

**PPTS OPERATOR ADVISORY:
THE ROLE OF ONE-CALL PARTNER ACTIVITY
ON THIRD PARTY EXCAVATION DAMAGE INCIDENTS**

Executive Summary

This Advisory focuses on incidents involving businesses – e.g., pipeline companies and utilities -- that have belowground assets that require them by state law to be members of One-Call programs.¹ These businesses are referred to here as “One-Call Partners.” One-Call Partners play an important role in mitigating excavation damage, and it is in their interest to do so. They bear significant costs when their assets incur mechanical damage. Therefore, they work closely with the Common Ground Alliance (CGA) to draw up best practices for the prevention of underground facility damage.

Between 1999 and 2006, excavation incidents attributed to One-Call Partners have declined. However, the consequences remain high. Over this time period, excavation damage incidents by One-Call Partners:

- Accounted for about 27% of the 123 third party excavation damage incidents.
- Resulted in 5 fatalities and 4 injuries.
- Resulted in the release of about 8,600 barrels along the ROW.

The vast majority of these One-Call Partner incidents, 85%, included some indication of failure to follow one or more of the CGA best practices on the part of the third party.

[The numbers reported here are drawn from the Pipeline Performance Tracking System (PPTS), a voluntary reporting database for hazardous liquids pipeline operators. Participants in PPTS operate about 85% of the hazardous liquid pipeline mileage under the jurisdiction of the Pipeline and Hazardous Materials Safety Administration.]

One-Call Partners are in the best position of all types of excavators to understand the impact and consequences of excavation damage and to prevent the occurrence of damage to underground facilities. The record, however, clearly indicates that more can be done. Areas of focus to consider include:

- Strict adherence to the Common Ground Alliance best practices.
- Clear understanding of the depth of the scope of work to be performed around the pipeline and the implications that this depth has for pipelines in the area. (Damage involving One-Call Partners have occurred at relatively deeper cover than incidents involving other third parties.)
- Proper evaluation and communication of the pipeline’s depth, in addition to developing and providing a set of guidelines about precautionary measures for the excavator to employ.

¹ One-Call programs facilitate damage prevention by allowing an excavator or anyone else who will be digging to place one call in order to contact the operators of all underground assets in the area: pipelines, gas utilities, cable and telecommunications companies, etc. The operator comes to the site to physically mark the location of its assets prior to commencement of the digging. Any one-call center can be reached by calling 811, the national “Call Before You Dig” number launched in May 2007.

One-Call Partner Activity

This Advisory focuses on incidents involving businesses that have underground assets that require them to be members of One-Call programs. These businesses are referred to here as “One-Call Partners” and include other pipeline companies as well as underground utilities such as water, sewer, telecommunications, and power.

Between 1999 and 2006, 123 Third Party Damage incidents were reported to PPTS that occurred along the right-of-way and met the requirements for detailed reporting (a release of 5 barrels or more, or one involving a death, injury, fire, or explosion). A “third party” is a person or persons other than the operator’s employees or its contractors; that is, people not involved with operating or maintaining the damaged pipeline. Examples of third parties are farmers, homeowners, or other utility operator’s construction crews and excavators. These are people who, in the course of their normal activities, may come in contact with a pipeline and cause damage that results in a spill or worse.

Of the 123 Third Party incidents, 33 were caused by One-Call Partner activity. This represents 23% of the Third Party incidents or a little over 4 incidents per year. In evaluating these statistics, it is important to recall that One-Call Partners are the very entities that are most impacted when their assets incur mechanical damage. They incur repair bills and customer outages, and may expose their customers and workers to danger during the incident or the response to it. Because they have a high stake in preventing excavation and other mechanical damage, these One-Call Partners were heavily involved in the development of Common Ground Alliance’s (CGA’s) best practices for underground facility damage prevention. As such, One-Call Partners are in the best position to know, understand, and follow CGA’s recommendations. However, these 33 One-Call Partner incidents:

- **Significantly impacted the environment:**
 - Accounted for 33,100 barrels released (one release was larger than 10K barrels and 7 were larger than 1,000 barrels), and
 - Accounted for 26% of all reported volume released along the right-of-way in accidents involving third party excavation/mechanical damage.
- **Affected Public Safety:**
 - Accounted for 1 incident involving death (5 fatalities);
 - Accounted for 2 incidents that involved an injury (1 injury in one incident, and 3 injuries in the other, which also involved the fatalities);
 - Accounted for 2 incidents involving fire or explosion;
 - Accounted for 6 incidents requiring an evacuation.
- **Included activities covered by Damage Prevention:**
 - 85% of the incidents involved a failure to follow a CGA best practice applying to excavators.
 - 3% of the incidents were due to failure of the pipeline operator – the PPTS participant -- to respond or mark after a one-call was placed; this, too, is a CGA best practice, in this case applying to the facility operator.

As seen in the table below, the occurrence of these One-Call Partner incidents has declined markedly in the 1999-2006 period, but the potential consequences remain high. Therefore, these incidents remain a continuing focus for the oil pipeline industry.

Excavation/Mechanical Damage Incidents Caused by Third Parties, 1999-2006								
	3-Yr. Avg. Ending in Year Shown						Ann'l Avg.	% of Total
Damaging Party/ Activity Category	2001	2002	2003	2004	2005	2006	'99-'06	'99-'06
Landowner/Tenant (a)	8.7	8.7	6.0	4.3	3.0	2.0	5.5	35.2%
One-Call Partners (b)	6.3	6.3	3.7	4.0	2.7	2.3	4.1	27.2%
Road Constr/Maint (c)	3.0	2.0	2.3	0.7	1.3	0.7	1.6	10.4%
All Other Parties (d)	5.7	4.3	3.7	3.3	2.3	3.0	4.1	27.2%
Total	23.7	21.3	15.7	12.3	9.3	8.0	15.4	100.0%

Percentages do not add due to rounding.

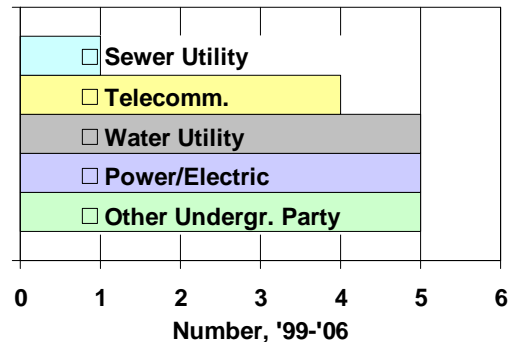
Notes:
Includes incidents 1) involving a release of 5 barrels or more, or death, injury, fire or explosion; 2) occurring along the right-of-way; and 3) involving failure at the time the damage occurred. Categories include: (a) Farming/Agricultural business; Homeowner or other activity related to homeowner residence; (b) Other liquid or gas transmission pipeline operator or their contractor; Other underground facility operator or their contractor; (c) Road construction or maintenance; (d) Residential or commercial development, Railroad construction, maintenance, or repair; Waterway or reservoir construction or maintenance; Offshore oil production, maritime, shipping, or fishing activity or equipment; Inland waterway oil production, maritime, shipping, or fishing activity or equipment; Other damaging party or activity.

Clouser Look at Third Party Damage by One-Call Partner Activity, 1999-2006

Breaking Down the One-Call Partner Category

One-Call Partner category is further broken out into Transmission Pipeline and Other Underground Operator. The Transmission Pipeline category, accounting for 13 of the 33 incidents, includes natural gas transmission pipelines and hazardous liquids pipelines including other PPTS participants. The "Other Underground Operator" category, 20 of the 33 incidents, has an equal share of incidents involving water utilities, power or electric companies and "other underground parties" – entities not listed in the PPTS choices. Specified operator types include telecommunications

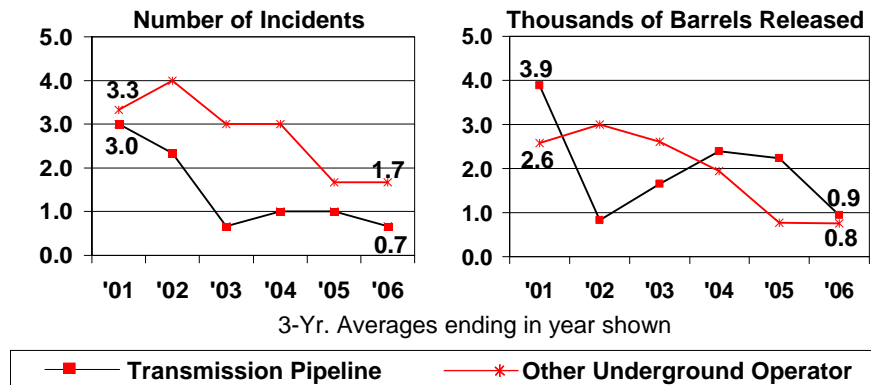
Types of "Other Underground Operators"



companies, and sewer utilities. There were no incidents over the 1999-2006 period that involved gas distribution operators or cable television operators causing a release.

As shown in the charts to the right, Other Underground Operator and Transmission Pipeline were fairly equal in share in the earliest 3 year

Incidents Caused by One Call Partners, 1999-2006



average, but the latest averages show that Transmission Pipelines incidents are 60% less than Other Underground Operators.

As also demonstrated in the charts, incidents involving Transmission Pipeline activities and those involving Other Underground Operator activities have declined markedly in the period since 1999. In the first three-year period (ending in 2001), there were 3.0 incidents per year caused by Transmission Pipeline activities, and in the most recent three-year period (to 2006), there were 0.7 incidents per year, for a decline of 78%. For Other Underground Operators, the decline was not as sharp, with only a 50% decrease from the first three-year average to the most recent average. The decline in the number of barrels released was about the same: a 76% decline for release volumes involving Transmission Pipeline activities, and a 71% decline for release volumes involving Other Underground Operator activities.

The improvement evidenced by these data has come about for a variety of reasons, chiefly among them the industry's sharp focus on reducing the number of, and opportunity for, releases caused by excavation and mechanical damage. Most important was the development in 2000 of CGA's best practices for underground facility damage prevention. The recommended best practices address many areas including one-call, line marking, and excavation. As noted above, significant improvement has been made since 2001 in both numbers and volume of incidents.

Even with this improvement, the industry remains engaged in aggressive prevention programs, mindful that these incidents can carry a high toll in human casualties, pollution and public disruption. An incident involving individuals working on the right-of-way for another underground operator resulted in 5 fatalities and 3 injuries in 2004. This incident also involved a fire, an explosion, and a mandatory evacuation.

Depth of Cover and Other Details

PPTS collects information on depth of cover and some other aspects of the incident, such as the type of activity that caused the damage to the pipe. The following observations can be drawn from the data:

- “Trenching, grading, and backfilling” represent the largest share of One-Call Partner activity threats to pipelines. The repair of existing utilities, or the laying of new cable, wire, or other utility conduits would be examples of these activities. These activities caused 24 of the 33 incidents attributable to One-Call Partners and accounted for the 4 injuries.
- “Drilling, boring, or auguring” by One-Call Partners, at 5 incidents, accounts for half of all Third Party damage incidents in this threat activity.
- In the 23 incidents where depth of cover was reported, 16 incidents or 70% took place at depths greater than 36”. (Depth of cover was not reported in 10 incidents.) Among all the groupings of damaging parties, the One-Call Partners had the highest share of incidents occurring at 36” or deeper. In fact, 48% of the 23 incidents took place at depths of 48” or deeper. **Thus, an operator receiving one-call locate request from an entity such as a One-Call Partner is well-advised to understand the depth implications of the scope of work to be performed around the pipeline.** Remembering that an unusual share of the

One Operator's Experience in the Field

“Our experience suggests that drilling risk could be quite high when compared to trenching, and we've instituted practices such as requiring that drilling contractors “bell hole” over our pipe to show they crossed it safely. We have also had repeated experience with drilling operations not using One-Call, or giving wrong or incomplete information on the location. As an example, a cable company's contractor gave the location where they were going to start, which led us to believe that we were not involved. A subsequent ILI revealed significant pipe damage from that same job after the contractor moved down the street for a new bore. He thought he hit a rock, withdrew the tool, and made another pass, which further gouged the pipe as it slid underneath. This Advisory's advice to pay attention when the excavator is going to be using directional drilling is right on target.”

releases occurred with deeper cover, the operator will want to evaluate and communicate the line’s depth, and perhaps set guidelines about precautionary measures for the excavator to employ. This is particularly true since hand-digging is not an option for directional drilling and other techniques that these One-Call Partners may use.

Depth of Cover and Type of Excavation When One-Call Partner Activity Caused Third Party Damage					
Depth of Cover	Cultivation	Drilling, boring, augering	Trenching, grading, backfilling	Other	Total
<16"	0	0	1	0	1
16" to 36"	0	2	4	0	6
>36"	0	2	12	2	16
Total, Cover Depth Known	0	4	17	2	23
Cover Depth Not Known	0	1	7	2	10
Total Incidents	0	5	24	4	33

Includes incidents 1) involving a release of 5 barrels or more, or death, injury, fire or explosion; 2) occurring along the right-of-way; 3) involving failure at the time the damage occurred.

The Role of One-Call and CGA Best Practices

The PPTS survey form asks the “apparent primary cause” of Third Party Damage incidents, and it reflects an operator’s assessment of factors beyond whether One-Call was used. “Failure to utilize One-Call system” was listed as the primary cause in 23% of the incidents involving Transmission Pipelines and 40% of the incidents involving Other Underground Operators for a combined share of 33%. These shares are lower (better) than for other categories of damaging parties, such as farmers and homeowners. Still, the One-Call Partners are required to be members of One-Call systems, and yet they apparently failed to use the system.

Perhaps more important, however, is the fact that other primary causes reflect a failure to employ the best practices developed in the CGA framework. In the table below, the items that are addressed in CGA’s best practices for excavators are shown in bold and italic font. Cumulatively, the failure to adhere to one or more of these best practices was indicated as a factor in 85% of the incidents involving One-Call Partners. Another incident (3%) was attributed to the failure of the operator (not the third party) to respond properly to the request for a one-call locate; this, too, is the subject of a CGA best practice. Thus, nearly 90% of the incidents in this overall category involve the failure of an operator (either first, second² or third party) to follow a widely agreed-upon best practice.

Releases involving One-Call Partners: Apparent Primary Reason for Release		
Reason	Number	%
<i>Failure of third party to utilize One-Call System</i>	11	33.3%
<i>Failure of third party to take reasonable care to protect facilities</i>	7	21.2%
<i>Failure of third party to respect pipeline company directions or procedures</i>	5	15.2%
<i>Failure of third party to wait the proper time</i>	5	15.2%
Other	4	12.1%
<i>Failure of pipeline operator to respond or to properly mark the pipeline</i>	1	3.0%
Total	33	100.0%

Bold and italic font represents excavator practices addressed in CGA’s best practices.

² First party damage is damage caused by the operator of the damaged facility and second party damage is damaged caused by a contractor of the operator of the damaged facility.

Considerations for Operators

Know Your Right-of-Way Neighbors

- ❖ Employ GIS to better understand the locations where your pipeline intersects or aligns with other underground utilities, and focus your damage prevention efforts on these areas and entities. There is an ongoing potential for a hit from the utilities that service their lines on a routine basis.
- ❖ Track rapidly growing areas near your pipeline particularly closely. Construction of new homes and businesses creates the need for installation of new underground utilities, which increases the potential for hits to existing facilities. Also, track civic and utility improvements such as installation or replacement of water lines, gas distribution lines, sewer services, etc.

Engage in policy- making decisions for stakeholder prevention programs

- ❖ Support or become involved in industry groups and research efforts. Raise awareness among your neighbors in the shared right-of-way that CGA's best practices apply to them, too.
- ❖ Support continued development and use of One-Call systems.
- ❖ Proactively participate in damage prevention and One-Call programs in the states in which your system operates. Help shape reforms of regulations and statutes to eliminate unwise exemptions and enhance enforcement options. Support aggressive enforcement of One-Call statutes, including legal redress of violations, even among your colleagues in the right-of-way.

Establish company policies that recognize the unique nature of the One-Call Partner

- ❖ A shared right-of-way magnifies the need for strict adherence to the Common Ground Alliance best practices.
- ❖ Develop a clear understanding of the depth implications of the scope of work to be performed around the pipeline through face-to-face meetings and other direct communication with the excavator. (Damage involving One-Call Partners has occurred at relatively deeper cover than incidents involving other third parties.) If the excavator does not request a meeting, the operator should do so.
- ❖ As possible, use drawings and other information to evaluate the pipeline's depth. Communicate this to the excavator, in addition to a set of guidelines about precautionary measures for the excavator to employ. Request that the excavator depict both location and depth (plan and profile) on any provided drawings.
- ❖ Engage in on-site excavation monitoring as required by API RP 1166.

Integrate information across your company and across the industry.

- ❖ Learn from, and share with, other operators by attending workshops and participating in forums. This is particularly important when it comes to excavation damage, because the number of incidents for each operator, typically, is low.
- ❖ Understand industry incident data to help you spot trends that may not be apparent in a few company incidents. Advisories posted on API's website (www.api.org/ppts) summarize and analyze the data to help operators. Share the Advisories' findings across the company. Additional excavation damage Advisories address specific aspects of excavation damage in more detail.



The hazardous liquids pipeline industry undertook a voluntary environmental performance tracking initiative in 1999, recording detailed information about spills and releases, their causes and consequences.

The pipeline members of the American Petroleum Institute and the Association of Oil Pipe Lines believe that tracking and learning from spills improves performance, and demonstrates the industry’s firm commitment to safety and environmental protection by its results.

This is one in a series of Advisories based on the Pipeline Performance Tracking System, "PPTS."

NOTE: The “Considerations for Operators” in this document represent the experience of a limited number of subject matter experts from a variety of liquids pipelines operators. They were not developed under the process prescribed by the American National Standards Institute and do not represent a Standard or a Recommended Practice of the API or its member companies.

Understanding the detailed data is central to developing appropriate strategies for prevention. Hence, we have developed additional detailed advisories to address different aspects of excavation damage incidents (see list below). Please see www.api.org/ppts/. Click on the “documents” link in the left frame to see other Operator Advisories. Of particular interest on the topic of excavation damage prevention will be the following:

Title	Date	Number
PPTS Operator Advisory: More to Do on Excavation Damage	Sept 2008	2008-4
PPTS Advisory for Operators: Role of First and Second Party Damage in Excavation Incidents	May 2009	2009-1
PPTS Operator Advisory: Landowner/Tenant Activity Impact on Third Party Damage	Sept 2009	2009-2
PPTS Operator Advisory: Focus on One-Call Partners	Oct 2009	2009-3

Find these and other PPTS Operator Advisories at www.api.org/ppts/. Click on “Documents” in the left pane.

