EXCAVATION

SAFETY GUIDE & DIRECTORY

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

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Pipeline Edition

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Pipeline Association *for* Public Awareness

2018

Pipeline Safety Guidelines

Damage prevention is a shared responsibility. Digging safely begins with a call to your One Call System. Most state laws require this call, and it is normally free. Excavation information is then sent by the One Call System to operators of underground facilities near your excavation. The operators will mark the location of their facilities in accordance with the applicable state requirements. Emergency contact information should be obtained directly from the operator or from nearby pipeline markers.

Pipelines are an essential part of our transportation system. We depend on them every day to transport gas and liquid products to our homes and businesses. Pipeline companies perform ongoing maintenance to ensure the reliability of their systems. Local communities also play a vital role in keeping our Nation's energy infrastructure safe and secure. Individuals who observe any unusual conditions or suspicious activity near a pipeline facility should immediately report these to local law enforcement or the pipeline operator. Following these guidelines will help prevent pipeline emergencies and keep pipelines the safest method for transporting gas and liquid products.

Know the hazards

- Natural gas and other petroleum products will ignite and burn.
- If exposed to the skin, serious irritations may occur.
- Escaping gases can displace oxygen.

Recognize unsafe conditions

- Pipelines that are: leaking, damaged, insufficiently supported, exposed to high heat, or threatened by natural forces are all unsafe conditions.
- Any damaged or weakened pipeline must always be checked by the pipeline company for remaining strength. Even very minor damages can cause future leaks or ruptures and must be investigated.
- Pools of liquid, blowing dirt, hissing sounds, vapor clouds, gaseous odors, bubbles in standing water, dead vegetation and frozen soil or ice next to pipelines are all signs of a pipeline leak and should be treated as an emergency.

Respond immediately

- Immediately leave the area while avoiding any action that may cause sparks. Abandon all equipment and get a safe distance away.
- Call 911 and then immediately notify the pipeline company.
- Keep others away until emergency officials arrive. Stay upwind, do not attempt to operate pipeline valves or extinguish any pipeline fires.

Guía de Seguridad de Tuberías

811

La prevención de daños es una responsabilidad compartida. Excavar con cuidado empieza con una llamada a su "One Call System" local. La mayoría de las leyes estatales requieren esta llamada y normalmente es gratis. Información sobre la excavación es enviada por el "One Call System" a los operarios de las instalaciones subterráneas que están cerca de su excavación. Los operarios marcarán el lugar donde tienen sus instalaciones en acuerdo con los requisitos estatales. Información sobre contactos de emergencia puede ser obtenida directamente del operario o de las señales en los gasoductos u oleoductos.

Las tuberías son parte esencial de nuestro sistema de transporte. Dependemos de ellas a diario para transportar productos de gas y líquido a nuestros hogares y negocios. Las compañías de tubería realizan mantenimiento para asegurar la confiabilidad de sus sistemas. Comunidades locales también pueden jugar un papel importante en mantener segura la infraestructura nacional de energía. Individuos que observen cualquiera condición inusual o actividades sospechosas cerca de facilidades de acueductos debe reportarlo inmediatamente a las autoridades locales o al operador del acueducto. Siguiendo las pautas antedichas ayudará a prevenir emergencias de tubería y garantizar que las tuberías son el método más seguro para transportar productos de gas y líquido.

Conozca los peligros

- Gas natural y otros productos petróleos pueden encenderse y quemar.
- Si expuesta a la piel, serias irritaciones pueden ocurrir.
- Gases escapados pueden desplazar el oxígeno.

Conozca las condiciones peligrosas

- Condiciones peligrosas son: gasoductos u oleoductos que tienen escapes, están dañados, el soporte es insuficiente, están expuestos a temperatura muy alta, o amenazados por las fuerzas de la naturaleza.
- Cualquier gasoducto u oleoducto dañado o frágil siempre debe ser revisado por la compañía que los dirige para determinar la resistencia restante. Incluso daños menores en los gasoductos u oleoductos tienen que ser investigados porque pueden causar escapes o rupturas en el futuro.
- Indicios de un escape en un gasoducto u oleoducto son: charcos de líquido, tierra soplada, sonido de silbidos, nubes de vapor, olores a gas, burbujas en agua estancada, vegetación completamente seca, y tierra congelada o hielo alrededor de ella. Todos estos indicios deben ser tratados como una emergencia.

Actúe de inmediato

- Aléjese del área inmediatamente y evite cualquier acción que pueda causar chispas. Abandone todo el equipo y manténgase a una distancia segura.
- Llame al número de emergencia 911 y luego de inmediato notifique a la compañía que dirige el gasoducto u oleoducto.
- No deje que otras personas se acerquen hasta que llegue el personal de emergencia. Manténgase contra el viento y no intente manejar las válvulas ni extinguir incendios en el gasoducto u oleoducto.

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2018 EXCAVATION SAFETY GUIDE & DIRECTORY

PIPELINE EDITION

BEFORE YOU DIG

What you need to know and what you need to do before you dig.

This publication is an informational and educational guide, but it is not intended to provide you with any definitive information regarding legal issues. You need to follow your specific state laws and OSHA rules. If you have any questions on issues raised in this guide, please consult with legal counsel and/or your state One Call Center.

The Excavation Safety Guide is designed to be a reference for readers to use all year long. The articles are concise, to the point and focus on current industry trends and technologies. The resources include the CGA Excavation Best Practices, a complete One Call Center listing along with the state laws and provisions, a pull-out Emergency Response poster and much more. Protecting buried infrastructure is becoming more of a challenge every day and this guide will help you navigate through these challenges.

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www.pipelineawareness.org

FREE
Excavation Emergencies Poster
LOOK ON PAGE 31 TO FIND YOUR COMPLIMENTARY PULL-OUT POSTER with complete information on how to recognize and respond to the hazards inherent in utility excavation. **Provided by Pipeline Association for Public Awareness**

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RESOURCE DIRECTORY

A collection of invaluable information and access to resources.

Damage Prevention Best Practices: BEFORE YOU DIG!

BY DAN LUCARELLI

Congratulations! Your bid for excavation work has been accepted! Let's get the crew to the site. Chop, chop! Time is money!

Let's GO!

Before you send a crew to start work on your successful bid, a responsible excavating company may want to consider their One Call obligations and review some best practices to ensure a safe, productive and profitable excavating job. Have you read and do you understand the excavator section of your state's One Call law? Before you send a crew or fire up the engine on the backhoe or trackhoe, consider these steps:

1 Plan your excavation. Take time to review the excavation site. What potential obstacles do you see? Are there any indications that underground facilities may be nearby? (For example, do you see any electric transformers? Fire hydrants? Telephone poles with conduit? Telltale signs of traffic loops? Do you see any pipeline right-of-way markers? All are indications that underground facilities may be near or in your excavation site.) Take notes. Take pictures. Formulate a plan for excavation.

2 Premark in white. You know exactly where you will be digging. The professional locators who visit your site do not. The best way to communicate your intent at the work site is to document where you intend to dig with white chalk, paint, flags or stakes around the area where excavation is planned and communicate clearly on the ticket: street, cross street, landmarks, measurements, distances. This step is important enough that many states, including Pennsylvania, will ask the question, "Is the site marked in white?" when you call 811.

Chop, chop!

3 Call 811. The damage prevention industry has spent hundreds of millions of dollars over the last decade promoting a simple message: "Call 811 before you dig." This is worth repeating again and again because of two statistics from the Common Ground Alliance Damage Information Reporting Tool (DIRT): if the excavator calls 811 in advance of excavation, there is a 99% chance that the project will complete without damage or injury; and 25% of all damages are caused by the excavator failing to call 811 before beginning excavation. Call 811 before you dig.

4 Wait the required time. Each state has different requirements for when excavation can begin after a call to 811. In Pennsylvania, three business days are required (i.e. call on Monday, excavate on

Thursday). This wait time gives the facility owners nearby time to mark the approximate location of underground utilities at the work site with colored paint, flags, chalk, stakes or other means. Other states have different wait times, and excavators should check applicable state laws.

5 Review the facility owner responses. Many states, including Pennsylvania, obligate the facility owner to provide the disposition of the notification ("Clear" or "Marked") back to the One Call center. Pennsylvania 811 collects the responses from all notified facility owners and sends an email or fax to the excavator on the morning of excavation with all of the responses. This provides the excavator with a clear understanding of what was marked (and therefore what underground facilities to expect), and, as important, what facilities are "clear" and therefore should not be located within the work site.

6 Compare the responses. A list of responses from the One Call center is one half of a facility checklist. The list of responses should be compared to the temporary marks found at the work site. Has the electric company responded but there are no red marks on the ground? Are there yellow marks at the work site but no corresponding "Marked" on the responses list? Discrepancies in this comparison should raise a red flag (pun intended) and warrant further investigation before excavation begins.

7 Document the work site. Before excavation begins, the excavator should document the work site. Do you have a copy of the notification on site? Everyone's cell phone has a camera. Take pictures of the work site, the temporary marks, landmarks, etc. Make sure the pictures are far enough away to clearly see where the marks are at the work site and close enough to show needed details. Remember to download the pictures to a project folder to keep in the unlikely event they are needed in a dispute.

Time is money!

8 Know your Tolerance Zone. Do you know how big the tolerance zone is within the state you are excavating? In Pennsylvania, the tolerance zone is defined as eighteen inches from the outside wall or edge of the facility. This means that different facilities have different tolerance zones, and the locator should have placed a facility size in addition to the colored paint on the ground. In Pennsylvania, 2 inches is assumed if no size is marked. Common sense should prevail: A green mark (for a sewer line) with no corresponding size should warrant investigation and a question back to the facility owner.

9 Excavate prudently. Within the Tolerance Zone the excavator should use hand digging or soft excavation techniques (such as a vac truck) until the underground facility is found and exposed within the tolerance zone of the temporary mark. In Pennsylvania, powered excavation equipment within the tolerance zone is discouraged. Hand dig. Find the facility. Expose the facility. Only then should the excavator consider mechanized equipment for the excavation.

10 Protect the marks. Temporary marks are temporary, and should be protected until the excavation job is complete, even if the facilities are exposed. Consider asking the locator to provide offset marks, outside the active excavation area. In Pennsylvania, the excavator is responsible to maintain the temporary marks throughout the job, and damaging the marks is a fineable offense.

11 Protect the exposed facilities. The facility owner is the best resource to determine how to protect exposed facilities during an excavation project. Some facility owners will insist on specific actions to protect facilities, including temporary shoring. Other facility owners may insist on observing the excavation activity. Please remember that the facility owner wants to keep their facilities safe and the excavator safe from injury, and their requests to protect their facilities during excavation should be honored.

12 Clean up the work site. Most contracts include clauses for site cleanup. The excavator who originated the request to locate underground utilities is ultimately responsible for cleaning up the work site when the excavation project is complete. This includes removing temporary marks from the work site and surrounding area.

These twelve steps can help ensure a safe excavation job with no damage to underground utilities and no injuries to self or crew. Congratulations on winning the bid! Get to work! (Safely). ESG

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IMPROVING DAMAGE INVESTIGATION

BY RON PETERSON

"DAMAGE INVESTIGATORS SHOULD REMEMBER THEY ARE TELLING THE STORY OF THE DAMAGE THROUGH PHOTOS OR VIDEO TO SOMEONE WHO WILL LIKELY NEVER GO TO THE SITE - AN INTERNAL RISK MANAGER, INSURANCE ADJUSTER, UTILITY CLAIMS REPRESENTATIVE OR EVEN A UTILITY EXPERT HIRED TO REVIEW THE CASE."

I am often asked how to better investigate a damage in order to beat paying for it. While I get the point of the question, the real purpose behind the damage investigation is to get to the truth of what happened. If the excavator is wrong, no amount of manipulation is going to change this fact. A good investigation, however, can tell what went wrong and how to change or improve things to prevent it in the future. If the excavator did everything right, but has little or no documentation, they again find themselves involved in a claim. Excavators continue to find themselves in claims disputes because, in general, they don't do an adequate job of documenting a damage. To be fair, utilities don't do a good job either which leads to disputes and, in many cases, litigation.

A quality investigation can defend an excavator against unfair claims and literally save thousands of dollars. With just a few key processes in place, excavators can set themselves up for success in the event of an unforeseen incident.

One of the most overlooked tasks necessary for a quality investigation occurs long before the incident ever happens. Taking photographs or video after locates are complete and before excavation begins can be critical in telling the story of a utility damage. Once excavation begins, the site changes forever; marks are destroyed making it impossible to know what the area looked like before the damage without the aid of pictures. Many court cases have been lost because the contractor could not prove his claim that a line had not been marked or was mismarked prior to the damage.

It is necessary to capture an overview of the area that provides a geographic reference to place the photograph at the location. Date and time are important and many modern cameras have this information built into the metadata even though it may not show in the picture. Photographs should follow the path of the proposed excavation along with potential crossings of other utility lines. Even if there is no paint, pictures should be taken. If a line is struck, those photos will clearly show the absence of paint or flags. You can't take too many pictures. Pictures cost nearly nothing with today's technology, so take plenty.

Video can be an excellent addition to the documentation process. The concept is the same as with photography, except that the videographer has the ability to narrate as s/he captures the scene. Talking about the marks (or lack of marks) as well as what will take place can be a powerful piece of evidence should things go wrong. Background noise and opinions should be kept out of the video. I've seen numerous videos produced that had great content, but the narration was filled with opinions and conclusions that were later proved wrong or with an obvious bias against the other party which hurt the contractor's case. Stick to the facts.

Potholing activities should be documented with pictures and video when possible. In many cases, open excavation will destroy any sign of potholing and if an incident occurs there will be questions as to whether potholing took place. Unfortunately, if it isn't documented, it might as well have not

happened. This documentation will show the utility in question was safely exposed without damage which can be helpful if something goes wrong several months or years down the road.

Once all utility responses have been verified and the potholing has been completed and documented, excavation can begin. It is a good idea to periodically take pictures and video throughout the excavation process.

All this documentation will certainly help to reduce damages, however, despite doing everything right incidents still happen. When they do, a quality investigation will get to the truth of what happened. Several steps are necessary to ensure a proper investigation.

First, do not leave the scene. If you are not on site, arrive as quickly as possible. It is necessary to preserve evidence and make sure that nothing occurs that may corrupt the scene. The first priority is to ensure the area is safe for workers and the general public.

Once it is safe to do so pictures and, if possible, video should be taken of the scene. In the event of a natural gas release, always seek permission before using a camera as it could be an ignition source. Many efforts to document an incident result in four to eight pictures of a damage in a hole and not much more. While it is important to capture the actual point of damage, those pictures by themselves do little to help the case.

Damage investigators should remember they are telling the story of the damage through photos or video to someone who will likely never go to the site - an internal risk manager, insurance adjuster, utility claims representative or even a utility expert hired to review the case. Companies should develop a standardized process for photographing a scene that is easily repeatable.

One easy solution is called the "clock method". Using the center of the clock as the point of damage, the investigator starts at 12 at a distance away from it; potentially 50 feet or more depending on the size of damage and scope of work. A picture is taken looking toward the damage. The investigator moves halfway toward the damage and takes another picture. Moving close to the damage, the investigator takes one more. This process is repeated at the clock position 1:30, 3:00, 4:30, 6:00, 7:30, 9:00 and 10:30. This generates 24 pictures from varying perspectives. Designed for use with a disposable camera where there was no opportunity to review the photos prior to developing them, even with today's advanced digital cameras and cell phones, it is a good way to standardize the process of photography.

Additionally, photos following the path of the excavation and the path of the marks should be a point of emphasis. One key component of these pictures is a measuring device. Photos without these devices are fairly worthless when the dispute is whether marks put down were within the tolerance zone of the damaged utility line. While a tape measure is fine, there are several "Hit Kits" on the market which are very easy to see in photographs.

It is important to capture individuals involved in the incident in the pictures, including construction staff, locators, utility representatives and witnesses. If the case should go to litigation, this places them at the scene at the time of the incident. Vehicle photos including license plates may be helpful in determining the identity of an uncooperative representative. Video should follow the same basics process.

The next step of the investigation is to draw a diagram. This should be done on site during the investigation, not later at the office where details may be forgotten. This diagram should contain landmarks, directions, marks (if present), the path of excavation and all other important information. It doesn't matter if the investigator is not an artist. The drawing can be cleaned up or reproduced in a software program later. Pictures can be added and comments, directions, names and other details can be overlaid on top of the photos to tell the story of the damage.

It may be possible to utilize a google earth image and redraw the diagram on it. The purpose is to help tell the story of the damage. Photographic locations can be added to the diagram to help provide perspective.

Interviews can be another important part of the investigation, including the excavator's staff, the locators and the utility representatives. In many cases, the locators and utility representatives may refuse to give a statement but an attempt should still be made. If litigation occurs, the investigator may find himself in a deposition in which the question is asked about whether he talked to the other sides. If the answer is no, it will be easy to spin the testimony to sound like the investigation was one-sided and didn't consider other parties. If other parties refuse, it should be documented on the investigation report. With this, the answer becomes, "I tried, but they refused to talk to me", which changes the dynamic and should diffuse that line of questioning. If they do talk, it should be documented and if possible, signed.

Along with interviewing internal staff, statements should be collected from those on site at the time of incident. Each employee should write a personal statement about what they were doing when the damage happened and what was observed. The employee should sign and date this statement. Never write a group statement and have employees sign it. This can be made to imply the company is telling the employee what to say. After personal statements have been gathered, it is fine to gather everyone together to talk about what they saw as a group. One prominent attorney uses this technique to tap into what he calls their collective conscience. By getting them together, one employee may remember one thing that spurs the rest to build on the point and additional facts may be revealed.

It is important that, regardless of the investigation form used, it is completed entirely. "N/A" is better than a blank field. Blank spaces can lead to the perception of an incomplete report. Forms should be completed on site; waiting to get back to the office can lead to errors and loss of needed facts. One error could lead others to question the accuracy of the entire report.

Once all information has been collected, it is important to store it in a location where it can be easily retrieved at a later date. Because invoices for damages can come months or years after the incident, storage and retrieval are necessary requirements of any damage investigation process. This is one of the main reasons it is critical to thoroughly document a damage. After the incident, life goes on. Other jobs continue and the memory of the incident can fade away. Employees may leave, taking with them valuable information. A thorough damage investigation helps to remind everyone of what actually happened and fill in the gaps caused by memory loss and employee turnover.

Simply put, a quality damage investigation puts your company in the driver's seat. ESG

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BY AMY KONCELIK

Using Technology to Predict the Future

TECHNOLOGY AND RISK ANALYSIS ALLOWING UTILITIES TO PREVENT DAMAGES FROM OCCURRING

In today's day and age, technological advancements are occurring that most would agree make our lives easier. From new mobile applications to self-driving cars, the world looks a lot different than it did just ten years ago.

In addition to the development of new apps, devices and tools, developments that seek to harvest the intrinsic value of data are at the forefront of many modern advances. From predicting significant weather events with incredible accuracy to identifying potential buyers for retail purposes, the value of data and its use in predictive analysis is recognized as a key to success in many sectors.

So, what about the utility sector and excavation damage prevention? Utility operators have extensive data and intelligence about their underground infrastructure, and are beginning to put that data to use in the damage prevention context. The good news is that predictive risk analysis is a method of damage prevention that, within the first few years of putting the technology to the test, seems to be an effective damage prevention tool.

What is predictive analysis?

The PIPES (Protecting our Infrastructure of Pipelines and Enhancing Safety) Act of 2016[1] and a subsequent study on Improving Damage Prevention Technology[2] issued by the Department of Transportation shared both expectations and suggestions for various uses of technology for improvements in the damage prevention field. Industry-leading companies are continually searching for opportunities to improve pipeline safety through the use of technology and are starting to unlock the power of the data they keep for prevention purposes.

In simplest terms, predictive analysis is the use of current and past data to predict future trends and future events. Statistical modelling of One Call ticket volumes, for instance, can predict upward trends in excavation and allow utility companies to focus resources appropriately in certain areas. More specific risk analysis technology utilizes different programs and data sources to analyze and predict the risk of damage on a specific One Call ticket. This technology allows for the deployment of a resource to a particular site and excavator for the purpose of preventing a damage on a specific One Call ticket.

This kind of predictive analysis is needed. On a larger scale, statistical modelling will be useful to make decisions on how to deploy resources. What areas need more intensive "Call Before you Dig" outreach and which educational programs resonate with particular excavator groups? On a more granular level, ticket risk analysis can address excavators and excavation techniques that are still causing significant damage – even after a One Call ticket has been requested and facilities have been properly marked.

According to recent CGA DIRT reporting, approximately two-thirds of damages have a One Call ticket associated with the work. What does that tell us? The leading problem in excavator damage is no longer "no notification."

Pilot program with early success

Columbia Gas of Ohio (COH) started to put predictive analysis to the test in early 2015. Using a ticket risk model and a risk algorithm, the company reviewed many factors of risk beyond the excavation damage history of a particular excavator, including:

- **Material type of pipe**
- **Type of work**
- **Volume density**
- **Pipe pressure**
- **Age of line**
- **Geographical area by known root causes**

The model and risk algorithm were able to identify the highest risk excavation tickets consistently. Throughout the pilot program and the rollout of the risk model in Ohio, the algorithm identified that approximately 52 percent of excavation damages occurred on the top 10 percent of "riskiest" One Call tickets[3].

With the highest risk tickets identified, COH Field Damage Prevention Coordinators could create the greatest proactive and preventative impact. The coordinators continued typical educational conversations with an excavator after a damage occurred but they also completed proactive conversations with excavators ("risk mitigations"), based on statistical risk identification. Conversations about excavation techniques and other site-specific risks helped bring to light the issues that could occur and could lead to a facility damage. In essence, field personnel were able to show up at the scene of a possible incident, before the incident occurred, and attempt to prevent it through education.

Actual damage experience since the inception of the risk model program shows that risk identification and proactive conversations have prevented damages. For the first two quarters of 2017, in areas where Field Damage Prevention Coordinators were able to complete risk mitigations on at least 16 percent of the highest risk tickets, there was a 10 percent year-over-year reduction in damages per 1,000 One Call tickets overall.

Long term vision for technology

Efforts are continuing at COH to continue to refine the algorithm and to identify other ways that risk scoring can be used to prevent damages. Some possible future uses that NiSource is continuing to explore include informational assistance for locators prior to locating and assistance in prioritization of areas where facility records issues should be addressed via GPS technology.

In addition to risk mitigation activities by Field Damage Prevention Coordinators, more alternatives may be valuable – inspector presence and standby, locator watchdog services, locate audits on high risk tickets, and automated emails and/or robo-calls to damage prevention stakeholders, like excavators.

In the damage prevention field, while there is a need for effective enforcement measures to deter negligent, unsafe behavior and actions, the need for education, communication and partnership in the damage prevention arena cannot be overstated. The point of predictive analysis is not to call out excavators for previous wrongdoings, but instead to focus on prevention, education and collaboration to ensure that an excavation occurs in the safest possible way and does not result in facility damage.

For decades, the industry as a whole has focused on reacting to incidents. Now the industry can prevent excavation damage and use mitigation techniques to further emphasize proper excavation. With data and predictive analysis, utility operators can do just that. ESG

1 Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2016, Pub. L. No. 114-183 (June 22, 2016).

2 A Study on Improving Damage Prevention Technology, U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (August 3, 2017).

3 Since the inception of the risk model and its use by Columbia Gas of Ohio, the risk algorithm has identified from a low of 41% of damages (during the initial pilot period) to a high of 54% of damages (during a more recent period) within the top 10% of "riskiest" One Call tickets

Columbia Gas of Ohio (COH) is a natural gas distribution company and part of NiSource, a regulated utility company based in Northwest Indiana. Amy Koncelik is Manager, Damage Prevention for NiSource and can be reached at akoncelik@nisource.com.

Pre-Excavation Checklist Before EVERY Excavation

IN THE OFFICE

- ❑ Review all drawings, plans, engineering blueprints for existing buried facilities
- ❑ Proposed excavation area has been marked in white paint and/or flags
- ❑ Call 811 at least 2-3 business days before excavation (check your state One Call laws)
- ❑ Locate ticket number is posted at the work location
- ❑ Onsite meeting scheduled with all high profile facilities in locate area (gas/oil pipelines, high-voltage cables, fiber optic)

ONSITE

Complete a pre-excavation walkthrough of the entire jobsite and adjacent areas

Visual Inspection of Jobsite:

Permanent markers:

- ❑ Signs or marking posts
  - Pavement markers (stamped nails, pavement decals, A-tags™)
  - Surface markers
- ❑ Other surface signage for landscaped areas
- ❑ Locate marks
- ❑ Consult any maps or field sketches of the location
- ❑ Identify all services to buildings such as:
  - Gas meters
  - Farm taps
  - Pipeline valves
  - Cable pedestals
  - Electric cables
  - Water valves
  - Telephone closures
- ❑ Look for evidence of trench lines from previous excavation
- ❑ Look for cleared pipeline ROWs
- ❑ Talk with the property owner or general contractor to identify potential private facilities that may not be marked:
  - Lighting
  - Outbuildings
  - Pools/Spas
  - Irrigation
  - Sewer laterals
  - Propane tanks
  - Communications lines

Document of Jobsite:

- ❑ Compare actual jobsite to One Call ticket
  - One Call ticket covers the scope of the work
  - One Call ticket "Work to Begin" date is valid
  - All utilities have responded
  - All facilities are marked within the excavation area
- ❑ Photograph the jobsite
  - Locate marks and flags from 360° at varying distances for perspective
  - Permanent signage and location relative to the dig area:
    - Note location, height, and operator of overhead lines
    - Note all required safety signage
- ❑ Video and/or sketches where pertinent

BEFORE YOU DIG

- ❑ Review safety information with anyone working the job
- ❑ Confirm with facility owner vacuum or hydro excavation is scheduled for all pipelines impacted
- ❑ Locations for hand digging within the tolerance zone are noted
- ❑ Representatives for all critical facilities are present
- ❑ Emergency equipment available when hazardous atmospheres are potentially present
- ❑ List of all emergency contact numbers for assets in and adjacent to the dig zone is readily available
- ❑ The location and route to the nearest hospital is known by onsite supervisors

Understanding the Marks: Locating and Marking Practices

TAKEN FROM CGA BEST PRACTICES 14.0

Operator markings of facilities include the following:

- The appropriate color for their facility type
- Their company identifier (name, initials, or abbreviation) when other companies are using the same color
- The total number of facilities and the width of each facility
- A description of the facility (HP, FO, STL, etc).

Use paint, flags, stakes, whiskers, or a combination to identify the operator's facility(s) at or near an excavation site.

1. Marks in the appropriate color are approximately 12 in. to 18 in. long and 1 in. wide, spaced approximately 4 ft to 50 ft apart. When marking facilities, the operator considers the type of facility being located, the terrain of the land, the type of excavation being done, and the method required to adequately mark the facilities for the excavator. (Illustration 1)

2. The following marking examples illustrate how an operator may choose to mark their subsurface installations:

a. Single Facility Marking: Used to mark a single facility. This can be done in one of two ways
- placing the marks over the approximate center of the facility. (Illustration 2a1) or
- placing the marks over the approximate outside edges of the facility with a line connecting the two horizontal lines (in the form of an H) to indicate there is only one facility. (Illustration 2a2)

These examples indicate an operator's 12 in. facility. When a facility can be located or toned separately from other facilities of the same type, it is marked as a single facility.

b. Multiple Facility Marking: Used to mark multiple facilities of the same type (e.g., electric), where the separation does not allow for a separate tone for each facility, but the number and width of the facilities is known. Marks are placed over the approximate center of the facilities and indicate the number and width of the facilities. **Example:** four plastic facilities that are 4 in. in diameter (4/4" PLA). (Illustration 2b)

c. Conduit Marking: Used for any locatable facility being carried inside conduits or ducts. The marks indicating the outer extremities denote the actual located edges of the facilities being represented. **Example:** four plastic conduits that are 4 in. in diameter (4/4" PLA), and the marks are 16 in. apart, indicating the actual left and right edges of the facilities. (Illustration 2c)

d. Corridor Marking: Used to mark multiple facilities of the same type (e.g., electric), bundled or intertwined in the same trench, where the total number of facilities is not readily known (operator has no record on file for the number of facilities). Marks are placed over the approximate center of the facilities and indicate the width of the corridor. The width of the corridor is the distance between the actual located outside edges of the combined facilities. **Example:** a 12 in. corridor (12" CDR). (Illustration 2d)

Illustration 1

Illustration 2a1

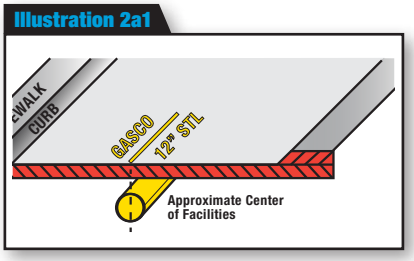


Illustration 2a2

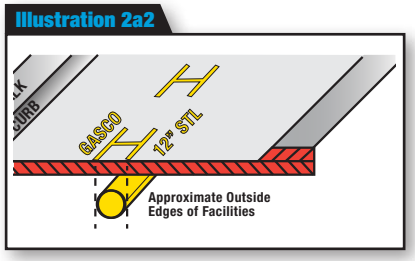


Illustration 2b

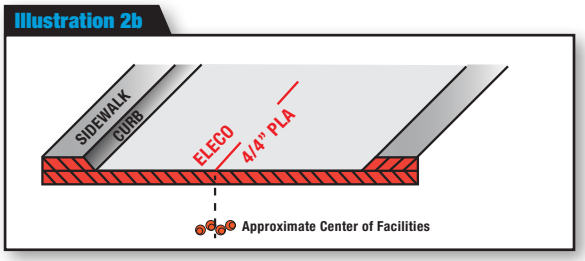


Illustration 2c

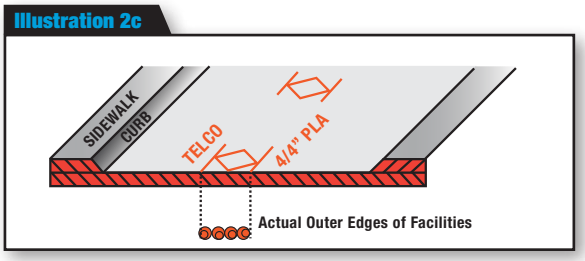
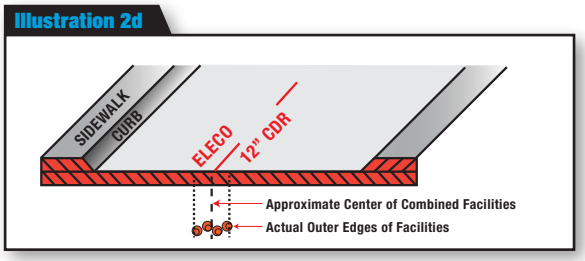
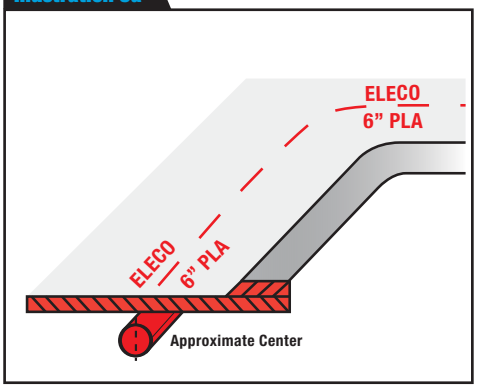


Illustration 2d



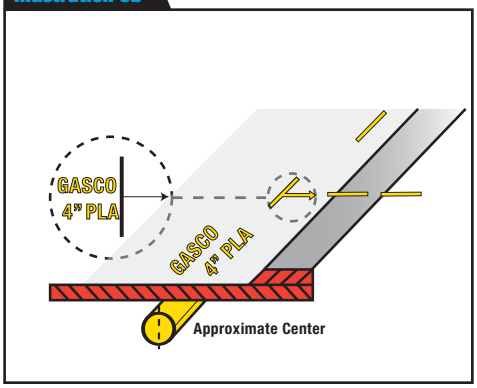
3. Changes in direction and lateral connections are clearly indicated at the point where the change in direction or connection occurs, with an arrow indicating the path of the facility. A radius is indicated with marks describing the arc. When providing offset markings (paint or stakes), show the direction of the facility and distance to the facility from the markings. **Example:** radius (Illustration 3a)

Illustration 3a



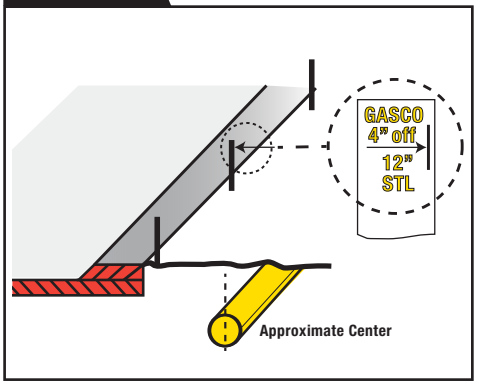
Example: lateral connection (Illustration 3b)

Illustration 3b



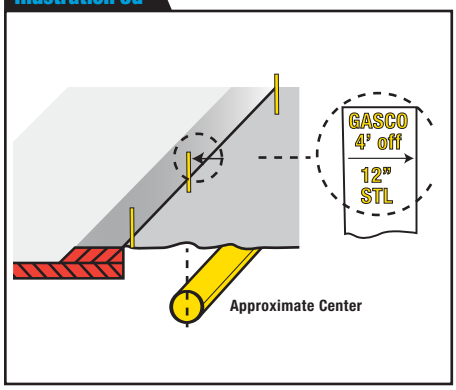
Example: painted offset (off) (Illustration 3c)

Illustration 3c



Example: staked offset (off) (Illustration 3d)

Illustration 3d



4. An operator's identifier (name, abbreviation, or initials) is placed at the beginning and at the end of the proposed work. In addition, subsequent operators using the same color mark their company identifier at all points where their facility crosses another operator's facility using the same color. Reduce the separation of excavation marks to a length that can reasonably be seen by the operator's locators when the terrain at an excavation site warrants. **Examples:**

CITYCO ELECO TELCO

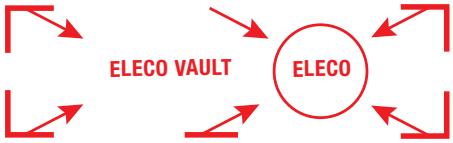
5. Information regarding the size and composition of the facility is marked at an appropriate frequency. **Examples:** the number of ducts in a multi-duct structure, width of a pipeline, and whether it is steel, plastic, cable, etc.

TELCO 9/4"CAB GASCO 4" PLA WATERCO 12"STL

6. Facilities installed in a casing are identified as such. **Examples:** 6 in. plastic in 12 in. steel and fiber optic in 4 in. steel.

GASCO 6" PLA/12" STL TELCO FO (4"STL)

7. Structures such as vaults, inlets, and lift stations that are physically larger than obvious surface indications are marked so as to define the parameters of the structure. **Example:**



8. Termination points or dead ends are indicated as such. **Example:**

9. When there is "No Conflict" with the excavation, complete one or more of the following:

- Operators of a single type of facility (e.g., TELCO) mark the area "NO" followed by the appropriate company identifier in the matching APWA color code for that facility. **Example:** NO TELCO

- Operators of multiple facilities mark the area "NO" followed by the appropriate company identifier in the matching APWA color code for that facility with a slash and the abbreviation for the type of facility for which there is "No Conflict." **Example:** NO GASCO/G/D illustrates that GASCO has no gas distribution facilities at this excavation site. The following abbreviations are used when appropriate: /G/D (gas distribution); /G/T (gas transmission); /E/D (electric distribution); /E/T (electric transmission).

- Place a clear plastic (translucent) flag that states "No Conflict" in lettering matching the APWA color code of the facility that is not in conflict. Include on the flag the operator's identifier, phone number, a place to write the locate ticket number, and date. Operators of multiple facilities indicate on the flag which facilities are in "No Conflict" with the excavation (see the previous example).

- If it can be determined through maps or records that the proposed excavation is obviously not in conflict with their facility, the locator or operator of the facility may notify the excavator of "No Conflict" by phone, fax, or e-mail, or through the One Call Center, where electronic positive response is used. Operators of multiple facilities indicate a "No Conflict" for each facility (see the previous examples).

COLOR CODE IDENTIFIERS

WHITE	Proposed Excavation
PINK	Temporary Survey Markings
RED	Electric Power Lines, Cables, Conduit, and Lighting Cables
YELLOW	Gas, Oil, Steam, Petroleum, or Gaseous Materials
ORANGE	Communication, Alarm or Signal Line, Cables, or Conduit
BLUE	Potable Water
PURPLE	Reclaimed Water, Irrigation, and Slurry Lines
GREEN	Sewers and Drain Lines

FACILITY IDENTIFIER			
CH	Chemical	E	Electric
FO	Fiber Optic	G	Gas
LPG	Liquefied Petroleum Gas	PP	Petroleum Products
RR	Railroad Signal	S	Sewer
SD	Storm Drain	SL	Street Lightning
STM	Steam	SP	Slurry System
SS	Storm Sewer	TEL	Telephone
TS	Traffic Signal	TV	Television
W	Reclaimed Water "Purple"	W	Water
UNDERGROUND CONSTRUCTION DESCRIPTIONS			
C	Conduit	CDR	Corridor
D	Distribution Facility	DB	Direct Buried
DE	Dead End	JT	Joint Trench
HP	High Pressure	HH	Hand Hole
MH	Manhole	PB	Pull Box
R	Radius	STR	Structure (vaults, junction boxes, inlets, lift stations)
T	Transmission Facility		
INFRASTRUCTURE MATERIAL			
ABS	Acrylonitrile - Butadiene - Styrene	ACP	Asbestos Cement Pipe
CI	Cast Iron	CMC	Cement Mortar Coated
CML	Cement Mortar Lined	CPP	Corrugated Plastic Pipe
CMP	Corrugated Metal Pipe	CU	Copper
CWD	Cresote Wood Duct	HDPE	High Density Polyethylene
MTD	Multiple Tile Duct	PLA	Plastic (conduit or pipe)
RCB	Reinforced Concrete Box	RCP	Reinforced Concrete Pipe
RF	Reinforced Fiberglass	SCCP	Steel Cylinder Concrete Pipe
STL	Steel	VCP	Vertrified Clay Pipe

• Place "No Conflict" markings or flags in a location that can be observed by the excavator and/or notify the excavator by phone, fax, or e-mail that there is "No Conflict" with your facilities. When the excavation is delineated by the use of white markings, place "No Conflict" markings or flags in or as near as practicable to the delineated area.

Caution: Allow adequate space for all facility mark-outs.

"No Conflict" indicates that the operator verifying the "No Conflict" has no facilities within the scope of the delineation; or when there is no delineation, there are no facilities within the work area as described on the locate ticket. **Example:**

Guide for Abbreviation Use

Follow these guidelines when placing abbreviations in the field:

• Place the Company Identifier at the top or at the left of the abbreviations.

• Place the abbreviations in the following order: Company Identifier / Facility Identifier / Underground Construction Descriptions / Infrastructure Material. **Example:** TELCO/TEL/FO/PLA indicates that TELCO has a telecommunication fiber optic line in a single plastic conduit. The use of the abbreviation /TEL is not necessary, because the orange marking would indicate that the facility was a communication line; but its use is optional.

• To omit one or more of the abbreviation types, use the order described above but omit the slash and abbreviation that does not apply. **Example:** to omit /TEL, the result would be TELCO/FO/PLA. ESG

Choosing the Right Locating METHOD & TECHNIQUE

BY BOB NIGHSWONGER

A variety of methods and techniques are used for locating a buried utility line. Before deciding on a best approach for a specific line locating challenge, key decisions have to be made based on information at hand. During the planning phase of your locate challenge, information must be gathered from a visual inspection of the job site and available mapping data before choosing a locating technique. When the challenge is identified the next step is to choose a type of technology for the specific challenge.

An Electromagnetic (EM) Pipe and Cable Locator is the first choice for locating buried line that is conductive in nature and has a continuous pathway for signaling current to flow. This is the most common locating equipment and consists of a portable signal transmitter and a handheld signal receiver. The transmitter is used to apply current to the buried line and creates a detectable magnetic field called a signal. The receiving unit detects the signal and provides information about the signal field including horizontal centerline of the field, intensity of the field and estimated distance to the center of the signal. When looking for a nonmetallic pipe, EM devices will not work unless you first insert a metallic conductor into the pipe. This is called rodding.

Most conventional signal receivers can recognize two types of signals - active and passive. Active signals are the signals that you apply deliberately with your signal transmitter whereas passive signals are signals that are created by outside sources and may naturally be present on your buried line. Applying an active signal for locating in the conduction/direct connection mode is our national CGA best practice. Passive signal locating method is primarily used to sweep an area for the presence of any lines carrying these types of signal. Passive signals are often present on many types of buried utilities so this method is not ideal for targeting one line at a time in a congested area.

There are 3 techniques for applying an active signal to an underground line with a transmitter: Direct Connection, Close Induction and Broadcast Induction.

1ST CHOICE – Direct Connection Technique:

The first and best choice for applying an EM signal should always be the direct connection

technique when possible. This method provides a metal-to-metal contact between transmitter and targeted underground line and allows you to use a low frequency which is best for targeting a single utility in a congested area due to low levels of signal bleed off to other lines in the area. Direct connection is the process of connecting a direct lead from the transmitter to the target facility and connecting a ground lead from the transmitter to a temporary ground stake or other grounding source.

Advantage: A broader range of signal frequencies can be used including very low frequencies used for long distance locating with very little signal bleed over. Direct connection is a great technique for targeting one line at a time in a congested utility environment and the only practical way to locate a copper tracer wire buried with a plastic pipe.

Disadvantage: Direct connection requires a direct metal-to-metal access point to hook up the transmitter. In some cases these access point are limited and signal current may not travel as far as you need them to. Another disadvantage is common grounding connection between several types of buried lines provide signal currents a direct pathway from your target line to other lines bonded with your targeted line causing unwanted signals to appear on non-targeted lines which share the ground source. This is very common in cabling systems.

2ND CHOICE – Close Induction Technique:

If direct connection is not possible or does not give you the results you need, the use of an induction clamp (coupler) is the second most effective method of applying a locate signal onto the target line. This method limits the choices of broadcast frequency and power outputs when compared to direct connection. The close inductive coupler, commonly called the ring clamp, produces a strong EM signal field within the clamp which is transferred to the conductor encircled by the coupler clamp. The ring clamp windings are similar to the primary winding inside an electrical transformer. A conductor within the winding becomes a secondary circuit connected to the transmitter through the EM field transfer of energy. In many circumstances the close induction clamp is an available accessory that is either included in the kit or can be ordered separately.

Advantage: The clamp can be applied without making metal-to-metal contact to the line. The clamp is ideally used for applying signals to cables. A signal is transferred from clamp to cable without taking the cable out of service in a pedestal, manhole, electrical panel or junction box. The clamp can be placed around conduits that have cables in them that line a conduit, are on a building wall or located on a pole.

Disadvantage: The ring clamp usually provides fewer low frequency broadcast choices for long distance locates. Another disadvantage to this technique is, like direct connection, common grounding of other cables can create multiple signals.

3RD CHOICE – Broadcast Induction Technique:

The least-preferred method is induction or broadcast technique. Broadcast induction is an indirect way to transfer a signal from the transmitter to a buried line. This technique in normally used as a last resort and can cause signals to appear on all conductive lines in an area.

Broadcast induction is done by turning on the signal transmitter with no attachments plugged in. The majority of signal transmitters available today have a built-in inductive broadcast antenna that will normally activate simply by turning on the transmitter. There are a few models that require the user to press a specific button to activate the internal broadcast antenna. Consult your user's guide for information on broadcast induction activation and transmitter positioning over a buried line.

Advantages: When done correctly, the inductive broadcast technique can place a signal on an underground line that does not have a nearby access point. This technique is a good way to attempt to send signal to a tracer wire that has been cut at several locations. This technique can also be deployed by two people when sweeping an area for conductive lines. To conduct a sweep, one person holds the receiver and the other person holds the transmitter as they walk in tandem. If they cross a buried line at same time, the person with the receiver will read a good signal.

Disadvantage: Higher frequencies are often necessary when inducing a signal. By nature, high frequency signals are prone to ghost signals and can easily bleed over to other lines in the ground. It can be very difficult to induce a signal field on a small tracer wire. Induced signal fields can flow on abandon lines as easily as live lines and is a poor way to single out a specific line in a congested utility easement. Similar to trying to target shoot with a shotgun, you're likely to hit more than one target.

There are several golden rule for locators to follow. One of those rules are to direct connect whenever possible. ESG

Bob Nighswonger is President/CEO of Utility Training Academy Inc. Bob has 30 years of line locating and damage prevention experience and has been a long time professional instructor of line locators. Bob can be reached for questions and feedback by emailing bob@utasearch.com.

BY MIKE IADANZA

Protecting All Infrastructure is Important

Public vs. Private Utility Locating: Understanding the Difference Could Save a Life

What's the difference between public and private utility locating? Up until now, much of the public (including many in the public locating industry) did not really understand the true differences between the two because it can be very complex, and it can vary from state to state and municipality to municipality. Private locating has always been the much smaller brother to public locating, but what many people do not know is there are more buried private utilities than public utilities.

As the construction industry grows and infrastructure maintenance, building and rebuilding becomes a focus of the current administration, we are finding that much of what is underground is actually in the form of private utilities.

The 811 Call Before You Dig service is the backbone of utility damage prevention, is step number one, and MUST be done before any excavation begins on any property. All facility owners should belong to their state's One Call system. It is a free service which ensures locate notices are distributed to all underground utility owners with facilities to the service meter. But quite often there are private utilities beyond the service meter that go unmarked and are still a danger to the excavator and field worker. Being educated on where these private utilities may be buried is the next important step to safe digging.

Public utility lines are located to the dissemination point (or "point of service") by the facility owner and each company defines exactly at what point their ownership ends and private service (owned and maintained by the property owner) begins.

State laws differ, but most require underground facility owners to mark the private lines it is their responsibility to own and maintain. These lines include water and sewer laterals, power to other structures and lights, irrigation systems, propane and septic systems to name a few. Common areas for private utilities are schools and campuses, hospitals, subdivisions and apartment complexes, government facilities, military installations and solar and wind farms, etc.

If you are still a bit confused, this chart should help you understand the difference:

One Call System/Utilities	Private System/Utilities
Public utilities/rights-of-way	Plants, ports, universities, refineries, industrial site, etc.
Members typically have complete and accurate utility records	Records often limited, incomplete or out-of-date
Provides single point of contact for excavators through 811	Facility owner responsible for locating utilities and maintaining records
Typically, 72-hour to complete locates	Locate on demand
Overall well-established guidelines	Guidelines vary within industry

Locating private utilities is a completely different challenge that requires different technologies and skillsets beyond those used for public locating. Utility records represent the single biggest challenge in dealing with private systems.

- Available: Many records maybe missing
- Accurate: Most records are based on the original design rather than the actual installation of the utilities
- Complete: Not all utilities or necessary information may be on record
- Aging: Records may not reflect current systems or realignments

On the construction side, challenges include non-metallic lines with no tracer wire, aging and outdated systems, multiple repairs, undocumented construction and installation.

How do these challenges affect the damage prevention process?

For the locate technician, there are different models in skillset and technologies. The One Call locator typically has utility records, uses electromagnetic (EM) equipment exclusively and only locates the specific utilities identified. No additional utilities and no abandoned utilities are located.

The private locator typically has few or limited utility records, uses multiple pieces of locating equipment (EM, Ground Penetrating Radar (GPR), Acoustic, etc.), and all utilities and utility types are located. Considering the lack of records, prints, and vast array of technology private locators need advanced training to safely detect and locates these utilities.

Typical private locating clientele include:

- Excavators who can be fully compliant with One Call laws and still hit and damage buried utility lines.
- Engineers who can request utility records through the One Call system and still not account for all utilities present.
- Facility owners who may have utility systems damaged by in-house and third-party excavators.
- Utility and Municipal Owners whose public utilities are registered within the One Call system but onsite systems are not covered and are still their responsibility.

The Path Forward

It is important to get the word out and go Beyond 811. Continue education and outreach to excavators, engineers, contractors and facility/property owners on their roles and responsibilities. Always establish best practices for dealing with private utility systems.

One Call does amazing work and should be your first step before digging. Going Beyond 811 and making that second call when needed keeps job costs down and ensures the safety of all crews and the public when there might be other hidden dangers in your work area. ESG

Mike Iadanza is Director of Marketing for USIC and Blood Hound Underground Utility Locators. He can be reached at MichaelIadanza@usicllc.com

SAFETY

Planning for Excavation and Trenching

BY JOE WISE

What if you could feel confident that your safety training, job experience and work authority prevented injury and property damage on every job? No one plans on an accident occurring, but an absence of planning produces greater risk of excavation hazards.

According to OSHA, worker safety in excavation and trenching continues to be a major concern in construction hazards. U.S. trench-related fatalities and injuries increased by over 50% in 2016 versus 2015. Through May 2017, the trend is troubling and indicates that the fatality rate could climb to 60% over 2015 **(Figure 1)**.

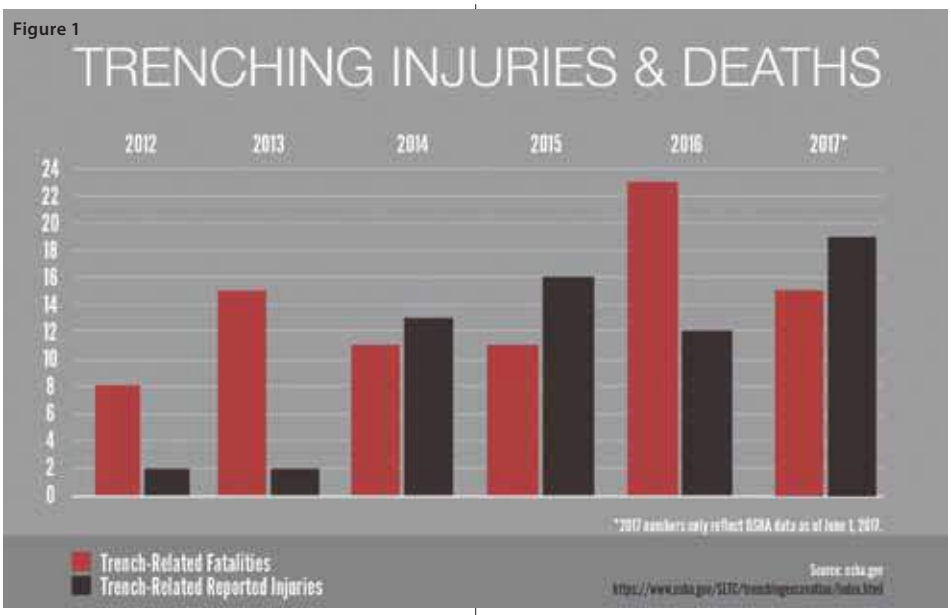
Another concern is that the majority of trench collapse fatalities were in depths of less than 9 feet where no protective system (slope, bench, shield or shoring) was used. Another source of data is the DIRT Report published by the Common Ground Alliance. The report points to insufficient excavation and poor "locate" practices as root causes of worker risk and utility damage.

Who can have the most significant impact in averting these dangers? The employer? The Competent Person? Both? If you guessed the Competent Person you're halfway there, because that person has the authority to maintain a safe site.

But a Competent Person must be empowered by the employer to lead safe construction operations. OSHA requires that every excavation and trench project have a Competent Person onsite, with specific training in 1926.651 Subpart P, on-the-job experience and the authority to take prompt hazard-elimination measures. The Federal Register goes further: the Competent Person must be trained in, and knowledgeable about, soil analysis and the use of protective systems.

There are 12 specific requirements within the standard. One states that the Competent Person must use "safe and acceptable" means to locate existing underground installations. Common best practices regarding "safe and acceptable" include using a

Figure 1



probe rod, manual dig or vac truck to identify the precise location of utilities before any excavation begins. If a probe rod is used, it's advisable to use non-conductive fiberglass rods and insulated gloves when probing near electrical systems.

Once the utility has been marked with the uniform color code, the Competent Person must evaluate the site work near that utility to determine whether support or removal is advisable to avoid employee injury.

Support beams and straps, and in some cases engineered designs, may be required by the load and stress calculations. Some states require that the contractor check with adjacent businesses, public utility owners and even private property owners who may not be associated with a One Call system.

It's important to know the difference between the options of sloping, benching, shielding and shoring. If sloping is used, the Competent Person must first determine the stability of the soil to excavate the proper sloping angle relative to soil strength. The maximum allowable angles for depths of 20 ft. or less are provided in Appendix B of the OSHA Excavation Standard.

For example: if you dig a trench that is five feet deep and three feet wide in type B soil, the measurement across the top of the excavation needs to be 13 feet. (2 x depth + width = Total width at top) to comply with the maximum allowable slope of 45 degrees. **(Figure 2)**

The Competent Person determines whether there is enough room to properly slope the trench and if the removal of soil could cause stress on an exposed utility or put workers at risk.

Shoring and shielding can also be effective systems when used properly; however, there's a critical difference between the two methods. Shielding is considered a "passive" method of protection; it will keep workers safe inside the shield, but will not support the trench walls where utilities could be compromised in the event of a soil collapse.

If you need to protect employees working in excavations or trenches where utilities cross or run parallel, shoring is a better method. The solution could be simple, such as hydraulic vertical shores that support the trench walls, or it could be a modular hydraulic waler and strut system designed by a registered professional engineer. The benefit of a shoring system is it provides "positive" protection (as opposed to "passive"). Other positive methods, such as beam and lagging or slide rail systems, also prevent soil collapse.

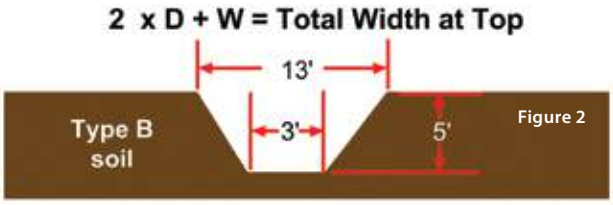


Figure 2

Ultimately, it's helpful to think about excavation safety in two parts. One part is the standard, which mandates what is required: Competent Person training, experience, soil analysis, utility location and the proper protective solutions. The second part is employer support. That's the part that advances industry best practices for safety and ensures that the most qualified Competent Persons is identified.

When the two parts are aligned - the right Competent Person, invested with authority by the employer - everyone wins, and practices in the field result in certainty rather than luck. ESG

Joe Wise is the Regional Customer Training Manager for United Rentals Trench Safety Division. To learn more about competent person safety training offered through United Rentals please visit unitedacademy.ur.com

HDD: It's Time for a

BY JERI LAMERTON

Since the introduction of Horizontal Directional Drilling, the tracking process on HDD bores has remained relatively unchanged. We're out to change that. Capitalizing on a growing shift in traditional thinking about the drill operator's role on HDD jobsites, and the desire for safer, more efficient methods of boring, my company has been developing new technologies for a process they call Green Ops. We believe this new process will reduce risk and improve efficiency and profitability on HDD bores.

We Need A Safer, More Efficient HDD Drilling Process.

The benefits of Horizontal Directional Drilling have made it the method of choice for utility installation from sewer, water and power to gas and telecommunications. Despite the very real benefits of horizontal directional drilling, however, the very nature of HDD means there will always be risks involved. When drilling underground, encountering unseen obstacles that may pose a threat to workers, equipment, or the project as a whole is a dangerous possibility. Subsurface Utility Engineering (SUE) is not always accurate and the density of underground infrastructure is increasing at a high rate. This is not a new development. However, recent underground strikes of buried assets resulting in service interrupts, damaged property, injuries, and even deaths, have focused attention on the need for safer, more confident HDD tracking.

We Want a Safer, More Efficient, and Therefore More Profitable HDD Drilling Process.

The fiber boom has hit, and it isn't going away any time soon. As more projects become available, HDD crews are looking for ways to streamline the process in a safe manner. Better accuracy and efficiency will help crews get jobs done more quickly, so they can move on to the next job. This, of course, will result in more jobs per year, which will increase profits.

Until now, the most major advances in jobsite efficiency have been the drills themselves. But our approach to the challenge has a different perspective: leveraging modern data-sharing technology to improve the accuracy and efficiency of bores. The idea is to provide a clear plan, more control, and faster reporting for safer, more productive jobs.

The Green Ops Process

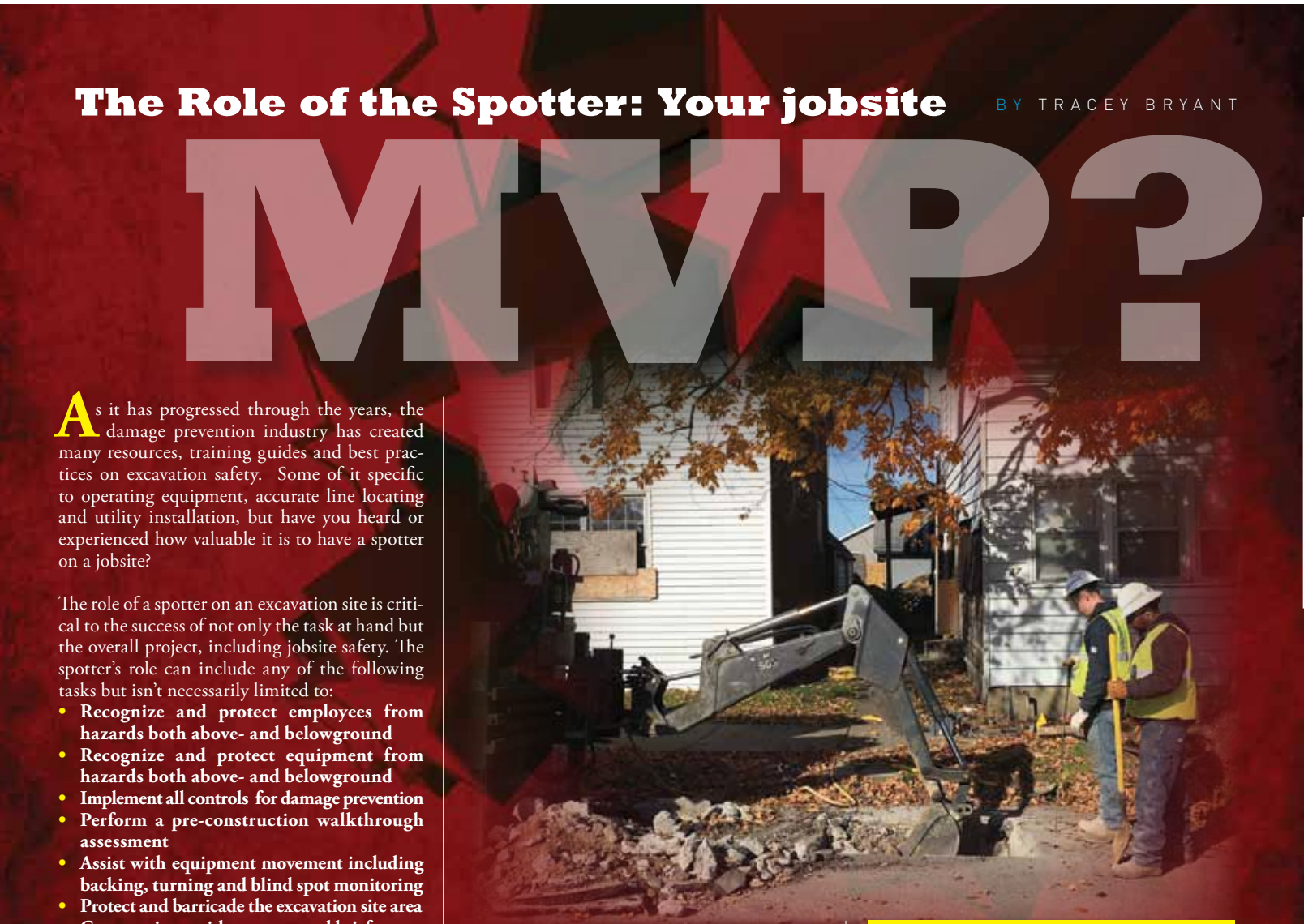
The Green Ops process combines a more thorough investigation of the underground job site with a shift in "command" of the bore itself, immediate in-field reporting upon completion of the bore, and online access to jobsite data long after the project is done.

It all comes down to three simple steps: planning, boring and reporting. According to Levi Valdois, HDD Guidance Product Manager with Subsite Electronics, "Planning is not an extra step, it's extra protection. It's not added time, it's added productivity. Walking the bore path and creating a plan before your crew arrives at the site can result in substantial time

HDD: It's Time for a Change - **continued on page 25**

The Role of the Spotter: Your jobsite MVP?

BY TRACEY BRYANT



As it has progressed through the years, the damage prevention industry has created many resources, training guides and best practices on excavation safety. Some of it specific to operating equipment, accurate line locating and utility installation, but have you heard or experienced how valuable it is to have a spotter on a jobsite?

The role of a spotter on an excavation site is critical to the success of not only the task at hand but the overall project, including jobsite safety. The spotter's role can include any of the following tasks but isn't necessarily limited to:

- **Recognize and protect employees from hazards both above- and belowground**
- **Recognize and protect equipment from hazards both above- and belowground**
- **Implement all controls for damage prevention**
- **Perform a pre-construction walkthrough assessment**
- **Assist with equipment movement including backing, turning and blind spot monitoring**
- **Protect and barricade the excavation site area**
- **Communicate with operator and brief operator on hand signal use**
- **Act as a resource for county, city, state laws surrounding excavation**
- **Provide guidance about OSHA rules and regulations**

Having a spotter on the excavation site is critical to the safety of your crews, underground utilities and the community. Specific to monitoring excavation near buried utilities, consider if your spotter has work stop authority. Would he feel confident in stopping an operator or crew member if there is risk of striking a utility line? Many of us have heard those famous words from an operator: "One more scoop" or "I will feel it before I damage it".

Warning Signs when Spotting for Excavation

- Warning tape buried above the utility line
- Marker balls or tracer wire
- Otherwise disturbed soil
- Trash or debris in the ground
- Backfill material
- Visible utility such as a gas meter but no yellow paint in the area

Having an assigned spotter present on the job site does not automatically reduce risk. Spotters need to:

- **Be trained to know what to look for**
- **Understand hand signals**
- **Be aware of all of the hazards**
- **Actively look for hazards**
- **Anticipate situations which may lead to an accident**
- **Have consistent messaging to warn others of a hazard**
- **Frequently remind coworkers of their hand signals**
- **Stop or redirect any work activity confidently**
- **Stay focused on safety and identifying risks**

Both the spotter and operators should participate in safety pre-planning. By doing so, all parties can agree on a standard set of hand signals and use those consistently while working. A pre-movement review of the line of travel will allow all workers to identify potential hazards along the way.

You wouldn't let an untrained worker operate heavy equipment on a jobsite because it's too dangerous. But what kind of training do you give the spotter you trust to protect that equipment, its operator and other workers?

Can you see me now?

The spotter should be highly visible, and everyone on the job site should be aware of his or her role. You may consider having the spotter wear a high-visibility safety vest that is a different color than the vests worn by other workers. In cooler weather, spotters can wear the type of high-visibility gloves used by police officers when directing traffic.

It can be rare to find training materials or hear discussion about how important the role of the spotter is. It is encouraged that you to seek out available training materials and customize it to fit your company. One lesson that has been learned in the world of damage prevention and safety, your peers are willing to share materials or even collaborate to build new messaging that may be needed. If you cannot find spotter training materials, consider approaching your Common Ground Alliance (CGA) regional partner or Damage Prevention Council to possibly create it as a group. ESG

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HDD: It's Time for a Change - continued from **page 23**

"The fiber boom has hit, and it isn't going away any time soon. As more projects become available, HDD crews are looking for ways to streamline the process in a safe manner."

savings by minimizing the chance of strikes and downtime. Using technology to plan—utilizing your smartphone and uploading directly to your drill— streamlines the boring process and boosts productivity."

He also points out that an HDD rig isn't your only drilling tool. "By putting vital information in the hands of the drill operator, the right tracker, software and HDD guidance display can boost the effectiveness of that drill. Download the bore plan for viewing from the drill seat. Reference the plan and monitor tracking information as you drill. Log your bore data as you go. Give the drill operator more information, so they can command the bore. It's more accurate, more efficient, and ultimately, more profitable."

Finally, Valdois says "generating an As-Built report, quickly and accurately, is key to a very important part of the bore process: getting paid. GPS and other tracking technology allow you to collect bore data live, as you drill, building the report in real time. With mobile solutions, you can send the report from your smartphone while you're still in the operator's seat, immediately upon completion of the bore. The information is accurate and easily shared. So you can document your progress quickly and get on to the next job."

The three steps in the Green Ops process are a simple way to understand the process as a whole. The technology behind the steps, however, is the driver that makes it all work.

The process starts with a pre-bore analysis of the jobsite. This planning and mapping before drilling begins is essential to achieving increased safety throughout the duration of the project. Traditionally done with pad and paper, new technologies utilize your smartphone to collect this information and give you the connectivity to upload it directly to a guidance display on the drill itself.

With accurate utility locating completed, users can mark critical waypoints such as the entry pit, exit pit and crossing utilities along the bore path. Users can also record depth, indicate where potholing needs to occur, and forward accurate location information to the drill operator by utilizing the GPS compatibility. By collecting this data electronically, it enables users to send the information to a supervisor or owner for plan approval, to the crew to initiate daylighting, and to the drill operator so he'll know when critical crossing are coming up.

Electronic mapping and planning minimizes risk, enables potholing ahead of time, and helps crews be more informed and thus, more productive and efficient.

Perhaps the biggest shift in thinking is the "transfer of power" to the drill operator. On today's HDD jobsite, the tracker operator commands the bore. He is trained and skilled, and he has access to all the vital tracking information needed to safely guide the bore. That data is delivered directly to the drill operator. As a result, users have the option of putting the drill operator in command to maintain the intended bore path in real time, making adjustments as needed. This direct communications with the hand that guides the bit is more efficient and limits the learning curve of new crew members.

Once drilling is complete, the third step begins: reporting. Advanced software solutions let you download HDD bore information directly to your mobile phone, tablet or computer, speeding production and reducing logging errors. Then you can generate and send an As-Built report as soon as the pilot bore is completed, right from the field.

"The three steps—plan, bore and report—make describing the process easy," says Valdois, "but don't let that minimize the profound change this could have on the jobsite. With these technologies, operators will be more safe, more efficient, and as a result, more profitable. We believe it's the future of HDD drilling." ESG

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Cross Bores & Beyond: New Solutions for Risk Control

BY MARK H. BRUCE

Unexpectedly, cross bore project technologies are leading to dramatic shifts in data integration at gas utilities for better safety and risk reduction throughout the enterprise.

Gas cross bore risk is thought to be the largest system integrity risk by some gas distribution utilities. Cross bores have been recognized by the U.S. DOT since 1976 after review of a gas explosion which resulted in two deaths caused by a sewer drain cleaner hitting a cross bore using a root cutting tool.

Cross bore explosions are infrequent but catastrophic. Cross bores are numerous. Though cross bore statistics are not consistent, extrapolation of reported cross bores of gas lines and sewers alone are expected to be in the hundreds of thousands at an estimated average rate of 0.4 per mile. The largest reported impact from a single cross was when two children were horribly burned resulting in $30 million in damages paid. Cross bores occur between all types of utilities, but gas is the focus of this article.

Trenchless installation methods include percussion piercing tools, HDD and plowing. The commonality of these three methods is the pipe is not visible to inspection as it is installed. Trenchless installations allow cost efficiencies and prevent impacts of digging streets, sidewalks and driveways. Even the Arbor Day Foundation recognizes the advantages of trenchless to save damage to trees. Trenchless has great benefits.

Using trenchless installation methods brings added responsibilities. Time and energy is required to avoid cross bores and consequential damages. If not, property damage, injury and death can result. The good news is cross bore risk can be addressed to ensure new construction does not leave cross bores behind and legacy cross bores are eliminated.

Installers need to know locations of existing utilities to have a chance of avoiding them. In a 1999, a ruling by the Kentucky PSC sums up how to avoid cross bore damage. To paraphrase the resulting decision to both parties of a damages lawsuit: “Sewer utility – inform the gas company where your sewers are: Gas utility – do not damage them”. The lack of good information from sewer utilities has challenged installers. However, the damage to sewers, including consequences from a drain cleaner breaching the gas line, have generally been the responsibility of the installer and owner of the utility being installed.

Annual statistics show the continued reduction of damage by using 811 services to locate the existing utilities in your area. The 811 “Call Before You Dig” programs developed through the Common Ground Alliance (CGA), is an area where common interests of utility owners, installers and government have been extremely successful.

Unfortunately, 811 calls normally do not include sanitary and storm sewer locates, leaving a major risk potential to the installer and the utility owner. It can be a nightmare to try to estimate the location of lateral sewers, especially for trenchless installers. Extra efforts are required. Potholing and pre-locating using sonde equipped robotic and manual push cameras are prevalent methods.

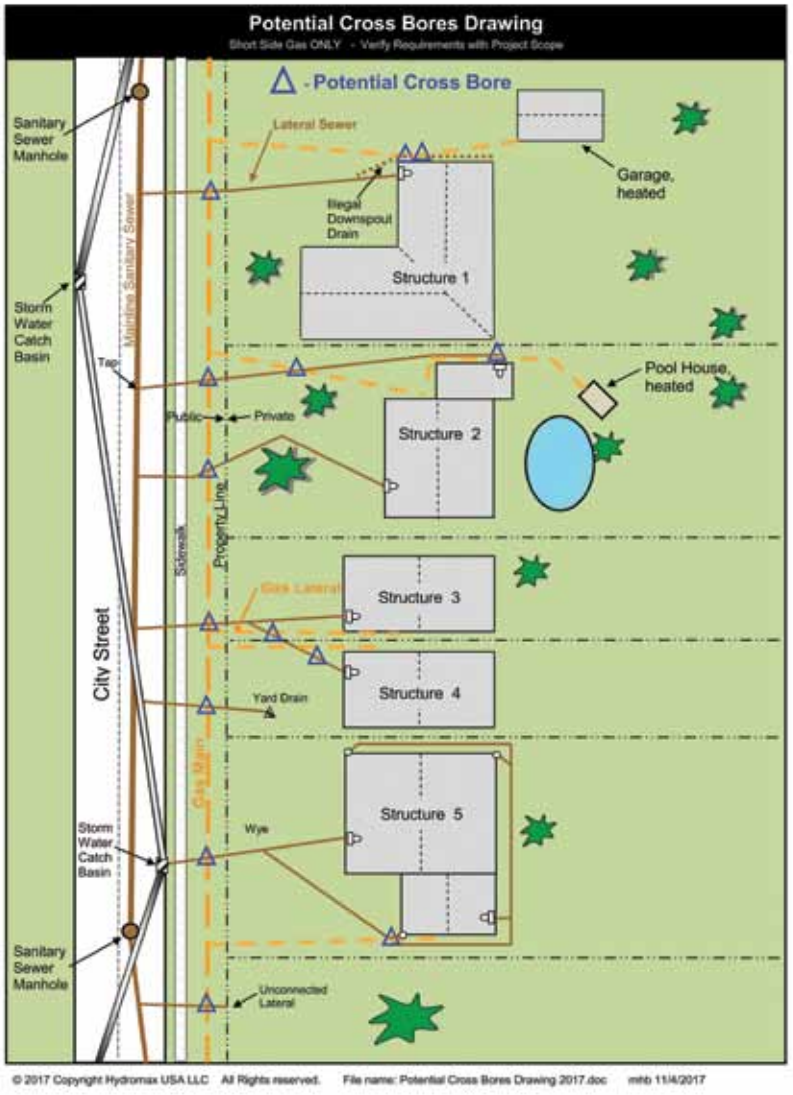
Cross bores have been found after pre-construction locating of sewers using cameras and pre-construction potholing at suspected planned crossings of gas and sewers. Potholing may not find all sewers unless the location of the sewers is known, accurate and complete. Multiple wyes in sewers, elevation changes, multiple mainline sewer taps and sewers crossing property lines complicate installation and location. Abandoned sewers or multiple sewers can be above each other. Even when sewers locations are accurately known, potholes to observe a trenchless crossing has given false confidence.

Many strongly believe that inspection after gas trenchless installation is the most crucial inspection element and takes priority over pre-construction only locating. Best practices include 100% review of videos for mainline and laterals at risk. Separate processes to verify the camera inspection has traversed beyond the gas risk are good verification elements.

Data:

Auditing to validate work is appropriate. Many early adopters of cross bore risk reduction programs had boots on the ground to verify cross bore inspections were complete; checking that all laterals and wye branches were inspected with full visibility of the cameras to a point beyond the risk of the gas lines. Drawings were consulted, gas lines energized and 100% of all videos were reviewed. These were appropriate for the times and are still good practices if there are enough trained inspectors.

More recently, during the last decade, verification and project management is able to be accomplished with tracking of the work using GPS points and GIS mapping systems. GIS has the advantage of capturing information that can be preserved, eliminating manual drawing and data entry. Work can be validated, rework can be scheduled and the inspection is directed more efficiently. The GPS locates of mainline sewers, lateral sewers and energized gas lines can prove the sewer camera has adequately traveled past gas line risk. The data is permanently stored for use and to manage the cross bore project. The added, often overlooked, advantage is this GIS information is invaluable for other utility needs. Today's technology allows data to be mined with algorithms looking for patterns to address highest risk locations first. Facilitating the use of this data is the advent of low cost accurate GPS receivers. Utility info can be accessed on a mobile device, with the ability to "view" the pipe and its properties on a 2D map view, Google street map view, or visualized pipe underground with Augmented Reality (AR). Updated info from the field is added digitally with GPS references. This ability is available now on low cost platforms. Data flows to servers up and down in seconds, not months. Information is web-enabled, avoiding IT security and software bottlenecks. The enterprise has better knowledge of its assets.



Once the gas lines and sewer lines are known, this can be used for planning new work, avoiding damage to gas and sewer lines and eliminate the need for 811 paint locates. Eventually the need for paint marking can be drastically reduced with the retrieval of GIS information saved from gas cross bore, leak survey, installer as-builts and gas first response mapping records. This is already a reality in some places. A visit to BCOneCall.bc.ca or FortisBC.com will provide a glimpse of the value of high quality GIS data. Site plans are provided in lieu of paint markings when appropriate.

Summary:

Cross bores of gas distribution lines is recognized as the highest risk to system integrity at many utilities. Specific efforts are required to ensure cross bores are not left behind from trenchless installations. Good records and verification is required to ensure processes and work instructions are achieved. GIS implementation for cross bore projects is a model to allow better utility data integration throughout the enterprise. Collected data is valuable for use in other aspects of utility work and asset management enhancing utility value. Ultimately, better data will reduce risk throughout the organization for not only cross bores but all safety elements through accessibility, accuracy and speed. Embracing new and proven technology allow us to efficiently achieve our goals of lower risk and highest safety. ESG

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Damaged Pipeline?

DON'T ATTEMPT TO OPERATE PIPELINE VALVES!

BY DEANNA CENTURION, CONSULTANT, PIPELINE ASSOCIATION FOR PUBLIC AWARENESS

Hit, scrape or dent a pipeline during a project and suspect the pipeline is leaking?

Protect yourself and others nearby. Leave your equipment, move to a safe place away from the damaged line and immediately call 911 and the pipeline operator to report the leak.

Do not pinch off damaged lines, shut off gas at the gas meter or attempt to close pipeline valves on transmission or local distribution pipelines. Pipeline operator personnel are trained and familiar with the pipeline system valves and if needed will close select valves as part of their emergency response procedures.

Closing a pipeline system valve, shutting off gas at the meter or attempting to pinch off a line can cause additional and unpredicted problems at the damage site or other places along the system.

What Is a Pipeline Valve?

Pipeline system valves help maintain safe pipeline operations and are typically located aboveground in accessible areas along the pipeline system. Valves help control the pressure of energy products moving through the pipeline. They also help restrict or stop the flow of gas or other energy products if needed.

Pipeline systems typically include a combination of manual, remote and automatic shut-off valves. Manual valves are opened and closed by hand. Remote valves can be opened and closed by personnel at the pipeline control center, and automatic shut-off valves close if pressure drops or the direction of the flow of product changes. Automatic shut-off valves can also be operated manually.

Pipeline personnel are trained to operate valves and to repair damage to the pipeline based on company-specific emergency response and maintenance procedures. To keep the pipeline system functioning safely, only trained pipeline operator personnel are authorized to operate valves.

Pressure-relieving valves on natural gas pipelines allow a controlled amount of gas to be released if an overpressure event is encountered. If a pressure-relieving valve is activated, it can cause a loud sound and the area near the valve may smell like the odorant added to natural gas.

If you hear a loud sound or smell gas coming from a pressure-relieving valve, move away from the immediate area and notify the pipeline operator or call 911 so that the operator can investigate the valve release. ESG

Pipeline Location Information

PIPELINE MARKERS

Pipelines are buried in areas called rights-of-way. Pipeline markers are used to designate the general route of the pipeline. Markers can also be found where a pipeline crosses a street or railroad, emerges from the ground, or in waterways.

BE AWARE: Pipeline markers will not designate the exact location, depth or number of pipelines in the area. Markers come in different shapes and sizes, but will always:

- **Include the word WARNING, DANGER OR CAUTION**
- **Identify the material being transported**
- **Provide a number to reach the company in event of an emergency**
- **Provide the name of the pipeline company**

Gathering pipelines are normally located in rural areas and transport crude oil or natural gas from wellheads and production facilities to processing facilities where the oil, gas and water are separated and processed.

Transmission pipelines move refined liquid products and natural gas from refineries to marketing and distribution terminals typically using larger diameter, high-pressure lines. The general location of all transmission pipelines can be viewed in the National Pipeline Mapping System at www.npms.phmsa.dot.gov

Distribution pipelines are normally located in populated areas and carry natural gas or propane from a transmission pipeline or storage facility directly to residential and industrial customers. Some companies have included the location of their pipelines in a mobile friendly web application called Pipelines Nearby, which can be accessed at www.pipelinesnearby.org

MARCADORES DE TUBERÍA

Las tuberías son enterradas en áreas llamadas derecho de paso (ROW por sus siglas en ingles). Los marcadores de tubería se usan para designar la ruta general de la tubería. Los marcadores también pueden ser encontrados donde una tubería cruza una calle o riel de tren, donde sale del suelo, o en vías navegables.

ESTÉ CONSCIENTE: Los marcadores no dan la ubicación exacta, profundidad ni número de tuberías en el área. Los marcadores vienen en diferentes formas y tamaños, pero siempre incluyen:

- **Incluye la palabra WARNING, DANGER OR CAUTION (aviso, peligro o precaución)**
- **Identifica el material siendo transportado**
- **Da el número de la compañía en case de emergencia**
- **Da el nombre de la compañía de tubería**

Tuberías **Recolectoras** están situadas en zonas rurales y transportan normalmente petróleo crudo o el gas natural de manantiales y de instalaciones de producción a centros de procesamiento donde se separan y se procesan aceite, gas y agua.

Las tuberías de **Transmisión** mueven productos y gas natural líquidos refinados desde refinerías a terminales comerciales y de distribución típicamente usando líneas de alta presión con diámetro más grande. La ubicación general de todas las tuberías de transmisión se puede ver en el sistema de trazado nacional de tubería en www.npms.phmsa.dot.gov

Las tuberías de **Distribución** están situadas en áreas pobladas y llevan normalmente el gas natural o propano de una tubería de transmisión o instalación de almacenamiento directamente a clientes residenciales e industriales. Algunas compañías han incluido la ubicación de sus tuberías en una aplicación web móvil llamada Pipelines Nearby, que puede ser accedida en www.pipelinesnearby.org

Pipeline Products

Natural Gas - is a naturally occurring resource formed millions of years ago because of heat and pressure acting on decayed organic material. It is extracted from wells and transported through gathering pipelines to processing facilities. From these facilities, it is transported through transmission pipelines to distribution pipeline systems. The main ingredient in natural gas is methane (approximately 94 percent). Natural gas is odorless, colorless, tasteless and nontoxic in its natural state. An odorant (called mercaptan) is normally added when it is delivered to a distribution system. At ambient temperatures, natural gas remains lighter than air. However, it can be compressed (CNG) under high pressure to make it convenient for use in other applications or liquefied (LNG) under extremely cold temperatures (-260° F) to facilitate transportation.

Petroleum Gas - is a mixture of gaseous hydrocarbons, primarily propane, butane and ethane. These products are commonly used for cooking, heating and other industrial applications. They are easily liquefied under pressure and are often stored and transported in portable containers labeled as Liquified Petroleum Gas (LPG). When transported in transmission pipelines they may also be identified as Highly Volatile Liquids (HVLs) or Natural Gas Liquids (NGLs). Vaporized LPG may also be found in smaller gas distribution systems. LPG is a tasteless, colorless and odorless gas. When transported via transmission pipelines it typically will not have odorant added. Odorant is added when LPG is offloaded to a distribution pipeline system or transport tanks to facilitate leak detection.

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

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

Carbon Dioxide - is a heavy gas that is normally transported in transmission pipelines as a compressed fluid. It is a naturally occurring, colorless, odorless and tasteless gas used in the petroleum industry. Under normal conditions, carbon dioxide is stable, inert and nontoxic. However, it can act as an asphyxiant.

Ethanol - (also called ethyl alcohol) is a colorless liquid that is widely used as an additive to automotive gasoline. It may be transported in buried transmission pipelines.

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

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

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

DIRECTRICES PARA REACCIONAR EN EMERGENCIAS

PÓSTER DE SEGURIDAD PROVEIDO POR PIPELINE ASSOCIATION FOR PUBLIC AWARENESS

CONOZCA LOS PELIGROS

- El gas natural y otros productos de petróleo son inflamables y queman. Si la piel está expuesta, serias irritaciones pueden ocurrir. Los gases escapados pueden desplazar el oxígeno.
- La electricidad hará descargas o cortocircuito a tierra produciendo temperaturas que son cuatro veces más intensas que la temperatura del sol. Como mínimo quemaría la piel y dañaría los organos internos. Los altos voltajes de electricidad pueden hacer arco a distancias considerables a través del aire. Usted debe estar consiente de cables aéros de alto voltaje y aleje cualquier parte del equipo por lo menos a 10 pies de distancia de los cables aéreos.
- El agua a alta presión pueden causar heridas graves. Las aguas residuales contienen bacterias que puede ser de alto riesgo para la salud. Los gases del alcantarillado son inflamables y queman.

RECONOZCA LAS CONDICIONES PELIGROSAS

- Los charcos de liquido, la tierra soplando, los sonidos siseantes, las nubes de vapor, los olores a gas, las burbujas en agua estancada, la vegetación completamente seca, y la tierra congelada o hielo alrededor de gasoductos/ oleoductos son todas señales de escapes de gas natural o petróleo y deben de ser tratadas como una emergencia.
- Trate el contacto con cualquier cable eléctrico como una emergencia sin tener en cuenta si aparece dañado o no o si está cortado. Ésto incluye el contacto con cables aéreos de alto voltaje.
- Con frecuencia los servicios usan zanjas conjuntamente poniéndolo a usted en un mayor riesgo en las zanjas que támbien tienen electricidad.
- La tierra mojada o descolorida es un indicio de un escape de agua/alcantarillado y debe ser tratada como una condición de emergencia potencial.

EXCAVATION EMERGENCIES

PROVIDED BY PIPELINE ASSOCIATION FOR PUBLIC AWARENESS

KNOW THE HAZARDS

- Natural gas and other petroleum products will ignite and burn. If exposed to the skin, serious irritations may occur. Escaping gases can displace oxygen.
- Electricity will arc or short to ground producing heat that is up to four times greater than the heat of the sun. At a minimum, it will burn skin and damage internal organs. High voltage electricity can arc significant distances through the air. Be aware of all aboveground high voltage lines and keep any part of the equipment at least 10 feet away from overhead lines.
- Water under high pressure can cause serious injury. Wastewater contains bacteria that can be a significant health risk. Sewer gas will ignite and burn.

RECOGNIZE UNSAFE CONDITIONS

- Pools of liquid, blowing dirt, hissing sounds, vapor clouds, gaseous odors, bubbles in standing water, dead vegetation, and frozen soil or ice next to pipelines are all signs of a natural gas or petroleum pipeline leak and should be treated as an emergency.
- Treat contact with any electric line as an emergency regardless of whether it appears undamaged, damaged or severed. This includes contact with aboveground high voltage lines.
- Utilities often jointly use trenches placing you at greater risk in trenches that also have electricity.
- Wet or discolored soil is an indication of a water/sewer leak and should be treated as a potential emergency condition.

EMERGENCY CONDITIONS INVOLVING UNDERGROUND FACILITIES INCLUDE:

Leaks, ruptures, explosions, fires, severe settling or soil movement, weakened or damaged facilities and similar instances where immediate action is necessary to prevent loss of life, injury to persons, or damage to property and the environment. Every situation is different and must be evaluated on the individual circumstances. Below are general emergency response guidelines for various emergency/damage situations involving underground facilities.

RESPOND IMMEDIATELY

NATURAL GAS & PETROLEUM LIQUIDS

1. Turn off equipment, if it can be done safely.
2. Abandon all equipment and get a safe distance away.
3. Avoid open flames or anything that might start a fire. Do not start motor vehicles or electrical equipment. Remove all ignition sources (cigarettes, cell phones, or anything that could create a spark or static electricity).
4. Evacuate the area and keep people out.
5. Do not make contact with escaping liquids.
6. Do not operate any pipeline valves.
7. Call 911 or your local fire, police, or sheriff's office.
8. Do not try to put out a fire. If it's burning, let it burn; ask local firefighters to observe and protect adjacent property.
9. Contact the facility operator immediately to report the condition.

ELECTRICITY

1. Only move equipment in contact with overhead or underground electric lines if you can move it away safely.
2. If excavator equipment remains in contact with electric equipment, it's safest to stay on equipment (unless on fire) until rescue workers arrive; keep others away. If you must abandon equipment, jump clear of it, landing with both feet on the ground at the same time, and then only shuffle or hop away.
3. If a buried electrical line is struck in wet soil/conditions, the ground may become energized for a large area around the strike. *(Hopping or shuffling away will help reduce your risk to step potential.)*
4. Contact the facility operator immediately to report the condition.
5. If appropriate, call 911 for local emergency response.

WATER/SEWER

1. Evacuate the area immediately and keep people out. Leaking water can fill a trench quickly making escape extremely difficult.
2. Do not close valves in order to stop flooding. Closing the wrong valve may affect fire flows and/or possible containment of potable systems.
3. Be careful of damaged high-pressure water lines because even the slightest scratch or vibration can cause pipelines to break.
4. Move carefully around trenches with wet walls. Wet soil can easily cause suffocation.
5. Avoid contact with wastewater. Do not wade in or work around wastewater.
6. Sewer gas is flammable; avoid open flames or anything that might start a fire.
7. Contact the facility operator immediately to report the condition.

FIBER/COMMUNICATION

1. If a fiber optic cable is cut, do not look into the end of it. Serious eye damage may occur.
2. Contact the facility operator and report the condition.

NEVER BURY A DAMAGED FACILITY!

Even a minor scrape, nick, cut, tear, break, or dent should be reported to the facility owner immediately. If not promptly repaired, it could result in a future leak, service outage, explosion, accident, injury, or death.

CONDICIONES DE EMERGENCIA que afectan las instalaciones subterráneas incluyen: escapes, rupturas, explosiones, incendios, hundimiento severo o movimiento de tierra, debilitamiento y daño de gasoductos/oleoductos/acueductos, y casos similares donde es necesaria la acción inmediata para impedir pérdida de vidas, heridas a personas, o daños a propiedad y el medio ambiente. Cada situación es diferente y debe ser evaluada individualmente según las circunstancias. A continuación se dan directrices generales de emergencia para reaccionar ante varias emergencias/situaciones donde hay daños que afectan las instalaciones subterráneas.

REACCIONE INMEDIATAMENTE

GAS NATURAL Y LÍQUIDOS DERIVADOS DEL PETROLEO

1. Apague el equipo, si lo puede hacer con seguridad.
2. Abandone todo el equipo y aléjese a una distancia segura.
3. Evite llamas abiertas o cualquier cosa que pueda prender fuego. No arranque vehículos de motor o equipo eléctrico. Retire todas las fuentes de ignición (cigarrillos, teléfonos celulares, o cualquier cosa que pueda crear una chispa o electricidad estática).
4. Evacúe el área y no deje pasar a la gente.
5. No haga contacto con escapes de líquidos.
6. No maneje las válvulas de gasoductos/oleoductos.
7. Llame al número de emergencia 911 o llame a las oficinas locales del cuerpo de bomberos, policía, o sheriff.
8. No trate de apagar el fuego. Si está ardiendo déjelo quemar; pídale a los bomberos que observen y protejan la propiedad adyacente.
9. Inmediatamente póngase en contacto con a la compañía que opera los gasoductos/oleoductos para reportar las condiciones.

ELECTRICIDAD

1. Sólo mueva equipo que esté en contacto con cables eléctricos aéreos o subterráneos si usted lo puede mover con seguridad.
2. Si el equipo excavador continúa en contacto con equipo eléctrico, es más seguro quedarse en el equipo (a no ser que esté en llamas) hasta que lleguen los trabajadores de rescate: no deje que otros se acerquen. Si tiene que abandonar el equipo, salte lejos del equipo, cayendo con ambos pies a la misma vez, y luego sólo aléjese arrastrando los pies o saltando
3. Si hay impacto con un cable enterrado y la tierra está mojada, la tierra en el área alrededor del impacto puede estar energizada. (Reduzca el riesgo de electrocutarse alejándose saltando o arrastrando los pies.)
4. Inmediatamente póngase en contacto con la compañía que opera las instalaciones para reportar la emergencia
5. Si es apropiado llame al número de emegencia 911 para ayuda local.

ACUEDUCTO/ALCANTARILLADO

1. Evacúe el área de inmediato y no deje que la gente se acerque. Un escape de agua puede llenar una zanja rápidamente haciendo su escape sumamente dificil.
2. No cierre las válvulas para impedir inundaciones. Cerrar la válvula equivocada puede impedir que el agua pase por los ductos de agua que usan los bomberos para apagar fuegos y/o posiblemente contaminar el sistema de agua potable.
3. Tenga cuidado con los ductos de agua de alta presión debido a que cualquier leve rasguño o vibración puede causar una ruptura.
4. Muévase con cuidado alrededor de zanjas que tienen las paredes mojadas. Tierra mojada puede derrumbarse fácilmente y causar asfixia.
5. Evite contacto con aguas residuales. No camine o trabaje alrededor de aguas residuales.
6. Los gases del alcantarillado son inflamables; evite llamas abiertas o cualquier cosa que pueda iniciar un incendio.
7. Inmediatamente póngase en contacto con la compañía que opera los acueductos y alcantarillados para reportar la emergencia.

FIBRA ÓPTICA/COMUNICACIÓN

1. Si el cable de fibra óptica está cortado, no mire adentro de la punta del cable. Graves daños a los ojos pueden ocurrir.
2. Inmediatamente póngase en contacto con la compañía que opera la fibra óptica para reportar la situación.

NUNCA ENTIERRE EQUIPO DAÑADO

Nunca entierre equipo dañado como cables eléctricos, gasoductos, oleoductos, o ductos de cualquier tipo. Informe de inmediato a la compañía afectada cualquier leve rasguño, corte, rotura, o abolladura. Si la reparación no es hecha rápidamente en el futuro pueden resultar escapes, interrupción de servicios, explosiones, accidentes, heridas, o muerte.

Know the Possible Hazards

Leak, Hazard, and Emergency Response Information	Natural Gas	Petroleum Gas	Petroleum Liquids	Anhydrous Ammonia	Carbon Dioxide	Ethanol	Hydrogen Gas	Sour Gas (H_2S)	Sour Crude Oil (H_2S)	Liquids & Natural Gas
INDICATIONS OF A LEAK										
An odor like rotten eggs or a burnt match	(1)	(1)						X	X	(1)
A loud roaring sound like a jet engine	X							X		X
A white vapor cloud that may look like smoke		X		X						
A hissing or whistling noise	X	X		X	X		X	X		X
The pooling of liquid on the ground			X			X			X	X
An odor like petroleum liquids or gasoline		X	X			X			X	X
Fire coming out of or on top of the ground	X	X					X	X	X	X
Dirt blowing from a hole in the ground	X	X		X	X		X	X		X
A sheen on the surface of water		X	X						X	X
An area of frozen ground in the summer	X	X			X		X	X		X
An unusual area of melted snow in the winter	X	X			X		X	X		X
An area of dead vegetation	X	X	X			X	X	X	X	X
Bubbling in pools of water	X	X			X		X	X		X
An irritating and pungent odor				X				X	X	
HAZARDS OF A RELEASE										
Highly flammable and easily ignited by heat or sparks	X	X	X			X	X	X	X	X
Will displace oxygen and can cause asphyxiation	X	X		X	X		X	X		X
Vapors are heavier than air and will collect in low areas		X	X	X	X	X		X	X	X
Contact with skin may cause burns, injury, or frostbite		X	X	X	X	X	X	X		X
Initial odor may be irritating and deaden the sense of smell								X	X	
Toxic and may be fatal if inhaled or absorbed through skin				X				X	X	
Vapors are extremely irritating and corrosive				X				X	X	
Fire may produce irritating and/or toxic gases	X	X	X	X		X	X	X	X	X
Runoff may cause pollution			X	X		X			X	X
Vapors may form an explosive mixture with air	X	X	X	X		X	X	X	X	X
Vapors may cause dizziness or asphyxiation without warning	(1)	(1)			X		X	X	X	(1)
Is lighter than air and can migrate into enclosed spaces	X						X			X
EMERGENCY RESPONSE										
Avoid any action that may create a spark	X	X	X	X		X	X	X	X	X
Do NOT start vehicles, switch lights, or hang up phones	X	X	X	X		X	X	X	X	X
Evacuate the area on foot in an upwind and/or uphill direction	X	X	X	X	X	X	X	X	X	X
Alert others to evacuate the area and keep people away	X	X	X	X	X	X	X	X	X	X
From a safe location, call 911 to report the emergency	X	X	X	X	X	X	X	X	X	X
Call the pipeline operator and report the event	X	X	X	X	X	X	X	X	X	X
Wait for emergency responders to arrive	X	X	X	X	X	X	X	X	X	X
Do NOT attempt to close any pipeline valves	X	X	X	X	X	X	X	X	X	X
Take shelter inside a building and close all windows				(2)	(2)			(2)	(2)	X

(1) These products are naturally odorless and only certain pipeline systems may be odorized.
(2) Sheltering in place is an alternative to evacuation when the products are toxic or the risk of fire is very low

I just HIT a pipeline, Now What?

BY BRAD CARTER

It was early that morning when he got out of bed just before the spring sun had crested over the horizon. Like every other morning, a list of daily chores that would need tending to before day's end ran through his mind. The start of the spring planting season was nearing, which would...usher in long days and short nights for the next several weeks until crops were in their proper places. This wasn't new for him, the ins and outs of daily farm routine have been part of his life since he was a little boy working alongside his father on the farm.

He had been anticipating planting season for some time and was ready to get started. With a tug on the worn leather boots and a quick adjustment of his hat, he headed out the door as he heard his wife say, "I love you and be safe." He had heard his wife say this to him every morning as he left the house, but never really thought much about it. He was comfortable working the land on the "old home place," because rarely did anything happen out of the ordinary. As usual, he left the house, climbed into his pick-up truck and made the short journey to the shop where his tractors and implements were kept.

Today he would hitch his tractor to a deep ripper, a piece of equipment he borrowed this year from a fellow farmer to try. Deep tilling at sixteen inches had never been done on his farm before, but he was told this would make a huge difference in crop yields. This implement required a beast to pull it, but with a new tractor purchased just last year, he had horsepower to spare. When the last pin snapped into place, the ripper was now securely attached and he was bound for the nearby field.

Not far away from the shop he crossed a culvert entering a one-hundred acre tract he had traversed so many times before. He situated the equipment in the far corner and pointed the front toward a small tree in the distance as a point of reference. Placing the tractor in gear and with a moderate increase of rpms, he turned to watch the ripper as he gently lowered the implement in the earth.

The start to this farmer's day was not unlike many others, but what made this day a little different was a piece of equipment that reached a greater depth than usual. In the field where he was pulling the deep ripper was an underground, 26 inch, steel pipeline carrying natural gas at 720 pounds of pressure. The farmer knew the pipeline was there because of the markers, but he had not experienced any trouble in the past when using other implements. This pipeline ran perpendicular to the way he was moving across the field, and his tractor was headed directly for it.

As this farmer crossed the underground pipeline, he felt a slight bounce that caused him to stop and do some investigating. He quickly made his

Don't be afraid to call the pipeline company's emergency number to have a professional pipeline operator assess the damage for everyone's safety.

way down the ladder from his tractor cab and as his feet touched the soil he glanced at the fence line and noticed the familiar yellow pipeline marker standing about five feet in height with the word "Warning" across it. He immediately became very concerned that his implement had struck the pipeline. With his heart pounding and nerves on edge he asked himself, "Now what?" The farmer's implement came into contact with the pipeline, and the farmer's next moves would determine his safety at that point and the safety of others in the future. I want to lead you through the steps and actions that would most likely take place in the event the pipeline sustained minor damage or if the pipeline strike resulted in catastrophic failure.

Most transmission pipelines made of steel are covered with a continuous protective coating to help prevent corrosion. Even a small disruption in this coating can cause major corrosion damage that can lead to catastrophic failure if left unrepaired. This is why it is very important to report pipeline strikes or possible pipeline strikes to the pipeline company so qualified individuals can assess the damage and make the appropriate repairs. Pipelines are designed to safely transport the commodity inside, but even a small bump or nudge can sacrifice the reliability until it is reported and properly repaired.

In the event of a pipeline emergency such as a pipeline strike, your first concern should be for your personal safety and the safety of those around you. If you think you have come into contact with a pipeline, immediately turn off all sources of ignition without risking injury, abandon any equipment and quickly leave the area by foot. From a safe location, call the 24 hour emergency number located on the permanent transmission pipeline marker to inform the company of the situation and notify your local emergency responders by calling 911.

The pipeline emergency number on the line marker will place you in direct contact with the pipeline company's gas control center that is manned 24 hour a day, seven days a week. You will talk directly with a gas controller who will ask several questions to determine: the exact location of the pipeline hit; the manner in which it was hit; if there were any injuries and if you know of any gas leaking from the pipeline due to the hit.

A company's gas control center monitors the pressure on their company's pipeline system at all times, and it is very likely they have already seen a change in the pressure on the pipeline if there is a release (gas or product escaping). Your call to gas control will confirm the pressure change they are monitoring and provide them with the information needed to address the situation.

Pipeline operations personnel will be dispatched to the location of the line strike to examine the pipeline area and provide more information to the pipeline company to determine which valves need to be closed. Never attempt to operate a valve on a transmission pipeline yourself. If there is a release, the gas controller will also contact emergency response personnel. Having fire trucks and police cruisers on scene may be a little unnerving, but their presence is to protect everyone's safety.

If there is a release, the pipeline will most likely need to have the pressure removed, also referred to as "blowing down the line." This means the gas that is inside of the pipeline will be released to the atmosphere through one or more relief valves. This will make the area safe for company personnel to make repairs. The location on the pipeline that was struck will be inspected by pipeline personnel to determine the severity of the strike and the proper repair method that should take place for the pipeline to operate safely.

The thought of an event like this taking place can be overwhelming, but the pipeline company and the emergency responders have worked together in mock exercises to prepare for such events. These are professionals that take their jobs very seriously and know how to respond to both minor and major pipeline emergencies.

Always pay attention to pipeline markers. If you are going to dig or change the way you dig or farm, call 811. I want you to understand the importance of calling the pipeline company even for small events so they will be aware of the situation and can make the proper and necessary repairs to ensure the integrity of the pipeline. A pipeline strike that goes unreported could remain unnoticed for several years without problems, but at some point, even a nick to the coating could eventually lead to catastrophic damage.

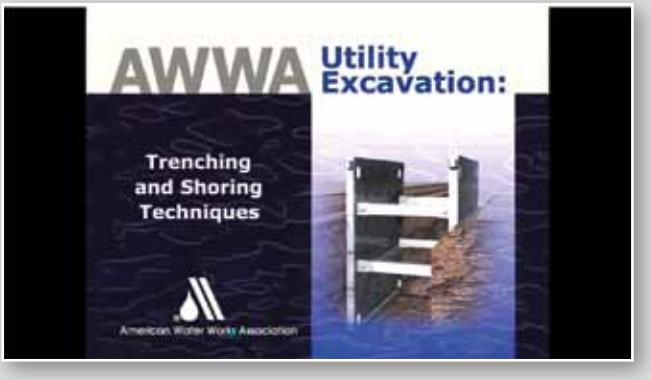
Don't be afraid to call the pipeline company's emergency number to have a professional pipeline operator assess the damage for everyone's safety.

To determine if there is a transmission pipeline in your area, go to www.npms.phmsa.dot.gov and search your county for transmission pipelines. Most pipeline companies will have a section on their website devoted to pipeline safety and contact information to ask questions. They have many resources that can provide you with the information you need to understand the safety and reliability of the pipelines in your area. Your questions or concerns are important to you and the pipeline company, and they look forward to hearing from you. ESG

Brad Carter is a Pipeline Safety Specialist with Southern Star Central Gas Pipeline. He can be reached at Brad.Carter@sscgp.com.

VIDEO VAULT

There are many **FREE** training tools available to you on the internet. Shown here are just a few of the excellent videos that have been created to help keep our excavators safe. To find more, go to dp-pro.com, or from YouTube, search for keywords like "excavation safety training".



AWWA Trenching and Shoring Backhoe Safety

Excavation is one of the most dangerous work activities for water utility employees. These two programs on a single DVD show employees how to work safely on the excavation site.

YouTube.www.youtube.com/watch?v=2X0IvoQyE70

OSHA What is Confined Space

Addresses the OSHA definition of a confined space. Understanding this definition is the first step toward determining if any spaces at your workplace are considered a permit-required confined space.

youtu.be/rbfWE7D9RZk

Colorado Springs Utilities Simulated Emergency Rescue

Designed as a training video for employees, this excavation safety video shows a simulated emergency situation with rescue operations from the Colorado Springs Fire Department.

youtube.com/watch?v=p6IryUsdpZE

MISS DIG: Hand Exposing

After utility lines have been marked, you should always expose them by hand to verify their location before using power equipment near them. If you can't find them, please let us know.
youtube.com/watch?v=t783TsizRfo

NC811: Understanding the Tolerance Zone811 for the Ag Community

The 811 message is important for all Americans, but it's especially critical for members of the agricultural community, due to sheer number of buried facilities under our nation's farms and ranches.
youtube.com/watch?v=VlmS54Yhq0c

Ameren Missouri Digging Safely Around Utilities

Learn the right way to dig around natural gas pipelines.
youtube.com/watch?v=GF9qt443f8A

Pipeline Safety for Excavators

An exceptional video covering the potential dangers and safety precautions related to living and working around buried infrastructure. This video offers an in-depth look at gas and oil pipelines in the United States and their safe operation.
vimeo.com/114175332

5 Steps to Safer Digging Toolbox

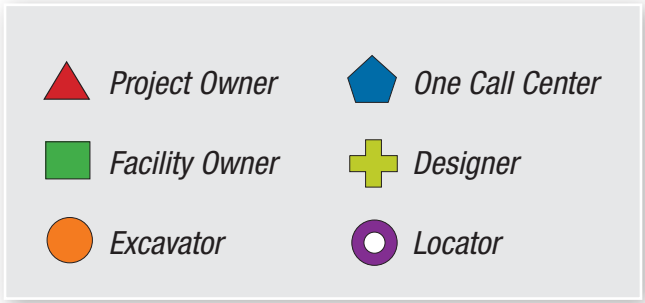
Informative and engaging safety awareness for professional excavators. www.call811.com
https://youtu.be/5u7Ksl2rENM

ESG

Common Ground Alliance Excavation Best Practices 14.0

The Best Practices Committee of the Common Ground Alliance (CGA) developed the following guide based on the Common Ground Study. The Best Practices document is considered the "go to" resource by all stakeholders, governments, and associated industries when addressing safety and damage prevention issues internally, as well as on the local, state, and national levels.

To view or download the complete Common Ground Alliance Best Practices Field Manual, visit CommonGroundAlliance.com



5-1: One Call Facility Locate Request

Practice Statement:
The excavator requests the location of underground facilities at each site by notifying the facility owner/operator through the One Call Center. Unless otherwise specified in state/provincial law, the excavator calls the One Call Center at least two working days and no more than ten working days prior to beginning excavation.

Practice Description:
Currently 50 states and 5 Canadian provinces have One Call legislation and/or established One Call Centers recognizing that excavation performed without prior notification poses a risk to public safety, excavators, and the environment, and can disrupt vital services provided by facility operators. Increased participation in this One Call system provides for improved communication between excavators and facility operators necessary to reduce damage.

5-2: White Lining

Practice Statement:
When the excavation site cannot be clearly and adequately identified on the locate ticket, the excavator designates the route and/or area to be excavated using white premarking prior to the arrival of the locator.

Practice Description:
The route of the excavation is marked with white paint, flags, stakes, or a combination of these to outline the dig site prior to notifying the One Call Center and before the locator arrives on the job. Premarking allows the excavators to accurately communicate to facility owners/operators or their locator where excavation is to occur. The 1997 safety study "Protecting Public Safety through Excavation Damage Prevention" by the NTSB reached the conclusion that premarking is a practice that helps prevent excavation damage. Maine was one of the first states to have mandatory premarking for non-emergency excavations. Connecticut also adopted a premarking requirement; however, the law provides for face-to-face meetings between operators and excavators on projects that are too large for or not conductive to premarking. Facility owners/operators can avoid unnecessary work created when locating facilities that are not associated with planned excavation. (See Appendix B for additional practice information)

5-3: Locate Reference Number

Practice Statement:
The excavator receives and maintains a reference number from the One Call Center that verifies that the locate was requested.

Practice Description:
All calls from excavators processed by the One Call Center receive a unique message reference number, which is contained on all locate request messages. The excavator records this number; it is proof of notification to the members. The computer-generated request identifies the date, time, and sequence number of the locate request. Each locate request ticket (notification) is assigned a unique number with that One Call Center, the requestor, and the facility owner/operator. This number distinguishes this ticket from all other tickets so that it can be archived and retrieved upon request to provide the details of that request only.

5-4: Pre-Excavation Meeting

Practice Statement:
When practical, the excavator requests a meeting with the facility locator at the job site prior to marking the facility locations. Such pre-job meetings are important for major, or unusual, excavations.

Practice Description:
The meeting facilitates communications, coordinates the marking with actual excavation, and ensures identification of high-priority facilities. An on-site pre-excavation meeting between the excavator, facility owners/operators, and locators (where applicable) is recommended on major or large projects. This includes projects such as road, sewer, water, or other projects that cover a large area, that progress from one area to the next, or that are located near critical or high-priority facilities. Such facilities include, but are not limited to, high-pressure gas, high-voltage electric, fiber-optic communication, and major pipe or water lines.

5-5: Facility Relocations

Practice Statement:
The excavator coordinates work that requires temporary or permanent interruption of a facility owner/operator's service with the affected facility owner/operator in all cases.

Practice Description:
Any temporary or permanent interruption requires the active participation by the facility owner/operator and the excavator to ensure protection of facilities through a joint preplanning meeting or conference call. One Call Centers note on the ticket any special contractor requests for a joint meeting that require the facility owner/operator to initiate the process.

5-6: Separate Locate Requests

Practice Statement:
Every excavator on the job has a separate One Call reference number before excavating.

Practice Description:
There are often several excavators on a job site performing work. The construction schedule may dictate different types of work requiring excavation from different specialty contractors simultaneously. In these situations, it is imperative for each excavator to obtain a One Call reference number before excavation to ensure that the specific areas have been appropriately marked by any affected underground facility owner/operator.

5-7: One Call Access

Practice Statement:
The excavator has access to a One Call Center 24 hours per day, 7 days a week.

Practice Description:
Utilities service the public needs 24 × 7 and thus should be protected during that same time. Certain conditions may exist that require excavators to work during off-hours (city/road congestion, off-peak utility service hours). Although most excavators are on the job site during regular work hours, they need to be able to call in future work locations after 5:00 p.m. This allows them more flexibility to schedule work and to avoid peak hours of locate requests at the One Call center.

5-8: Positive Response

Practice Statement:
The underground facility owner/operator either 1) identifies for the excavator the facility's tolerance zone at the work site by marking, flagging, or other acceptable methods; or 2) notifies the excavator that no conflict situation exists. This takes place after the One Call Center notifies the underground facility owner/operator of the planned excavation and within the time specified by state/provincial law.

Practice Description:
If a facility owner/operator determines that the excavation or demolition is not near any of its existing underground facilities, it notifies the excavator that no conflict exists and that the excavation or demolition area is "clear." This notification by the facility owner/operator to the excavator may be provided in any reasonable manner including, but not limited to face-to-face communications; phone or phone message, facsimile or other electronic means; posting at the excavation or demolition area; or marking the excavation or demolition area. If an excavator has knowledge of the existence of an underground facility and has received an "all clear," a prudent excavator will attempt to communicate that a conflict does indeed exist, and the locator will make marking these facilities a priority before excavation begins. Better communication between the excavator and the facility owner/operator is required as an area of excavation becomes more crowded with new underground facilities.

"Positive response" is a term used to describe the two types of action taken by a facility owner/operator after it receives notification of intent to excavate. The facility owner/operator must 1) mark its underground facilities with stakes, paint, or flags; or 2) notify the excavator that the facility owner/operator has no underground facilities in the area of excavation. This process allows the excavator to begin work in a timely manner.

When the excavator makes the request to the One Call Center, the excavator is told which facility owners/operators will be notified. The excavator logs these facilities on a job sheet and identifies which facility owner/operators have responded by marking and which have cleared the area. When a facility owner/operator does not respond by marking or clearing, it may indicate that the facility owner/operator did not receive a locate notice or that the One Call Center's contact information for that facility owner/operator may be incorrect, incomplete, or corrupt (which could result in calamity).

When the excavator has obtained all required information, the excavation can commence with confidence that the safety of the work crew and the public at large has been considered.

5-9: Facility Owner/Operator Failure to Respond

Practice Statement:
If the facility owner/operator fails to respond to the excavator's timely request for a locate (e.g., within the time specified by state/provincial requirements) or if the facility owner/operator notifies the excavator that the underground facility cannot be marked within the time frame and a mutually agreeable date for marking cannot be arrived at, then the excavator re-calls the One Call Center. However, this does not preclude the excavator from continuing work on the project. The excavator may proceed with excavation at the end of two working days, unless otherwise specified in state/provincial law, provided the excavator exercises due care in all endeavors.

Practice Description:
The facility owner/ operator and the excavator partner together to ensure that facilities are marked in an acceptable time frame to allow for underground facility protection.

5-10: Locate Verification

Practice Statement:
Prior to excavation, excavators verify that they are at the correct location, verify locate markings and, to the best of their ability, check for unmarked facilities.

Practice Description:
Upon arrival at the excavation site and prior to beginning the excavation, an excavator does the following:

- Verifies that the dig site matches the One Call request and is timely
- Verifies that all facilities have been marked and reviews color codes if in doubt
- Verifies all service feeds from buildings and homes
- Checks for any visible signs of underground facilities, such as pedestals, risers, meters, and new trench lines
- Checks for any facilities that are not members of the One Call Center and contact someone to get them located.

Use of a pre-excavation checklist is recommended by insurers and practiced by responsible excavating contractors.

5-11: Documentation of Marks

Practice Statement:
An excavator uses dated pictures, videos, or sketches with distance from markings to fixed objects recorded, to document the actual placement of markings.

Practice Description:
In most situations when underground facilities are not properly marked, excavators have no way of knowing where underground utilities are located. If locate markings are adequately documented through the use of photographs, video tape, or sketches before excavation work begins, it is easier to resolve disputes if an underground facility is damaged as a result of improper marking, failure to mark, or markings that have been moved, removed, or covered. It is important for excavators and locators to document the location of markings before excavation work begins. The primary purpose of this best practice is to avoid unnecessary litigation and expensive legal fees for all parties involved.

5-12: Work Site Review with Company Personnel

Practice Statement:
Prior to starting work, the excavator reviews the location of underground facilities with site personnel.

Practice Description:
Sharing information and safety issues during an on-site meeting between the excavator and the excavating crews helps avoid confusion and needless damage to underground facilities.

5-13: One Call Reference Number at Site[59]

Practice Statement:
Except in case of an emergency, the excavator at each job site has available a complete description of the dig site, a list of the facility owner members impacted at that dig site as identified by the One Call Center, and the One Call Center ticket number.

Practice Description:
The availability of locate request details on site is useful because excavators can easily access information about the location and extent of work, the valid start time, and the list of operators notified. The documentation also provides an excavator with appropriate information for daily tailgate meetings for crews; provides quick references for excavation equipment operators; and facilitates communications between the excavator and the One Call Center with respect to that particular locate request, should it become necessary. When multiple crews are working on the same project at separate locations or when different employers have crews working at the same location, each crew has the information.

5-14: Contact Names and Numbers

Practice Statement:
The excavator's designated competent person at each job site has access to the names and phone numbers of all facility owner/operator contacts and the One Call Center.

Practice Description:
Situations arise on the job site that require immediate notification of the facility owner/operator, One Call Center, or local emergency personnel. To avoid costly delays, the excavator ensures that the designated job site personnel have all appropriate names and phone numbers. If telephone communication is unavailable, radio communication to the "home office" is available so that timely notification can be made. The "home office" also has immediate access to all appropriate names and telephone numbers.

5-15: Facility Avoidance

Practice Statement:
The excavator uses reasonable care to avoid damaging underground facilities. The excavator plans the excavation so as to avoid damage or to minimize interference with the underground facilities in or near the work area.

Practice Description:
Foremost on any construction project is safety. Excavators using caution around underground facilities significantly contribute to safe excavation of existing facilities.

5-16: Federal and State Regulations

Practice Statement:
The excavator complies with all applicable federal and state/provincial safety regulations, and, when required, provides training as it relates to the protection of underground facilities.

Practice Description:
Although most existing state/provincial damage prevention legislation does not include reference to federal and state/ provincial regulations, it is important to include reference to worker safety and training in the best practices. Excavators are required to comply with federal and state/provincial occupational safety and health requirements to protect employees from injury and illness. These regulations include reference to training each employee to recognize and avoid unsafe conditions in the work environment and to control or eliminate any hazards or exposures to illness or injury. Therefore, the excavator's crew, as part of its safety training, is informed of the best practices and regulations applicable to the protection of underground facilities.

5-17: Marking Preservation

Practice Statement:
The excavator protects and preserves the staking, marking, or other designation of underground facilities until no longer required for proper and safe excavation. The excavator stops excavating and notifies the One Call Center for re-marks if any facility mark is removed or is no longer visible.

Practice Description:
During long, complex projects, the marks for underground facilities may need to be in place far longer than the locating method is durable. Painting, staking, and other marking techniques last only as long as the weather and other variables allow. When a mark is no longer visible, but work continues around the facility, the excavator requests a re-mark to ensure the protection of the facility.

5-18: Excavation Observer

Practice Statement:
The excavator has an observer to assist the equipment operator when operating excavation equipment around known underground facilities.

Practice Description:
The excavator designates a worker (an observer) who watches the excavation activity and warns the equipment operator while excavating around a utility to prevent damaging that buried facility.

5-19: Excavation Tolerance Zone

Practice Statement:
The excavator observes a tolerance zone that is comprised of the width of the facility plus 18 in. on either side of the outside edge of the underground facility on a horizontal plane. This practice is not intended to preempt any existing state/provincial requirements that currently specify a tolerance zone of more than 18 in.

Practice Description:
(See Practice Statement 5–20)

5-20: Excavation Within Tolerance Zone

Practice Statement:
When excavation is to take place within the specified tolerance zone, the excavator exercises such reasonable care as may be necessary for the protection of any underground facility in or near the excavation area. Methods to consider, based on certain climate or geographical conditions, include hand digging when practical (pot holing), soft digging, vacuum excavation methods, pneumatic hand tools, other mechanical methods with the approval of the facility owner/operator, or other technical methods that may be developed. Hand digging and non-invasive methods are not required for pavement removal.

Practice Description:
Safe, prudent, non-invasive methods that require the excavator to manually determine the actual location of a facility are considered "safe excavation practices" in a majority of state/provincial laws (38 states). A majority of states outline safe excavation practices to include hand digging or pot holing (16 states). Some states specifically allow for the use of power excavating equipment for the removal of pavement. Each state/province must take differing geologic conditions and weather related factors into consideration when recommending types of excavation within the tolerance zone.

5-21: Mismarked Facilities

Practice Statement:
The excavator notifies the facility owner/ operator directly or through the One Call Center if an underground facility is not found where one has been marked or if an unmarked underground facility is found. Following this notification, the excavator may continue work if the excavation can be performed without damaging the facility, unless specified otherwise in state/ provincial law.

Practice Description:
When an excavator finds an unmarked or inaccurately marked facility, excavation stops in the vicinity of the facility and notification takes place. If excavation continues, the excavator plans the excavation to avoid damage and interference with other facilities and protects facilities from damage.

5-22: Exposed Facility Protection

Practice Statement:
Excavators support and protect exposed underground facilities from damage.

Practice Description:
Protecting exposed underground facilities is as important as preventing damage to the facility when digging around the utility. Protecting exposed underground facilities helps ensure that the utility is not damaged and, at the same time, protects employees working in the vicinity of the exposed facility. Exposed facilities can shift, separate, or be damaged when they are no longer supported or protected by the soil around them. Excavators support or brace exposed facilities and protect them from moving or shifting, which could result in damage to the facility. This can be accomplished in different ways; for example, by shoring the facility from below or by providing a timber support with hangers across the top of an excavation to ensure that the facility does not move or bend. In addition, workers are instructed to not climb on, strike, or attempt to move exposed facilities that could damage protective coatings, bend conduit, separate pipe joints, damage cable insulation, damage fiber optics, or in some way affect the integrity of the facility. The Occupational Safety and Health Administration (OSHA) also has addressed this issue in Subpart P—Excavation Standard 29 CFR 1926.651(b)(4), which states "While the excavation is open, underground installations shall be protected, supported, or removed as necessary to safeguard employees." For example, an unsupported sewer main could shift, causing the pipe joints to separate, which could result in the trench where employees are working to flood, endangering the safety of employees.

5-23: Locate Request Updates

Practice Statement:
The excavator calls the One Call Center to refresh the ticket when excavation continues past the life of the ticket (sometimes, but not always, defined by state/provincial law). This recognizes that it is a best practice to define ticket life. If not currently defined in state/provincial law, ticket life is ideally 10 working days but does not exceed 20 working days. Original locate request tickets are generated so that the minimum number of locate request updates are necessary for the duration of a project. After all the excavation covered by a locate request is completed, no additional locate request updates are generated. Communication between excavation project planners, field personnel, and clerical personnel is essential in accomplishing this task.[36]

Practice Description:
Refreshing the ticket recognizes that markings are temporary and provides notification to facility owners/operators of ongoing excavation when a job is started but not completed as planned. Any excavation not begun during the life of the ticket is recalled to the One Call Center. Any excavation that covers a large area and will progress from one area to the next over a period of time is broken into segments when notifying the One Call Center in order to coordinate the marking with actual excavation. The possibility exists that new facilities have been installed in the area where the excavation is to be conducted after the original notification and marking. This practice also helps in situations where multiple excavators are working in the same area at essentially the same time. An example of when this can occur is when two facility owners, such as a cable television company and a telephone company, are planning to serve a new section of a subdivision. In their pre-planning process, they see a vacant space in the right-of-way to place their new facility. Each excavator (internal or external) calls the One Call Center for locates and each facility owner/operator comes and marks their respective facilities indicating that nothing exists. For one reason or another, one of the excavators gets delayed and does not start construction as planned, and when returning to the job site to place the new facility, finds new lines have been installed in the previously vacant space. Many facility owners/operators do not perform their own locates and utilize the services of a contracted facility locator. These contracted facility locators may not be aware of work planned in the near future. By excavators refreshing the locate ticket, the contract locator has another opportunity to identify newly placed facilities. This practice also gives the facility owner/operator another chance to identify the location of their facilities and to avoid possible damage and disruption of service if something was marked incorrectly or missed on a previous locate. Excellent planning, generation, and updating of tickets enhance safety and reduce the unnecessary use of locate resources.[37]

5-24: Facility Damage Notification

Practice Statement:
An excavator discovering or causing damage to underground facilities notifies the facility owner/operator and the One Call Center. All breaks, leaks, nicks, dents, gouges, grooves, or other damages to facility lines, conduits, coatings, or cathodic protection are reported.

Practice Description:
A majority of states require notification for damage or substantial weakening of an underground facility (27 states). The possibility of facility failure or endangerment of the surrounding population dramatically increases when a facility has been damaged. Although the facility may not immediately fail, the underground facility owner/operator is provided the opportunity to inspect the damage and make appropriate repairs.

5-25: Notification of Emergency Personnel

Practice Statement:
If the damage results in the escape of any flammable, toxic, or corrosive gas or liquid or endangers life, health, or property, the excavator responsible immediately notifies 911 and the facility owner/operator.[3/] The excavator takes reasonable measures to protect everyone in immediate danger, the general public, property, and the environment until the facility owner/operator or emergency responders arrive and complete their assessment.[4/]

Practice Description:
This practice is already required by many of the states' One Call legislation. This practice minimizes the danger to life, health, or property by notifying the proper authorities to handle the emergency situation. In these situations, local authorities are able to evacuate as appropriate and command substantial resources unavailable to the excavator or underground facility owner/operator. The excavator takes reasonable measures based on their knowledge, training, resources, experience, and understanding of the situation to protect themselves, people, property, and the environment until help arrives. The excavator responsible remains on-site to convey any pertinent information to responders that may help them to safely mitigate the situation.[4]

5-26: Emergency Excavation

Practice Statement:
In the case of an emergency excavation, maintenance or repairs may be made immediately, provided that the excavator notifies the One Call Center and facility owner/operator as soon as reasonably possible. This includes situations that involve danger to life, health, or property or that require immediate correction in order to continue the operation of or ensure the continuity of public utility service or public transportation.

Practice Description:
This practice allows excavation to begin immediately to restore service or to stop a hazardous situation from getting worse in the case of a gas or pipeline leak, cut telephone cable, or other facility damage.

5-27: Backfilling

Practice Statement:
The excavator protects all facilities from damage when backfilling an excavation. Trash, debris, coiled wire, or other material that could damage existing facilities or interfere with the accuracy of future locates are not buried in the excavation.

Practice Description:
Extra caution must be taken to remove large rocks, sharp objects, and large chunks of hard-packed clay or dirt. No trash or pieces of abandoned lines are backfilled into the trench. This helps prevent inadvertent damage to the facility during the backfill process.

5-28: As-built Documentation

Practice Statement:
Contractors installing underground facilities notify the facility owner/operator if the actual placement is different from expected placement.

Practice Description:
For a facility owner/operator to maintain accurate records of the location of their facilities, it is critical that the contractor installing the new facility be required to notify the facility owner/operator of deviations to the planned installation. Some facility owners/operators do not require a full-time inspector and use a sampling process to ensure that a new facility is correctly installed in compliance to specifications. When this occurs, it becomes much more critical for the contractor to notify the facility owner/operator of changes. For example, it is common for the contractor to make adjustments in the location of the new facility when rocks or other underground obstructions are encountered or when the location of the new facility conflicts with another existing underground facility. This change in plan can represent changes in horizontal or vertical distances from the specified plans. The facility owner/operator establishes standards that require notification if a deviation is beyond specified tolerances, such as changes in depth of 6 in. or more and lateral measurement changes of greater than 1 ft. When these changes to the expected location are communicated to the facility owner/operator, it is the owner/operator's responsibility to take appropriate action to update their records so that an accurate locate can be conducted in the future.

5-29: Trenchless Excavation[13]

Practice Statement:
All stakeholders comply with all best practices and the following general guidelines prior to, during, and after any trenchless excavation (as applicable).

Practice Description:
- The excavator requests the location of underground facilities at the entrance pit, trenchless excavation path, and the exit pit by notifying the facility owner/operator through the One Call Center.
- The trenchless equipment operator performs a site inspection, walking the trenchless excavation path prior to commencing work, and has a good understanding of the job.
- The trenchless excavation operator confirms and maintains the path and minimum clearances established by the project owner and design engineer by tracking and recording the path of the trenchless excavation until complete. Means of tracking trenchless excavations include electronic locating/guidance devices, pipe lasers, water levels, visual inspection, etc.
- When existing facilities are known to be present but cannot be potholed as a result of local conditions, the facility owner and the excavator meet to discuss how to safely proceed with the excavation.
- The excavator stops the trenchless excavation operations if an abnormal condition, unknown substructure, or other hidden hazard is encountered. The excavator proceeds safely only after making positive identification. (Refer to Practice Statements 2–13 and 4–19 for additional information.)

5-30:	Emergency Coordination with Adjacent Facilities[16]
	Practice Statement: Emergency response planning includes coordination with emergency responders and other aboveground and/or underground infrastructure facility owner/operators identified by the Incident Commander through the Incident Command System/Unified Command (ICS/UC) during an emergency. Practice Description: During emergency situations, there are many stakeholders involved: excavators, locators, owner/operators, first responders, One Call Centers, and the general public. Any actions taken by one stakeholder could adversely affect other stakeholders. Accordingly, emergency planning and response are coordinated.
5-31:	**No Charge for Providing Underground Facility Locations[23]**
	Practice Statement: Upon notification by One Call Centers, locations of underground facilities are provided by operators at no cost to excavators. Practice Description: It is the basic underpinning of the call-before-you-dig process that persons involved in excavation activities receive facility locates at no charge when they contact their local One Call Center to give notice of intent to excavate. This service is critical to maintaining the communication between operators and excavators. Call-before-you-dig education and marketing campaigns, such as 811 and those promoted by One Call Centers and associated industries, advise persons involved in excavation activities, including the public, homeowners, and professional excavators, that the service is provided by facility operators at no charge to the person providing the notice of intent to excavate.

5-32:	Vacuum Excavation[39]
	Practice Statement: Vacuum excavation, when used appropriately, is an efficient, safe, and effective alternative to hand digging within the designated underground facility tolerance zone. Use of equipment also follows state/provincial laws and/or local ordinances. Practice Description: The safe exposure of underground facilities within the tolerance zone is essential to damage prevention. Site conditions may make the use of hand tools to expose underground facilities difficult or even impractical. Vacuum excavation is often an appropriate alternative. Locates must be obtained prior to the commencement of work (see Practice Statement 5–1). Many underground facility owners/operators have specific criteria for safe excavation/exposure practices around their facilities. Some underground facility owners/operators accept vacuum excavation as equivalent to hand excavation for exposing their facilities, and others have restrictions on its use. Vacuum excavation is an appropriate method of excavating safely around underground facilities provided that the equipment • has been specifically designed and built for this purpose; • is operated by a worker trained and experienced in its operation; • is operated in accordance with practices that provide appropriate levels of worker and public safety and prevent damage to buried facilities; and • is used in compliance with state/provincial laws and/or local ordinances.
5-33:	**Facility Owner Provides a Monitor During Excavation[64]**
	Practice Statement: If a facility owner/operator considers it necessary to be on site during excavation activities to work with the excavator in protecting their existing facilities, the facility owner/operator makes arrangements with the excavator to be present during those excavation activities within the time specified by state/provincial law. Practice Statement: The facility owner/operator may determine it necessary to be on site during excavation activities taking place near their facilities to help protect them. A facility owner/operator has access to information and resources that may not be available to the excavator. This practice should be considered in conjunction with Practice Statement 2–4: Utility Coordination.

3. 11/30/2001 Amendment approved by the CGA Board via TR-2001-02A
4. 09/27/2002 Amendment approved by the CGA Board via TR-2001-02B
13. 09/16/2005 Amendment approved by the CGA Board via TR-2002-03
16. 09/08/2006 Amendment approved by the CGA Board via TR-2005-02
23. 08/08/2008 Amendment approved by the CGA Board via TR-2007-06
36. 07/16/2010 Amendment approved by the CGA Board via TR-2009-16
37. 07/16/2010 Final wording approved by the CGA Board via TR-2009-16
39. 09/10/2010 Amendment approved by the CGA Board via TR-2009-09
59. 06/19/2014 Wording approved by CGA Board via TR-2011-11
64. 12/13/2016 Approved by CGA Board via TR-2014-01

Community Liaison Service

Formerly known as Community Assistance & Technical Services (CATS)

PHMSA has renamed its CATS program to "Community Liaison Services" to more appropriately align with current roles and responsibilities and better interface with various stakeholders.

The mission of the PHMSA Community Liaison Services is to advance PHMSA's pipeline safety mission:

By proactively engaging with pipeline stakeholders, providing technical expertise, and leveraging technology, data, and information to reduce pipeline risks and influence change through program and policy development.

If you need assistance with any of the following pipeline safety related matters, please contact a PHMSA Community Liaison today:
- Pipeline safety policy/programs (damage prevention, public awareness, emergency response, PIPA, etc.)
- Pipeline stakeholder engagement and outreach
- Pipeline technical services and support (public inquiries, whistleblowers, post incident/accident communications, siting and permit initiatives)
- Questions about pipeline safety in your community

Community Liaisons are located within each PHMSA region. Contact information for the Community Liaisons for your state is noted below.

Community Liaison Services Program Manager
Karen Lynch: karen.lynch@dot.gov • Phone: (202) 366-6855

Central Region:
Illinois; Indiana; Iowa; Kansas; Michigan; Minnesota; Missouri; Nebraska; North Dakota; South Dakota; Wisconsin.
Angela Pickett: angela.pickett@dot.gov • Phone: (816) 329-3823
Sean Quinlan: sean.quinlan@dot.gov • Phone: (816) 329-3800

Southern Region:
Alabama; Florida; Georgia; Kentucky; Mississippi; North Carolina; Puerto Rico; South Carolina; Tennessee.
James Kelly: james.kelly@dot.gov • Phone: (404) 990-1848
Arthur Buff: arthur.buff@dot.gov • Phone: (404) 832-1155

Eastern Region:
Connecticut; Delaware; Maine; Maryland; Massachusetts; New Hampshire; New Jersey; New York; Ohio, Pennsylvania; Rhode Island; Vermont; Virginia; Washington, D.C.; West Virginia.
Karen Gentile: karen.gentile@dot.gov • Phone: (609) 433-6650
Ian Woods: ian.woods@dot.gov • Phone: (609) 468-9478

Southwest Region:
Arkansas; Louisiana; New Mexico; Oklahoma; Texas.
Bill Lowry: bill.lowry@dot.gov • Phone: (713) 272-2845
James 'Jay' Prothro:james.prothro@dot.gov • Phone: (713) 272-2832

Western Region:
Alaska; Arizona; California; Colorado; Hawaii; Idaho; Montana; Nevada; Oregon; Utah; Washington; Wyoming.
Tom Finch: thomas.finch@dot.gov • Phone: (720) 963-3175
Dave Mulligan: david.mulligan@dot.gov • Phone: (720) 963-3193

49 CFR-PART 196

PROTECTION OF UNDERGROUND PIPELINES FROM EXCAVATION ACTIVITY

Subpart A—General

§196.1 What is the purpose and scope of this part?

This part prescribes the minimum requirements that excavators must follow to protect underground pipelines from excavation-related damage. It also establishes an enforcement process for violations of these requirements.

§196.3 Definitions.

Damage or excavation damage means any excavation activity that results in the need to repair or replace a pipeline due to a weakening, or the partial or complete destruction, of the pipeline, including, but not limited to, the pipe, appurtenances to the pipe, protective coatings, support, cathodic protection or the housing for the line device or facility.

Excavation refers to excavation activities as defined in §192.614, and covers all excavation activity involving both mechanized and non-mechanized equipment, including hand tools.

Excavator means any person or legal entity, public or private, proposing to or engaging in excavation.

One-call means a notification system through which a person can notify pipeline operators of planned excavation to facilitate the locating and marking of any pipelines in the excavation area.

49 CFR PART 196

Pipeline means all parts of those physical facilities through which gas, carbon dioxide, or a hazardous liquid moves in transportation, including, but not limited to, pipe, valves, and other appurtenances attached or connected to pipe (including, but not limited to, tracer wire, radio frequency identification or other electronic marking system devices), pumping units, compressor units, metering stations, regulator stations, delivery stations, holders, fabricated assemblies, and breakout tanks.

Subpart B—Damage Prevention Requirements

§196.101 What is the purpose and scope of this subpart?

This subpart prescribes the minimum requirements that excavators must follow to protect pipelines subject to PHMSA or State pipeline safety regulations from excavation-related damage.

§196.103 What must an excavator do to protect underground pipelines from excavation-related damage?

Prior to and during excavation activity, the excavator must:

(a) Use an available one-call system before excavating to notify operators of underground pipeline facilities of the timing and location of the intended excavation;

(b) If underground pipelines exist in the area, wait for the pipeline operator to arrive at the excavation site and establish and mark the location of its underground pipeline facilities before excavating;

(c) Excavate with proper regard for the marked location of pipelines an operator has established by taking all practicable steps to prevent excavation damage to the pipeline;

(d) Make additional use of one-call as necessary to obtain locating and marking before excavating to ensure that underground pipelines are not damaged by excavation.

§196.105 [Reserved]

§196.107 What must an excavator do if a pipeline is damaged by excavation activity?

If a pipeline is damaged in any way by excavation activity, the excavator must promptly report such damage to the pipeline operator, whether or not a leak occurs, at the earliest practicable moment following discovery of the damage.

§196.109 What must an excavator do if damage to a pipeline from excavation activity causes a leak where product is released from the pipeline?

If damage to a pipeline from excavation activity causes the release of any PHMSA regulated natural and other gas or hazardous liquid as defined in part 192, 193, or 195 of this chapter from the pipeline, the excavator must promptly report the release to appropriate emergency response authorities by calling the 911 emergency telephone number.

§196.111 What if a pipeline operator fails to respond to a locate request or fails to accurately locate and mark its pipeline?

PHMSA may enforce existing requirements applicable to pipeline operators, including those specified in 49 CFR 192.614 and 195.442 and 49 U.S.C. 60114 if a pipeline operator fails to properly respond to a locate request or fails to accurately locate and mark its pipeline. The limitation in 49 U.S.C. 60114(f) does not apply to enforcement taken against pipeline operators and excavators working for pipeline operators.

Subpart C—Administrative Enforcement Process

§196.201 What is the purpose and scope of this subpart?

This subpart describes the enforcement authority and sanctions exercised by the Associate Administrator for Pipeline Safety for achieving and maintaining pipeline safety under this part. It also prescribes the procedures governing the exercise of that authority and the imposition of those sanctions.

§196.203 What is the administrative process PHMSA will use to conduct enforcement proceedings for alleged violations of excavation damage prevention requirements?

PHMSA will use the existing administrative adjudication process for alleged pipeline safety violations set forth in 49 CFR part 190, subpart B. This process provides for notification that a probable violation has been committed, a 30-day period to respond including the opportunity to request an administrative hearing, the issuance of a final order, and the opportunity to petition for reconsideration.

§196.205 Can PHMSA assess administrative civil penalties for violations?

Yes. When the Associate Administrator for Pipeline Safety has reason to believe that a person has violated any provision of the 49 U.S.C. 60101 et seq. or any regulation or order issued thereunder, including a violation of excavation damage prevention requirements under this part and 49 U.S.C. 60114(d) in a State with an excavation damage prevention law enforcement program PHMSA has deemed inadequate under 49 CFR part 198, subpart D, PHMSA may conduct a proceeding to determine the nature and extent of the violation and to assess a civil penalty.

§196.207 What are the maximum administrative civil penalties for violations?

The maximum administrative civil penalties that may be imposed are specified in 49 U.S.C. 60122.

§196.209 May other civil enforcement actions be taken?

Whenever the Associate Administrator has reason to believe that a person has engaged, is engaged, or is about to engage in any act or practice constituting a violation of any provision of 49 U.S.C. 60101 et seq., or any regulations issued thereunder, PHMSA, or the person to whom the authority has been delegated, may request the Attorney General to bring an action in the appropriate U.S. District Court for such relief as is necessary or appropriate, including mandatory or prohibitive injunctive relief, interim equitable relief, civil penalties, and punitive damages as provided under 49 U.S.C. 60120.

§196.211 May criminal penalties be imposed?

Yes. Criminal penalties may be imposed as specified in 49 U.S.C. 60123. ESG

CHANGES TO THE LAWS IN YOUR STATE

BY JENNIFER REAMS, UNDERGROUND TECHNICAL ADVISOR,
INFRASTRUCTURE COMPLIANCE CONCEPTS

Presented for informational purposes only. Information and laws are subject to change. Please consult the One Call center website or other sources for current information. The Pipeline Association for Public Awareness attempted to verify all information for accuracy as of the date of this publication, but is not responsible for incorrect or missing information.

CALIFORNIA

Effective changes as of January 1, 2017. Several changes have been highlighted in California's dig safe law of 2016 and are found in detail on the One Call websites indicated below. These changes include the creation of California Underground Facilities Safe Excavation Board operating under the State Fire marshal, mandatory white lining (alternate methods if impedes traffic), definition of working day, 24" tolerance zone, procedures for destroyed markings during an ongoing project, excavator shall not begin until positive response has been received from all known members and excavation permits are not valid without a ticket number.

Effective changes previously November 2017, postponed until July 1, 2020. Changes are as follows: (a) Definition of continual excavation means a location where excavation is part of the normal business activities of that location, including but not limited to, agricultural operations and flood control facilities, (b) a continual excavation shall be valid for one year of the date of issuance, (c) Inaccurate field mark means "a mark, or set of markings that did not correctly indicate the approximate location of a subsurface installation affected by an excavation and includes the actual physical location of a subsurface installation affected by an excavation that should have been marked", (d) liability provisions for both excavators and operators for failure to perform obligations under the law.

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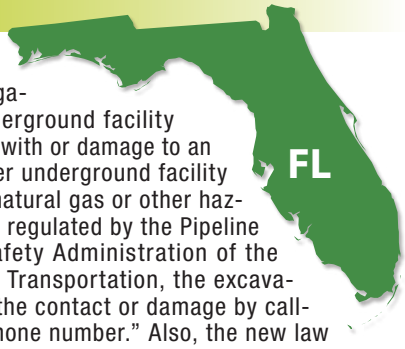
FLORIDA



HB 397 passed 6/15/2017. Provision was added for obligations when contact with underground facility occurs as follows, "If contact with or damage to an underground pipe or any other underground facility results in the escape of any natural gas or other hazardous substance or material regulated by the Pipeline and Hazardous Materials Safety Administration of the United States Department of Transportation, the excavator must immediately report the contact or damage by calling the 911 emergency telephone number." Also, the new law requires reporting to the center damages that occurred by March 31 of the prior calendar year and allows state law enforcement to issue citations for violations.

sunshine811.com

INDIANA

SB 472 passed on 4/21/2017. Indiana damage prevention law has added a provision for design information notice. Design information notice is defined to mean a notification that: (1) is voluntarily submitted to the association by a person providing professional services in connection with: (A) a construction project; or (B) any other project or operation; that will involve an excavation or demolition operation (2) is made in preparation for bidding, preconstruction engineering, or other advance planning efforts in connection with the project or operation and (3) is separate from and does not supplant the notice required for excavation. The new provision outlines duties for the person submitting the design notification, the responsibilities of the association receiving the notification and the obligations of the operator once receiving the design information notice. Please note; this design information notice is NOT an excavation notice.

indiana811.org

LOUISIANA

HB 249 effective 6/14/2017. Louisiana is on trend with changes to their One Call law. To start, commissioner and pipeline were added to the definition section. The most notable change is that the commissioner of conservation is granted the authority of enforcement. The duties outlined for the commissioner are as follows: (1) Monitoring any excavation or demolition, including requests for the excavator or demolisher to provide the locate request number issued by a regional notification center, (2) Issuing citations or ordering other penalties or remedies, (3) Seeking restraining orders, injunctions, or any other available civil remedies, (4) Utilizing any other enforcement powers that may be provided by law, (5) the ability to promulgate rules and regulations for the implementation of a procedure to report and investigate any reasonable complaint regarding a violation, (6) the establishment of a toll free number for a centralized complaint reporting point, (7) establish a uniform complaint form, and (8) investigate the validity of all complaints. The penalty schedule, to be established, will include the ability to consider factors including but not limited to gravity of violation, history of prior violations, good faith attempts to achieve compliance. All monies from the above shall be credited to the Oil and Gas Regulatory Fund.

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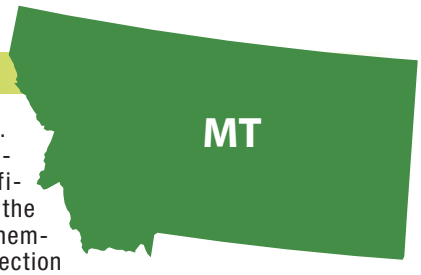
CHANGES TO THE LAWS IN YOUR STATE!

MONTANA



HB 365 effective 5/5/2017. Montana's damage prevention law went through significant revisions in 2017. First, the new law established the 11-member Underground Facility Protection Advisory Council and outlined rules for this Council. Regarding enforcement, it also grants the Montana Department of Labor and Industry with the responsibility to handle the tracking and administration of damages and law compliance. Other changes are as follows: Tort Liability for excavators and facility owners in cost associated with utility repair when damaged, monetary penalty schedule for excavators and facility owners, appeal process for penalties issued; mediation provision, failure to pay guidelines and department collection actions processes, established an underground facility protection account and grant process for distribution of funds to notification centers that accumulate in this account, reporting protocols, positive response obligations and excavator obligations under positive response, white lining provisions, onsite meetings and modified marking schedule for difficult to locate facilities, clarifications for when remarks are needed to include fees to excavator on the third locate request if the ticket has previously been called in on two occasions without excavation taking place within 30 days, and mandatory membership for facility owners to the notification center. Also, there were many definition additions and revisions as follows: (1) "Agricultural locate request" means a request for a locate and mark that is requested based on the perimeter boundary of an agricultural field: (a) by a property owner or excavator prior to agricultural activity; or (b) by a property owner or excavator prior to conducting soil probing or testing, (2) (a) "Business day" means any day beginning at midnight and ending 24 hours later, other than Saturday, Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. (b) When a holiday listed in subsection (2)(a) occurs on a Saturday, the preceding Friday is not considered a business day. When a holiday listed in subsection (2)(a) occurs on a Sunday, the following Monday is not considered a business day (3) Civil penalties, (4) Council, (5) "Damage" or "damages" means any impact upon or removal of support from an underground facility as a result of excavation or demolition that, according to the operating practices of the underground facility owner, would necessitate the repair of the facility. (6) "Department" means the department of labor and industry (7) "Designated service area" means a geographic area defined using state and county boundaries or further defined by the members of a notification center in operation, (8) Clarifies that there may not be more than two designated service areas in Montana. (9) "Engineering locate request" means a request for a locate and mark to identify underground facilities for planning and design purposes. (10) "Event" means damages to an underground facility, if: (a) the underground facility is not a jurisdictional pipeline; and (b) the underground facility owner determines the damages are not an incident. (11) clarifies what is an excavation exemption, (12) jurisdictional pipeline, (13) positive response, (14) property owner, (15) locate request that include defined limits per ticket, (16) third party, (17) Clarifies definitions of an exempt and non-exempt underground facility.

montana811.org

NEBRASKA

LB 263 passed 5/23/2017. Nebraska modifications include enhanced outline of duties for the State Fire marshal as follows: to adopt and promulgate rules and regulations that address (a) Any requirements necessary to comply with United States Department of Transportation programs; (b) The qualifications, appointment, retention, and composition of the board of directors; and (c) Best practices for the marking, location, and notification of proposed excavations which shall govern the center, excavators, and operators of underground facilities. The new law also adds criteria to include a provision that any rule or regulation adopted and promulgated by the State Fire Marshal pursuant to this section shall originate with the board of directors. Further, the new law adds violations concerning fiber optic telecommunications facility to an amount not to exceed ten thousand dollars for each violation for each day the violation persists, up to a maximum of five hundred thousand dollars. It also increases penalties for all other underground facility, an amount not to exceed five thousand dollars for each day the violation persists, up to a maximum of fifty thousand dollars.

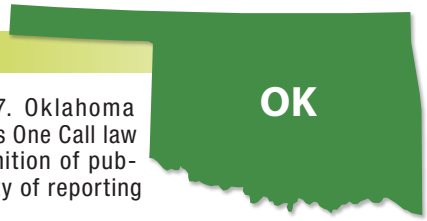
ne1call.com

NORTH DAKOTA

HB 1026 signed 3/10/2017. North Dakota is another state that substantially updated their One Call law. First, it expands definition of prudent excavation to include the requirement of "manual" excavation within the tolerance zone and supporting exposed facilities. A large change is in the definition of the "Locate period" meaning the later of: (a) The forty-eight-hour period beginning at 12:01 a.m. of the day after the location request was submitted to the notification center; excluding any Saturday, Sunday, or holiday; and any twenty-four-hour extension provided through the notification center; or (b) The period between the submission of a location request to the notification center and the noted date and time of excavation. Still further, is the addition of positive response through the One Call center, naming the North Dakota One Call as the notification center and establishing criteria for nine representing members of its Board of Directors, a defined ticket limit of area not exceeding three contiguous city blocks within an urban area or an area of four contiguous quarter sections or five linear miles [8.05 kilometers] in a rural area, the provision that the excavator can proceed with excavation after positive response has been received or the wait time has elapsed. Other notable changes are the provision that states "an operator of a facility required to be locatable is responsible for the costs of location. If an excavator is unable to locate a facility within two feet on either side of the operator's facility location markings and requests assistance from the operator to locate the facility, but the operator fails to provide the requested assistance within a reasonable time, the operator is responsible for the excavator's reasonable costs incurred to locate the facility"; exempt is water facility installed prior to August 1, 2013 and an excavator, who calls in excessive relocates due to their lack of care to preserve the locate marks, are liable for the operators cost of location and notification requirements for design and survey. Regarding penalties, an excavator can now be found guilty of a class A misdemeanor for damage to facility that includes damage to the coating of the facility.

ndonecall.com

OKLAHOMA



HB 1376 approved 5/3/2017. Oklahoma made some minor changes to its One Call law as follows: (a) simplified definition of public agency and (b) responsibility of reporting

CHANGES TO THE LAWS IN YOUR STATE!

damage to a facility operator expanded from excavator to include "Person" which includes any individual, partnership, corporation, association, cooperative, trust or other entity, including a person engaged as a contractor by a public agency, but not including a public agency.

okie811.org

PENNSYLVANIA

SB 242 10/30/2017. Another state with substantial changes in 2017 is Pennsylvania. First, the addition of definitions to include "Alleged violation" meaning an instance when a person by action or inaction fails to fulfill the obligations of this act, what constitutes a work site as the specific place denoted on the locate request where excavation or demolition work is being or is planned to be performed, Chairman means Chairman of the Pennsylvania Public Utility Commission, Commission means the Pennsylvania Public Utility Commission and Committee means the Damage Prevention Committee. Other new definitions found in the law are: conventional oil and gas well, federal pipeline safety laws, fiscal year, injury, lawful start date, preconstruction meeting, report of alleged violations, stripper well, stripper well lines, unconventional formation, unconventional oil and gas well, and well pad. Some important revisions to the previous definitions are also notable and as follows: Facility owners and excavators are now able to designate an excavation project as complex and unconventional oil and gas well production and gathering lines or facilities are now defined under facility. Also, exemptions to excavation work now include excavation that relates to the protection of underground facilities, stripper lines, excavation in the operation of a well pad, mining and coal refuse disposal. Excavators should note that the new lawful start date shall be three business days through ten business days following notification to the One Call System and the new provision for utility locating that states "The One Call System may not require its members to locate lines or facilities installed before the effective date of this clause unless the member has existing maps of the lines or facilities and the member's existing maps meet the specifications of the One Call System's Member Mapping Solutions". Another new provision within the law states that, if apparent, an excavator shall renotify the One Call center of mismarked or not marked facilities and wait three hours before proceeding with excavation subject to the limitations previously set forth in law. Also, "if a facility owner failed to respond to an original, proper, nonemergency locate request from the One Call System or to a renotification; communicate directly to the excavator within two hours after renotification of the information about its facility location and, if necessary and possible, go to the proposed work site to mark, stake or locate its underground lines or to verify to the excavator that the facility owner's underground lines are not within the area of the proposed work site." The process for submitting an alleged violation has changed to be submitted through the One Call system within 30 days after receipt of notice that a facility has been damaged and a requirement that the damage cost is to be less than two thousand five hundred dollars ($2,500), unless the same person damaged the facility owner's lines two or more times within a six-month period. In turn, designers shall submit alleged violations through the One Call system within 30 days of becoming aware of the alleged violation. Excavators will submit alleged violation through the One Call system within 10 days of damage to a facility. Facility owners will maintain records of abandoned facilities and mark the mains starting with the effective date of this provision. The One Call center is now delegated as the record keeper of alleged violation reports and all supporting documentation available for the commission and emergency management. Also, two seats have been added to the One Call board of directors for conventional and unconventional oil and gas wells. Fees associated with seeking information (including locate requests) from the One Call center are now annual fees to be paid to the One Call center. Failure of payment is considered a violation. A new section establishing a nine-member damage prevention committee to include duties, protocols for alleged violators, funding and penalty schedule for violations. New sunset provision is December 31, 2024 and this law is in effect 180 days after the signing (10/30/2017) except for the enforcement funding which went into effect on the sign date above.

pa1call.org/pa811

RHODE ISLAND

HB 5643 signed 6/29/2017. Rhode Island added definition of "Immediate danger to life and health means likely to cause death or immediate or 28 delayed permanent adverse health effects or prevent escape from such an environment". This definition is important, as the excavator must now notify 911 if damage to a facility pose immediate danger to life and health. Further, excavation must take place within 30 days of the one notification (previously 60 days).

digsafe.com

TENNESSEE

SB379/HB1337 effective 1/1/2017. All utilities shall be installed in a manner that will make those underground utilities locatable using a generally accepted electronic locating method.

Tenn. Code Ann. §§ 65-31-101 to -113 Underground Utility Damage Prevention Act

SB 112/HB 199, 4/19/2017- extends the underground utility damage enforcement board two years to June 30, 2019; adds an attendance requirement for members of the board.

tenn811.com

WASHINGTON

HB 1064 passed 4/17/2017. Removed sunset provisions (expiration dates) for Commission authority over violation investigation and enforcement

washington811.com

CHANGES TO THE LAWS IN YOUR STATE!

2018 BILLS

Indiana SB 125
- introduced 1/3/2018

Wisconsin SB 475
- introduced 12/21/2017

Vermont HB 193
- introduced 2/3/2017

South Dakota HB 1024
- expected introduction 2018

New York Assembly bill 3771
- introduced 1-30-2017 referred 1-3-2018

Nebraska legislature Bill 459
- introduced 1/17/2017 carryover 1/3/2018

Missouri SB 816
- introduced 1/3/2018

Illinois SB 1383/HB 3634
- introduced 2/9/2017

STATE ENFORCEMENT AGENCIES

Enforcement of the damage prevention laws in your state can be a bit confusing. Questions such has: who is enforced, who enforces it, and what is enforceable are common throughout the US. The information below is provided to help you navigate these situations. Please note that some states have more than one avenue of enforcement and may appear more than once on the list below.

- **State Public Utilities Commission:** Alaska, Arizona, California, Connecticut, Georgia, Hawaii, Illinois, Indiana, Kansas, Maine, Massachusetts, Michigan, Minnesota, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Rhode Island, Tennessee, Utah, Vermont, Virginia, West Virginia, Wisconsin
- **State Attorney General:** Alabama, Arkansas, California, Colorado, Delaware, District of Columbia, Iowa, Nevada, Pennsylvania, South Carolina, Texas, Utah
- **Relevant County Court:** Alabama, Alaska, Arkansas, Colorado, New Mexico, Wisconsin
- **State Division of Safety:** Idaho, Washington
- **Underground Facilities Damage Prevention Authority or Board:** Maryland, Mississippi
- **Department of Transportation and Public Works (DTOP):** Puerto Rico
- **Railroad Commission:** Texas
- **Department of Labor:** Montana
- **Department of Natural Resources:** Louisiana
- **State Fire Marshal:** California
- **State One Call:** Colorado (offers dispute resolution board), North Dakota, South Dakota, Wyoming
- **Local Law Enforcement:** Florida, Kentucky
- **Pipeline Hazardous Materials Safety Administration:** damage to federally regulated pipelines in any state without adequate state enforcement.

The Pipeline Hazardous Materials Safety Administration has complied extensive documentation for each state which is updated periodically. This information can be found at the following link: https://primis.phmsa.dot.gov/comm/states.htm?nocache=5069.

One Call and State Law Directory

Informational purposes only. Information and laws are subject to change. Consult your local One Call Center website for updated information. Infrastructure Resources, LLC attempted to verify all information as of publication date, and accepts no responsibility for missing or incorrect information.

You can reach your local One Call center in the U.S. by dialing 811.

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

	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 (either side of the utility plus the width of the utility)
ALABAMA / Alabama 811 / 800-292-8525																							
Website: www.al811.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 working days **Marks Valid:** 10 working days **Law Link:** www.al811.com/law	N	Y	Y	Y	Y	Y	N	N	N	Y	Y	N	Y	N	Y	Y	12" *	Y	Y	Y	N	N	18"
	*Agricultural purposes only																						
ALASKA / Alaska Dig Line, Inc. / 800-478-3121 or 907-278-3121 / Tickets Fax: 907-278-0696																							
Website: www.akonecall.com **Hours:** May 15-Sept 15: 7:00 AM - 7:00 PM, M-F, Sep 16-May 14: 8:00 AM - 5:00 PM, M-F **Advance Notice:** 2 business days **Marks Valid:** 15 business days **Law Link:** www.akonecall.com/faq.htm	Y	Y	N	Y	Y	Y	N	N	N	N	Y	N	N	N	N	N	N	Y	Y	Y	N	N	24"
ARIZONA / Arizona 811 / 800-782-5348 or 602-263-1100																							
Website: www.arizona811.com **Hours:** 6:00 AM - 5:00 PM, M-F **Advance Notice:** 2 full working days(excludes weekends and holidays) **Marks Valid:** 15 working days **Law Link:** www.arizona811.com/resources/	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	N	N	Y	N	N	Y	Y	N	N	24"
ARKANSAS / Arkansas 811 / 800-482-8998																							
Website: www.arkansas811.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 to 10 working days **Marks Valid:** 20 working days **Law Link:** www.arkonecall.com/statelaw/statelaw.aspx	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	N	N	N	N	N	Y	Y	N	Y	18"
CALIFORNIA																							
USA North 811 / 800-642-2444 **Website:** www.usanorth811.org **Hours:** 6:00 AM - 7:00 PM , M-F **Advance Notice:** 2 working days **Marks Valid:** 28 days **Law Link:** WWW.usanorth811.org/law	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	Y	N	Y	24"
Underground Service Alert of Southern California / 800-422-4133 **Website:** www.digalert.org **Hours:** 6:00 AM - 7:00 PM, M-F **Advance Notice:** 2 working days to 14 calendar days not including date of notice **Marks Valid:** 28 days **Law Link:** www.digalert.org/calaw	N	Y	Y	N	Y	Y	Y*	Y	Y	Y	Y	Y	N	Y	N	N	N	Y	N	Y	N	Y	24"
	*DOT and non-pressurized sewer lines, storm drains and drain lines exempt **Up to 1 sq mi on single ticket, tickets valid 28 days																						
COLORADO / Colorado 811 / 800-922-1987																							
Website: www.co811.org • **Hours:** 24 hours **Advance Notice:** 2 days, not to include the day of notice **Marks Valid:** 30 days **Law Link:** www.colorado811.org/wp-content/uploads/PDF%20Documents/colorado_one_call_law.pdf	N	Y	Y	Y	Y	Y	Y*	N	N	Y	N	Y	N	N	N	Y	Y	Y	Y	Y	N	Y	18"
	* DOT exempt																						
CONNECTICUT / Call Before You Dig / 800-922-4455																							
Website: www.cbyd.com **Hours:** 7:00 AM - 5:00 PM, M-F; Emergencies 24 Hours **Advance Notice:** 2 full working days up to 30 calendar days (excludes weekends and holidays) **Marks Valid:** 30 days **Law Link:** www.cbyd.com/education_excavator.html	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	N	N	Y	N	Y	Y	Y	N	Y	18"
DELAWARE / Miss Utility of Delmarva / 800-282-8555 (DE), 800-441-8355 (Eastern Shore MD)																							
Website: www.missutilitydelmarva.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 full business days (for both DE and Eastern Shore MD) **Marks Valid:** 10 working days in DE; 12 business days in Eastern Shore MD **Law Link:** www.delcode.delaware.gov/title26/c008/index.shtml	N	Y	N	Y	Y	Y	Y	N	N	Y	Y	N	N	Y	N	N	N	N	Y	Y	N	N	*
	*24" DE, 18" Eastern Shore, MD																						
FLORIDA / Sunshine 811 / 800-432-4770																							
Website: www.sunshine811.com **Hours:** 7:00 AM - 5:00 PM, M-F **Advance Notice:** 2 full business days (10 if dig site is underwater) **Marks Valid:** 30 days **Law Link:** www.sunshine811.com/the-law	N	Y	N	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	24"

One Call and State Law Directory

HELP US STAY UP TO DATE.
Directory information is also available online at dp-pro.com. Report any updates to this directory by calling 866-279-7755.

You can reach your local One Call center in the U.S. by dialing 811. Know what's below. Call before you dig.

	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 (either side of the utility plus the width of the utility)
GEORGIA / Georgia 811 / 800-282-7411																							
Website: www.Georgia811.com **Hours:** 7:00 AM - 6:00 PM, M-F • (24/7 emergency) **Advance Notice:** 2 business days (excluding day of call) **Marks Valid:** 30 calendar days **Law Link:** www.georgia811.com/lawspolicies.aspx	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y**	N	Y	Y	Y	Y	Y	18"
** Routine road maintenance* *** Farming activities*																							
HAWAII / Hawaii One Call Center / 866-423-7287 / Tickets Fax: 877-695-2466																							
Website: www.callbeforeyoudig.org **Hours:** 24 hours, 7 days **Advance Notice:** 5 workings days, not to exceed 28 calendar days **Marks Valid:** 28 calendar days **Law Link:** www.callbeforeyoudig.org/law.htm	Y	Y	N	Y	Y	Y	Y	N	Y	Y	Y	N	N	Y	N	N	N	Y	Y	Y	N	N	30"
IDAHO																							
DIG LINE / 800-342-1585/ Tickets Fax: 208-342-8907 **Website:** www.digline.com **Hours:** 24 hours **Advance Notice:** 2 business days **Marks Valid:** 3 weeks **Law Link:** www.legislature.idaho.gov/statutesrules/idstat/Title55/T55CH22/	Y	Y	N	N	Y	Y	Y	N	Y	N	Y	Y	N	15"	N	Y	15"	Y	Y	Y	Y	Y	24"
BONNER/BOUNDRY One Call / 800-626-4950 **Website:** www.passwordinc.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 business days **Marks Valid:** 10 days **Law Link:** www.legislature.idaho.gov/statutesrules/idstat/Title55/T55CH22/	N	Y	N	N	Y	Y	Y	N	Y	N	Y	Y	N	15"	N	Y	15"	Y	Y	Y	Y	N	24"
SHOSHONE/BENEWAH One Call / 800-398-3285 **Website:** www.passwordinc.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 business days **Marks Valid:** 10 days **Law Link:** www.legislature.idaho.gov/statutesrules/idstat/Title55/T55CH22/	N	Y	N	N	Y	Y	Y	N	Y	N	Y	Y	N	15"	N	Y	15"	Y	Y	Y	Y	N	24"
KOOTENAI COUNTY One Call / 800-428-4950 **Website:** www.passwordinc.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 business days **Marks Valid:** 10 days **Law Link:** www.legislature.idaho.gov/statutesrules/idstat/Title55/T55CH22/	N	Y	N	N	Y	Y	Y	N	Y	N	Y	Y	N	15"	N	Y	15"	Y	Y	Y	Y	N	24"
ILLINOIS																							
JULIE, INC. / 800-892-0123 **Website:** www.illinois1call.com • **Hours:** 24 hours, 7 days **Advance Notice:** 48 hours notice (two business days), but no more than a 14 calendar day advance notice prior to the start of excavation. **Marks Valid:** 28 calendar days **Law Link:** www.illinois1call.com/law_policies/law.htm	N	Y	N	N	Y	Y	Y	N	Y*	Y	Y	Y	N	N	Y	Y	N	Y	Y	Y	N	N	18"
CHICAGO DIGGER / 312-744-7000 / Tickets Fax: 312-742-0950 **Website:** www.ipi.cityofchicago.org/Digger **Hours:** 6:00 AM - 10:00 PM **Advance Notice:** 48 hours • **Marks Valid:** 28 days **Law Link:** www.illinois1call.com/law_policies/law.htm	Y	Y	N	N	Y	Y	N	Y	Y*	Y	Y	Y	N	N	Y	Y	N	Y	N	Y	N	N	18"
**When possible*																							
INDIANA / Indiana 811 / 800-382-5544																							
Website: www.indiana811.org • **Hours:** 24 hours, 365 days **Advance Notice:** 48 hours notice (two working days), but no more than a 20-calendar day advance notice prior to the start of excavation. **Marks Valid:** 20 calendar days **Law Link:** www.indiana811.org/wp-content/uploads/2017/07/IC8-1-26-2017.pdf	N	Y	N	Y	Y	Y	Y	N	N	Y	Y	Y	N	N	Y	Y	N	Y	Y	Y	N	N	24"
IOWA / Iowa One Call / 800-292-8989																							
Website: www.iowaonecall.com • **Hours:** 24 hours, 7 days **Advance Notice:** Forty-eight hours, excluding Saturdays, Sundays, and legal holidays **Marks Valid:** 20 calendar days **Law Link:** www.iowaonecall.com/Default.aspx?tabid=404#iowa	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	N	N	Y*	N	Y	Y	Y	N	Y	18"
**Normal farm operations less than fifteen inches*																							

Know what's below. Call before you dig.

Expand public awareness by visiting call811.com. You will find a variety of downloadable elements available for use free in your company/organization's existing campaigns.

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

	TICKETS			STATE LAWS & PROVISIONS									NOTIFICATION EXEMPTIONS					NOTIFICATIONS ACCEPTED					Tolerance Zone (either side of the utility plus the width of the utility)
	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	
KANSAS / Kansas 811 / 800-344-7233																							
Website: www.kansas811.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 full working days(not including day of notice) **Marks Valid:** 15 calendar days **Law Link:** www.kansasonecall.com/static/pdf/KUUDPA_04.03.2010.pdf	N	Y	Y	Y	Y	Y	Y	N	N	Y	N	N	N	Y*	Y	Y	N	N	Y	Y	N	N	24"
	*Homeowner retains responsibility for any damages due to digging																						
KENTUCKY / Kentucky 811 / 800-752-6007																							
Website: www.kentucky811.org **Hours:** 24 hours/7 days **Advance Notice:** 2 business days **Marks Valid:** 21 days **Law Link:** www.kentucky811.org/the-dig-law	N	Y	N	Y	Y	Y	N	N	N	Y	Y	N	Y	N	Y	Y	N	Y	Y	Y	N	N	18"
LOUISIANA / Louisiana One Call / 800-272-3020																							
Website: www.laonecall.com **Hours:** 7:00 AM - 6:00 PM, Emergency Locates 24/7 **Advance Notice:** 2 Business Days **Marks Valid:** 20 Days/30 Days for Forestry **Law Link:** www.laonecall.com/law_frame_page.htm	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	N	N	N	Y	Y	Y	N	N	18"
MAINE / Dig Safe System, Inc. / 888-344-7233																							
Website: www.digsafe.com **Hours:** 24 hours, 7 days **Advance Notice:** 72 hours(excluding weekends and holidays) **Marks Valid:** 60 days; must start within 30 days **Law Link:** http://www.digsafe.com/laws_rules.php	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	Y	N	Y	N	Y	18"
MARYLAND / Miss Utility Call Center / 800-257-7777																							
Website: www.missutility.net **Hours:** 24 hours, 7 days **Advance Notice:** 2 full business days **Marks Valid:** 12 business days **Law Link:** www.missutility.net/maryland/mdstatelaw.asp	N	Y	N	Y	Y	Y	Y	N	N	Y	Y	N	N	Y*	N	N	N	N	Y	Y	N	N	18"
	*Hand-dig only.Mechanized equipment must call																						
MASSACHUSETTS / Dig Safe System, Inc. / 888-344-7233																							
Website: www.digsafe.com **Hours:** 24 hours, 7 days **Advance Notice:** 72 hours(excluding weekends and holidays) **Marks Valid:** Must start within 30 days **Law Link:** http://www.digsafe.com/laws_rules.php	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	N	Y	N	Y	N	Y	N	Y	18"
MICHIGAN / Miss Dig System, Inc. / 800-482-7171																							
Website: www.missdig811.org **Hours:** 24 hours **Advance Notice:** 3 business days(excluding weekends and holidays) **Marks Valid:** 3 weeks to 6 months **Law Link:** www.missdig811.org/education/public-act-174.html	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y	18"
MINNESOTA / Gopher State One Call / 800-252-1166 or 651-454-0002																							
Website: www.gopherstateonecall.org **Hours:** 24 hours **Advance Notice:** 48 hours(excluding weekends and holidays) **Marks Valid:** 14 days **Law Link:** www.revisor.leg.state.mn.us/statutes/?id=216D	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	N	N	N	N	N	Y	Y	N	N	24"
MISSISSIPPI / Mississippi 811, Inc. / 800-227-6477 / Tickets Fax: 601-362-7533																							
Website: www.ms811.org **Hours:** 24 hours, 7 days **Advance Notice:** 2 working days **Marks Valid:** 14 working days **Law Link:** www.ms1call.org/One Call-law	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y	24"	12"	Y	Y	Y	N	Y	18"
MISSOURI / Missouri One Call System / 800-344-7483 / Tickets Fax: 800-635-8402																							
Website: www.mo1call.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 working days, not counting day of request **Marks Valid:** As long as visible **Law Link:** www.mo1call.com/manual_law.php	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	N	Y	Y*	N	Y	Y	Y	N	N	24"
	*Less than 16"																						

One Call and State Law Directory

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MONTANA																							
MONTANA 811 / 800-424-5555 or Fax: 800-424-5555 **Website:** www.montana811.org **Hours:** 24 hours, 365 days **Advance Notice:** 2 business days **Marks Valid:** 30 days **Law Link:** www.montana811.org/montana-dig-law.html	Y	Y	Y	N	Y	Y	Y	N	N	Y	Y	Y	N	Y	N	Y	Y	Y	Y	Y	N	N	18"
MONTANA ONE CALL / 800-551-8344 or 406-755-8344 **Website:** www.montanaonecall.com **Hours:** 24 hours, 365 days **Advance Notice:** 2 business days **Marks Valid:** 30 days **Law Link:** montana811.com/montana-dig-law.html	Y	N	N	N	Y	Y	Y	N	Y	Y	Y	Y	N	Y	N	15"	Y	N	Y	Y	Y	N	18"
NEBRASKA / Nebraska811 / 800-331-5666 / Tickets Fax: 800-896-0664 **Website:** www.ne1call.com **Hours:** 24 hours, 365 days **Advance Notice:** 2 to 10 business days excluding holidays and weekends **Marks Valid:** 5-10 business days **Law Link:** http://www.ne1call.com/ne-law-enforcement/nebraska-statutes/	Y	Y	Y	Y	Y	Y	Y	N	N	Y	N	Y	N	N	Y	Y	N	Y	Y	Y	N	N	18"
NEVADA / USA North 811 / 800-642-2444 **Website:** www.usanorth811.org **Hours:** 6:00 AM - 7:00 PM, M-F **Advance Notice:** 2 working days up to 28 calendar days **Marks Valid:** 28 days **Law Link:** http://usanorth811.org/law	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	N	N	N	Y	N	Y	N	N	24"
NEW HAMPSHIRE / Dig Safe System, Inc. / 888-344-7233 **Website:** www.digsafe.com **Hours:** 24 hours, 7 days **Advance Notice:** 72 hours(exluding weekends and holidays) **Marks Valid:** 30 days **Law Link:** http://www.digsafe.com/laws_rules.php	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	Y	N	Y	N	Y	18"
NEW JERSEY / New Jersey One Call / 800-272-1000 / Tickets Fax: 800-705-4559 **Website:** www.nj1-call.org **Hours:** 24 hours **Advance Notice:** 3 full business days **Marks Valid:** 45 business days **Law Link:** www.nj1-call.org/nj-law/	Y	Y	N	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	N	Y	Y	Y	N	Y	N	N	24"
NEW MEXICO / New Mexico One Call, Inc. dba NM811 / 800-321-2537 / Tickets Fax: 800-727-8809 **Website:** www.nm811.org **Hours:** 7:00 AM - 5:00 PM, M-F / Emergencies & Damages: 24 hours **Advance Notice:** 2 working days **Marks Valid:** 10 business days **Law Link:** www.nm811.org/new-mexico-811-law/	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	N	Y	18"
NEW YORK																							
DIG SAFELY NEW YORK / 800-962-7962 **Website:** www.digsafelynewyork.com **Hours:** 24 hours, 365 days **Advance Notice:** 2 to 10 working days(Excluding day of call) **Marks Valid:** 10 working days **Law Link:** www.digsafelynewyork.com/resources/nys-code-rule-753	N	Y	N	N	Y	Y	Y	N	N	Y	Y	N	N	N	N	N	N	Y	Y	Y	N	N	24"
NEW YORK 811 / 800-272-4480 **Website:** www.newyork-811.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 to 10 business days **Marks Valid:** 10 working days **Law Link:** www.newyork-811.com/law.html	N	Y	N	N	Y	Y	Y	N	N	Y	Y	N	N	Y	N	N	N	Y	Y	Y	N	N	24"
NORTH CAROLINA / North Carolina One Call Center, Inc. / 800-632-4949 **Website:** www.nc811.org **Hours:** 24 hours, 365 days **Advance Notice:** 3 full business days **Marks Valid:** 15 working days **Law Link:** http://nc811.org/nclaws.htm	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y	N	N	24"

Know what's below. Call before you dig.

You can also reach your local One Call Center by dialing 811 anywhere in the United States. This is a FREE call and a FREE service.

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

	TICKETS			STATE LAWS & PROVISIONS									NOTIFICATION EXEMPTIONS					NOTIFICATIONS ACCEPTED					Tolerance Zone (either side of the utility plus the width of the utility)
	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	
NORTH DAKOTA / North Dakota One Call / 800-795-0555																							
Website: www.ndonecall.com **Hours:** 24 hours **Advance Notice:** 48 hours(excluding weekends and holidays) **Marks Valid:** 21 calendar days **Law Link:** www.legis.nd.gov/cencode/t49c23.pdf?20130530105605	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	N	N	Y	N	N	Y	Y	N	N	24"
OHIO																							
OHIO UTILITIES PROTECTION SERVICE / 800-362-2764 **Website:** www.oups.org **Hours:** 24 hours, 7 days **Advance Notice** 48 hours but not more than 10 working days **Marks Valid:** As long as visible and work begins within 10 days of original ticket **Law Link:** www.oups.org/ExploreOUPS/TheLaw	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	N	N	Y	N	Y	Y	Y	N	Y	18"
OIL AND GAS UNDERGROUND PROTECTION SERVICE / 614-715-2984 / Ticket Fax: 614-824-4329 **Website:** www.ogpups.org **Hours:** 8:00 AM - 5:00 PM, M-F (except holidays) **Advance Notice:** 48 hours **Marks Valid:** 7 days **Law Link:** www.oups.org/law/Law_law.html	Y	Y	N	Y	Y	Y	Y	N	Y	Y	Y	N	N	N	N	Y	N	Y	Y	N	N	N	18"
OKLAHOMA / Okie811 / 800-522-6543																							
Website: www.okie811.org **Hours:** 24 hours, 7 days **Advance Notice:** 48 hours **Marks Valid:** 10 business days **Law Link:** http://www.okie811.org/how-it-works/the-law/	N	Y	Y	Y	N	Y	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	Y	N	Y	24"
OREGON / Oregon Utility Notification Center / 800-332-2344 / Tickets Fax: 503-293-0826																							
Website: www.digsafelyoregon.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 days to the life of the project **Marks Valid:** Life of project **Law Link:** www.digsafelyoregon.com/faqs/ounc_ors_oar.htm	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	12"	N	Y	N	N	Y	Y	N	N	24"
PENNSYLVANIA / Pennsylvania One Call System, Inc. / 800-242-1776																							
Website: www.paonecall.org **Hours:** 24 hours, 7 days **Advance Notice:** 3 to 10 business days(construction), 10-90 days (design) **Marks Valid:** as long as equipment is on site **Law Link:** www.paonecall.org/palaw	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	N	Y	Y	N	Y	18"
RHODE ISLAND / Dig Safe System, Inc. / 888-344-7233																							
Website: www.digsafe.com **Hours:** 24 hours, 7 days **Advance Notice:** 72 hours(exluding weekends and holidays) **Marks Valid:** Must start within 30 days **Law Link:** www.digsafe.com/laws_rules.php	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	N	Y	N	Y	N	Y	N	Y	18"
SOUTH CAROLINA / South Carolina 811 / 888-721-7877																							
Website: www.sc811.com **Hours:** 7:30 AM - 5:30 PM, M-F **Advance Notice:** 3 to 12 full working days notice(10-20 full working days notice subaqueous) **Marks Valid:** 15 working days **Law Link:** www.sc811.com/SCStateLaw.aspx	N	Y	Y	Y	Y	Y	Y	N	Y*	Y	Y	Y**	Y***	Y***	N	Y***	N	Y	Y	Y	N	N	24"
	** Mandatory when excavation site can't be clearly or adequately identified* ***Damages must be reported to the facility operator, if known, as well as the One Call Center.* ****Exemptions for agricultural tilling or plowing less than 12"; homeowners have a 10" non-mechanized depth exception provided the ROW/ Easement not encroached. SCDOT exception for specific work activities only.*																						
SOUTH DAKOTA / South Dakota 811 Center / 800-781-7474																							
Website: www.SD811.com **Hours:** 24 hours **Advance Notice:** 48 hours(excluding weekends and holidays) **Marks Valid:** 21 working days from start date and time on ticket **Law Link:** www.sdonecall.com/law.asp	N	Y	Y	Y	Y	Y	Y	N	N	N	Y	Y*	N	N	N	N	N**	Y	Y	Y	N	Y	18"
	** Damage reporting required. All damage must be reported to the facility operator, or if the operator is unknown, to South Dakota 811 Center.* *** For agricultural tilling and road and ditch maintenance to a depth of 18" only; homeowners have a 12" depth exception for tilling of soil and gardening*																						
TENNESSEE / Tennessee 811 / 800-351-1111 / Tickets Fax: 615-367-4469																							
Website: www.tn811.com • **Hours:** 24 hours **Advance Notice:** Not less than 3 working days, not more than 10 working days **Marks Valid:** 15 calendar days **Law Link:** https://www.tn.gov/tpuc/topic/uudp-underground-utility-damage-prevention	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	N	N	Y	Y	N	N	24"

One Call and State Law Directory

HELP US STAY UP TO DATE.
Directory information is also available online at dp-pro.com. Report any updates to this directory by calling 866-279-7755.

You can reach your local One Call center in the U.S. by dialing 811.

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	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 (either side of the utility plus the width of the utility)
TEXAS																							
TEXAS811 **Website:** www.texas811.org **Hours:** 24 hours **Advance Notice:** 48 hours (excluding weekends and holidays) **Marks Valid:** 14 working days **Law Links:** http://www.rrc.texas.gov/pipeline-safety/pipeline-damage-prevention-program/	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	N	Y	Y*	16"	Y	Y	Y	N	N	18"
*Agriculture exemption less than 16"																							
LONE STAR 811 **Website:** www.lonestar811.com **Hours:** 24 hours, 7 days **Advance Notice:** 48 hours(excluding weekends and holidays) **Marks Valid:** 14 working days **Law Links:** http://www.rrc.state.tx.us/pipeline-safety/rules/	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	N	Y	Y*	16"	Y	Y	Y	N	N	18"
*Agriculture exemption less than 16"																							
UTAH / Blue Stakes of Utah 811 / 800-662-4111																							
Website: www.bluestakes.org **Hours:** 7:00 AM - 5:00 PM, M-F **Advance Notice:** 2 business days, 48 hours notice **Marks Valid:** 14 calendar day **Law Link:** www.le.utah.gov/xcode/Title54/Chapter8A/54-8a.html	N	Y	Y	Y	Y	N	Y	N	N	Y	Y	N	N	N	N	N	N	N	N	Y	N	N	24"
VERMONT / Dig Safe System, Inc. / 888-344-7233																							
Website: www.digsafe.com **Hours:** 24 hours, 7 days **Advance Notice:** 48 hours(excluding weekends and holidays) **Marks Valid:** 30 days **Law Link:** www.digsafe.com/laws_rules.php	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	N	Y	N	Y	N	Y	N	Y	18"
VIRGINIA / Virginia 811 / 800-552-7001																							
Website: www.va811.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 working days(excluding day of call) **Marks Valid:** 15 working days **Law Link:** http://va811.com/lawspolicies/	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	N	N	Y	Y	Y	N	N	Y	Y	N	Y	24"
WASHINGTON / 800-424-5555 / TICKETS FAX: 503-293-0826																							
Utilities Underground Location Center (UULC/WA811) **Website:** www.washington811.com **Hours:** 24 Hours, 7 days **Advance Notice:** 2 business days **Marks Valid:** 45 days **Law Link:** www.washington811.com/wa-dig-law-rcw-19-122/	N	Y	N	Y	Y	Y	Y	N	Y	N	Y	Y	N	Y	N	Y	Y	Y	Y*	Y	N	Y	25"
*Calls are taken and sent to utilities, however, no language detailing utility response																							
Northwest Utility Notification Center (NUNC) **Website:** www.callbeforeyoudig.org **Hours:** 24 hours, 7 days **Advance Notice:** 2 business day **Marks Valid:** 45 days **Law Link:** www.apps.leg.wa.gov/RCW/default.aspx?cite=19.122	N	Y	N	Y	Y	Y	Y	N	Y	N	Y	Y	N	Y	N	Y	Y	Y	Y*	Y	N	Y	25"
*Calls are taken and sent to utilities, however, no language detailing utility response																							
Inland Empire Utility Coordinating Council (IEUCC) **Website:** Website: www.ieucc811.org **Hours:** 24 hours, 7 days **Advance Notice:** 2 business day **Marks Valid:** 45 days **Law Link:** www.apps.leg.wa.gov/RCW/default.aspx?cite=19.122	N	Y	N	Y	Y	Y	Y	N	Y	N	Y	Y	N	Y	N	Y	Y	Y	Y*	Y	N	Y	25"
*Calls are taken and sent to utilities, however, no language detailing utility response																							
WASHINGTON D.C. / District One Call / 800-257-7777																							
Website: www.missutility.net **Hours:** 24 hours, 7 days **Advance Notice:** 2 business day **Marks Valid:** 15 business days **Law Link:** www.apps.leg.wa.gov/rcw/default.aspx?cite=19.122&full=true	N	Y	N	Y	Y	Y	Y	Y	N	Y	Y	N	N	N	N	N	N	N	N	Y	N	N	18"
WEST VIRGINIA / West Virginia 811 / 800-245-4848																							
Website: www.wv811.com **Hours:** 24 hours **Advance Notice:** 2 days but not more than 10 **Marks Valid:** 10 days **Law Link:** http://www.wv811.com/one-call-law	N	Y	N	Y	Y	Y	N	N	N	N	N	N	Y	N	N	Y	N	Y	Y	Y	N	N	24"

Know what's below. Call before you dig.

Expand public awareness by visiting call811.com. You will find a variety of downloadable elements available for use free in your company/organization's existing campaigns.

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

	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 (either side of the utility plus the width of the utility)
WISCONSIN / Diggers Hotline / 800-242-8511																							
Website: www.diggershotline.com **Hours:** 24 hours, 7 days **Advance Notice:** 3 working days **Marks Valid:** 10 calendar days **Law Link:** http://www.diggershotline.com/wilaw2.html	N	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	N	N	N	N	N	Y	Y	Y	Y	N	
WYOMING / One Call of Wyoming / 800-849-2476 / Tickets Fax: 800-217-3719																							
Website: www.onecallofwyoming.com **Hours:** 24 hours **Advance Notice:** 2 full business days **Marks Valid:** 14 business days **Law Link:** www.onecallofwyoming.com/law.htm	Y	Y	N	Y	Y	Y	Y	N	N	Y	Y	Y	N	N	N	Y	N	Y	Y	Y	N	N	24"
GULFSAFE / Covers state and Federal waters in the Gulf of Mexico, the Florida Straits and Atlantic Coast / 888-910-4853 (GULF)																							
Website: www.gulfsafe.org **Hours:** 24 hours **Advance Notice:** 7 working days **Marks Valid:** Not Applicable **Law Link:** Not Applicable	N	Y	N	N	N	N	N	Y	N	N	N	N	Y	N/A	N/A	N/A	N/A	Y	Y	Y	N/A	N	N/A

Canada One Call

Click Before You Dig / Cliquez Avant de Creuser

Canadian One Call Centres Committee

	TICKETS			PROVINCIAL 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 (either side of the utility plus the width of the utility)
ALBERTA / Alberta One Call Corporation / 800-242-3447																							
Website: www.albertaonecall.com **Hours:** 8:00 AM-4:00PM, M-F (Emergency: 24/7) **Advance Notice:** 2 full working days **Marks Valid:** 14 days(extendable to 30 if certain conditions are met)	N	Y	Y	Y	N	N	N	N	N	Y	Y	Y	N	N	N	N	**	Y	Y	Y	N	Y	1m (39")
*** 300 mm (12") hand tools only*																							
BRITISH COLUMBIA / BC One Call / 800-474-6886 / Tickets Fax: 604-451-0344																							
Website: www.bconecall.bc.ca **Hours:** 24 hours / 7 days **Advance Notice:** 3 working days excluding Saturdays, Sundays and holidays **Marks Valid:** 30 calendar days	Y	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N	N	N	Y	Y	Y	N	N	VARIES
MANITOBA / Click Before You Dig Manitoba / 800-940-3447 / Tickets Fax: 204-222-7177																							
Website: www.ClickBeforeYouDigMB.com **Hours:** 7:00 AM - 5:00 PM **Advance Notice:** 2 days-3 weeks (peak) **Marks Valid:** 10 days	Y	Y	N	Y	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	
ONTARIO / Ontario One Call / 800-400-2255																							
Website: www.on1call.com **Hours:** 24 hours, 365 days **Advance Notice:** Minimum of five days for standard requests **Marks Valid:** Determined by Member	N	Y	N	Y	Y	Y	Y	N	N	Y	Y	Y	N	N	N	N	N	Y	Y	Y	N	Y	
QUEBEC / Info-Excavation / 800-663-9228																							
Website: www.info-ex.com **Hours:** 24 hours/7 days **Advance Notice:** 72 hours (3 working days) **Marks Valid:** 30 days	N	Y	Y	Y	N	Y	N	N	N	Y	N	Y	N	N	N	N	N	Y	Y	Y	Y	Y	1m (39")
SASKATCHEWAN / Sask 1st Call / 866-828-4888																							
Website: www.sask1stcall.com **Hours:** December-March 8:00am - 5:00pm, April-November 7:00am - 5:00pm **Advance Notice:** 2 full working days **Marks Valid:** 10 working days	N	Y	Y	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	Y	N	N	

Company	EMERGENCY	NON-EMERGENCY	WEB ADDRESS
ADM	(563) 242-1121	(563) 241-1775	www.adm.com
AE2S Water Solutions	(218) 791-7372	(701) 746-8087	www.AE2SWaterSolutions.com
Aera Energy, LLC	(800) 247-5977	(661) 665-5103	www.aeraenergy.com
Aka Energy Group, LLC	(970) 737-2601	(970) 764-6672	www.akaenergy.com
Alliance Pipeline L.P.	(800) 884-8811	(952) 983-1026	www.alliancepipeline.com
Alliant Energy - IPL	(319) 365-8040	(800) 255-4268	www.alliantenergy.com
Alliant Energy - WPL	(800) 758-1576	(800) 255-4268	www.alliantenergy.com
Aloha Petroleum	(808) 478-5155	(808) 594-3775	www.alohagas
Altamont Midstream	(435) 454-3927	(435) 454-3927	www.kindermorgan.com
Amplify Energy Corp.	(307) 328-2348	(307) 328-2348	www.amplifyenergy.com/
Anadarko Midstream - Colorado	(866) 504-8184	(970) 506-5980	www.anadarko.com
Anadarko Midstream - Utah	(435) 781-7825	(435) 781-9736	www.anadarko.com
Anadarko Midstream - Wyoming	(307) 682-9710	(307) 670-6042	www.anadarko.com
Arrow Pipeline, LLC	(866) 234-7473	(701) 675-8602	www.crestwoodlp.com
Assiduous Energy, LLC	(405) 285-2201	(405) 285-2201	
Atmos Energy Corporation	(866) 322-8667	(888) 286-6700	www.atmosenergy.com
Aux Sable Midstream	(701) 628-9380	(701) 628-9393	www.auxsable.com
AVAD Operating LLC	(435) 820-9801	(435) 636-2400	www.avadenergy.com
Avista Utilities	(800) 227-9187	(800) 227-9187	www.avistautilities.com
BakkenLink Pipeline LLC	(855) 298-4556	(701) 751-4331	www.tesorologistics.com
Baron Exploration Company	(405) 834-7535	(405) 341-1779	
Basin Electric Power Cooperative	(800) 339-5616	(701) 557-5895	www.basinelectric.com
Belle Fourche Pipeline Co	(866) 305-3741	(307) 746-4417	www.truecos.com
Big Horn Gas Gathering	(713) 737-9555	(307) 660-1940	www.kindermorgan.com
Black Hills Colorado IPP, LLC	(719) 696-3220	(719) 696-3209	www.blackhillsenergy.com
Black Hills Energy	(800) 694-8989	(303) 566-3509	www.blackhillsenergy.com
Black Hills Energy - IA Gas	(800) 694-8989	(888) 890-5554	www.blackhillsenergy.com
Black Hills Power dba Black Hills Energy	(307) 757-3010	(307) 757-3010	www.blackhillspower.com
Blueknight Energy Partners	(855) 999-2537	(918) 237-4000	www.bkep.com
BOE Pipeline, LLC	(844) 220-9234	(701) 300-1333	www.boemidstream.com
BP America Production - Southern CO	(970) 247-6916	(970) 247-6800	www.bp.com
Bridger Lake, LLC	(870) 814-5331	(307) 429-0271	www.bridgergroup.com
Bridger Pipeline LLC	(866) 305-3741	(307) 746-4417	www.truecos.com
Bridger Transfer Services, LLC	(307) 321-5800	(307) 321-5800	www.bridgergroup.com
Bridger Transfer Services, LLC - Swan Ranch	(307) 634-5305	(318) 564-8963	www.bridgergroup.com
Butte Pipe Line Company	(866) 305-3741	(307) 746-4417	www.truecos.com
Caliber Midstream Partners, LP	(866) 535-2522	(303) 628-1410	www.calibermidstream.com
California Resources Central Valley	(661) 763-6911	(661) 763-6363	www.crc.com
California Resources Elk Hills, LLC	(661) 763-6911	(661) 763-6363	www.crc.com
California Resources Ventura Basin	(844) 422-5737	(805) 525-8008	www.crc.com
Calumet Montana Refining, LLC	(406) 761-4100	(406) 454-9887	www.montanarefining.com
Cascade Natural Gas	(888) 522-1130	(888) 522-1130	www.cngc.com
Cedar Falls Utilities	(319) 268-6999	(319) 268-5280	www.cfu.net
Cenex Pipeline, LLC	(800) 421-4122	(406) 628-5443	www.chsinc.com
CenterPoint Energy - OK	(888) 876-5786	(866) 275-5265	www.centerpointenergy.com/safety
Central Iowa Power Cooperative	(641) 782-5518	(641) 782-2158	www.cipco.net
Central Valley Gas Storage	(855) 303-2847	(530) 439-2607	www.cvgasstorage.com
Centurion Pipeline L.P.	(800) 765-8695	(713) 215-7000	www.centurionpipeline.com
Chesapeake Energy Corporation	(800) 566-9306	(405) 935-3847	www.chk.com
Chevron Pipe Line Company - CO	(800) 762-3404	(970) 675-3777	www.chevron.com
Chevron Pipe Line Company - UT	(800) 762-3404	(801) 975-2324	www.chevron.com
Cheyenne Rail Hub, LLC	(307) 640-4768	(307) 638-2617	www.crhpipeline.com
CHS - Conway Pipeline	(844) 721-6611	(855) 424-7747	www.chsinc.com
CHS - Council Bluffs Pipeline	(844) 721-6611	(855) 424-7747	www.chsinc.com
City of Blanding	(435) 678-2916	(435) 678-2791	www.blanding-ut.gov
City of Ellensburg	(509) 925-8534	(509) 962-7124	www.ci.ellensburg.wa.us
City of Fort Morgan	(970) 867-4350	(970) 542-3910	www.cityoffortmorgan.com
City of Granville	(701) 263-1591	(701) 728-6369	www.granvillend.net
City of Lake City, Natural Gas Dept.	(386) 758-5405	(386) 758-5405	www.lcfla.com
City of Sioux Falls	(605) 941-2351	(605) 261-2980	www.siouxfalls.org
City of Walsenburg	(719) 738-1044	(719) 738-1048	www.cityofwalsenburg.com
City of Waukee	(515) 249-1212	(515) 978-7920	www.waukee.org
Colorado Natural Gas	(800) 720-8193	(303) 979-7680	www.coloradonaturalgas.com
Colorado Springs Utilities	(719) 448-4800	(719) 448-4800	www.csu.org
Continuum Midstream, LLC	(877) 587-0026	(918) 492-2840	www.continuumes.com
CPN Pipeline Company	(877) 432-5555	(707) 374-1505	www.calpine,com
Crestwood Dakota Pipeline, LLC	(866) 234-7473	(701) 859-5001	www.crestwoodlp.com
Crestwood West Coast, LLC	(866) 234-7473	(661) 765-4087	www.crestwoodlp.com
Crooks Municipal Utilities	(605) 359-2371	(605) 543-5238	www.cityofcrooks.net
Dakota Access, LLC	(800) 753-5531	(701) 421-6412	www.energytransfer.com
Dakota Gasification Company	(866) 747-3546	(701) 880-1129	www.dakotagas.com/Gas_Pipeline
Devon Energy Production Company LP	(800) 214-2154	(307) 857-2228	www.dvn.com
Dick Brown Technical Services	(888) 764-5147	(707) 249-8333	www.dbts.com
Divide Creek Gathering LLC	(844) 663-0191	(281) 664-6839	www.sginterests.com
Dominion Energy Idaho	(800) 767-1689	(801) 324-5000	www.dominionenergy.com

• If you would like any additional information from a pipeline member, call or visit the links above.

COMPAÑÍA	EMERGENCIA	NO EMERGENCIA	DIRECCIÓN DE INTERNET
Dominion Energy Questar Pipeline, LLC	(800) 300-2025	(801) 324-5000	www.dominionenergy.com
Dominion Energy Utah	(800) 767-1689	(801) 324-5000	www.dominionenergy.com
Dominion Energy Wyoming	(800) 767-1689	(801) 324-5000	www.dominionenergy.com
E & B Natural Resources - Kern	(661) 392-7575	(661) 428-6146	www.ebresources.com
E & B Natural Resources - Los Angeles	(310) 286-9114	(714) 325-9502	www.ebresources.com
El Paso Natural Gas	(800) 334-8047	(713) 420-5433	www.kindermorgan.com
Elk Hills Power, LLC	(661) 763-6911	(661) 763-6363	www.crc.com
Enable Bakken Crude Services	(701) 842-6916	(405) 576-8228	www.enablemidstream.com
Enable Gas Gathering	(800) 522-8048	(405) 576-8228	www.enablemidstream.com
Enable Gas Transmission	(800) 474-1954	(405) 576-8228	www.enablemidstream.com
Enable Illinois Intrastate Transmission	(800) 325-4005	(405) 576-8228	www.enablemidstream.com
Enable Midstream Partners	(800) 474-1954	(405) 576-8228	www.enablemidstream.com
Enable Mississippi River Transmission	(800) 325-4005	(405) 576-8228	www.enablemidstream.com
Enable Oklahoma Intrastate Transmission	(800) 522-8048	(405) 576-8228	www.enablemidstream.com
Enbridge Energy	(800) 858-5253	(218) 755-6712	www.enbridgeus.com
Enbridge Pipelines (North Dakota) LLC	(800) 858-5253	(701) 857-0800	www.enbridge.com
EnCana Oil & Gas (USA) Inc.	(877) 386-2200	(720) 876-5183	www.encana.com
Energy Operations Management Inc	(877) 723-3344	(916) 859-4700	
Energy Operations Management Nevada LLC	(877) 723-3344	(916) 859-4700	
Energy West Montana	(800) 570-5688	(406) 791-7500	www.egas.net
Enterprise - Jonah Gas Gathering	(307) 352-2404	(800) 203-1347	www.enterpriseproducts.com
Enterprise - Mid America Pipeline - CO, UT, WY	(888) 883-6308	(307) 362-2703	www.enterpriseproducts.com
Enterprise Products - CO	(800) 546-3482	(713) 381-2802	www.enterpriseproducts.com
Enterprise Products - IA	(800) 546-3482	(800) 331-3032	www.enterpriseproducts.com
Enterprise Products - Piceance Gas Gathering	(888) 883-6308	(888) 806-8152	www.enterpriseproducts.com
EOG Resources - ND	(866) 994-4775	(701) 628-1635	www.eogresources.com
EOG Resources - WY	(307) 266-7406	(970) 895-2247	www.eogresources.com
Express Pipeline LLC	(800) 794-3827	(800) 700-8666	www.enbridge.com
ExxonMobil Pipeline Co - Montana	(800) 537-5200	(406) 439-0805	www.exxonmobil.com
ExxonMobil Production	(307) 276-6000	(307) 276-6242	www.exxonmobil.com
FDL Operating, LLC - Midwest	(307) 437-9500	(307) 262-9786	www.fdlenergy.com
FDL Operating, LLC - Monell	(307) 212-3486	(307) 705-1210	www.fdlenergy.com
Fort Union Gas Gathering	(307) 682-9710	(307) 670-6022	www.fortuniongg.com
Fountain Valley Power LLC	(303) 594-2655	(303) 922-0630	www.southwestgen.com
Freeport-McMoRan Oil & Gas	(805) 739-9111	(805) 934-8223	www.fcx.com
Front Range Pipeline, LLC	(800) 421-4122	(406) 628-5443	www.chsinc.com
Garretson Natural Gas	(605) 594-6723	(605) 594-6723	www.garretsonsd.com
Georgia-Pacific - Camas Paper	(360) 834-8414	(360) 834-3021	www.gp.com
Georgia-Pacific - Crossett Paper	(870) 567-8421	(870) 567-8627	www.gp.com
Great Plains Natural Gas Company	(877) 267-4764	(701) 222-7773	www.gpng.com
Grove Municipal Service Authority	(918) 801-5404	(918) 786-6107	www.cityofgrove.com
Harlan Municipal Utilities	(712) 755-5182	(712) 733-0026	www.harlannet.com
Havre Pipeline Company LLC	(406) 357-2233	(406) 357-3643	
Hawaii Electric Light Co.	(808) 969-6666	(808) 969-6999	www.hawaiielectriclight.com
Hawaii Gas	(808) 526-0066	(808) 594-5522	www.hawaiigas.com
Hawaiian Electric Company, Inc	(808) 543-7685	(808) 548-7311	www.hawaiianelectric.com
Hawthorn Oil Transportation Inc. - ND	(888) 814-0188	(701) 629-9930	www.hawthornoiltransportation.com
Hess Corporation	(800) 406-1697	(701) 664-6200	www.hess.com
Hildale - Colorado City Gas Department	(435) 467-1160	(435) 874-1160	
Holly Energy Partners	(877) 748-4464	(575) 748-8950	www.hollyenergy.com
Humboldt Municipal Gas Utility	(888) 320-1490	(605) 661-5268	www.humboldtsd.com
Intermountain Gas Company	(877) 777-7442	(208) 377-6179	www.intgas.com
Island Energy Services	(808) 682-4711	(808) 682-2227	www.islandenergyservices.com
Jayhawk Pipeline	(888) 542-9575	(855) 424-7747	www.chsinc.com
Kaiser-Frontier Midstream LLC	(800) 876-7023	(918) 494-0000	www.kfoc.net
Kaw Pipeline	(888) 542-9575	(855) 424-7747	www.chsinc.com
KB Pipeline	(800) 433-0252	(800) 433-0252	www.portlandgeneral.com
Kelton Gas Services, LLC	(800) 460-3601	(806) 826-3230	
Kern River Gas Transmission Company	(800) 272-4817	(800) 420-7500	www.kernrivergas.com
Kinder Morgan - EPNG - OK	(800) 334-8047	(580) 347-2718	www.kindermorgan.com
Kinder Morgan - Natural Gas Pipeline Co	(800) 733-2490	(580) 347-2718	www.kindermorgan.com
Kinder Morgan - NGPL	(866) 775-5791	(641) 765-4242	www.kindermorgan.com
Kinder Morgan - Scissortail Energy	(918) 625-6598	(918) 625-6598	www.kindermorgan.com
Kinder Morgan - Southern Dome	(918) 625-6598	(918) 625-6598	www.kindermorgan.com
Kinder Morgan CIG - Eastern CO and WY	(877) 712-2288	(303) 261-4296	www.kindermorgan.com/public_awareness/
Kinder Morgan CIG - MT, UT and Western WY	(877) 712-2288	(307) 922-6443	www.kindermorgan.com
Kinder Morgan CIG - Ruby Pipeline	(877) 712-2288	(307) 922-6443	www.kindermorgan.com
Kinder Morgan CIG - Western CO	(877) 712-2288	(970) 216-5065	www.kindermorgan.com
Kinder Morgan CO2 Company, LP	(877) 390-8640	(970) 882-2464	www.kindermorgan.com
Kinder Morgan Cochin Pipeline - IA	(800) 265-6000	(713) 369-9000	www.kindermorgan.com
Kinder Morgan Cochin Pipeline - ND	(800) 265-6000	(701) 252-9013	www.kindermorgan.com
Legacy Reserves Operating LP	(307) 527-2873	(307) 587-7232	www.legacylp.com
Liberty Utilities	(855) 644-8134	(855) 872-3242	www.libertyutilities.com
Linde	(800) 232-4726	(307) 875-4480	www.linde.com
Lumen Midstream Partners - KS	(316) 542-0395	(316) 542-0395	

• Si quisiera más información sobre un miembro de tubería, llame o visite los enlaces arriba.

PIPELINE OPERATOR CONTACT DIRECTORY

Company	EMERGENCY	NON-EMERGENCY	WEB ADDRESS
Lumen Midstream Partners - OK	(888) 851-5445	(405) 224-4681	
Magellan Midstream Partners LP - ND	(800) 720-2417	(701) 282-7134	www.magellanlp.com
Magellan Midstream Partners LP - WY and SD	(800) 720-2417	(918) 574-7000	www.magellanlp.com
Marathon Pipe Line LLC - WY & MT	(800) 537-6644	(307) 347-9241	www.marathonpipeline.com
Merit Energy Company	(307) 783-2608	(307) 783-2608	www.meritenergy.com
Mid American Energy Company	(800) 595-5325	(888) 427-5632	www.midamericanenergy.com
Midwest Energy Inc.	(800) 222-3121	(800) 222-3121	www.mwenergy.com
MIGC	(307) 682-9710	(307) 670-6022	www.migc.com
Montana Dakota Utilities Company	(800) 638-3278	(701) 222-7773	www.montana-dakota.com
Mountain Gas Resources, Inc.	(307) 875-9049	(307) 352-3302	www.anadarko.com
Naftex Operating Company	(661) 363-8801	(661) 330-2044	
Nemaha Gas Gathering System, LLC	(479) 783-4191	(479) 783-4191	
NEOKC Pipeline, LLC	(405) 239-6001	(405) 239-6001	
Nephi City Gas	(435) 623-0822	(435) 623-0822	www.nephi.utah.gov
Nesson Gathering System LLC	(701) 664-3139	(701) 664-3139	www.xtoenergy.com
Northern California Power Agency	(209) 333-3225	(661) 809-4956	www.ncpa.com
Northern Natural Gas - IA	(888) 367-6671	(888) 654-0646	www.northernnaturalgas.com
Northern Natural Gas - OK	(888) 367-6671	(402) 398-7773	www.northernaturalgas.com
Northern Natural Gas - SD	(888) 367-6671	(402) 530-3835	www.northernnaturalgas.com
NorthWestern Energy - MT	(888) 467-2669	(406) 497-2446	www.northwesternenergy.com
NorthWestern Energy - NE and SD	(800) 245-6977	(406) 497-2446	www.northwesternenergy.com
NuStar Logistics, L.P	(800) 481-0038	(361) 290-0604	www.nustarenergy.com
NuStar Pipeline Operating Partnership L.P.	(800) 759-0033	(316) 721-7068	www.nustarenergy.com
NW Natural	(503) 226-4211	(503) 226-4211	www.nwnatural.com
Oasis Midstream Services, LLC.	(866) 584-8016	(281) 404-9600	www.oasispetroleum.com
Oklahoma Natural Gas	(800) 458-4251	(800) 664-5463	www.oklahomanaturalgas.com
Omimex Canada, Ltd.	(800) 230-9892	(406) 357-3156	
ONEOK - North System	(888) 844-5658	(918) 732-1451	www.oneokpartners.com
ONEOK Field Services Company	(888) 675-3302	(918) 588-7000	www.oneokpartners.com
ONEOK Gas Transportation	(888) 215-5137	(918) 561-8019	www.oneokpartners.com
ONEOK NGL Pipeline, L.L.C.	(855) 348-7258	(855) 689-1298	www.oneokpartners.com
ONEOK Rockies Midstream	(800) 778-7834	(406) 433-3664	www.oneokpartners.com
ONEOK Rockies Midstream - Wyoming	(866) 575-6465	(307) 687-3103	www.oneokpartners.com
Overland Pass Pipeline Company	(800) 635-7400	(307) 872-2833	www.williams.com/overlandpass/
Pacific Gas and Electric Company	(800) 743-5000	(925) 244-3057	www.pge.com/pipelinesafety
Paradox Midstream	(435) 587-2237	(970) 529-3419	www.paradoxresources.com
Paradox Resources LLC	(866) 774-8385	(435) 686-7600	www.paradoxresources.com
Pecan Pipeline Company - ND	(866) 899-2626	(701) 628-1635	www.pecanpipeline.com
Pembina Prairie Pipeline (U.S.A.) Ltd.	(800) 360-4706	(888) 428-3222	www.pembina.com
Petro - Hunt, LLC	(701) 863-6500	(701) 863-6500	www.petrohunt.com
Phillips Pipe Line Co - WY and MT	(877) 267-2290	(406) 855-6963	www.phillips66.com
Pine Pipeline	(800) 474-1954	(405) 576-8228	www.enablemidstream.com
Pinedale Natural Gas, Inc.	(307) 367-4427	(970) 928-9208	www.pinedalegas.com
Pioneer Pipe Line Company	(877) 267-2290	(801) 299-3627	www.phillips66.com
Plains Pipeline, L.P.	(800) 708-5071	(713) 646-4225	www.plainsallamerican.com
Plant Daniels	(866) 977-7374	(405) 576-8228	www.enablemidstream.com
Platte Pipe Line Company, LLC	(800) 794-3827	(800) 700-8666	www.enbridge.com
Platte River Power Authority	(970) 229-1733	(970) 226-4000	www.prpa.org
Pony Express Pipeline, LLC	(855) 220-1762	(303) 763-3445	www.tallgrassenergy.com
Prospector Pipeline Company	(877) 723-3344	(916) 859-4700	
Puget Sound Energy	(800) 710-1515	(888) 225-5773	www.pse.com
QEP Field Services - LA	(888) 599-4923	(318) 540-9286	www.qepres.com
Red Cedar Gathering Company	(970) 382-0828	(970) 764-6900	www.redcedargathering.com
Redding Electric Utilities	(530) 245-7009	(661) 809-4956	www.reupower.com
Rose Rock Midstream, LP - CO	(800) 522-3883	(720) 613-7008	www.semgroupcorp.com
Rose Rock Midstream, LP - ND	(800) 522-3883	(405) 945-6381	www.semgroup.com
Rose Rock Midstream, LP - OK	(800) 522-3883	(918) 225-7758	www.semgroupcorp.com
Running Horse Pipeline, LLC	(800) 889-7437	(928) 871-4880	www.nnogc.com
Ryckman Creek Resources, LLC	(888) 869-6795	(307) 222-5981	
Salt Plains Gas Storage	(877) 694-2249	(580) 694-2249	www.rockpointgs.com
San Diego Gas & Electric	(888) 320-1906	(800) 411-7343	www.sdge.com
San Pedro Bay Pipeline C/O Beta Offshore	(562) 606-5711	(562) 628-1534	www.betaoffshore.com
SandRidge Energy	(877) 435-7080	(405) 429-5500	www.sandridgeenergy.com
Savage Bakken Connector, Inc	(701) 774-9316	(701) 774-9311	www.savageservices.com
SemGas, LP	(800) 522-3883	(918) 524-8078	www.semgroupcorp.com
Seneca Resources	(888) 595-8595	(661) 473-7005	http:www.natfuel.com/seneca
Signature Flight Support	(808) 836-1830	(808) 226-3981	www.signatureflight.com
Silicon Valley Power	(408) 615-6550	(408) 615-6551	www.siliconvalleypower.com
Sinclair Pipeline Company	(800) 321-3994	(307) 328-3643	www.sinclairoil.com/pipelines.html
SoCal Holdings, LLC / LA Basin	(562) 624-3452	(562) 624-3400	www.crc.com
South Dakota Intrastate Pipeline Co.	(800) 852-0949	(605) 224-0949	www.sdipco.com
Southeast Supply Header	(866) 977-7374	(405) 576-8228	www.enablemidstream.com
Southern California Gas Company	(800) 325-4070	(800) 427-2200	www.socalgas.com
Southern Star Central Gas Pipeline	(800) 324-9696	(888) 885-6008	www.sscgp.com
Southwest Gas	(877) 860-6020	(877) 860-6020	www.swgas.com
St. Croix Gas	(715) 425-6177	(715) 425-6177	www.stcroixgas.com

• If you would like any additional information from a pipeline member, call or visit the links above.

COMPAÑÍA	EMERGENCIA	NO EMERGENCIA	DIRECCIÓN DE INTERNET
Statoil Oil & Gas LP	(855) 750-8024	(701) 875-3501	www.statoil.com
Stephens Energy Group, LLC	(479) 783-4191	(479) 783-4191	
Stephens Production Company	(479) 783-4191	(479) 783-4191	
Summit Midstream	(888) 643-7929	(970) 858-3425	www.summitmidstream.com
Suncor Energy (U.S.A.) Pipeline Company	(866) 978-6267	(307) 775-8106	www.suncor.com
Superior Pipeline Company	(866) 904-4514	(918) 382-7200	www.superiorpipeline.com
Tallgrass Energy / Rockies Express Pipeline	(877) 436-2253	(303) 763-3445	www.tallgrassenergy.com
Tallgrass Interstate Gas Transmission	(888) 763-3690	(303) 763-3445	www.tallgrassenergy.com
Tallgrass Midstream Powder River	(307) 687-9691	(303) 763-3445	www.tallgrassenergy.com
Targa Badlands LLC	(866) 957-3133	(701) 842-3315	www.targaresources.com
Tesoro Great Plains Gathering & Marketing LLC	(855) 298-4556	(701) 751-4331	www.tesorologistics.com
Tesoro High Plains Pipeline Company	(866) 283-7676	(701) 225-8973	www.tesorologistics.com
Tesoro Logistics - Rockies - Belfield	(866) 560-7019	(303) 454-6674	www.tesorologistics.com
Tesoro Logistics - Rockies - Robinson Lake	(877) 876-5380	(303) 454-6674	www.tesorologistics.com
Tesoro Logistics - Rockies - UT	(800) 628-6157	(435) 781-5053	www.tesorologistics.com
Tesoro Logistics - Rockies - WY	(800) 840-3482	(307) 922-5604	www.tesorologistics.com
Tesoro Logistics Northwest Products LLC	(800) 725-1514	(801) 521-4810	www.tesorologistics.com
Tesoro Logistics Operations LLC - Utah	(801) 521-4900	(801) 521-4987	www.tesorologistics.com
THUMS Long Beach Company	(562) 624-3452	(562) 624-3400	www.crc.com
Thunder Creek Gas Services, LLC	(877) 619-4680	(307) 687-0614	www.thundercreekgas.com
Tidelands Oil Production Company	(562) 624-3452	(562) 624-3400	www.crc.com
Tidewater Terminal Company	(800) 562-1607	(360) 693-1491	www.tidewater.com
Town of Aguilar	(719) 941-4360	(719) 941-4360	www.aguilarco.us
Trailblazer Pipeline Company, LLC	(866) 299-3050	(303) 763-3445	www.tallgrassenergy.com
TransCanada - Bison Pipeline	(800) 447-8066	(855) 458-6715	http://www.transcanada.com/public-safety.html
TransCanada - Gas Transmission Northwest	(800) 447-8066	(855) 458-6715	http://www.transcanada.com/public-safety.html
TransCanada - Keystone Pipeline	(800) 447-8066	(855) 458-6715	http://www.transcanada.com/public-safety.html
TransCanada - Keystone Pipeline XL	(800) 447-8066	(855) 458-6715	http://www.transcanada.com/public-safety.html
TransCanada - Northern Border Pipeline Co	(800) 447-8066	(855) 458-6715	http://www.transcanada.com/public-safety.html
TransCanada - Tuscarora Gas Transmission	(800) 447-8066	(855) 458-6715	http://www.transcanada.com/public-safety.html
TransColorado Gas Transmission Co.	(800) 944-4817	(970) 208-1290	www.kindermorgan.com/public_awareness
Tronox Alkali	(307) 875-8150	(307) 872-2131	www.alkali.tronox.com
TRP - OK Properties LLC	(405) 535-9402	(405) 360-2784	
United States Gypsum Company	(866) 650-6005	(503) 556-4360	www.usg.com
Utah Associated Municipal Power Systems	(801) 925-4008	(801) 925-4003	www.uamps.com
Vermont Gas Systems	(800) 639-8081	(802) 863-4511	www.vermontgas.com
Viking Gas Transmission Company	(888) 417-6275	(218) 745-5082	www.vgt.nborder.com
Walden Gas	(970) 723-4662	(970) 928-9208	www.pinedalegas.com
Wamsutter Pipeline LLC	(307) 875-9049	(307) 352-3302	www.anadarko.com
Watertown Municipal Utilities	(605) 882-6233	(605) 882-6233	www.watertownsd.us
WBI Energy Midstream	(888) 859-7291	(406) 359-7316	www.wbienergy.com
WBI Energy Transmission	(888) 859-7291	(406) 359-7316	www.wbienergy.com
Westfield Gas & Electric	(413) 572-0000	(413) 572-0100	www.wgeld.org
White Cliffs Pipeline - CO	(800) 522-3883	(720) 613-7008	www.semgroupcorp.com
White Cliffs Pipeline - OK	(800) 522-3883	(918) 225-7758	www.semgroupcorp.com
White River Hub LLC	(800) 558-1913	(307) 352-7690	www.whiteriverhub.com
Whiting Oil and Gas Corporation - CO	(800) 723-4608	(303) 594-6304	www.whiting.com
Whiting Oil and Gas Corporation - ND	(701) 227-8703	(701) 627-2754	www.whiting.com
Wickland Pipelines LLC	(916) 978-2477	(916) 978-2480	www.wicklandpipelines.com
Wild Goose Storage LLC	(866) 940-7351	(530) 846-7351	www.rockpointgs.com
Williams Midstream - Central WY	(855) 427-2875	(855) 255-2406	co.williams.com/safety
Williams Midstream - Northwest CO	(800) 635-7400	(970) 285-5512	www.williams.com
Williams Midstream - OK	(855) 427-2875	(800) 945-5467	www.williams.com/safety
Williams Midstream - Southwest CO and NM	(800) 635-7400	(505) 634-4954	www.williams.com
Williams Midstream - Wyoming	(800) 635-7400	(307) 872-2839	www.williams.com
Williams Northwest Pipeline - Battle Ground	(800) 972-7733	(360) 687-3156	www.williams.com
Williams Northwest Pipeline - Boise District	(800) 972-7733	(208) 884-4300	www.williams.com
Williams Northwest Pipeline - Kemmerer Dist.	(800) 972-7733	(307) 872-2890	www.williams.com
Williams Northwest Pipeline - Moab District	(800) 972-7733	(435) 686-2214	www.williams.com
Williams Northwest Pipeline - Pasco District	(800) 972-7733	(509) 544-9216	www.williams.com
Williams Northwest Pipeline - Pocatello Dist	(800) 972-7733	(208) 238-4100	www.williams.com
Williams Northwest Pipeline - Redmond District	(800) 972-7733	(425) 868-1010	www.williams.com
Williams Northwest Pipeline - Spokane District	(800) 972-7733	(509) 466-6650	www.williams.com
Williams Northwest Pipeline - Sumas District	(800) 972-7733	(360) 988-2261	www.williams.com
Williams Northwest Pipeline - Vernal District	(800) 972-7733	(435) 781-3200	www.williams.com
Woodbine Municipal Natural Gas System	(712) 644-2537	(712) 647-2550	www.woodbineia.com
Wyoming Gas Company	(307) 347-2416	(307) 335-3584	www.wyogas.com
Wyoming Refining Company	(307) 746-4931	(307) 746-2379	
Xcel Energy, NSP - MN - Gas Distribution	(800) 895-2999	(800) 895-4999	www.xcelenergy.com
Xcel Energy, NSP - MN - Gas Transmission	(800) 895-2999	(800) 895-4999	www.xcelenergy.com
Xcel Energy, NSP - WI - Gas Distribution	(800) 895-2999	(800) 895-4999	www.xcelenergy.com
Xcel Energy, NSP - WI - Gas Transmission	(800) 895-2999	(800) 895-4999	www.xcelenergy.com
Xcel Energy, PSCo - Gas Distribution	(800) 895-2999	(800) 895-4999	www.xcelenergy.com
Xcel Energy, PSCo - Gas Transmission	(800) 698-7811	(800) 895-4999	www.xcelenergy.com
Xcel Energy, SPS	(800) 895-2999	(800) 895-4999	www.xcelenergy.com
XTO Energy - Southeastern CO	(719) 846-0272	(719) 845-2100	www.xtoenergy.com
XTO Energy - Southwestern CO	(970) 247-7708	(970) 247-7708	www.xtoenergy.com

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Industry Publications

811 Magazines

811 Magazines are dedicated to creating a positive message for the damage prevention industry by promoting stronger relationships and trust. Targeting users and members of state One Call systems, readership includes owners and operators of utility systems and pipelines, excavators who consistently call 811 and state and local government officials.

American Locator

gets to the heart of news, debate, technology and processes focusing on damage prevention in the underground utility industry. With each issue, we focus on relevant topics within key areas of the industry and strive to bring tips, breaking news and information to our readers from people working daily in the field.

Compact Equipment

Compact Equipment magazine engages equipment owners and operators of small construction equipment with cutting-edge editorials focused on equipment categories including skid steers, utility vehicles, mini excavators, backhoes, compact tool carriers, tractors, generators, compressors, wheel loaders, telehandlers, and OEM systems.

Contractors Hot Line

For over 50 years, Contractors Hot Line has reached the most active construction equipment buyers in the industry. Not only does Contractors Hot Line reach thousands of equipment buyers and sellers with our weekly print and digital magazines, we are also distributed at over 40 major industry trade shows and exhibitions nationwide.

Damage Prevention Professional

Published quarterly, Damage Prevention Professional reaches over 70,000 readers each issue in print and digital formats. With a different technology and industry spotlight focus in each issue, we keep our finger on the pulse of the industry through relevant and thought-provoking articles and features written by industry professionals.

Energy Ink

Energy Ink Magazine is a family owned, free, quarterly magazine which covers every aspect of the energy industry in the Rocky Mountain West and Northern Plains. Our corporate readership in oil, coal, gas, and wind industries spans 32 states and Canada.

Incident Prevention

Incident Prevention contains utility safety and operations articles written by industry experts specifically for utilities, contractors and communication providers. The iP audience has grown to rely on our valuable information.

Industrial Hygiene News

Industrial Hygiene News (IHN) is dedicated to the anticipation, recognition, evaluation, communication and control of environmental factors in or coming from the workplace that may result in injury, illness, impairment, or affect the well-being of workers and the community. These factors include safety, chemical, ergonomic, and biological.

ISE Magazine

ISE (ICT Solutions & Education), formerly OSP® magazine, ISE connects network evolution professionals with innovative solutions and concise education across the rapidly changing ICT landscape. www.isemag.com

NASTT's Trenchless Today

NASTT's Trenchless Today magazine focuses on NASTT members. The three issues published each year include NASTT news, trenchless project updates, technical papers and information on upcoming educational events. We also highlight outstanding members throughout the year, including NASTT's Hall of Fame inductees and information on NASTT's No-Dig Show.

North American Oil & Gas Pipelines

North American Oil & Gas Pipelines is geared toward owners, operators, contractors and service providers and covers the latest news and market developments shaping the industry, including the most efficient methods of pipeline installation, the latest in integrity management and managerial strategies that enhance your company's bottom line.

Pipeline & Gas Journal

For more than 158 years, Pipeline & Gas Journal has maintained its position as a recognized authority and leader on pipeline operations and construction worldwide. P&GJ is written for those involved in moving, marketing and managing hydrocarbons from the well head to the ultimate consumer.

Pollution Equipment News

Pollution Equipment News covers the environmental industries of water, wastewater, air and hazardous waste pollution, featuring equipment and services used to design the pollution abatement systems and policies. Topics cover green technologies, air quality testing instrumentation and air cleaning equipment, and waste and wastewater technologies.

Rural Water

Rural Water is the official magazine of the National Rural Water Association.

The Municipal

Designed to bring the best in information, products, services and equipment to America's municipalities, The Municipal bridges the gap between buyer and seller. We reach over 25,000 municipal executives and decision makers: Police, Fire & Rescue, Public Works & Utility, Parks & Recreation, Transportation & Fleet, Facility, Street & Highway and more.

Trenchless Technology

The worldwide and premier communications vehicle for the promotion and development of the trenchless technology industry. Through our website, magazine, international e-newsletter, special supplements and magazine app, you receive insights, information and innovation into the trenchless industry in order to make your business better.

Underground Construction

A market leader for in-depth coverage of the North American underground infrastructure market. Articles include case studies, equipment reports, market analysis, revealing surveys and substantive editorial coverage of issues and regulations impacting the gas distribution, energy pipeline, sewer, water, telecommunications and electric industries.

Utility Contractor

The official magazine of the National Utility Contractors Association (NUCA), the largest trade association working solely for the excavation and underground utility construction industry. We present the latest information, including technological advancements, safety issues, important legislative developments, instructional advice and more.

Utility

Utility is an Australian dedicated utility magazine covering utility engineering, construction and maintenance and is currently available for free to all utility professionals in Australia. It covers all utilities included water and sewer, gas, electricity, communications and the NBN. Utility is both a full-color printed magazine and an online portal for all things utility.

WorldWide Drilling Resource

Is a one-stop, informative monthly drilling magazine focusing on drilling professionals and their specific wants and needs, worldwide. Topics include construction / geotechnical, directional, environmental, exploration / blasthole, shallow gas and oil, to geothermal, mining, and water.

Readership Survey

The Excavation Safety Guide, a reference tool designed to assist readers throughout the year, contains articles that are focused on industry trends and technologies, as well as providing access to important contact information and resources in one easily accessible location. Your comments and suggestions are invaluable in helping us to continue producing a high-quality publication that has become a valued industry resource.

How would you rate the overall value of this publication? *(Check one)*

- ❑ Excellent
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After completing this survey, **snap a pic and email it to info@emailir.com or:**

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