical to public safety.

The following protocol is intended as a solid framework for call intake, but should not in any manner rescind or override agency procedures for the timing of broadcasts and messaging.

These procedures are established as recommended practices to consider with existing agency policy and procedure to ensure the most swift and accurate handling of every incident involving the release of dangerous gases or hazardous liquids.

All information should be simultaneously entered, as it is obtained by the telecommunicator, into an electronic format (when available) that will feed/populate any directed messages which will be sent to emergency responders in conjunction with on-air broadcasts.

Location:

Request exact location of the incident (structure addresses, street names, intersections, directional identifiers, mile posts, etc.) and obtain callback and contact information.

Determine Exactly What Has Happened:

Common signs of a pipeline leak are contained in Table 1 below. If any of these conditions are reported, THIS IS A PIPELINE EMERGENCY.

TABLE 1

Common Indications of a Pipeline Leak

Condition	Natural Gas (lighter than air)	LPG & HVL (heavier than air)	Liquids
An odor like rotten eggs or a burnt match	X	X	
A loud roaring sound like a jet engine	X	X	
A white vapor cloud that may look like smoke		X	
A hissing or whistling noise	X	X	
The pooling of liquid on the ground			X
An odor like petroleum liquids or gasoline		X	X
Fire coming out of or on top of the ground	X	X	
Dirt blowing from a hole in the ground	X	X	
Bubbling in pools of water on the ground	X	X	
A sheen on the surface of water		X	X
An area of frozen ground in the summer	X	X	
An unusual area of melted snow in the winter	X	X	
An area of dead vegetation	X	X	X

PSAP - Notification of Potential Rupture Rule

From April Heinze at NENA October 2022

A recent change made at the federal level will begin to impact your Emergency Communications Center (ECC) very soon. In April 2022, the Pipeline and Hazardous Materials Safety Administration (PHMSA), a subset of the National Highway Traffic Safety Administration (NHTSA), updated a rule for Pipeline Operators. The rule went into effect on October 5, 2022. The PHMSA rule is 49 CFR § 192.615(a)(8) and § 195.402(e)(7). It requires pipeline operators to contact the appropriate PSAP immediately upon notification of a potential rupture. The rule specifies the following:

A ***Notification of Potential Rupture*** is an observation of any unanticipated or unexplained:

- Pressure loss outside of the pipeline's normal operating pressure
- Rapid release of a large volume of a commodity (e.g., natural gas or hazardous liquid)
- Fire or explosion in the immediate vicinity

ECCs will begin to receive calls from pipeline operators for situations that may not be dispatchable. Of the three potential rupture notifications, the "pressure loss outside of the pipeline's normal operating pressure" will be the most difficult for responders to locate and mitigate. The operators will contact the ECC at the same time they are sending a technician to check the potential problem and determine the actual location. Many pipeline segments span an extensive area that could cross multiple ECC and Fire Department boundaries. Based on recent discussions with pipeline operators, they will call ECCs to fulfill the rule requirements to place the ECC on standby for a potential problem. They also want the ECC to contact them if the ECC receives any calls that may confirm there is a problem.

PHMSA and pipeline operators lack an understanding of local ECC and first responder policies and procedures. Some pipeline operators have already sent letters to ECCs that serve the areas their pipeline infrastructure is located. It does not appear that PHMSA engaged the ECC community before adopting the rule, nor have they communicated this information to the responder community.

So, what does this mean for your ECC? ECCs are responsible for intaking information and dispatching appropriate resources. They are not in the habit of intaking details of a potential emergency and doing nothing with it. To do nothing creates liability issues for your ECC. ECC Managers should work with local Fire Departments to develop local policy regarding handling these calls. The policy will need to address whether to hold the information until further information is provided from the pipeline operator or, if a dispatch is to be made, what resources need to be sent. The policy should also address how to properly notify the pipeline operator if the ECC or responders discover that a potential rupture is, in fact, an actual rupture. ECC management should incorporate pipeline maps into their local GIS systems or maintain a map easily accessible to call-takers of the pipeline infrastructure within their jurisdiction. PHMSA has a pipeline mapping system that ECCs can use, https://www.npms.phmsa.dot.gov/. In addition, the ECC should consider specific questions within their call intake guides.

Specific Questions that ECCs may want to incorporate for potential rupture situations include:

1. What commodity might be leaking, and how severe does the potential leak appear?
2. What is the point-to-point location span of the potential rupture?
3. Is any special equipment needed for responders to mitigate the potential problem?

To comply with the new PHMSA rule, pipeline operators must contact ECCs reliably. Some pipeline operators are local or regional companies with existing relationships with the ECCs in their area. However, many pipeline operators serve a large geographic area and may not have established relationships with every ECC within their service area. Those pipeline operators may utilize the NENA Enhanced PSAP Registry and Census (EPRC) to obtain PSAP contact information. NENA strongly encourages you to verify the accuracy of your PSAP's contact information in the EPRC database. ECC 24/7/365 emergency contact number(s) should be 10-digit lines answered as quickly as possible. Callers should not be required to interact with a phone tree or wait on hold if possible. Access to the EPRC is free for ECCs. To learn more and to request user accounts if you do not already use the EPRC, visit nena.org/eprc.

Pipeline Purpose and Reliability

- Critical national infrastructure
- Over 2.7 million miles of pipeline provide 65% of our nation's energy
- 20 million barrels of liquid product used daily
- 21 trillion cubic feet of natural gas used annually

Safety Initiatives

- Pipeline location
  - Existing right-of-way (ROW)
- ROW encroachment prevention
  - No permanent structures, trees or deeply rooted plants
- Hazard awareness and prevention methods
- Pipeline maintenance activities
  - Cleaning and inspection of pipeline system

Product Hazards and Characteristics

Petroleum (flow rate can be hundreds of thousands of gallons per hour)

- Flammable range may be found anywhere within the hot zone
- H2S can be a by-product of crude oil

Type 1 Products	Flash Point	Ignition Temperature
Gasoline	- 45 °F	600 °F
Jet Fuel	100 °F	410 °F
Kerosene	120 °F	425 °F
Diesel Fuel	155 °F	varies
Crude Oil	25 °F	varies

Natural Gas (flow rate can be hundreds of thousands of cubic feet per hour)

- Flammable range may be found anywhere within the hot zone
- Rises and dissipates relatively quickly
- H2S can be a by-product of natural gas – PPM = PARTS PER MILLION
  - 0.02 PPM — Odor threshold
  - 10.0 PPM — Eye irritation
  - 100 PPM — Headache, dizziness, coughing, vomiting
  - 200-300 PPM — Respiratory inflammation within 1 hour of exposure
  - 500-700 PPM — Loss of consciousness/possible death in 30-60 min.
  - 700-900 PPM — Rapid loss of consciousness; death possible
  - Over 1000 PPM — Unconsciousness in seconds; death in minutes
- Incomplete combustion of natural gas may release carbon monoxide
- Storage facilities may be present around populated areas/can be depleted production facilities or underground caverns
- Gas travel may be outside the containment vessel along the natural cavern between the pipe and soil

Propane, Butane and Other Similar Products

- Flammable range may be found anywhere within the hot zone
- Products cool rapidly to sub-zero temperatures once outside the containment vessel
- Vapor clouds may be white or clear

Type 3 Products	Flash Point	Ignition Temperature
Propane	- 150 °F	920-1120 °F
Butane	- 60 °F	725-850 °F

Line Pressure Hazards

- Transmission pipelines – steel *(high pressure: average 800-1200psi)*
- Local gas pipeline transmission – steel *(high pressure: average 200-1000psi)*
- Local gas mains and services – steel and/or plastic *(low to medium pressure)*
  - Mains: up to 300psi
  - Service lines: up to regulator
    - Average 30-45psi and below
    - Can be up to 60-100psi in some areas
- At regulator into dwelling: ounces of pressure

Leak Recognition and Response

- Sight, sound, smell – indicators vary depending on product
- Diesel engines – fluctuating RPMs
- Black, dark brown or clear liquids/dirt blowing into air/peculiar odors/dead insects around gas line/dead vegetation
- Rainbow sheen on the water/mud or water bubbling up/frozen area on ground/frozen area around gas meter
- Any sign, gut feeling or hunch should be respected and taken seriously
- Take appropriate safety actions ASAP

High Consequence Area (HCA) Regulation

- Defined by pipeline regulations 192 and 195
- Requires specialized communication and planning between responders and pipeline/gas personnel
- May necessitate detailed information from local response agencies to identify HCAs in area

Emergency Response Basics

- Always follow pipeline/gas company recommendations – pipeline representatives may need escort to incident site
- Advance preparation
  - Get to know your pipeline operators/tour their facilities if possible
  - Participate in their field exercises/request on-site training where available
  - Develop response plans and practice
- Planning partners
  - Pipeline & local gas companies
  - Police – local/state/sheriff
  - Fire companies/HAZMAT/ambulance/hospitals/Red Cross
  - LEPC/EMA/public officials
  - Environmental management/Department of Natural Resources
  - Army Corps of Engineers/other military officials
  - Other utilities
- Risk considerations
  - Type/volume/pressure/location/geography of product
  - Environmental factors – wind, fog, temperature, humidity
  - Other utility emergencies
- Incident response
  - Always approach from upwind/park vehicle a safe distance away/if vehicle stalls – DO NOT attempt to restart
  - Gather information/establish incident command/identify command structure
  - Initiate communications with pipeline/gas company representative ASAP
  - Control/deny entry: vehicle, boat, train, aircraft, foot traffic, media – refer all media questions to pipeline/gas reps
- Extinguish fires only
  - To aid in rescue or evacuation
  - To protect exposures
  - When controllable amounts of vapor or liquid present
- Incident notification – pipeline control center or local gas company number on warning marker
  - In ***Pipeline Emergency Response Planning Information Manual***
  - Emergency contact list in ***Program Guide***
  - Call immediately/provide detailed incident information
- Pipeline security – assist by noting activity on pipeline/gas facilities
  - Report abnormal activities around facilities
  - Suspicious excavation/abandoned vehicles/non-company personnel/non-company vehicles
  - Freshly disturbed soil/perimeter abnormalities

One-Call

- One-Call centers are not responsible for marking lines
- Each state has different One-Call laws. Familiarize yourself with the state you are working in
- Not all states require facility owners to be members of a One-Call
- You may have to contact some facility owners on your own if they are not One-Call members
- In some states, homeowners must call before they dig just like professional excavators

Pipeline Emergency Response Training

First Responders and Emergency Personnel

CORE
COORDINATED RESPONSE EXERCISE

Instructor:

Continuing Education Unit (CEU) Opportunities

Make sure you see the MUFRTI representative for information relating to Continuing Education Units (CEUs) for this course.

2023 Regional Attendance winners

2023 Nine Regional Agency Winners ($500.00 ea.)

- Region A – Belton Police Department
- Region B – Pike County EMA
- Region C – Beaufort – Leslie Fire Protection Dist
- Region D – Urbana Rural Fire Dept Station 1
- Region E – Cape Girardeau County EMA
- Region F – Northwest Fire Protection Dist Station 1
- Region G – Rover VFD
- Region H – Polo VFD & Rescue Department
- Region I – Gasconade County LEPC

Sponsoring Companies

PAM
Pipeline Association of Missouri

Local Operator Information*

- Operator and/or company name
- Pipeline systems and products
- Location of pipelines
- Pipeline size/operating pressure(s)
- Operator Response(s) to a pipeline emergency

*Information in the materials may not represent all pipeline companies in your area.

Coordinated Response Exercise*

- **Learn** your roles and responsibilities as emergency responders should a pipeline emergency happen in your jurisdiction. As well as your access to resources.
- **Acquaint** you with the operator's ability to respond to a pipeline emergency.
- **Identify** the types of pipeline emergencies.
- **Plan** how all parties can engage in mutual assistance to minimize hazards to life, property and the environment.

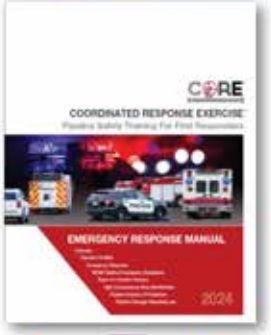
Code of Federal Regulations (CFR): 49 CFR Parts 192 and 195

Roll Call: Law Enforcement, Fire, EMS, Emergency Management, Division of Forest Service, State & Federal Officials, School Officials, PSAP & Pipeline Operators

Program Resources

Showmepipeline.com

Program Resources



Integrity Management

Pipeline companies are required to have Integrity Management programs to insure safe and efficient operations:

- Internal and external cleaning and inspection, of the pipeline and affected areas
  - Rights-of-Way and valves
- Supervisory Control and Data Acquisition (SCADA)
- Identification of High Consequence Areas (HCA)
- Aerial Rights-of-Way Patrols
- Public Awareness Outreach to stakeholders
- Participation as a member of 811
- Operator Qualification (OQ) Training
- Local Distribution Company (LDC)
  - Meter Testing
  - Leak Surveys
    - May also be utilized on transmission pipelines

Pipeline Operators Emergency Response Plans

Natural gas and hazardous liquids

- Notify appropriate fire, police, and other public officials of **gas** or **liquid** pipeline emergencies, coordinate planned responses, and actual responses during an emergency
- Identify the type of incident
- Prompt and effective response measures
- Availability of personnel and equipment
- Make safe any actual or potential hazard to life, property, and the environment
- Incident investigation and review

Natural gas (49 CFR 192.615)

- Establish and maintain communication with fire, police, and other public officials
- Direct actions to protect people, then property
- Emergency shutdown to minimize hazard to life, property, and the environment
- Safely restore service

Hazardous liquid (49 CFR 195.402)

- Take necessary actions, such as emergency shutdown and pressure reduction
- Control of released hazardous liquid or carbon dioxide at scene to minimize hazards
- Minimize public exposure to injury by taking appropriate actions such as evacuations or traffic controls
- Use instrumentation to assess vapor cloud coverage and determine hazardous areas

Coordinated Response Exercise®

Discussion Based Exercise

Natural Disasters

- Tornadoes
- Wildfires/Forest Fires
- Flooding/Mudslides/Slips
- Earthquakes

Human Error

- Vehicle accidents involving above ground valve sites
- Third party strikes by contractors and excavators
- Agricultural activities, field tiling

National Security Threats

- Cyberterrorism involving pipeline systems
- IED's on pipeline assets

These training programs can also go hand in hand with Homeland Security Exercise and Evaluation Programs (HSEEP)

Virtual Scenario Manager (VSM™) Map

Coordinated Response Exercise Discussion

Discussion Questions

- Pipeline Operators: How do you typically find out about an emergency, and what protocols go into effect when a product release occurs on your system that your local emergency responders may not be aware of (behind the scenes)?
- Emergency Responders: How will we deliver coordinated, prompt, reliable and actionable information to the whole community about what is happening? (Mission: Response; Public Information & Warning)
- Pipeline Operators: Do you always know where emergency responders will set up an Incident Command Post (ICP)?
- Emergency Responders: How will we establish and maintain a unified and coordinated operations structure that appropriately integrates all critical stakeholders and supports the execution of core capabilities? (Mission: Response; Operational Coordination)

Coordinated Response Exercise Discussion

Discussion Questions

- Pipeline Operators: How will you get access to the scene if a secured perimeter has been established?
- Emergency Responders: How will we conduct appropriate measures to ensure the protection of the health and safety of the public and workers, as well as the environment, from all-hazards in support of responder operations and the affected communities? (Mission: Response; Environmental Response / Health & Safety)
- Pipeline Operators: How will you typically handle communications;
  - At the scene between pipeline operators?
  - At the scene between pipeline operators and the ICP / other emergency responders?
  - Between field pipeline personnel and Control Centers / SCADA Centers?
- Emergency Responders: How can we ensure the capacity for timely communications in support of security, situational awareness, and operations by any and all means available, among and between affected communities in the impact area and all response forces? (Mission: Response; Operational Communications)

Discussion-Based Exercise Recap

- Timely notification of the incident
- Denied entry at scene of incident
- Quick access to remote valves/ICP
- Getting equipment into the area
- Communications with incident command
- Clear lines of communication (both ways)
- Face to face meetings with local officials
- Pre-planning with emergency services

National Emergency Number Association

Pipeline Emergency Operations Standard

NENA's pipeline emergency operations workgroup recommendations
- Awareness of pipelines affecting the 911 service area
- Pipeline leak recognition and initial response actions
- Additional notices to pipeline operators

Initial intake checklist
- Quick reference guide in program materials

Pipeline emergency operations standard/model recommendations
- Access the full report through **nena.org**

"Actions taken during this time frame significantly impact the effectiveness of the response and are critical to public safety"

New PHMSA Rule – Impact on PSAPs

For both natural gas and hazardous liquids pipelines

- Rupture mitigation valves must be installed on all newly constructed and replaced pipelines 6" in diameter or greater for onshore gas transmission, Type A gas gathering and hazardous liquid pipelines
  - This does not include natural gas distribution pipelines
- Pipeline operators must contact 9-1-1 or Emergency Management with a 'notice of potential rupture'

How does this rule potentially affect PSAPs

- How will your agency process this call when notified of a 'potential' release?
  - Will you record it and not pass it on to your response agencies?
  - Will you record and pass that information on to your response agencies?
  - Will this require your PSAP (and emergency services) to develop written policies?
  - Where, potentially, could this call be coming from?
  - Pipeline control center locations
    - Contacting a PSAP through the non-emergency number (no Automatic Number Identification (ANI), No Automatic Location Identification (ALI)
    - Is this number monitored 24/7?
- Pipeline operators were required to update their Emergency Response Plans (ERP) with this requirement in October 2022

Product Characteristics

Hazardous Liquids

ER Guide 128 (Pages 186-187)

- Crude oil, jet fuel, gasoline and other refined products
- **Liquid in and liquid out of the pipeline**

Highly Volatile Liquids

ER Guide 115 (Pages 160-161)

- Propane, Butane, Ethane and natural gas liquids
- **Liquid in and vapor out of the pipeline**

Natural Gas

ER Guide 115 (Pages 160-161)

- Gas in and gas out of the pipeline
- **Odorant Mercaptan added where required**

Product Characteristics Resources

Anhydrous Ammonia (NH_3)

ER Guide 125 (Pages 186-187)

Potential Hazards

- Toxic; may be fatal if inhaled, ingested or absorbed through skin
- Cloud may not be visible
- Vapors are initially heavier than air and spread along ground
- Wear full protective clothing/SCBA

Health Hazards

- Vapors may cause dizziness or suffocation
- Vapors are extremely irritating and corrosive
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite
- Fire will produce irritating, corrosive and/or toxic gases
- (LEL) 15% to (UEL) 28% (NIOSH Pocket Guide to Chemicals)

Public Safety

- Immediate precautionary measure, isolated spill or leak area at least 330 ft all directions
- Keep unauthorized personnel away
- Stay upwind and/or upstream
- Vapors are lighter than air

Petroleum Products Batching

Emergency Response and 811

Derailments, car accidents, excavating/farming mishaps, natural disasters, and wildfires

PHMSA Advisory Bulletin (2012-08)

- Based on National Transportation Board recommendation
- Inform emergency responders about the benefits of 811
- Identify underground utilities in the area
- Notify underground utilities in the area

811

Above Ground Storage Tanks

Considerations when responding to tank farms/ terminals

Work with your local operator to:

- Develop an effective response plan
- Identify products and hazards
- Determine evacuation radius

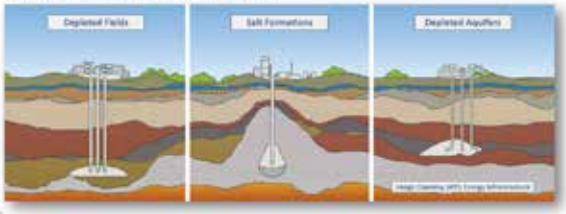
Response recommendations:

- Cool tank(s) or nearby containers by flooding with water
- Use unmanned hose holders/monitor nozzles
- Do not direct water at safety devices or icing may occur
- Let product burn, even after air supply line/system is closed
- Beware of the potential for **Boiling Liquid Expanding Vapor Explosion (BLEVE)**

Underground Storage Fields

Emergency response "non-intervention"

- Emergency contact information found on pipeline markers and all wellhead locations
- Always be aware of wind direction; walk into the wind, away from hazardous fumes
- Do not drive into a leak or vapor cloud
- Monitor combustible atmosphere
- Determine hazardous area and escape routes



Local Distribution Systems

Caution

- Be aware, not all natural gas leaks are from excavation; unintended leaks from stoves, water, heaters, furnaces, etc. can occur
- When called out on natural gas leak events, use combustible gas indicators
- Mercaptan can be stripped as it travels through soil
- Frost heaves, breaking pipes
- Gas meter breaks due to snow buildup from melting snow falling from roofs

Excess flow valve meter tags

Identification tags [192.381(c)]

- The presence of an excess flow valve on the service lines must be marked with an identification tag. The identification tag will typically be located at the top of the service riser below the meter stop valve

Excess Flow Valve (EFV)

Local Distribution Lines

- **Automatic reduction of gas flow** should a service line break
- **May not** completely stop the flow of natural gas
- **May not** hear a distinct hissing sound
- Migration and ignition sources may still exist
- Always work a coordinated response with your local operator
- **Not all service lines have an EFV installed**

Explosive Limits

Explosive Limits vs. Percent of Gas in Air

Lower / Upper explosive limits depend on characteristics of specific products

Farm Taps

- Mainly in rural areas, some natural gas pipeline companies may have facilities commonly referred to as "farm tap"
- These natural gas settings are made up of valves, pipes, regulators, relief valves and a meter. It may be located near the home or within the general vicinity
- To report the smell of gas near a farm tap, call 911 and the local gas distribution company from a safe distance
- The lines after a farm tap or residential meter are PRIVATE LINES. Be aware of these.

InfraGard – Protecting Critical Infrastructure

InfraGard is a partnership between the FBI and members of the private sector for the protection of U.S. Critical Infrastructure.

https://infragard.org

16 Critical Infrastructure Sectors:

- Chemical
- Commercial Facilities
- Communications
- Critical Manufacturing
- Dams
- Defense Industrial Base
- Emergency Services
- Energy
- Financial Services
- Food and Agriculture
- Government Facilities
- Healthcare and Public Health
- Information Technology
- Nuclear Reactors, Materials, and Waste
- Transportation Services
- Water & Wastewater Systems

Emergency Response Portal (ERP)

PHMSA Advisory Bulletin issued October 2010

https://my.spatialobjects.com/admin/register/ERPP

Provides agencies secure access to participating pipeline operator profiles include:*

- Contact information
- Counties of operation
- Product(s) transported

*Additional information updated to share pipeline mapping, emergency response plans.

Live Virtual Pipeline Safety Webinar

If members of your agency couldn't be at this face-to-face meeting today, we will offer one live virtual version of the meeting on November 26th, 8:00a.m. To register to attend this virtual meeting, please go to: https://showmepipeline.com/meeting_schedule

If your **Emergency Response** Personnel can't attend the live virtual event mentioned above, please make them aware of our Training Center. There is more information about this on the next slide.

Pipeline Preparedness Training Center

Share with others in your agency unable to attend today's program

- Access to your local pipeline sponsor information
- Download the same documents presented in this program
- Certificate of completion provided upon completion of course

trainingcenter.pdigm.com
Use Code: 2024CORE

911 Communications Director: Appreciate the opportunity to do this online and have it available for my staff. Very informative!

Battalion Chief: Thank you for the information. I also like the fact of being able to take the course online when I cannot make the live sessions.

Commissioner: Very informative and increased my awareness of the resources available to our county leadership in case of an emergency.

Deputy Emergency Management Coordinator: Excellent presentation. Thank you for the resources and useful web pages.

Director of Public Safety: Excellent presentation. Thank you for the ability to take class online due to scheduling conflict.

Fire Chief: Thank you for providing this informative course. I would like to see more courses like this. It is a very good review and helps us tremendously.

Police Chief: The training is very informative, and I will pass this onto our Fire Department and our Law Enforcement Supervisors. Great job!!!

PIPELINE DAMAGE REPORTING LAW AS OF 2007

H.R. 2958 Emergency Alert Requirements

Any person, including a government employee or contractor, who while engaged in the demolition, excavation, tunneling, or construction in the vicinity of a pipeline facility;

A. Becomes aware of damage to the pipeline facility that may endanger life or cause serious bodily harm or damage to property; or

B. Damages the pipeline facility in a manner that may endanger life or cause serious bodily harm or damage to property, shall promptly report the damage to the operator of the facility and to other appropriate authorities.

Websites:

Association of Public-Safety Communications Officials - International (APCO)
www.apcointl.org/

Common Ground Alliance
www.commongroundalliance.com

Federal Emergency Management Agency
www.fema.gov

Federal Office of Pipeline Safety
www.phmsa.dot.gov

Government Emergency Telecommunications
www.dhs.gov/government-emergency-telecommunications-service-gets

Infrastructure Protection – NIPC
www.dhs.gov/national-infrastructure-protection-plan

National Emergency Number Association
https://www.nena.org/?

National Fire Protection Association (NFPA)
www.nfpa.org

National Pipeline Mapping System
www.npms.phmsa.dot.gov

National Response Center
www.nrc.uscg.mil or 800-424-8802

Paradigm Liaison Services, LLC
www.pdigm.com

United States Environmental Protection Agency (EPA)
www.epa.gov/cameo

Wireless Information System for Emergency Responders (WISER)
www.wiser.nlm.nih.gov

FOR MORE INFORMATION ON THE NASFM *PIPELINE EMERGENCIES* PROGRAM
www.pipelineemergencies.com

FOR EMERGENCY RESPONSE INFORMATION, REFER TO DOT GUIDEBOOK.
FOR COPIES: (202) 366-4900
www.phmsa.dot.gov/hazmat/erg/emergency-response-guidebook-erg

Presenter/Contact Information:	Key Take-Aways:
	✓
	✓
	✓
	✓
	✓

Comments to Remember

Questions to Ask

New Concepts to Explore

Additional Notes

University of Missouri Fire and Rescue Training Institute

Missouri Emergency Response Commission

State of Missouri Emergency Management Agency

EMERGENCY CONTACT LIST

COMPANY	EMERGENCY NUMBER
BBT Ozark Gas Transmission, LLC	**1-844-940-3077**
Buckeye Partners, L.P. (Northern Missouri)	**1-866-514-8380**
Buckeye Partners, L.P. (St. Louis Area)	**1-800-331-4115**
City of Fulton (Between 7:30 AM and 4:00 PM CST)	**1-573-592-3170**
City of Fulton (After hours or on weekends)	**1-573-592-3180**
Enable Gas Transmission	**1-800-474-1954**
Enable Mississippi River Transmission, LLC	**1-800-325-4005**
Enbridge / Platte Pipe Line Company / Texas Eastern Transmission LP (Gas)	**1-800-231-7794**
Enbridge / Platte Pipe Line Company / Texas Eastern Transmission LP (Liquids)	**1-800-858-5253**
Enterprise Products Operating LLC	**1-888-883-6308**
Explorer Pipeline Company	**1-888-876-0036**
Flint Hills Resources	**1-800-688-7594**
HF Sinclair Midstream	**1-877-748-4464**
Magellan Midstream Partners, L.P.	**1-800-720-2417**
NuStar Pipeline Operating Partnership, L.P.	**1-800-759-0033**
Omega Pipeline Company, LLC	**1-573-329-3382**
Panhandle Eastern Pipe Line	**1-800-225-3913**
Permian Express Partners	**1-800-753-5531**
Phillips 66 Pipeline LLC	**1-877-267-2290**
Spire (Kansas City and Western Missouri)	**1-800-582-1234**
Spire (St. Louis and Eastern Missouri)	**1-800-887-4173**
Spire MoGas Pipeline, LLC	**1-800-282-4916**
Summit Natural Gas	**1-800-883-3181**
Tallgrass Energy / Rockies Express Pipeline	**1-877-436-2253**
Tallgrass Energy / Tallgrass Interstate Gas Transmission	**1-888-763-3690**
TC Energy Liquids	**1-866-920-0007**
TC Energy Natural Gas	**1-800-447-8066**

Note: The above numbers are for emergency situations. Additional pipeline operators may exist in your area. Visit the National Pipeline Mapping System at www.npms.phmsa.dot.gov for companies not listed above.

ONE-CALL SYSTEM	PHONE NUMBER
Missouri One Call System	**1-800-344-7483**
National One-Call Referral Number	**1-888-258-0808**
National One-Call Dialing Number	**811**

The Missouri Underground Facility Safety and Damage Prevention statute (RSMo Chapter 319) provides for a notification center for participating utilities to receive locate requests. Missouri 811 operating as a non-profit Missouri corporation, is such a notification center providing a single point of contact for notification to its members through a statewide toll-free telephone number operating 24 hours a day, seven days a week. Missouri 811 was established in 1986 and currently is providing statewide services to utilities and excavators to comply with the law. This law applies to any person excavating in the state of Missouri.

Missouri 811 was established to protect underground facilities and assist excavators and utilities in complying with Missouri's statute and OSHA Rules 1926.651. By using the service that Missouri 811 provides, the general public's safety and the environment are also protected.

Using the Missouri 811 system correctly is easy, if you know how.

When you use the internet, or call, to contact Missouri 811, you will be asked for specifics about the planned excavation. Once this information is processed by the computer, you will be given a list of member utilities that will be notified of your excavation. The computer then sends this locate request to all member utilities with facilities in your dig site area. After the utility has been notified of the planned excavation, they will mark the "approximate location" of their underground lines or advise you there are no facilities in your area. After it is determined that markings are required, the locate request will be dispatched to a field locator who will locate and mark the excavation site with paint, stakes, or flags. Members mark their facilities according to specific guidelines.

Upon agreement of the excavator and the facility owner, location may be provided by alternative means such as an on-site meeting or other conference.

Either party may request an on-site meeting to clarify markings, which must occur prior to the start date and time as described in the request.

Additional information can be found by visiting us at www.missouri-811.org.

MISSOURI

Missouri One-Call System: 811 or 800-344-7438
Website: www.missouri-811.org
Hours: 24 hours, 7 days
Advance Notice: 2 working days, not counting day of request
Marks Valid: As long as visible
Law Link:
http://primis.phmsa.dot.gov/comm/DamagePreventionSummary.htm
**Exception only for seedbed preparation down to 16 inches*

TICKETS			STATE LAWS & PROVISIONS									NOTIFICATION EXEMPTIONS					NOTIFICATIONS ACCEPTED					
FAX	Online	Mobile	Statewide Coverage	Civil Penalties	Emergency Clause	Mandatory Membership	Excavator Permits Issued	Mandatory Premarks	Positive Response	Hand Dig Clause	Damage Reporting	DOT	Homeowner	Railroad	Agriculture	Depth	Damage	Design	Emergency	Overhead	Large Projects	Tolerance Zone
N	Y	Y	Y	N	Y	Y	N	N	Y	Y	Y	N	N	N	N*	N	Y	Y	Y	N	Y	24"

PAM

Pipeline Association of Missouri

showmepipeline.com