ROCKPOINT
GAS STORAGE

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October 18, 2019

Mr. Dennis Lee, P.E.
Program and Project Supervisor
California Public Utilities Commission
Safety and Enforcement Division
Gas Safety and Reliability Branch
505 Van Ness Avenue
San Francisco, CA 94102-3298

Certified Mail Receipt No. 70162070000038996415

RE: LGS Damage Prevention Program Inspection

Dear Mr. Lee:

Lodi Gas Storage, L.L.C. (LGS) submits this written response to the Safety and Enforcement Division (SED) of the California Public Utilities Commission (Commission). On behalf of the SED, Sunil Shori, Alan Wehrman, and Alula Gebremedhin conducted a Damage Prevention Program (DPP) inspection of LGS on September 26-28, 2018. The inspection findings identified by SED were provided to LGS on September 20, 2019. Please note that many of the inspection findings were addressed by LGS during the annual Operations & Maintenance Manual review and update conducted during December 2018. LGS addresses the remaining inspection findings as noted by SED in the Summary of Inspection Findings in the following enclosed documents:

- Attachment #1 – LGS Responses to Summary of Inspection Findings
- Attachment #2 – Procedure 3.01, 3.01a, 3.01b, DPP (December 2018 redlined version)
- Attachment #3 – Procedure 3.01, Form 3.01C, DPP (2019 redlined version)

If you have any questions, or require more information, please contact me at **gclark@lodistorage.com** or at (209) 368-9277 x21.

Sincerely,

Gregory N. Clark
Compliance Manager

Enclosures

cc: File #S3.03
D. Lee, S. Shori (via e-mail)
A. Anderson, M. Fournier (via e-mail)

Attachment #1

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LGS Responses to Summary of Inspection Findings

SUMMARY OF INSPECTION FINDINGS

49 CFR, Part 192, Section 192.614(a), in part, states: *"… each operator of a buried pipeline shall carry out in accordance with this section a written program to prevent damage to that pipeline by excavation activities…An operator may perform any of the duties required by paragraph (b) of this section through participation in a public service program, such as a "one-call" system, but such participation does not relieve the operator of responsibility for compliance with this section."*

49 CFR, Part 192, Section 192.614(b), in part, states: *"An operator may comply with any of the requirements of paragraph (c) of this section through participation in a public service program, such as a one-call system, but such participation does not relieve the operator of responsibility for compliance with this section. However, an operator must perform the duties of paragraph (c)(3) of this section through participation in a one-call system, if that one-call system is a qualified one-call system… An operator's pipeline system must be covered by a qualified one-call system where there is one in place…"*

Finally, 49 CFR, Part 192, Section 192.614(c) requires: The damage prevention program required by paragraph (a) of this section must, at a minimum:

> (1) Include the identity, on a current basis, of persons who normally engage in excavation activities in the area in which the pipeline is located.
>
> (2) Provides for notification of the public in the vicinity of the pipeline and actual notification of the persons identified in paragraph (c)(1) of this section of the following as often as needed to make them aware of the damage prevention program:
>
> (i) The program's existence and purpose; and
> (ii) How to learn the location of underground pipelines before excavation activities are begun.
> (3) Provide a means of receiving and recording notification of planned excavation activities.
>
> (4) If the operator has buried pipelines in the area of excavation activity, provide for actual notification of persons who give notice of their intent to excavate of the type of temporary marking to be provided and how to identify the markings.
>
> (5) Provide for temporary marking of buried pipelines in the area of excavation activity before, as far as practical, the activity begins.
>
> (6) Provide as follows for inspection of pipelines that an operator has reason to believe could be damaged by excavation activities:
>
> (i) The inspection must be done as frequently as necessary during and after the activities to verify the integrity of the pipeline; and

(ii) In the case of blasting, any inspection must include leakage surveys.

Both one-call systems (regional notification centers) instrumental in the operation of California's one-call damage prevention program, USANorth811 and DigAlert, meet the requirements of 49 CFR, Part 198, Section 198.39 and almost the entirety of Section 198.37. Therefore, both one-call systems are considered as a "qualified one-call system" per federal regulations. Moreover, since LGS' subsurface gas pipeline facilities traverse the respectively defined territory of only USA North811, LGS is a member of only this notification center.

I. Probable Violations

§192.13(c) states:

"Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part."

We believe that LGS needs to modify its Procedure 3.01, Damage Prevention Program, to address the following:

a) Section 1 - Most current CGA Best Practices version needs to be reviewed and incorporated during annual reviews of this procedure. The inspection noted that the procedure referenced outdated versions of California Government Code 4216 (GC 4216) (2007 version) as well as Common Ground Alliance (CGA) Best Practices (2015 version). Also, LGS needs to provide a clear statement within its Damage Prevention Program (DPP) that it will comply with all requirements of California Government Code 4216 (GC 4216) applicable to facility operators as well as excavators.

LGS agrees with the SED's finding. Section 1 of the O&M Manual, under References, has been updated to include the most up-to-date versions of California Government Code and Common Ground Alliance Best Practices. Section 4.1 has been revised to include a statement regarding compliance with GC 4216. Sections 5.5.1 and 5.6.2 have been revised to include references to CGA Best Practices. Please see Attachment #3.

b) Section 5.1.1 – LGS needs to modify section by replacing "will" with "does" or other mandatory language.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

c) Section 5.1.2 - This section requires activities which LGS is not performing (i.e., periodic confirmation of procedure requirements performed by a "one-call" system). LGS needs to modify this section or begin performing and documenting activities included herein. Also, instead of "may be performed," LGS needs to be clear in its procedure as to what specific activities are performed by the one-call center and what is performed by LGS.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

d) Section 5.4.1 – This section requires more details on the USA ticket receipt process and what LGS does to direct excavators to the one-call center if an excavator contacts, or is identified by LGS, outside of the USA process.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

e) Section 5.5.1 – This section requires more details on the LGS process for determining, logging, and responding to USA notifications. For example, determination of "no conflict", field review and GC 4216 required field meets for high priority facilities which LGSs pipelines are.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

f) Section 5.6.2 – LGS needs to provide more details for this procedure including need to capture/document communications between LGS and excavators noted on USA Tickets. Also, this section needs to provide more information regarding USA North (GC 4216) time period for tickets (i.e., ticket time periods for calling in a ticket and renewing a ticket).

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

g) Section 5.6.4 – LGS needs to provide more detail and specifications in this procedure. In general, within its Procedure 3.01, Section 5.6, LGS provides what are generally statements related to its mark and locate activities. LGS includes a document, California Marking Guidelines, from USA North; however, LGS has not converted the generic guidelines to be specific to its operations nor made the guidelines a mandatory requirement of its own procedures. LGS needs to modify its procedures to confirm that they continue to be as, or more stringent, than the most recent version of CGA Best Practices.

LGS agrees with the SED's finding. Section 1 of the O&M Manual, under References, has been updated to include the most up-to-date version Common Ground Alliance Best Practices. Sections 5.5.1 and 5.6.2 have been revised to include references to CGA Best Practices. Please see Attachment #3.

h) Section 5.6.7 – LGS needs to modify this procedure to include how LGS confirms/communicates with excavators to determine job is completed before removing stakes and/or flags.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

i) Section 5.6.8 – LGS needs to tie/reference this section to Section 5.5. Also, LGS needs to strike "greater than 6-inches nominal pipe diameter" since this is not in the definitions contained in GC 4216.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

j) Section 5.6.10 - LGS needs to clarify if this section is applicable to its own staff and/or contractors, working for LGS or not (i.e., third-party excavators).

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

k) Sections 5.6.11 - 5.6.19 - LGS needs to provide more procedural details for these Advisory Bulletins, including details on how they are implemented by LGS.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

l) Section 5.7.1 - LGS needs to clarify and document standby activities. In this section, LGS also needs to clarify what is meant/included by "may make other provisions." LGS inspection and monitoring (standby) procedures are detailed in Procedure 3.01, Section 5.7. LGS procedures require that its Form 3.01B or equivalent "should" be used for reporting purposes; however, it's not clear what an equivalent form would be. LGS needs to establish a clear form to capture more details on what LGS expects an employee to do as part of stand-by and recording of the activity, itself. The use of this form needs to be made mandatory and the form needs to capture the time duration personnel are on-site during standby.

LGS agrees with the SED's finding. A new form, Form 3.01C, has been developed to help ensure consistent and detailed information is collected during inspection and monitoring of excavation activities. Please see Attachment #3.

m) Section 5.7.4 - LGS's requirement to mandate an excavator to hand excavate within 36-inches of the surface of its facilities would appear to have no legal basis because it exceeds the 24-inch tolerance zone specified by GC 4216.

LGS agrees with the SED's finding. The procedure has been revised to match the 24-inch tolerance zone specified by GC 4216. Please see Attachment #3.

n) Section 5.7.5 - LGS needs to modify "should be utilized" to "must be utilized" regarding use of Form 3.01B. Also, LGS needs to clarify what an "equivalent" form would be.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

o) Section 5.9 - LGS needs to add language to clarify those requirements applying to its contractors/staff vs. other contractors not working for the company (i.e., third-party).

LGS agrees with the SED's finding. The procedure has been revised to clarify applicability of requirements. Please see Attachment #3.

p) Section 5.9.4 - LGS needs to clarify the significance of its soil characteristics statement and how this influences LGS procedure currently included under this section.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

q) Section 5.9.5 - LGS needs to clarify what the procedure means as "problems" as discussed in this section and specific actions to be taken in response.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

r) Section 5.10 - LGS needs to specify pipeline examination requirements to persons on stand-by/monitoring activities and require documentation of this activity on its Form 3.01B. Also, LGS needs to mandate the investigation of external corrosion found instead of the "may be" statement currently stated in this section

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

s) Section 5.11 - LGS has no documentation for activities shown in this section. LGS needs to establish procedures for these activities and document them, or possibly consider removing this section.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

t) Section 6 - Unclear if this section applies only to pipelines above 30% SMYS since Section 6.2 applies to covered segments under 30% SMYS. LGS needs to clarify this section.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

u) Section 6.1 (items 5-6) – LGS' language in this section is inconsistent with regulations. During the inspection, LGS representatives appeared to indicate that that they intended to remove Section 6 from Procedure 3.01.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

v) Section 6.2 - LGS needs to review its language related to Class 3 & 4 to confirm it is consistent with GO 112-F requirements since GO 112-F considers all Class 3 and 4 locations as high consequence areas.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

w) Section 6.2 (item 5) – The requirements of this section do not apply to LGS due to the commissioning date of its facilities (i.e., LGS has no unprotected segment).

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

x) Section 8 - LGS record retention requirements contained in this section do not appear to comport with GC 4216 requirements, nor would they allow for compliance review during an SED inspection. LGS record retention requirements to maintain notes and hard copies of USA tickets for 1 year is insufficient. Though we believe LGS should maintain all mark and locate records for 6 years, LGS needs to maintain records for at least 4 years for current SED audit purposes. Also, within its standards, LGS needs to mandate that subsurface abandoned facility records be retained indefinitely.

LGS agrees with the SED's finding. The procedure has been revised to clarify record retention requirements. Please see Attachment #3.

y) LGS needs to update the telephone numbers in its Table 3.01 which were noted during the inspection as being incorrect.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

z) LGS has no written procedures for acceptance of vacuum excavations for which it may receive notice from an excavator. Per GC 4216, LGS, as an operator of facilities, must agree and allow vacuum excavation; therefore, it needs to have procedures to determine if there are instances in which vacuum excavation should not occur near its facilities.

LGS addressed this finding by modifying the procedure in Section 5.7 to address vacuum excavation. Please see Attachment #3.

II. Areas of Concern/Recommendations

a) We are concerned that LGS does not have a process for submitting data into the CGA's Damage Incident Reporting Tool (DIRT) excavation damage data collection process,

LGS does not have a developed process to also submit the same data for any damages into the California DIRT data collection process. Since it would take almost no incremental resources for LGS to implement a process to submit excavation damage data into both DIRT and California DIRT, we recommend that LGS contact USA North 811 and learn what is necessary to implement reporting to both worthwhile damage prevention efforts.

LGS registered with California DIRT in March 2015 and has reported annually since. By reporting through California DIRT, the data is also provided to CGA DIRT North America. Please note that since this is not a regulatory requirement, LGS will not formally incorporate DIRT reporting into its procedures, but LGS intends to continue to report annually as a best practice.

b) We recommend that Section 4.2 include asphalt and pavement work among the categories noted under 4.2.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

c) We recommend that Section 5.6.18 be brought in under Section 5.6 as a new subsection 5.6.1.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

d) We recommend that Sections 5.6.5 and 5.6.6 would be good locations for LGS to include as requirement what LGS representatives indicated is LGS' procedure to use photographs to document and retain as records of marks after they are placed.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual by revising Section 5.6.4. Please see Attachment #2.

e) We recommend that Section 5.6.6 incorporate notifying 911, law enforcement and the California Safe Dig Board if an excavator does not cooperate and stop excavations near unmarked facilities.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

f) We recommend that within Section 5.6.21, LGS store locations of excavations that occur near its right-of-way as a layer in GIS.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

g) We recommend that in Section 5.8, LGS add a requirement to leak survey the area prior to any blasting operation for comparison with post blasting surveys.

LGS addressed this finding during the December 2018 update and revision of the O&M Manual. Please see Attachment #2.

h) We recommend that LGS establish procedures for a quality assurance program related to M&L on some set frequency.

LGS shall consider SED's recommendation regarding procedures for a quality assurance program related to M&L.

Attachment #2

LGS Procedure 3.01, 3.01a, 3.01b, Damage Prevention Program

December 2018 Redlined Version

DAMAGE PREVENTION PROGRAM

1. REFERENCE

- 49 CFR, Sections 192.614, 198.37~~, 198.37~~, and 198.39.
- PHMSA Advisory Bulletin #ADB-06-03, ADB-2013-03, ADB-2015-01
- California Government Code #4216 from SB 1359, Effective January 1, 2007
- Common Ground Alliance Best Practices, ~~Version 12.0 published 2015~~latest edition

2. PURPOSE

The purpose of this procedure is to establish a damage prevention program whose purpose is to minimize possible damage to the Company gas pipeline facilities by outside forces.

3. RESPONSIBILITY FOR IMPLEMENTATION

The (84) Compliance Manager is responsible for implementation of the damage prevention program.

4. GENERAL

4.1 It is Company intent to include, at a minimum, all regulated onshore and offshore pipelines in its prevention program to prevent damage to pipelines owned by the Company. For California pipeline operations additional requirements are noted with reference to Ca. Gov. Code #4216.

4.2 Federal and state pipeline regulations require that each operator of a buried pipeline have a written program to prevent possible damage to a buried pipeline facility by excavation activities. For the purpose of this Procedure 3.01, "excavation activities" includes but is not limited to:

4.2.1 Excavation

4.2.2 Blasting

4.2.3 Directional drilling and other trenchless technology, which includes, but is not limited to, a variety of cutting, jetting, boring, reaming, and jacking techniques.

4.2.4 Tunneling

4.2.5 Backfilling

4.2.6 Removal of above or below ground structures by either explosive or mechanical means.

4.2.7 Plowing (installation of flexible pipe, such as drain tile, or cable without open trenching).

4.2.8 Other earth moving or earth disturbing activities.

4.2.9 Offshore pipe laying.

5. PROCEDURE

5.1 ~~"~~One-~~-~~Call~~"~~ Participation

5.1.1 Lodi Gas Storage, L.L.C. supports and participates in Underground Service Alert (USA) North, a one-call system~~The Company will support and participate, which is required by law, in "one call" system~~.

~~5.1.2 Whenever pipelines are included in the geographic boundaries of an operational "one call" system, some activities required in this procedure may be performed by the "one call" system. Periodic confirmation of the procedure requirements that are performed by a "one call" system and subsequently are not carried out by the Company, shall occur to assure correct performance.~~

5.1.2~~3~~ See Table 3.01C for a listing of local ~~"~~One-~~-~~Call~~"~~ phone numbers.

5.2 Identification of Excavators

Develop, on a current basis, a list of contractors and other persons who are normally engaged in excavation activities in the area in which the pipeline is located. Refer to the Procedure for the "Public Education Program" (Procedure 18.01) in this manual. The company may use a third party consultant to generate this list.

5.3 Notification of Excavators and the Public

Provide general notification of the public living in the vicinity of the pipeline and actual notification of the individuals identified in 5.2 above, and make them aware of the damage prevention program and its purpose. Refer to the Procedure for

the "Public Education Program" (Procedure 18.01) in this manual for detailed procedures on how the company will notify and educate the public living along the pipeline.

5.4 Receiving and Recording Notices of Planned Excavation Activities

5.4.1 LGS ~~Provide~~ provides for the receipt of routine notices of planned excavation activities~~. This can be accomplished~~ by direct telephone communication and/or indirectly through one-call notification systems.

5.4.2 LGS ~~Document~~ documents all notifications requesting line marking or of excavation activity through the ~~on a form from the~~ one-call notification system~~service~~.

5.5 Responding to Notice of Planned Excavation Activities

5.5.1 LGS qualified personnel receive~~Log each notice received~~ and determine if excavation activity will be conducted in the vicinity of the Company's pipeline. If it is determined that the excavation activity is in the vicinity of the Company's pipeline, then that pipeline must be marked in the field.

5.5.2 LGS qualified personnel shall ~~Advise~~ advise the requestor that a Company representative will be present during excavation activity in the vicinity of the pipeline by direct telephone communication and/or indirectly through one-call notification systems prior to ticket becoming valid.

5.5.3 LGS qualified personnel shall ~~Inform~~ mark the pipeline and advise the requester if a Company pipeline is located in the area of the planned excavation activity by direct telephone communication and/or indirectly through one-call notification systems prior to ticket becoming valid.~~and tell him when the pipeline will be marked, what type of marking will be provided and how to identify the marking.~~

5.5.4 California law requires notification and onsite meeting to verify location of pipeline or utility if excavation within 10 feet of a "high priority subsurface installation." [Ca. Gov. Code #4216]

High priority subsurface installation is defined as: "High priority subsurface installation" is high pressure natural gas pipeline with normal operating pressures greater than 60 psig pressurized sewage pipelines, high voltage electric supply lines, conductors, or cables that have a potential to ground of greater than or equal to 60kv, or hazardous material pipelines that are

potentially hazardous to workers or the public if damage occurs. [Ca. Gov. Code #4216.1]

5.6 Pipeline Location and Marking

5.6.1 Calibrate tools and equipment used for line marking and make sure they are in proper working order. [PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by following locator manufacturer recommendations.

5.6.2~~1~~ Locate and mark the pipeline in areas of conflict where excavation activities are observed, anticipated, or will occur as indicated by notification.

5.6.~~2~~3 Pipelines must be marked before dig ticket becomes valid~~within 48 hours of receipt of notification~~, unless the notifying party agrees to extend this time, and before any excavation activities begin. Any agreement between parties shall be documented on the dig ticket.

5.6.~~3~~4 Use temporary flags, stakes, or other more permanent marks, if the type and duration of activity so dictates. The minimum length of pipeline to be marked shall be as required by conditions of the site and job. Photos may be taken to assist in documentation. If practical, locate and mark pipelines when a requester's representative is present.

5.6.~~4~~5 Bends and other changes of direction need to be marked so that the location of the pipe is clearly delineated.

5.6.~~5~~6 Mark on straight pipeline sections at intervals required by conditions of the site and job, but not to exceed 100 feet (30 meters) onshore~~ and 1000 feet (305 meters) offshore~~.

5.6.~~6~~7 If an outside party is seen approaching or working over the Company's pipeline, immediately notify the excavator that a conflict exists and ask him to delay until the line is located and marked. If the excavator does not cooperate, emergency responders shall be notified.

~~5.6.7 Remove stakes and/or flags when the work has been completed.~~

~~5.6.8 California law requires notification and onsite meeting to verify location of pipeline or utility if excavation within 10 feet of a "high priority subsurface installation." [Ca. Gov. Code #4216]~~

~~High priority subsurface installation is defined as: "High priority subsurface installation" is high pressure natural gas pipeline with normal operating pressures greater than 60 psig, or greater than 6 inches nominal pipe diameter petroleum pipelines, pressurized sewage pipelines, high voltage electric supply lines, conductors, or cables that have a potential to ground of greater than or equal to 60kv, or hazardous material pipelines that are potentially hazardous to workers or the public if damage occurs. [Ca. Gov. Code #4216.1]~~

5.6.~~9~~8 Only a "qualified person" is allowed to conduct subsurface installation locating activities. The regulation defines "Qualified person" as a person who completes a safety training program that meets the requirements of 8 CCR 1509 (Injury Prevention Program) & meets the minimum training guidelines and practices of Common Ground Alliance current Best Practices. The company defines qualified person as a person who meets the requirements for locating and marking as specified in the company Operator Qualification Plan. [Ca. Gov. Code #4216.1]

5.6.9~~10~~ LGS contract ~~The~~ excavators must notify the pipeline operator or call 911 when the excavator discovers or causes damage to the pipeline installation.
[Ca. Gov. Code #4216.1]

5.6.10~~11~~ Ensure up to date pipeline alignment and as-built drawings are available to the locator. The locator shall not rely solely on maps, drawings, or other written materials to locate pipelines.
[PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by providing qualified personnel with hardcopy pipeline alignment sheets and as-built drawings as well as a utility locator.

5.6.~~12~~11 The locator shall notify the Operations Manager when the pipeline alignment and as-built drawings need updates due to inconsistencies found in the field. The (68A) Operations Manager is responsible for submitting pipeline changes to the (68B) Compliance Manager.

5.6.~~13~~12 Ensure individuals marking & locating are ~~be~~ familiar with state and local marking requirements, and Common Ground Alliance Best Practices marking guidelines which includes recommended color codes and marking guidelines. [PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by requiring individuals marking & locating to be qualified (as required by OQ program).

5.6.~~14~~13 Ensure individuals marking & locating have knowledge, skills, and abilities (as required by OQ Program) to read & understand pipeline alignment and as-built drawings.
[PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by requiring individuals marking & locating to be qualified (as required by OQ program).

5.6.~~15~~14 Locate and mark accurately before excavation begins. This applies regardless if using own company employees or contractors for marking. Honor marking of existing pipelines or utilities. [PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by requiring individuals marking & locating to be qualified (as required by OQ program).

5.6.~~16~~15 Mark all pipelines including laterals. Consider environmental conditions such as rain or snow when selecting marking methods. In areas where the pipelines are curved or make sharp bends to avoid other utilities or obstructions, consider the visibility and frequency of markers. Individually mark pipelines within the same trench. Also, pipelines at cross-overs shall be marked.
[PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by requiring individuals marking & locating to be qualified (as required by OQ program).

5.6.~~17~~16 Facilitate communication during the excavation and make sure excavators have sufficient information about underground pipelines at an excavation site to avoid damage to the pipeline.
[PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by direct telephone communication and/or indirectly through one-call notification systems.

~~5.6.18 Calibrate tools and equipment used for line marking and make sure they are in proper working order. [PHMSA Advisor Bulletin #ADB-06-03]~~

5.6.~~19~~17 When pipelines are hit or almost hit during excavation, evaluate the practices and procedures before continuing excavation activities.
[PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by completing an incident investigation.

5.6.~~20~~18 When there are reports of third party damage on the pipeline, the company will check the TPD against One-Call tickets and document this

review. [PHMSA protocol 195.442] LGS accomplishes this by annually reviewing dig tickets and adding a one-call layer to GIS.

5.6.~~21~~19 The company will review "One-Call" reports and generate a list of third parties who actually conducted excavation activities along the pipelines. These companies who conducted excavation activities will be included in the public awareness education program either by mailing of materials or onsite visit. This excavation activities list will be documented once per year including how excavation companies were contacted. [PHMSA protocol 195.442] LGS accomplishes this by emailing a list of relevant excavators to Paradigm to be included in the public awareness program.

5.7 Inspection and Monitoring of Excavation Activities

5.7.1 A Company representative is to be present when excavation occurs that will expose or may be reasonably expected to expose the pipeline. ~~The (85) Operations Manager may make other provisions to prevent damage to the pipeline when the excavation activities, such as parallel encroachments, require the representative to be present for long time durations, and there is to be no crossing of the Company's pipeline.~~

5.7.2 If the pipeline is to be crossed, a Company employee will determine its depth at the point of intended crossing if practical and necessary. The Company employee will use a line locator and prodding bar, as appropriate.

5.7.3 Advise the excavator that he may proceed with excavation across the pipeline in a slow and controlled manner, and only if the exact depth and location are known and at least 18" (45.7 cm) of clearance (undisturbed soil) will exist from the bottom of the excavation to the top of the Company pipeline. Monitor the excavation as it occurs to assure that the depth of excavation is maintained as planned.

5.7.4 If less than 18" (45.7 cm) clearance will exist from the top of Company pipeline to the bottom of the excavation, the pipeline is exposed, or the crossing will be below the Company's pipeline, prohibit the outside party from approaching the unexposed pipeline closer than 18" (45.7 cm) from the top or 36" (91.4 cm) from the side of the pipeline with mechanical equipment. Require the excavator to expose the pipeline by hand excavation.

5.7.5 Inspection of pipelines must be done as frequently as necessary during and after activities to verify the integrity of the pipeline. Form 3.01B or equivalent shall~~ould~~ be utilized for documentation and reporting purposes.

5.8 Blasting

Prior to blasting, a leak survey may be conducted. If blasting occurs and it is determined that there is possible damage, a leakage survey must be done immediately to verify the integrity of the pipeline. Refer to procedure 5.02 paragraph 4.0 for the type of gas detection equipment to use for a leak survey.

5.9 Horizontal Directional Drilling (HDD) and other Trenchless Technology

Because of the high potential risk associated with HDD and other trenchless technology, the following procedures are in addition to the above stated requirements for normal excavation methods. These additional procedures are to mitigate the risks of damage to Company and other(s) pipelines.

5.9.1 Maximum separation between substructures, when possible, should be designed into the trenchless operation.

5.9.2 The Company must ensure that contractor personnel are following safe practices and are well qualified and experienced in this type of pipeline installation.

5.9.3 Prior to the commencement of any work, a precise and thorough site survey must be done to locate potential conflicts with known existing underground facilities.

Potholes may be required to determine substructure location(s). A knowledgeable substructure owner or representative must be on site at time of exploration (potholing) and actual trenchless operations.

5.9.4 Whenever HDD is proposed within 10 feet (3 meters) of a known substructure, potholes will be dug, when possible, at a maximum of 25 foot (7.6 meter) intervals to determine the exact location of the drill head during pilot and back reaming operations.

~~Characteristics of soil, i.e. rock, sand, etc., can effect the alignment of the pilot hole. Stiffness of the pipe can affect the accuracy.~~

~~5.9.5~~ Personnel must monitor location and alignment of the operation constantly with a "walkover" detector. Read the drill head every 10 feet (3 meters) for direction and depth and mark on the surface. If an ~~problem~~ abnormal operation is encountered, the operation must be either altered or shutdown immediately until the abnormal operation~~problem(s)~~ is resolved. The "drill head" should not be removed

5.9.5 in the event of suspected damage or abnormalities. Further damage could be caused.

5.9.6 If necessary, and to ensure additional safety of the HDD operation, it may be necessary to reduce pipeline operating pressure or shutdown the pipeline completely.

5.10 Exposed Pipe

Whenever any buried pipe is exposed for any reason, the company shall examine the pipe for evidence of external corrosion. See LGS O&M Procedure 6.04 Internal and External Examination of Buried Pipeline for more detail regarding exposed pipe.

~~If external corrosion requiring remedial action is found, additional investigation circumferentially and longitudinally may be necessary beyond the exposed portion (by visual examination, indirect method, or both) to determine whether additional corrosion requiring remedial action exists in the vicinity of the exposed portion.~~

~~5.11 Passage of Hurricanes~~

~~Operators of gas and hazardous liquid pipelines are reminded that pipeline safety problems can occur from the passage of hurricanes. Pipeline operators are urged to take the following actions to ensure pipeline safety:~~

~~5.11.1 Identify persons who normally engage in shallow-water commercial fishing, shrimping, and other marine vessel operations and caution them that underwater offshore pipelines may be exposed or constitute a hazard to navigation. Marine vessels operating in water depths comparable to a vessel's draft or when operating bottom dragging equipment can be damaged and their crews endangered by an encounter with an underwater pipeline.~~

~~5.11.2 Identify and caution marine vessel operators in offshore shipping lanes and other offshore areas that deploying fishing nets or anchors and~~

~~conducting dredging operations may damage underwater pipelines, their vessels, and endanger their crews~~

~~5.11.3 After a disruption, operators need to bring offshore and inland transmission facilities back online, check for structural damage to piping, valves, emergency shutdown systems, risers and supporting systems. Aerial inspections of pipeline routes should be conducted to check for leaks in the transmission systems. In areas where floating and jack-up rigs have moved and their path could have been over the pipelines, review possible routes and check for sub-sea pipeline damage where required.~~

~~5.11.4 Operators should take action to minimize and mitigate damages caused by flooding to gas distribution systems, including the prevention of overpressure of low pressure and high pressure distribution systems.~~

~~6. PROCEDURE FOR ADDITIONAL PREVENTATIVE MEASURES DUE TO THIRD PARTY DAMAGE IF PIPELINE IS COVERED UNDER THE INTEGRITY MANAGEMENT REGULATIONS~~

~~6.1 The Company will implement the following preventive and mitigative requirements regarding threats due to third party damage. These minimum enhancements to the 192.614 required damage prevention program will include the following with respect to IMP covered segments to prevent and minimize the consequences of a release:~~

~~1) Using qualified personnel for work the Company is conducting that could adversely affect the integrity of a covered segment, such as marking, locating, and direct supervision of known excavation work. [192.935(b)(1)(i)]~~

~~2) Collecting, in a central database, location-specific information on excavation damage that occurs in covered and non-covered segments in the transmission system and the root cause analysis to support identification of targeted additional preventative and mitigative measures in the high consequence areas. This information must include recognized damage that is not required to be reported as an incident under Part 191. [192.935(b)(1)(ii)]~~

~~3) Participating in one-call systems in locations where covered segments are present. [192.935(b)(1)(iii)]~~

~~4) Monitoring of excavations conducted on covered pipeline segments by pipeline personnel. [192.935(b)(1)(iv)]~~

~~5) When there is physical evidence of encroachment involving excavation that the operator did not monitor near a covered segment, verify that~~

~~the area near the encroachment must be excavated or that an above ground survey using methods defined in NACE RP 0502-2002 must be conducted. [192.935(b)(1)(iv)]~~

~~6) If an above ground survey is conducted, verify that any indication of coating holidays or discontinuities warranting direct examination must be excavated and remediated in accordance with ANSI/ASME B31.8S Section 7.5 and §192.933. [192.935(b)(1)(iv)]~~

~~Note, when the Company has a covered segment operating below 30% SMYS and for plastic transmission pipelines, the Company will implement a subset of these enhancements. See section #6.2 below. If the threat of third party damage is identified by results of the data gathering and integration process, the Company will implement the additional preventive measures, shown in section #6.1.~~

~~6.2 The Company will implement the following preventive and mitigative requirements for pipelines operating below 30% SMYS:~~

~~1) The Company's processes for damage prevention program enhancements will include requirements for the use of qualified personnel if the Company is conducting a task that could adversely affect the integrity of a covered segment, such as marking, locating, and direct supervision of known excavation work.~~

~~2) The Company's processes for damage prevention program enhancements will include participating in one-call systems in locations where covered segments are present.~~

~~3) Excavations near the pipeline will be monitored, or patrols will be conducted of the pipeline at bi-monthly intervals as required by §192.705. [§192.935(d), §192.935(d)(2)]~~

~~4) If indications of unreported construction activity are found, follow up investigations will be conducted to determine if mechanical damage has occurred. [§192.935(d)(2)]~~

~~For pipelines operating below 30% SMYS located in a class 3 or 4 area but not in a high consequence area, the Company will implement the following minimum requirements:~~

~~1) The Company's processes for damage prevention program enhancements will include requirements for the use of qualified personnel if the Company is conducting a task that could adversely affect the integrity of a covered segment, such as marking, locating, and direct supervision of known excavation work.~~

~~2) The Company's processes for damage prevention program enhancements will include participating in one-call systems in locations where covered segments are present.~~

~~3) Excavations near the pipeline will be monitored, or patrols will be conducted of the pipeline at bi-monthly intervals as required by 192.705. [192.935(d), 192.935(d)(2)]~~

~~4) If indications of unreported construction activity are found, follow-up investigations will be conducted to determine if mechanical damage has occurred. [192.935(d)(2)]~~

~~5) The Company will perform semi-annual leak surveys (quarterly for unprotected pipelines or cathodically protected pipe where electrical surveys are impractical). [192.935(d)(3), Table E.II.1]~~

7. RELATED PROCEDURES

3.02 Telephone Answering Services
3.05 Crossing of Company Pipelines
5.01 Continuing Surveillance
5.02 Gas Leak Detection Survey with Instrumentation for Pipelines without Odorant
6.04 Internal and External Examination of Buried Pipeline
18.01 Public Education Program

8. RECORDS

7.1 Record pertinent information on one-call service form. Retain forms for one year from date of last entry. In the event of litigation or other unresolved situations, do not destroy records until they are no longer needed for such situation.

7.2 Complete the Pipeline Maintenance and Surveillance Form (Form 3.01B) each time a buried pipeline is inspected, crossed or an above or below grade pipeline is damaged or hit by an outside party. These records are to be retained for at least five years.

EMERGENCY "ONE-CALL" PHONE NUMBERS
TABLE 3.01C

NATIONAL ONE CALL

811

CALIFORNIA

Underground Service Alert (USA) – North

(800) 642-2444	(811 equivalent)
(800) 640-5137	(admin/office)

APPENDIX B

Uniform Color Code and Marking Guidelines

The information contained in this appendix is intended to supplement information for existing practices found within CGA Best Practices.[8/]

BEST PRACTICES CHAPTER 4—LOCATING AND MARKING
Practice Statement 4–3: Color Code: A uniform color code and set of marking symbols is adopted nationwide.

Uniform Color Code[9/]

The following APWA uniform color code (ANSI Z535.1) shall be adopted as the uniform color code for marking excavation sites and underground facilities in conflict with an excavation. This recommendation is not intended to preempt any existing state requirement that specifies other colors.

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 Lines, Cables, or Conduit
Blue	Potable Water
Purple	Reclaimed Water, Irrigation, and Slurry Lines
Green	Sewers and Drain Lines

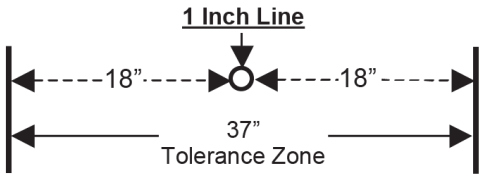
References:

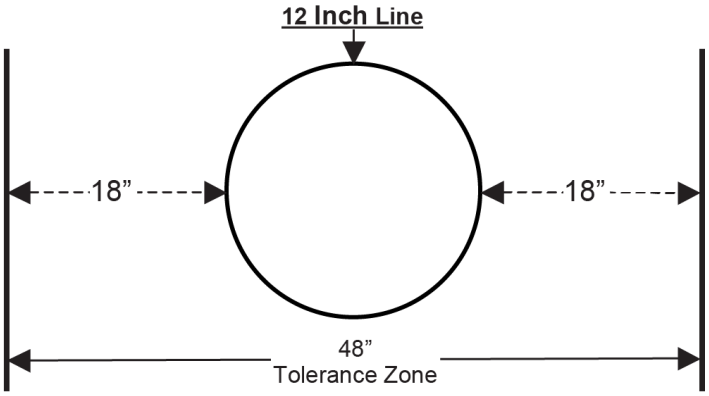
- APWA Uniform Color Code
- Existing operating practices from various states' one call centers
- Existing one call laws from various states
- ANSI Standard Z535.1 Safety Color Code

BEST PRACTICES CHAPTER 5—EXCAVATION
Practice Statement 5–19: Excavation Tolerance Zone*: *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.

Tolerance Zone[40/]

The following examples are of tolerance zones for a 1 in. and 12 in. line:



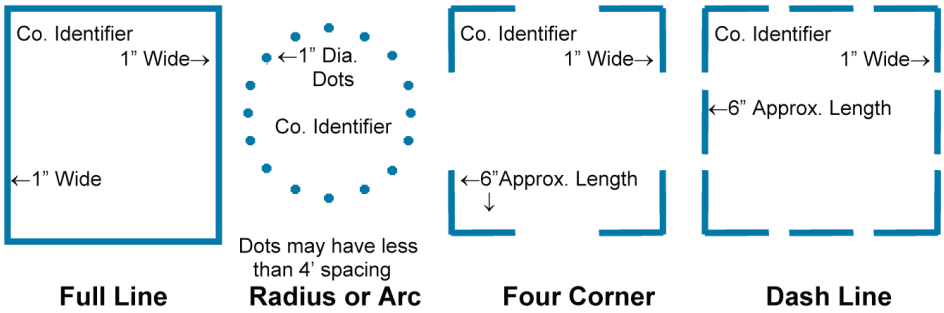


BEST PRACTICES CHAPTER 5—EXCAVATION
Practice Statement 5–2: White Lining[67/]: When the excavation site cannot be clearly and adequately identified on the locate ticket, the excavator designates the route and/or area to be excavated using white premarking, either onsite or electronically (when available through the one call center), prior to or during the request for the locate ticket.

Guidelines for Excavation Delineation[9/]

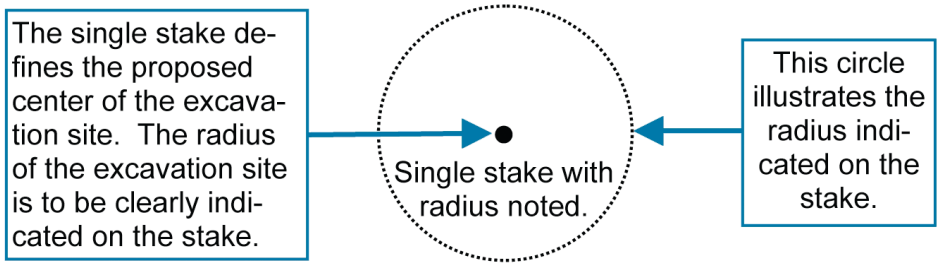
The following marking illustrations are examples of how excavators may choose to mark their area of proposed excavation. The use of white marking products (e.g., paint, flags, stakes, whiskers, or a combination of these) may be used to identify the excavation site.

Single Point Excavations Markings



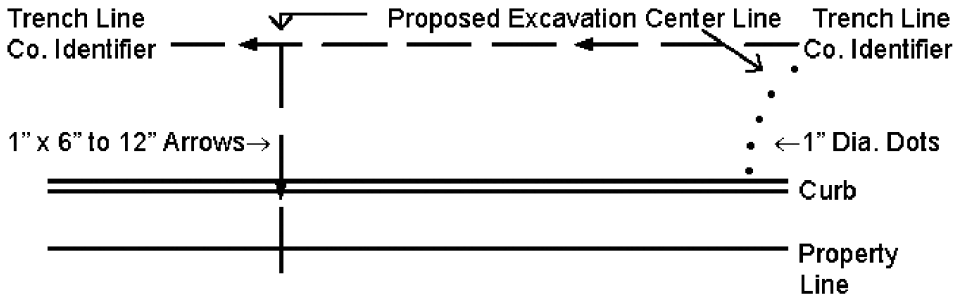
Delineate in white[62/] the proposed area of excavation using a continuous line, dots marking the radius or arcs, dashes marking the four corners of the project, or dashes outlining the excavation project. Limit the size of each dash to approximately 6 in. to 12 in. long and 1 in. wide with interval spacing approximately 4 ft to 50 ft apart. 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. Dots of approximately 1 in. diameter typically are used to define arcs or radii and may be placed at closer intervals in lieu of dashes.

Single Stake Marking Center Point of Excavation Site



When an excavation site is contained within a 50 ft maximum radius or less, it can be delineated with a single stake that is positioned at the proposed center of the excavation. If the excavator chooses this type of delineation, they must convey that they have delineated the excavation site with a single stake at the center of the excavation and include the radius of the site in the notification to the one call center. This single stake is white in color and displays the excavator's company identifier (name, abbreviations, or initials) and the radius of the excavation site in black letters on the stake or with a notice attached to the stake.

Trenching, Boring, or Other Continuous-Type Excavations



Continuous Excavation Marking

Mark in white[62/] the proposed centerline of planned excavation using 6 in. to 12 in. × 1 in. arrows approximately 4 ft to 50 ft apart to show direction of excavation. 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. Mark lateral excavations with occasional arrows showing excavation direction from centerline with marks at curb or property line if crossed. Dots may be used for curves and closer interval marking.

Stake, Flag, or Whisker Excavation Markers

Stakes, Flags or Whiskers Marking Four Corners

Stakes, Flags or Whiskers Marking Outline of Excavation

Delineate the proposed area of excavation using stakes, flags, or whiskers instead of spray paint to mark radius or arcs; the four corners of the project; or when outlining the excavation project. Limit the interval spacing to approximately 4 ft to 50 ft. 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. Stakes, flags, or whiskers provided to illustrate arcs or radii may be placed at closer intervals to define the arc or radius. Stakes, flags, or whiskers are white in color and display the excavator's company identifier (name, abbreviations, or initials).

BEST PRACTICES CHAPTER 4—LOCATING AND MARKING
Practice Statement 4–3: Color Code: A uniform color code and set of marking symbols is adopted nationwide.

Guidelines for Operator Facility Field Delineation[9/]

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).

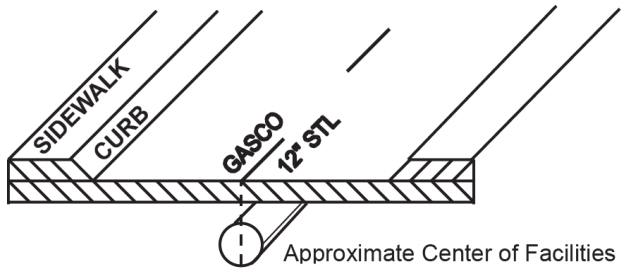
Use paint, flags, stakes, whiskers, or a combination to identify the operator's facility(s) at or near an excavation site.

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.

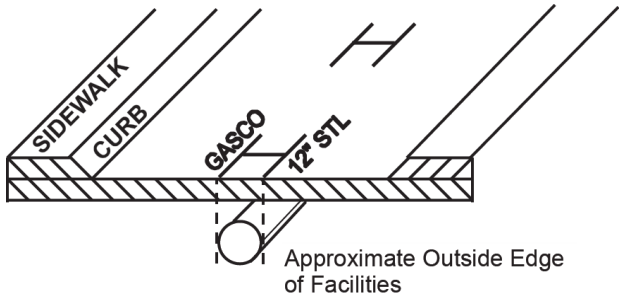
| ← 12" to 18" → | ← 4' to 50' in distance between marks → | ↑ 1" Wide

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—1) placing the marks over the approximate center of the facility:



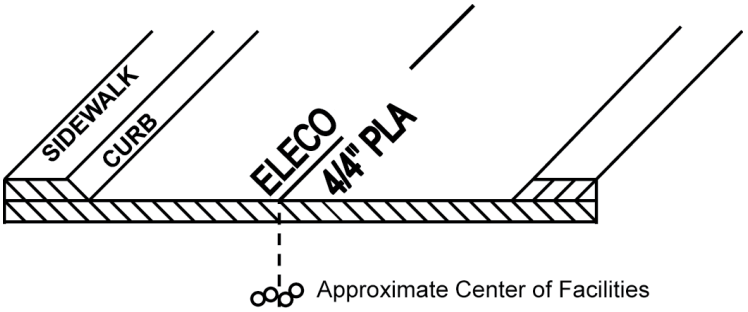
   or 2) placing the marks over the approximate outside edges of the facility with a line connecting the two horizontal lines (in the form of an H) to indicate there is only one facility:



   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.[41/]

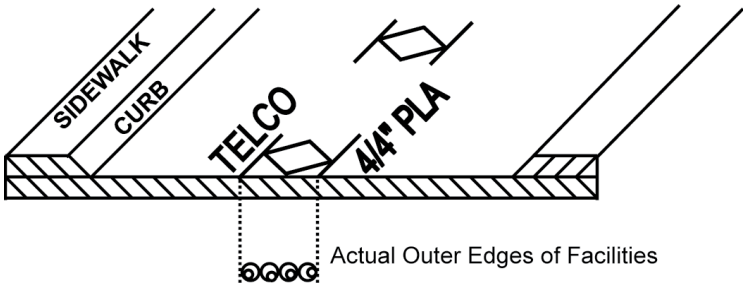
b. **Multiple Facility Marking:** Used to mark multiple facilities of the same type (e.g., electric), where the separation does not allow for a separate tone for each facility, but the number and width of the facilities is known. Marks are placed over the approximate center of the facilities and indicate the number and width of the facilities.

Example: four plastic facilities that are 4 in. in diameter (4/4" PLA)



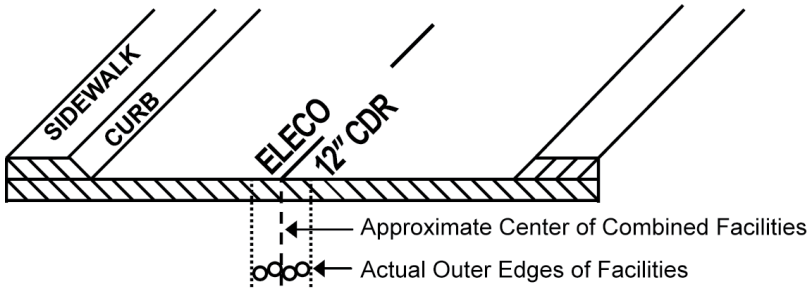
c. **Conduit Marking:** Used for any locatable facility being carried inside conduits or ducts. The marks indicating the outer extremities denote the actual located edges of the facilities being represented.

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



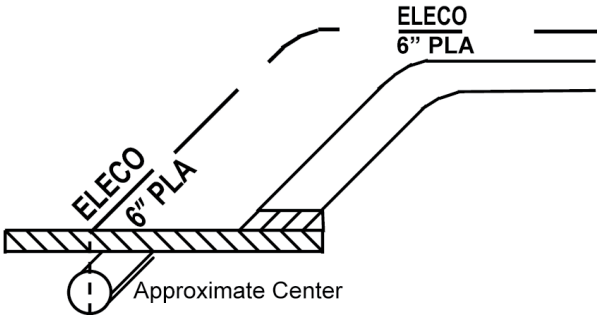
d. **Corridor Marking:** Used to mark multiple facilities of the same type (e.g., electric), bundled or intertwined in the same trench, where the total number of facilities is not readily known (operator has no record on file for the number of facilities). Marks are placed over the approximate center 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)

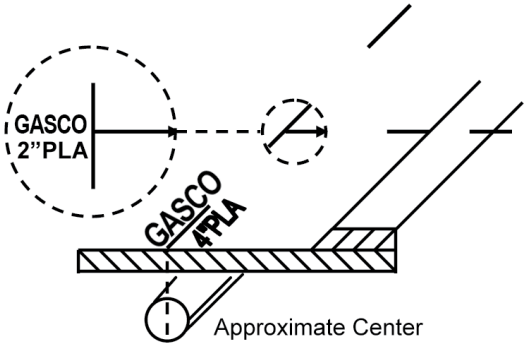


3. Changes in direction and lateral connections are clearly indicated at the point where the change in direction or connection occurs, with an arrow indicating the path of the facility. A radius is indicated with marks describing the arc. When providing offset markings (paint or stakes), show the direction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

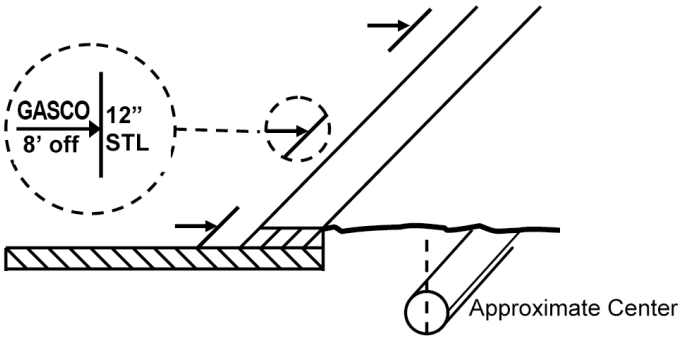
   Example: radius



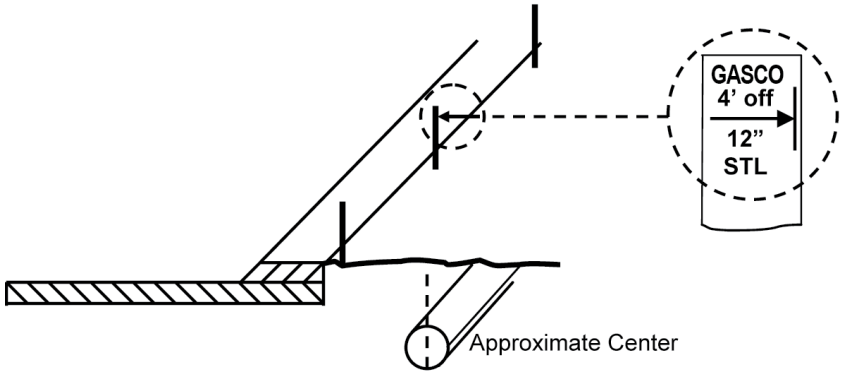
   Example: lateral connection



   Example: painted offset (off)



   Example: staked offset (off)



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

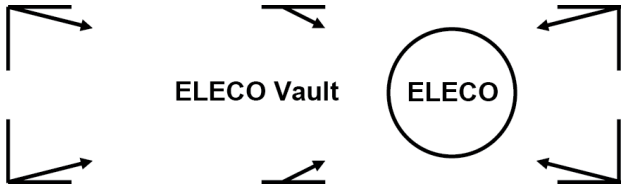
6. Facilities installed in a casing are identified as such.

   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."

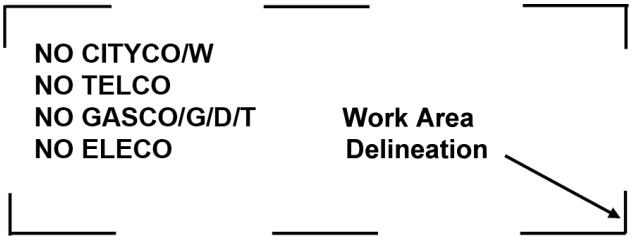
     Example: NO GASCO/G/D illustrates that GASCO has no gas distribution facilities at this excavation site. The following abbreviations are used when appropriate: /G/D (gas distribution); /G/T (gas transmission); /E/D (electric distribution); /E/T (electric transmission).

- 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).
- 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:



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 Lines, Cables, or Conduit
Blue	Potable Water
Purple	Reclaimed Water, Irrigation, and Slurry Lines
Green	Sewers and Drain Lines

Attachment #3

ROCKPOINT
GAS STORAGE

LGS Procedure 3.01, Form 3.01C, Damage Prevention Program

2019 Redlined Version

DAMAGE PREVENTION PROGRAM

1. REFERENCE

- 49 CFR, Sections 192.614, 198.37, and 198.39.
- PHMSA Advisory Bulletin #ADB-06-03, ADB-2013-03, ADB-2015-01
- California Government Code ~~#~~4216 (GC 4216) ~~from SB 1359, Effective January 1, 2007~~
- Common Ground Alliance Best Practices, latest edition

2. PURPOSE

The purpose of this procedure is to establish a damage prevention program whose purpose is to minimize possible damage to the Company gas pipeline facilities by outside forces.

3. RESPONSIBILITY FOR IMPLEMENTATION

The (84) Compliance Manager is responsible for implementation of the damage prevention program.

4. GENERAL

4.1 It is Company intent to include, at a minimum, all regulated onshore and offshore pipelines in its prevention program to prevent damage to pipelines owned by the Company. The Lodi Gas Storage (LGS) damage prevention program shall comply with all requirements of California Government Code 4216 (GC 4216) applicable to LGS operations personnel and contractors/excavators.~~For California pipeline operations additional requirements are noted with reference to Ca. Gov. Code #4216.~~

4.2 Federal and state pipeline regulations require that each operator of a buried pipeline have a written program to prevent possible damage to a buried pipeline facility by excavation activities. For the purpose of this Procedure 3.01, “excavation activities” includes but is not limited to:

4.2.1 Excavation

4.2.2 Blasting

4.2.3 Directional drilling and other trenchless technology, which includes, but is not limited to, a variety of cutting, jetting, boring, reaming, and jacking techniques.

4.2.4 Tunneling

4.2.5 Backfilling

4.2.6 Removal of above or below ground structures by either explosive or mechanical means.

4.2.7 Plowing (installation of flexible pipe, such as drain tile, or cable without open trenching).

4.2.8 Other earth moving or earth disturbing activities.

4.2.9 Offshore pipe laying.

5. PROCEDURE

5.1 One-Call Participation

5.1.1 Lodi Gas Storage, L.L.C. supports and participates in Underground Service Alert (USA) North, a one-call system.

5.1.2 See Table 3.01C for a listing of local One-Call phone numbers.

5.2 Identification of Excavators

Develop, on a current basis, a list of contractors and other persons who are normally engaged in excavation activities in the area in which the pipeline is located. Refer to the Procedure for the "Public Education Program" (Procedure 18.01) in this manual. The company may use a third party consultant to generate this list.

5.3 Notification of Excavators and the Public

Provide general notification of the public living in the vicinity of the pipeline and actual notification of the individuals identified in 5.2 above, and make them aware of the damage prevention program and its purpose. Refer to the Procedure for the "Public Education Program" (Procedure 18.01) in this manual for detailed procedures on how the company will notify and educate the public living along the pipeline.

5.4 Receiving and Recording Notices of Planned Excavation Activities

5.4.1 LGS provides for the receipt of routine notices of planned excavation activities by direct telephone communication and/or indirectly through one-call notification systems.

5.4.2 LGS documents all notifications requesting line marking or of excavation activity through the one-call notification system.

5.5 Responding to Notice of Planned Excavation Activities

5.5.1 LGS qualified personnel receive and determine if excavation activity will be conducted in the vicinity of the Company's pipeline. If it is determined that the excavation activity is in the vicinity of the Company's pipeline, then that pipeline must be marked in the field in accordance with Common Ground Alliance Best Practices.

5.5.2 LGS qualified personnel shall advise the requestor that a Company representative will be present during excavation activity in the vicinity of the pipeline by direct telephone communication and/or indirectly through one-call notification systems prior to ticket becoming valid.

5.5.3 LGS qualified personnel shall mark the pipeline and advise the requester if a Company pipeline is located in the area of the planned excavation activity by direct telephone communication and/or indirectly through one-call notification systems prior to ticket becoming valid.

5.5.4 California law requires notification and onsite meeting to verify location of pipeline or utility if excavation within 10 feet of a "high priority subsurface installation." [~~Ca. Gov. Code #~~GC 4216]

High priority subsurface installation is defined as: "High priority subsurface installation" is high pressure natural gas pipeline with normal operating pressures greater than 415kPA gauge (60~~–~~psig), petroleum pipelines, pressurized sewage pipelines, high voltage electric supply lines, conductors, or cables that have a potential to ground of greater than or equal to 60kv, or hazardous material pipelines that are potentially hazardous to workers or the public if damage~~ occurs~~d.~~ [Ca. Gov. Code #4216.1]~~

5.6 Pipeline Location and Marking

5.6.1 Calibrate tools and equipment used for line marking and make sure they are in proper working order. [PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by following locator manufacturer recommendations.

5.6.2 Locate and mark the pipeline in areas of conflict where excavation activities are observed, anticipated, or will occur as indicated by notification in accordance with Common Ground Alliance Best Practices and GC 4216.

5.6.3 Pipelines must be marked before dig ticket becomes valid, unless the notifying party agrees to extend this time, and before any excavation activities begin. Any agreement between parties shall be documented on the dig ticket.

5.6.4 Use temporary flags, stakes, or other more permanent marks, if the type and duration of activity so dictates. The minimum length of pipeline to be marked shall be as required by conditions of the site and job. Photos may be taken to assist in documentation. If practical, locate and mark pipelines when a requester's representative is present.

5.6.5 Bends and other changes of direction need to be marked so that the location of the pipe is clearly delineated.

5.6.6 Mark on straight pipeline sections at intervals required by conditions of the site and job, but not to exceed 100 feet (30 meters) onshore.

5.6.7 If an outside party is seen approaching or working over the Company's pipeline, immediately notify the excavator that a conflict exists and ask him to delay until the line is located and marked. If the excavator does not cooperate, emergency responders shall be notified.

5.6.8 Only a "qualified person" is allowed to conduct subsurface installation locating activities. The regulation defines "Qualified person" as a person who completes a safety training program that meets the requirements of 8 CCR 1509 (Injury Prevention Program) & meets the minimum training guidelines and practices of Common Ground Alliance current Best Practices. The company defines qualified person as a person who meets the requirements for locating and marking as specified in the company Operator Qualification Plan. [Ca. Gov. Code #4216.1]

5.6.9 LGS contract excavators must notify the pipeline operator or call 911 when the excavator discovers or causes damage to the pipeline installation.

[Ca. Gov. Code #4216.1]

5.6.10 Ensure up to date pipeline alignment and as-built drawings are available to the locator. The locator shall not rely solely on maps, drawings, or other written materials to locate pipelines.
[PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by providing qualified personnel with hardcopy pipeline alignment sheets and as-built drawings as well as a utility locator.

5.6.11 The locator shall notify the Operations Manager when the pipeline alignment and as-built drawings need updates due to inconsistencies found in the field. The (68A) Operations Manager is responsible for submitting pipeline changes to the (68B) Compliance Manager.

5.6.12 Ensure individuals marking & locating are familiar with state and local marking requirements, and Common Ground Alliance Best Practices marking guidelines which includes recommended color codes and marking guidelines. [PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by requiring individuals marking & locating to be qualified (as required by OQ program).

5.6.13 Ensure individuals marking & locating have knowledge, skills, and abilities (as required by OQ Program) to read & understand pipeline alignment and as-built drawings. [PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by requiring individuals marking & locating to be qualified (as required by OQ program).

5.6.14 Locate and mark accurately before excavation begins. This applies regardless if using own company employees or contractors for marking. Honor marking of existing pipelines or utilities. [PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by requiring individuals marking & locating to be qualified (as required by OQ program).

5.6.15 Mark all pipelines including laterals. Consider environmental conditions such as rain or snow when selecting marking methods. In areas where the pipelines are curved or make sharp bends to avoid other utilities or obstructions, consider the visibility and frequency of markers. Individually mark pipelines within the same trench. Also, pipelines at cross-overs shall be marked. [PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by requiring individuals marking & locating to be qualified (as required by OQ program).

5.6.16 Facilitate communication during the excavation and make sure excavators have sufficient information about underground pipelines at an excavation site to avoid damage to the pipeline. [PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by direct telephone communication and/or indirectly through one-call notification systems.

5.6.17 When pipelines are hit or almost hit during excavation, evaluate the practices and procedures before continuing excavation activities. [PHMSA Advisor Bulletin #ADB-06-03] LGS accomplishes this by completing an incident investigation.

5.6.18 When there are reports of third party damage on the pipeline, the company will check the TPD against One-Call tickets and document this review. [PHMSA protocol 195.442] LGS accomplishes this by annually reviewing dig tickets and adding a one-call layer to GIS.

5.6.19 The company will review "One-Call" reports and generate a list of third parties who actually conducted excavation activities along the pipelines. These companies who conducted excavation activities will be included in the public awareness education program either by mailing of materials or onsite visit. This excavation activities list will be documented once per year including how excavation companies were contacted. [PHMSA protocol 195.442] LGS accomplishes this by emailing a list of relevant excavators to Paradigm to be included in the public awareness program.

5.7 Inspection and Monitoring of Excavation Activities

5.7.1 A Company representative is to be present when excavation occurs that will expose or may be reasonably expected to expose the pipeline.

5.7.2 If the pipeline is to be crossed, a Company employee will determine its depth at the point of intended crossing if practical and necessary. The Company employee will use a line locator and prodding bar, as appropriate.

5.7.3 Advise the excavator that he may proceed with excavation across the pipeline in a slow and controlled manner, and only if the exact depth and location are known and at least 18" (45.7 cm) of clearance (undisturbed soil) will exist from the bottom of the excavation to the top of the Company pipeline. Monitor the excavation as it occurs to assure that the depth of excavation is maintained as planned.

5.7.4 If less than 18" (45.7 cm) clearance will exist from the top of Company pipeline to the bottom of the excavation, the pipeline is exposed, or the crossing will be below the Company's pipeline, prohibit the outside party from approaching the unexposed pipeline closer than 18" (45.7 cm) from the top or 24~~36~~" (91.4 cm) from the side of the pipeline with mechanical equipment. Require the excavator to expose the pipeline by hand excavation.

5.7.5 Vacuum/hydrovac excavation devices, and associated high pressure spray, have the potential to damage underground facilities (e.g., pipeline coating, fiber optic cable). If at all possible, hand exposure technique should be used in lieu of vacuum excavation. EXTREME CAUTION must be used by the contractor in the rare circumstances when LGS may grant permission to perform vacuum excavation.

5.7.6 ~~5.7.5~~ Inspection of pipelines must be done as frequently as necessary during and after activities to verify the integrity of the pipeline. Form 3.01B or equivalent shall be utilized for documentation and reporting purposes of exposed LGS pipeline. Form 3.01C or equivalent shall be utilized for documentation of inspection and monitoring of excavation activities.

5.8 Blasting

Prior to blasting, a leak survey may be conducted. If blasting occurs and it is determined that there is possible damage, a leakage survey must be done immediately to verify the integrity of the pipeline. Refer to procedure 5.02 paragraph 4.0 for the type of gas detection equipment to use for a leak survey.

5.9 Horizontal Directional Drilling (HDD) and other Trenchless Technology

Because of the high potential risk associated with HDD and other trenchless technology, the following procedures are in addition to the above stated requirements for normal excavation methods. These additional procedures are to mitigate the risks of damage to Company and other(s) pipelines. These procedures are mandatory for Company employees and contractors working on behalf of the Company, and should be used as guidance for other contractors/third parties.

5.9.1 Maximum separation between substructures, when possible, should be designed into the trenchless operation.

5.9.2 The Company must ensure that contractor personnel are following safe practices and are well qualified and experienced in this type of pipeline installation.

5.9.3 Prior to the commencement of any work, a precise and thorough site survey must be done to locate potential conflicts with known existing underground facilities.

Potholes may be required to determine substructure location(s). A knowledgeable substructure owner or representative must be on site at time of exploration (potholing) and actual trenchless operations.

5.9.4 Whenever HDD is proposed within 10 feet (3 meters) of a known substructure, potholes will be dug, when possible, at a maximum of 25 foot (7.6 meter) intervals to determine the exact location of the drill head during pilot and back reaming operations.

5.9.5 Personnel must monitor location and alignment of the operation constantly with a "walkover" detector. Read the drill head every 10 feet (3 meters) for direction and depth and mark on the surface. If an abnormal operation is encountered, the operation must be either altered or shutdown immediately until the abnormal operation is resolved. The "drill head" should not be removed in the event of suspected damage or abnormalities. Further damage could be caused.

5.9.6 If necessary, and to ensure additional safety of the HDD operation, it may be necessary to reduce pipeline operating pressure or shutdown the pipeline completely.

5.10 Exposed Pipe

Whenever any buried pipe is exposed for any reason, the company shall examine the pipe for evidence of external corrosion. See LGS O&M Procedure 6.04 Internal and External Examination of Buried Pipeline for more detail regarding exposed pipe.

6. RELATED PROCEDURES

3.02 Telephone Answering Services
3.05 Crossing of Company Pipelines
5.01 Continuing Surveillance

5.02 Gas Leak Detection Survey with Instrumentation for Pipelines without Odorant
6.04 Internal and External Examination of Buried Pipeline
18.01 Public Education Program

7. RECORDS

7.1 Record pertinent information on one-call service form. Retain forms for ~~one~~ six years from date of last entry. ~~In the event of litigation or other unresolved situations, do not destroy records until they are no longer needed for such situation.~~

7.2 Complete the Pipeline Maintenance and Surveillance Form (Form 3.01B) each time a buried pipeline is inspected, crossed or an above or below grade pipeline is damaged or hit by an outside party. These records are to be retained for at least six~~five~~ years.

Lodi Gas Storage, L.L.C.
A ROCKPOINT GAS STORAGE COMPANY

Excavation Inspection/Monitoring - Standby

Form 3.01C

Duration of time LGS representative was on site observing excavation project: _____

Inspection Activity – in vicinity of LGS pipeline	Completed (Y/N or NA)
Location marked with flagging / stakes / spray paint.	
Utilization of prodding bar.	
Identification of subsurface abandoned facilities.	
Cross reference location with maps and/or diagrams/drawings.	
Tailgate safety meeting reviewing work scope/safe practices prior to the start of excavation activity.	
Follow CGA Best Practices.	
Utilization of hydrovac/ vacuum truck to daylight pipeline. Note: If at all possible, hand tools should be used in lieu of hydrovac/ vacuum truck.	
Monitor excavation activity and document work performed.	
Take photographs of excavation area during locate, excavation, and backfill.	
Make note of any work scope changes that differ from original agreement and alert Operations Manager.	
Ensure contractor does not utilize mechanical equipment to excavate within 18” of top of pipeline. When excavation is within 18” of pipeline ensure remaining soil is removed by hand tools.	
Ensure contractor does not utilize mechanical equipment to excavate within 24” from the side of pipeline. When excavation is within 24” of pipeline ensure remaining soil is removed by hand tools.	
Inspect pipeline if there’s reason to believe it’s been damaged during excavation.	
Attempt to stop the excavation work in progress if unsafe work practices are observed that could result in public or employee injury. Notify the Operations Manager.	
Remove temporary markers when work has been completed.	