

SOUTHERN CALIFORNIA GAS COMPANY

**PG&E'S 851 APPLICATION TO SELL L306 TO SOCALGAS
(A.19-04-003)**

(CalPA Data Request-02)

Date Requested: April 05, 2019

Date Responded: May 08, 2019

QUESTION 01:

Please provide the definition of "pipeline section" as used in the March 26, 2019 letter of support for the sale of Line 306 to SoCalGas.

RESPONSE 01:

SoCalGas' use of the term "pipeline section" in the March 26, 2019 Statement of Support refers to the pipeline segments that SoCalGas has preliminarily identified as being within the PSEP project scope to be tested or replaced.

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QUESTION 02:

Please provide a geographic information file (readable in ArcGIS and/or Google Earth) of PG&E's Line 306 and related facilities that are proposed to be purchased by SoCalGas in this Application.

SoCalGas should include where they are proposing:

- a) To install in-line inspection tool launchers and receivers;
- b) To install replacement valves and fittings;
- c) To pressure test sections of Line 306 (exclusive of any testing for sections associated with installing in-line inspection tool launchers and receivers, replacement valves and fittings, service extensions, and replacement sections);
- d) To replace sections of Line 306;
- e) Add additional service extensions; and
- f) Improve cathodic protection.

If this information cannot be furnished in one file or in the timeframe requested in this data request, please contact the originator to discuss alternatives. If SoCalGas does not possess the GIS data, provide a detailed map that provides the approximate locations of the identified items and explain when and how SoCalGas would expect to have the GIS data if the sale of Line 306 is authorized.

RESPONSE 02:

The attached supporting documents include Confidential and Protected Materials provided pursuant to PUC Section 583, GO 66-D, D.17-09-023, the accompanying declaration, and/or non-disclosure agreement.

a), b), c), d), f) Attached please find a Google Earth map (CalPA DR-02_Q02 CONFIDENTIAL Preliminary KMZ.kmz) showing the preliminary project scope and locations of the replacement and hydrotest sections as well as the locations for inline inspection tool launchers and receivers, replacement valves and fittings, and the proposed location of the service extension. The installation of rectifiers will enhance cathodic protection of Line 306 at various points along the line.

e) The attached Google Earth image (CalPA DR-02_Q02 Proposed Extension part e.jpg) shows the general vicinity of the proposed extension based on preliminary designs that will connect Line 306 to Supply Line 44-1008. The exact locations of the complete project scope will be determined during detailed project design efforts to be conducted in the future.

Please note that the Google Earth map and image have limited geospatial accuracy as it was constructed based on the latest information received from PG&E and is subject to change subsequent to SoCalGas' future survey and project scoping efforts.

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QUESTION 03:

Please fill out the attached spreadsheet for each segment of Line 44-1008. By segment, the Public Advocates Office means a unique length of pipe. For example, a pipe with the same material specifications but in two different class locations would constitute two different segments.

For any value where SoCalGas is using assumed values, highlight that entry in green shading and provide a narrative identifying the basis (49 CFR 192, SoCalGas standard, etc) for that assumed value in a separate document. Any such value should be identified using values a-c below.

If any value is unknown, provide an entry of Unknown. If any value does not apply, leave the cell blank.

- a. Pipeline. The name of the pipeline.
- b. BEGCUMSTA. The start of the cumulative stationing for the segment (in feet).
- c. ENDCUMSTA. The end of the cumulative stationing for the segment (in feet).
- d. BEGENGSTA. The start of the engineering stationing for the segment (in feet).
- e. ENDENGSTA. The end of the engineering stationing for the segment (in feet).
- f. DOTCLASS. The current class location of the segment, as identified in 49 CFR 192.111.
- g. DESIGN FACTOR. The current design factor of the segment, as identified in 49 CFR 192.111.
- h. OD. Outside Diameter of the segment (in inches), as identified in 49 CFR 192.105.
- i. WT. Wall Thickness of the segment (in inches), as identified in 49 CFR 192.105 or 109.
- j. SMYS. Specified Minimum Yield Strength (SMYS) of the segment, as identified in 49 CFR 192.107.
- k. JOINTSPEC. The specification of the longitudinal joint of the segment, as identified in 49 CFR 192.113.
- l. JOINTCLASS. The pipe class of the longitudinal joint of the segment, as identified in 49 CFR 192.113.
- m. JOINTFACTOR. The longitudinal joint factor of the segment, as identified in 49 CFR 192.113.
- n. INSTALLDATE. The year in which the segment was installed.
- o. TESTPRESSURE. The pressure to which the segment was pressure tested.
- p. TESTSTANDARD. The standards to which the segment was pressure tested (e.g 49 CFR 192 Subpart J or GO 112-A).
- q. TESTMEDIUM. The medium (air, water, gas, unknown) with which the segment was pressure tested.
- r. TESTDATE. The year in which the pressure test was conducted.
- s. GRANDFATHERPRESSURE. The highest historical operating pressure to which the segment was operated, as identified in 49 CFR 192.619 (a)(3) or (c).

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- t. MAOP. The Maximum Allowable Operating Pressure of the segment, as identified in 49 CFR 192.619.
- u. % SMYS. The percentage of SMYS at which the segment currently operates.
- v. 192619 (A1). The MAOP of design, as identified in 49 CFR 192.619(a)(1).
- w. 192619 (A2). The MAOP of test, as identified in 49 CFR 192.619(a)(2).
- x. 192619 (A3). The MAOP of history, as identified in 49 CFR 192.619(a)(3).
- y. MAOP_192619GOVCASE. The portion of 49 CFR 192.619 that is utilized in establishing the MAOP (e.g. if the test was the lowest value, A2 would be the response).
- z. FromCL. If the class location of the pipeline has changed, what the class location was prior to the change.
- aa. ToCL. If the class location of the pipeline has changed, what the current class location is.
- ab. CLCHANGEYEAR. The year of the class location change identified in z and aa.
- ac. XRAY. If the longitudinal seam has been x-rayed.
- ad. NOTES. Any other notes regarding this segment.

RESPONSE 03:

The attached supporting documents include Confidential and Protected Materials provided pursuant to PUC Section 583, GO 66-D, D.17-09-023, the accompanying declaration, and/or non-disclosure agreement.

In the attachment CalPA DR-02_Q03 CONFIDENTIAL Line 44-1008 Pipeline Data.xls the following information is listed in the columns specified. In lieu of marking certain assumed values in green as requested, SoCalGas has indicated 'DT' (decision-tree) for those values as they are marked in yellow to denote confidential information.

- a. Column A: Pipeline Name.
- b. Column B: Cumulative stationing start points.
- c. Column C: Cumulative stop points.
- d. Column D: D/E. Engineering stationing start locations.
- e. Column E: Engineering stationing stop locations.
- f. Column F: Current class location
- g. Column G: Design factor. The Company uses the criteria listed in 192.111 but denotes that the original installation of the line precedes the effective date of the regulation.
- h. Column H: Outside diameter.
- i. Column I: Wall thickness. In some cases, conservative decision tree (DT) values are used and have been developed based upon internal purchasing specifications of SoCalGas at the time of installation and are documented in Gas Standard 167.0200.

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- j. Column J: SMYS. In some cases, conservative DT values are used. The DT values are highlighted in yellow to denote both that these are DT values and confidential.
- k. Column K: Intentionally left blank. *SoCalGas objects to this question under Rule 10.1 of the California Public Utilities Commission's Rules of Practice and Procedure on the ground that the burden and intrusiveness of the discovery outweighs the likelihood the information sought will lead to the discovery of admissible evidence. Subject to and without waiving the foregoing objection, SoCalGas responds as follows:* Joint specification, also known as the pipe specification used for the purchasing of pipe, is not an attribute that has been collected and inputted into the HPPD. This information is not readily available; obtaining it would require data mining of hard copy records.
- l. Column L: Joint Class (also known as long seam type). In some cases, conservative DT values are used.
- m. Column M: Joint Factor. SoCalGas applies the joint factor outlined in Gas Standard 192.113 as appropriate for pipeline installed after the effective date of the code and in alignment with the version which was in effective at the time of installation. For pipe segments installed prior to the effective date of the code, SoCalGas applies a conservative value.
- n. Column N: Installation date.
- o. Column O: Test Pressure, where available.
- p. Column P: Intentionally left blank. The test standard is not an attribute collected in the HPPD and is not readily available. The date of the original installation date of the 44-1008 was in 1937, which precedes both GO-112 and CFR 192. In 1958, work was performed to test the pipe as denoted in the spreadsheet. Post-1964 pipe segments installed were based upon the standard in effect at the time.
- q. Column Q: Test Medium, where available.
- r. Column R: Test Date, where available.
- s. Column S: Grandfather Pressure, where available. Currently the line does not use grandfather pressure to establish its MAOP.
- t. Column T: Maximum Allowed Operating Pressure (MAOP).
- u. Column U: % SMYS.
- v. Column V: 192619 (A1) Calculations for the MAOP of design from 192.619.
- w. Column W: 192619 (A2) Calculations for the MAOP of test from 192.619.
- x. Column X: 192619 (A3) Calculations for the MAOP of history from 192.619.
- y. Column Y: MAOP_192619GOVCASE The governing case for the respective segment.
- z. Column Z: From Change Location (CL) The prior class location could have been assigned for the entire segment length or a portion of the segment length. It is noted that this class location information is based upon readily available data in the HPPD through 2013.

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- aa. Column AA: To Change Location (CL) Blank. SoCalGas interprets this request as asking for segmentation of the current pipe attributes with the current class location. This information is listed in columns F and Y, respectively.
- ab. Column AB: CL Change Year. The year of the class location change is listed in column AB.
- ac. Column AC: Intentionally left blank. *SoCalGas objects to this question under Rule 10.1 of the California Public Utilities Commission's Rules of Practice and Procedure on the ground that the burden and intrusiveness of the discovery outweighs the likelihood the information sought will lead to the discovery of admissible evidence. Subject to and without waiving the foregoing objection, SoCalGas responds as follows: X-Ray of long seam is typically not performed during the field construction process but may have been done during an inspection or repairs. This information is not readily available and would require significant data mining to determine if records exists of this type of field inspection. Modern pipe installed may have been x-rayed in the mill depending upon the pipe specification.*
- ad. Column AD: Intentionally left blank. *SoCalGas objects to this request on the ground it is vague, ambiguous, and overly broad cope. Subject to and without waiving the foregoing objection, SoCalGas responds as follows: SoCalGas is not aware of any significant notes pertaining to the pipe characteristics.*

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QUESTION 04:

Where SoCalGas is proposing to pressure test parts of Line 306 provide a justification for each segment, except where the pressure test is: associated with installation of in-line inspection equipment, to changes to valves or fittings, or with replacement.

RESPONSE 04:

In compliance with the directives in D.11-06-017 and PU Code 958 to test or replace all segments of natural gas pipelines which were not pressure tested or lack sufficient details related to performance of any such test, and subject to final scope validation, SoCalGas proposes to pressure test two segments of Line 306, that total approximately 400 feet, that do not have records of a pressure test.

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QUESTION 05:

Where SoCalGas is proposing to replace parts of Line 306 provide a justification for each segment, except where the replacement is: associated with installation of in-line inspection equipment, due to changes to valves or fittings, or necessary for pressure testing.

RESPONSE 05:

As of this time, subject to final scope validation, SoCalGas is proposing to replace approximately 12,000 feet of Line 306 as follows:

1. **Morro Creek crossing:** Approximately 85 feet at the Morro Creek crossing is exposed and replacement under the creek may be required to provide adequate cover.
2. **Re-route of Paso Robles:** Based on preliminary design efforts, SoCalGas plans to re-route a section of Line 306 that passes through a congested area on the outskirts of Paso Robles. SoCalGas proposes to re-route the line along the city's right-of-way to avoid the congested area and allow for safer monitoring and maintenance of the pipeline compared to the existing route.

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QUESTION 06:

How much (in feet and as a percentage) of Line 306 is SoCalGas proposing to pressure test if Line 306 is purchased from PG&E?

RESPONSE 06:

As of this time, subject to final scope validation, SoCalGas is proposing to pressure test 400 feet (approximately 0.1% of Line 306).

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QUESTION 07:

How much (in feet and as a percentage) of Line 306 is SoCalGas proposing to replace if Line 306 is purchased from PG&E?

RESPONSE 07:

As of this time, subject to final scope validation, SoCalGas is proposing to replace approximately 12,000 feet (3.3%) of Line 306. Please note that all but 85 feet of the total represents a re-route in the city of Paso Robles as described in the response to Question 5.

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QUESTION 08:

Will SoCalGas need to conduct Pipeline Safety Enhancement Plan (PSEP) work on Line 306 if it purchases the Line? Please explain and reference the specific portions of SoCalGas's PSEP which would necessitate or exclude Line 306 becoming part of SoCalGas's PSEP.

RESPONSE 08:

Yes. The purchase of PG&E's Line 306 is considered to be the most cost-effective option for remediation of SoCalGas' Line 44-1008 under PSEP. Therefore, the proposed work, as stated in SoCalGas' March 26, 2019 Statement of Support, to integrate Line 306 into SoCalGas' system will be executed as part of PSEP. Line 44-1008 was presented in SoCalGas' 2019 General Rate Case as a PSEP Replacement Project (Exhibit 231, Revised Direct Testimony of Rick Phillips, pg. A-53) where it was noted that alternatives to replacement were under consideration.

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QUESTION 09:

During SoCalGas's discussions with PG&E regarding the purchase of Line 306, did SoCalGas identify any need to pressure test Line 306 if the line was purchased from PG&E? Explain and provide any relevant documents and communications.

RESPONSE 09:

Please see above response to Question 04 and 06 of this data request and the following attachments:

- 1) Potential Acquisition Summary, 10/31/18
- 2) Second Visit Summary Report, page 11
- 3) PG&E's Response to Data Request 6217

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QUESTION 10:

What cost containment measures will SoCalGas employ to ensure that its customers do not pay more than the \$40 million in “refurbishment and improvements” to Line 306?

RESPONSE 10:

The \$40 million estimate for refurbishments and improvements to Line 306 stated in SoCalGas' March 26, 2019 Statement of Support was based on a preliminary analysis and review of PG&E's records and was not a proposed cap on refurbishment costs. SoCalGas will design and execute the refurbishment of the line following the same decision tree and stage gate review process that it has implemented for the design and execution of its PSEP projects that is intended to monitor project costs and activity. SoCalGas and SDG&E's prudent project oversight and cost management efforts are described in detail in the amended testimony of Rick Phillips Chapter 2, pages 31-38 that details the prudent cost control measures executed by the PSEP that include prudent procurement of contracted labor and materials, use of the Performance Partnership Program and cost tracking, control and management practices.

The CPUC in D.16-09-005 confirmed that: SoCalGas and SDG&E implemented reasonable oversight and control of their PSEP activities (Finding of Fact 13, page 97); SoCalGas and SDG&E appropriately followed their Decision Tree process (Finding of Fact 14, page 97); SoCalGas and SDG&E implemented reasonable processes to track and verify PSEP costs (Finding of Fact 18, page 08); and the Seven Stage Review Process is a reasonable means to manage PSEP projects efficiently and effectively (Finding of Fact 10, page 98).

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QUESTION 11:

What does SoCalGas intend to do with Line 44-1008 if it is successful in purchasing Line 306?

RESPONSE 11:

Pending final scope validation, SoCalGas' current preliminary plans include abandoning approximately 30 miles of SL 44-1008 from the City of Avenal to the City of Shandon and de-rating approximately 20 miles from the City of Shandon to the City of Atascadero.

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QUESTION 12:

Does the \$40 million in “refurbishment and improvement” costs SoCalGas has estimated include addressing Line 44-1008 (as identified in Q10)?

RESPONSE 12:

Yes.

QUESTION 1: When was the line built?

RESPONSE 1: PG&E's transmission Line 306 was installed in 1962, 1967, 1969, 1973, 1982, 1993, 1994, and 2014. PG&E notes that approximately 99% of the original pipe installed in 1962 is still in service.

QUESTION 2: What is the MAOP of the line?

RESPONSE 2: The maximum allowable operating pressure (MAOP) of Line 306 is [REDACTED] pounds per square inch gauge (psig) from milepoint 0 (near I-5 and S. Lassen Avenue in Avenal) until it reaches the Whitley Gardens area, at which point the MAOP is approximately [REDACTED] psig until it reaches Morro Bay.

QUESTION 3: What is the normal operating pressure for the line?

RESPONSE 3: The maximum operating pressure (MOP) of Line 306 is [REDACTED] psig from milepoint 0 until it reaches the Whitley Gardens area, at which point the MOP is approximately [REDACTED] psig until it reaches Morro Bay. The normal operating pressure of Line 306 ranges from [REDACTED] psig to [REDACTED] psig.

QUESTION 4: Has the pipeline ever been pressure tested? If so, when and how was it tested? Do you have the records for the test(s)?

RESPONSE 4: PG&E has valid pressure test records for all but approximately 400 feet of Line 306.

QUESTION 5: What is the protective coating for the pipeline and do you know what the condition of that coating is?

RESPONSE 5: Line 306 pipe coating is Hot Applied Asphalt (double wrapped) and is in good condition.

QUESTION 6: Does the line have a history of leaks?

RESPONSE 6: PG&E records indicate that there have been approximately 12 leak indications along Line 306 since 1965 (of which includes leaks on valves, fittings, etc.).

QUESTION 7: Has the line been inspected with in-line inspection (ILI) tools? If so, what was the date of the last ILI and do you have the records for that test? If not, is the line currently capable of running ILI tools? If not, have any analyses been prepared to determine the scope of work required to make ILI runs feasible for this facility?

RESPONSE 7: Line 306 has not been inspected by in-line inspection tools. To make Line 306 piggable, a launcher/receiver would need to be installed and several Main Line Valve assemblies would need to be replaced.

QUESTION 8: How many customers does PG&E serve off this line currently? Could you provide the classification of these customers, e.g., residential, small industrial and commercial, farm taps, etc.?

RESPONSE 8: A general customer count from PG&E's SynerGEE model indicates the following:

- The City of Avenal (2,325 residential and 104 commercial)
- Prison (1)
- Farm (1)
- Paso Robles to Templeton (20 residential and 6 vineyards)
- Approximately 13 SoCal Taps (~30 residential)

QUESTION 9: What is the typical demand for these customers in the summer and in the winter? What has been the peak load for these customers?

RESPONSE 9: The data below are based on PG&E's summer and typical winter model.

- Summer (peak=65 MCFH, daily total = 1,500 MCFD)
- Typical Winter (peak= 100 MCFH, daily total = 2,000 MCFD)

PG&E Line 306 Potential Acquisition Documentation

10/31/18

Engineering Research/Due Diligence

- Conducted in February-March 2017 onsite with PG&E Subject Matter Experts present
- Due diligence complete and no significant issues found
- 71 miles [REDACTED] line is not piggable
- Contains ~400 feet of untested pipeline
- Some crossings in need of O&M work
- Possible may have to replace crossing of Morro Creek
- Total estimated cost (25% contingency) to make piggable and necessary repairs/upgrades: **\$39.5 million**
- Appraisal conducted by third party appraiser: **\$33.3 million** appraised value (page 93 of pdf)
- PG&E remaining book cost remaining **\$2.8 million**

Land Valuation/Due Diligence

- Easements/land use appraised for **\$7.3 million**
- Due diligence complete and no missing rights found
- Forest Service will require new assignment for existing pipeline
- PG&E will have to issue easement to SoCalGas for ~5 mile portion in PG&E power line easement

Environmental Due Diligence

- Conducted per ASTM E 1527-13 Phase I
- Due diligence complete and no significant issues noted
- Received Environmental approval

Final Purchase Agreement

- Reviewed and updated by Legal [REDACTED] awaiting final legal clause
- All exhibits and schedules reviewed
- Routing for IRC approval, Board approval obtained in August for **\$25 million** purchase price
- Requires PG&E to obtain regulatory approval

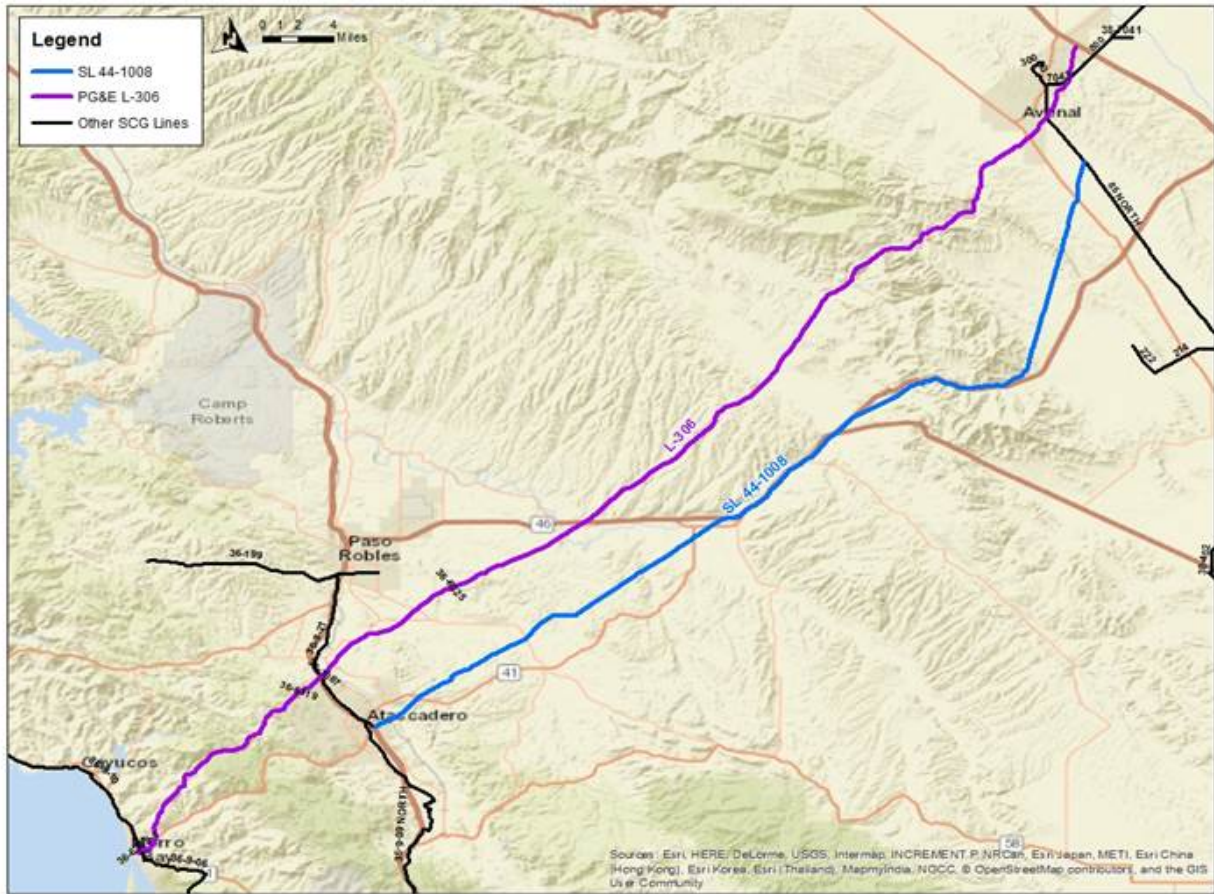
PG&E Recent Contact Update

- PG&E indicated legal clause not approved [REDACTED] to work on or escalate to General Counsel)
- Indicated they have a compliance item to complete by the end of 2019
- Stated they are near to filing 851 application after we execute agreement

PG&E Line 306 – Alternatives to Replacing Line 44-1008

Executive Summary

PG&E Line 306 is a 70 mile long, [REDACTED] pipeline, installed in 1962, that approximately follows SoCalGas' Supply Line (SL) 44-1008 alignment. SL 44-1008 is approximately 50 miles long (difference is distance to Morro Bay [REDACTED] pipeline (installed in 1937) and is a PSEP Phase 1B replacement. The scoping estimate (Class 4 parametric) for full replacement of SL 44-1008 is \$246 million. PG&E Line 306 is being offered for purchase consideration by PG&E due to the closure of the Morro Bay Power Plant.



A team of nine members (listed in Appendix A) conducted a second data room visit at PG&E in February/March of 2017 to perform a longitudinal review to evaluate the line's current condition. The visit also identified potential updates needed and to establish a go/no go decision for potential purchase. The line was evaluated using the criteria shown in Appendix B. The team was broken into three sub-teams to review the pipeline records:

- Cathodic protection history and status
- GIS/Engineering/Pigability
- Maintenance records

The overall team concluded that PG&E Line 306 was in good condition for a pipeline of that vintage and can be considered for purchase.

Summary statements for each data stream are shown below with further details in the body of this report.

- Cathodic protection is applied via impressed current and has been maintained. The entire line is one CP area and meets the 850 mV criteria. Several new test points were recently installed and additional test points are scheduled to be installed (CPUC finding on test point spacing). History indicates PG&E has upgraded some rectifiers, associated anode beds and is working on an induced AC interference study for a section of pipeline influenced by the parallel overhead PG&E high voltage transmission line. This AC study would need to be completed and appropriate mitigation measures taken and monitored on a regular basis going forward. The line is in good condition and properly maintained from a cathodic protection perspective. No immediate items were identified by the CP team.
- GIS/Engineering/Pigability was reviewed from PG&E's detailed listing of all components in the pipeline, MAOP validation and supporting documentation. Some plug valves would require replacement for pigging and some unknown fittings will be estimated for replacement. Approximately 400 feet of the pipeline lacks sufficient pressure test records and would be considered Category Four. The pipeline is currently not piggable and will be made piggable if acquired. Only one HCA exists near the end of the pipeline. Good material, installation and pressure test records exist for the pipeline except for the 400 feet identified as Category Four. No immediate items were identified by the GIS/Engineering/Pigability team.
- Maintenance records for the past several years were reviewed. Leakage records show only small, above ground leaks on regulation facilities. Patrolling records indicate four segments of line are exposed with only one identified as a span. The Morro Creek crossing may require replacement to ensure adequate depth due to erosion from extensive flooding since installation. Segments with less than 36" of cover were identified and noted. Generally, the line has more than 36" of cover and in many areas is much deeper. The M&R records were reviewed and maintenance is both current and complete. The team asked about any known environmental issues and PG&E stated there are none known at this time. No immediate items were identified by the Maintenance team.

Background

PSEP has a project to replace Line 44-1008 (approximately 50 miles) for Phase 1B. This pipeline is one of the critical feeds into the northern coastal system and connects supply from Line 85 to the coastal system. It is a [REDACTED] pipeline operating at [REDACTED]. The line is not piggable and pre-1946 (1937 install year) meeting the criteria for replacement under PSEP. A scoping estimate (Class 4 parametric) was done to evaluate the potential replacement cost of 44-1008 to compare to potential alternative options. The estimate indicated the replacement cost as approximately \$246 million. The PSEP team completed the options analysis below and presented it to stakeholder groups for review.

Options included:

1. Full replacement – This option is being evaluated. The Request for Engineering Review (RER) recommends the pipeline be replaced with [REDACTED] for system considerations.
2. Installation of 25 miles of [REDACTED] pipeline to reinforce the central coastal system near Atascadero and abandonment of 44-1008 – This option reduces system supply diversity to the coastal system and with the abandonment of 44-1008, eliminates the connection to Central Valley supply. There are currently several taps to SoCalGas and PG&E customers from 44-1008. These customers would have to be served from alternate sources. Also, there was not significant excess supply in this area of the system and this reinforcement would not keep ends of system supplied during peak events.
3. Add compression to system – Due to the small diameter pipe in the system in this area and lower system pressures, compression was not a viable alternative.
4. Take service from PG&E – SoCalGas approached PG&E and PG&E stated their preference if for SoCalGas to consider acquiring the line rather than to provide taps/interconnects into the SoCalGas system. They recommended SoCalGas consider purchasing PG&E Line 306.
5. Purchase PG&E Line 306 – being evaluated

The purpose of this white paper is to review option 5 fully.

Analysis

Throughout the options analysis above, preparations for a visit to PG&E to evaluate the overall condition of Line 306 were ongoing. The PSEP team prepared an outline of a “Longitudinal Review” of the pipeline records and overall condition. A longitudinal review attempts to review three basic streams of data and align them along the transmission pipeline to determine if any segments require retrofitting, upgrades, replacement, testing, etc.

PG&E gathered the records and agreed to have all available Subject Matter Experts (SMEs) nearby or available by phone. A PG&E transmission engineer was the host to our team for the entire week and assisted with additional records requests, clarifications and reaching out to the various SMEs. Due to this additional layer of assistance requested and provided by PG&E, the visit was successful in completing the longitudinal review.

The visit to PG&E occurred from February 27, 2017-March 2, 2017. Nine members of the team (listed in Appendix A) were onsite during the week to assist with the longitudinal review. They were broken into three teams to assess the three data streams as shown in Appendix B. Daily reports were returned from the visit and can be viewed in Appendix C.

Each team was asked to summarize their work for the week on the last day. These summaries are noted below:

1. CP Team
 - a. No corrosion leaks noted
 - b. AC mitigation plan will be ongoing process
 - c. Current requirements for pipeline less than 1 A/mile, indicating good protection and coating
 - d. May need some deep wells installed to meet SoCalGas standards
 - e. Coating noted as disbonded on DA report (for 1,200' HCA at end of pipeline)
 - f. All pipeline meets 850 mV criteria
 - g. No immediate items noted
2. GIS/Piggability/Engineering Team
 - a. Good Acceptable material and test records for line overall (140-400 ft. with no test records, to be addressed by PSEP)
 - b. Some fittings show "Unknown" and will be earmarked for replacement unless further details are uncovered in data requests
 - c. SoCalGas prefers to keep the connection to PG&E system for 306 at Kettleman Compressor Station to allow for operational flexibility (the intent is for a connection to Line 85 to be the primary feed)
 - d. Class location process was reviewed
 - e. No immediate items noted
3. Remediation/Maintenance/Compliance Team
 - a. 74 segments noted as less than 36" of cover, need to review
 - b. Morro Creek might need replacement
 - c. Maintenance records indicate pipe and coating in fair to good condition
 - d. Other two exposed segments would need wrap and evaluation
 - e. No immediate items noted

Following the week's visit, each team prepared a description of their research and notes for the week.

1. CP Team

The Cathodic Protection components analyzed consisted of rectifiers, anode beds, casings, ECDA surveys, and AC interference. There are a total of eight rectifier/current sources on L-306. All cathodic protection stations will require upgrading to include installation of electric meters (due to transfer to SoCalGas), with the exception of the single solar unit at [REDACTED]. A new CPS installation will likely be required to replace the location of the unit to be

abandoned at [REDACTED]. In addition, several shallow well installations will require replacements with deep well anodes. Twenty-nine Coupon Test Stations (CTS) were installed within 2015 – 2016. There will be eight additional CTS's to be installed in 2017 to equal one station per mile. This was to satisfy CPUC audit findings on inadequate test stations. AC interference has been identified on L-306 between [REDACTED] and [REDACTED] testing and mitigation are ongoing. There will be additional reports to follow in the future. There were seven casings identified. One casing at a railroad crossing is likely shorted and will need to be evaluated to determine condition and potential repair measures. All coating found to be hot applied asphalt (HAA) with no indications of asbestos in laboratory testing. ECDA and SCCDA inspections were completed in 2007, 2011, 2012 and 2014. Inspections at all direct examination sites showed HAA coating to be in fair to poor condition with significant disbonding or missing coating. Corrosion less than 20% wall loss found at all dig sites.

Cased Pipe

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Rectifiers

End Stationing or Milepost	Type of CP Applied	CP Criteria	Readings Range - Volts	Readings Range - Amps	Read Date
[REDACTED]	Rectifier	0.85	8.00 V	11.40 A	1/13/2017
[REDACTED]	Rectifier	0.85	9.00 V	7.60 A	1/13/2017
[REDACTED]	Rectifier	0.85	12.00 V	13.90 A	1/27/2017
[REDACTED]	Rectifier	0.85	4.00 V	9.80 A	1/13/2017
[REDACTED]	Rectifier	0.85	6.00V	6.00 A	1/19/2017
[REDACTED]	Rectifier	0.85	6.00 V	2.90 A	1/19/2017
[REDACTED]	Rectifier	0.85	3.00 V	1.50 A	1/19/2017
[REDACTED]	Rectifier	0.85	37.00 V	6.10 A	1/20/2017

2. GIS/Piggability/Engineering Team

Ells & Bends

All [REDACTED] are piggable. However, of the 103 “unknown” Elbows, only 28 were installed at a different time than the [REDACTED] (1962). And of those 28 unknown elbows, only 14 have an angle greater than [REDACTED]. Engineering recommends replacing these 14 elbows.

183 - [REDACTED]

- 167 - 8/28/1962 Install
- 11 - 8/21/1967 Install
- 5 - 12/14/1969

103 - Unknown

- 75 - 8/28/1962 Install (assumption is these are the same as the 167 above)
- 28 - 6/7/1973 Install
 - 14 - Angle 0 – 30 (Assume these are piggable, even if less than [REDACTED])
 - 14 - Angle 30 – 45

Additionally, all elbows that are back-to-back (less than 4 feet of pipe between) will need to be replaced as well. There are a total of 8 elbows that meet are close together that will need to be replaced.

Back to Back Elbows (less than [REDACTED])

Elbow 1&2 (PFL – 31 & 33)

- [REDACTED]
- [REDACTED]

Elbow 3&4 (PFL – 4150 & 4152)

- [REDACTED]
- [REDACTED]

Elbow 5&6 (PFL – 4278 & 4280)

- [REDACTED]
- [REDACTED]

Elbow 7&8 (PFL – 4284 & 4286)

- [REDACTED]
- [REDACTED]

Field Bends

No field bends greater than 6.6 degrees.

Tee's, Taps & Probes

During our follow up with SoCalGas' Pipeline Integrity after the data room visit, tees, taps and probes were inquired about. Based on the documentation that was reviewed at PG&E, the majority of the existing taps are [redacted] and smaller. A Data Request (DR) for the Pipeline Feature List (PFL) was made and will be used to research tees that may require to be barred [redacted] and type and size of all taps.

Drips & Drains

A DR for the PFL was made and will be used to research if there are any drips/drains existing on the pipeline. If there are, most likely they will need to be replaced or removed depending on where they are located. One drip was identified at the end of the pipeline downstream of our future interconnection point, which will be abandoned by PG&E prior to potential acquisition.

Launchers & Receivers

L306 is not currently piggable, and new launchers and receivers will need to be installed. After reviewing with Pipeline Integrity, a reasonable assumption would be to install a launcher at [redacted] on the east end of the pipeline, a receiver and launcher at the Estrella PLS at [redacted] and a receiver at the existing interconnect on the west end. Pipeline pressures and flowrates will dictate what the requirements will be for the distance recommendations between launchers & receivers. A hydraulic analysis will need to be performed to validate these assumptions.

Valve Information

There are a total of 8 valves on this line. Five (5) of them are contained within Kettleman Compressor Station and Estrella Pressure Limiting Station. There are three (3) main line valves, two (2) of which will need to be replaced with full-port ball valves since they are plug valves and therefore, not piggable. Engineering suggests moving the two replaced valves closer to the fault crossings, if feasible.

PFL	Valve Type	Valve Name	Size	Class	Approx. MP	Location
28	[redacted]					
312	[redacted]					
472	[redacted]					
3835	[redacted]					
3841	[redacted]					
3847	[redacted]					
3857	[redacted]					
4007	[redacted]					

After following up with the PSEP Valve Team, automation is required for all [redacted] and greater, 20% SMYS and greater valves. All 3 mainline valves (MLV) meet this requirement and will require automation. An additional new MLV may be required and should be considered in the retrofit estimate within 1-mile upstream of the fault line. For DOT Transmission pipelines the MLV spacing is every 20 miles for Class 1, every 15 miles in Class 2 and every 8 miles in Class 3 locations. A detailed Pipeline Feature List with stationing to depict where the class location changes are will be used to determine MLV spacing compliance.

In addition, since this pipeline meets PSEP’s requirement for automation, each tap [redacted] and larger will require installation of a check valve to prevent backflow. Bridled MLV’s will also need to be equipped with check valves or remotely controlled valves to prevent backflow around the MLV’s.

Regulator/Compressor Stations

L306 is a [redacted] natural gas pipeline that starts out at Kettleman Compressor Station ([redacted] line) and currently extends approximately 70 miles to Morro Bay Compressor Station ([redacted] line). At [redacted] PG&E installed Estrella Pressure Limiting Station ([redacted] line) to reduce the pressure of the downstream pipeline from [redacted] to be in compliance with a Class Location Changes (2 to 3). In 2017, it was decided that PG&E would abandon the line that feeds the Morro Bay Compressor Station (and Morro Bay Power Plant, which has been decommissioned). The pipeline will continue just past the SoCalGas inter-tie at MP 69.8 and be cut and capped.

Regulator/Compressor Stations		
Station Name	Approx. MP	Pipe Size (in)
Kettleman Compressor Station	[redacted]	
Estrella Pressure Limiting Station		
Morro Bay Compressor Station*		
*Note: Morro Bay Compressor Station is being abandoned.		

Pipe Diameter Changes

There are multiple pipeline diameter changes; however, many of these will be abandoned when the Morro Bay Power Plant section is abandoned (prior to proposed SoCalGas acquisition). The first pipe diameter change comes out of the Kettleman Compressor Station – [redacted] The second diameter change comes at the inlet and outlet of the Estrella PLS – [redacted] The third diameter change comes at the SoCalGas Inter-tie – [redacted] The fourth diameter change comes at the drip leg – [redacted] And the final pipeline diameter change comes at the Morro Bay Compressor Station [redacted] Please note that anything downstream of the SoCalGas tap at Morro Bay will be abandoned per a PG&E request (reviewed and approved by SoCalGas).

There are no issues with the pipe diameters in regards to pigability once the proposed valves are replaced.

Pipe Diameter Change					
PFL	Approx. MP	OD 1	OD 2	Reason Change	Comments
4413	[REDACTED]			SoCal Gas Inter-tie	
4418				External Drip	To be abandoned
4421				External Drip	To be abandoned
4424				External Drip	To be abandoned
4427				External Drip	To be abandoned
4430				External Drip	To be abandoned
3835				Estrella PLS	
4434				Morro Bay CS	To be abandoned

Taps to Other Entities

Taps to PG&E will be added to the current Exchange Agreement.

L-306 at milepost [REDACTED] City of Avenal (~2,460 customers), maximum hourly volume was approximately 55 MCFH and daily volume is 750 MCFD based on Cold Winter Day (CWD) modeling and 2015-2016 historical SM data.

L-306 at [REDACTED] Avenal Prison, based on CWD modeling and year 2016 AMR Data, maximum hourly volume was approximately 90 MCFH and daily volume 1600 MCFD.

L-306 at [REDACTED] 4 Taps (2 Vineyards (Cass and Gallo*) and 20 residential customers), based on CWD modeling and year 2016 historical SM Data, maximum hourly volume was approximately 50 MCFH and daily volume is 450 MCFD.

**Note much of the load from the vineyards/wineries occurs during the spring/summer months*

L-306 at [REDACTED] Paso Robles residents, maximum hourly volume was approximately 1 MCFH and daily volume 7 MCFD based on CWD modeling and historical SM Data for 2016.

L-306 at [REDACTED] multiple Taps to SoCal Gas. Please note that PG&E does not have usage data for these taps.

L-306 Taps					
MP	Customer	Max. Hourly Load (mscfh)	Max. Daily Load (mscfd)	Data (yr)	Source
[REDACTED]	Avenal (City)	55	750	2015-2016	Smart Meter
	Avenal Prison	90	1600	2016	Smart Meter
	(2) Wineries & 20 Residents	50	450	2016	Smart Meter
	Residents (Paso Robles)	1	7	2016	Smart Meter
	No usage data for taps	N/A	N/A	N/A	N/A

Class Location Changes

A data review of PG&E Line 306 was completed in January 13th and 14th, 2016. Although data for CP, coating, valves, right of ways, leak history, pipeline depth and environmental was reviewed during this visit, there was an additional request for more data. Part of this additional request was for PG&E to provide copies of their Class Location Surveys for Line 306. Unfortunately, no further data was sent to SoCalGas for this request. However, on the subsequent visit with PG&E during the week of February 27, 2016, the SoCalGas GIS/Engineering sub-team met with PG&E's [REDACTED] (an engineer from the MAOP Engineering Dept) to go over the Class Location data.

PG&E used their [REDACTED] to display the different class locations Line 306 is operating within. The SoCalGas sub-team was able to verify through PG&E's [REDACTED] that Line 306 is operating in three different class locations (i.e. Class 1, 2 and 3). The first 41.6 miles ([REDACTED]) is operating in a class 1 location. At [REDACTED] the class location changes from a Class 1 to a Class 3 location. At this location, PG&E installed a pressure limiting station (PLS) that reduced the Design MAOP from [REDACTED]. The Class 3 segments extend from [REDACTED] and are all operating at or below [REDACTED]. Due to this info, the installation of the PLS was most likely completed due to the class location change but it could not be verified with the PG&E team that was available. The remaining segments of Line 306 from [REDACTED] to the end of the line at [REDACTED] are operating in the three different class locations and at a Design MAOP of [REDACTED].

PG&E's pipelines are all digitized and in their [REDACTED]. They are transitioning to a new system called [REDACTED] that is in production but is not a final product as of this meeting. PG&E completes aerial patrol for all their transmission pipelines and the frequency of those patrols is per code. They look for any construction activity and if anything is spotted during an aerial patrol a subsequent ground patrol will be completed to

verify what was captured during the aerial patrol. In addition, aerial imagery is captured via a 3rd party and any changes in building count, dwelling units, or any structure used for human occupancy is sent to PG&E and is captured in their [REDACTED]

Strength Test Records

While a thorough review won't be conducted until we receive PG&E's Pipeline Feature List (PFL), a high level overview of the Strength Test Records indicate that adequate records exist for a majority of the pipeline. It is assumed by Engineering that after looking at these records, there is approximately 140-400 feet of pipeline/features that do not have records.

Pig Launchers/Receivers

Currently, there are no pig launchers/receivers on this line. A total of four (4) launchers/receivers will need to be installed: One (1) at Kettleman Compressor Station, two (2) on either side of the Estrella Pressure Limiting Station, and one (1) at the end of the line near the SoCalGas Inter-tie to 36-9-10.

3. Remediation/Maintenance/Compliance Team

Leak Survey

Leak survey is performed by aerial and if any indications, we noted they follow-up with foot survey to verify if leakage exists. If so, an Aform (PG&E's maintenance record) was generated.

Leaks

The team reviewed a workbook (L-306Leaks.xls) and noted 14 leaks were detected. One is on pipe ([REDACTED] indicated [REDACTED] in a vault not yet repaired). The remaining 13 above ground leaks were all Code 3's.

No orders were found indicating corrosion as a leakage cause. Leakage records show only small, above ground leaks on regulation facilities. No leaks were identified that related to seams, corrosion or other threats on the main pipeline. Overall, there are no indications of leakage concerns based on the information reviewed.

Excavation Damage

During the leak review, some evidence of previous excavation damage was noted. The previous DRs indicated no excavation damage had occurred. The following locations were noted:

- [REDACTED] in 2003 – Repaired with [REDACTED] long sleeve.
- [REDACTED] in 2003 – Repaired with sleeve.
- [REDACTED] in 1982 – Repaired with weld sleeves

PG&E indicated they would revise the previous data request and provide all these documents and search for any other damages.

Reduced Cover

The team reviewed a workbook showing segments with less than 36" of cover (Reduced_Cover_306.xls). Seventy-five locations were found with reduced cover from 0" to 34" in depth. The measurements were taken electronically with a Pipeline Current Mapper (or equivalent). Four locations at 0" of cover (see spans below).

Valve Maintenance

There are three mainline valves (1 ball valve and 2 plug valves). All passed inspection with no indications of operating concerns (i.e. hard to turn). The plug valves will need to be replaced for pigability.

Spans

There are four locations that are exposed:

- [REDACTED] (Span 770) – This span will require recoating approximately 30 feet of pipe.
- [REDACTED] – This span will require recoating approximately 25 feet.
- [REDACTED] – This span will require recoating of unknown length.
- [REDACTED] – Morro Creek crossing is exposed and may require replacement by HDD under river. This is an environmentally sensitive area. It was unable to determine pipe condition at Morro Creek from records or a field visit due to overgrowth.

Maintenance Records (Aforms)

Nineteen maintenance records (Aforms) were provided and reviewed. The one concern identified from this review was the condition of the span at [REDACTED]. The span was 85 feet at Morro Creek. It will be further evaluated through a field visit. All other Aforms were due to PG&E maintenance and did not indicate any areas of concern from the records provided.

Pipeline Patrols

The team requested any patrol and inspection records. None were provided during the visit, but requested in the follow up data requests.

Customer Taps

There are seven customer taps plus the two interties to the SoCalGas system (Morro Bay and Edelman). Details were review in the Gas System Planning folder on PG&E's computers. Tap locations are recorded in the Longitudinal Workbook on the Maintenance tab.

Measurement & Regulation (M&R)

The M&R records were reviewed and maintenance is both current and complete. No immediate items were identified by the Maintenance team. Construction of the Estrella PLS is to Company standards based on drawing review and maintenance records review. A field visit to this site was also requested.

Environmental Concerns

PG&E responded there are currently no environmental concerns. The pipeline coating does not contain asbestos. Several sample reports were reviewed and all showed no asbestos contained in the HAA coating.

Cultural Concerns

The team requested information on any cultural concerns. None were known at the time of our visit.

Appendix A – PG&E Line 306 Longitudinal Review Team

Overall coordination:

- [REDACTED] (PSEP) – Program Director [REDACTED]

CP Team:

- [REDACTED] (PSEP) – Engineer II
- [REDACTED] (PI) – Technical Advisor II

GIS/Engineering/Pigability Team:

- [REDACTED] (Gas Transmission Ops) – Technical Services Manager
- [REDACTED] (Region) – Region Engineering Supervisor
- [REDACTED] (PSEP) – PSEP Project Manager
- [REDACTED] (PSEP) – Land Services Manager

Maintenance Team:

- [REDACTED] (Region) – Measurement Supervisor
- [REDACTED] (Region) – Area Manager/Gas Ops

Thank you to this team for traveling for a week and working extended days in PG&E's office to complete this longitudinal review.

Appendix B – Longitudinal Review - Three Data Streams

1. Cathodic Protection Records indicating miles/stationing for:
 - a. How many miles are on:
 - b. 100 mV protection?
 - c. Rectifiers? Location(s) of each and output plus categorize P/S readings along this segment as:
 - i. Less than 0.9 V
 - ii. Between 0.9 and 1.0 V
 - iii. Between 1.01 and 2.0 V
 - iv. Greater than 2.0 V
 - d. Anodes? Location(s) of each and output plus categorize P/S readings along this segment as:
 - i. Less than 0.9 V
 - ii. Between 0.9 and 1.0 V
 - iii. Between 1.01 and 2.0 V
 - iv. Greater than 2.0 V
 - e. Any records of MIC – Location, investigation and remediation records
2. GIS System to determine Piggability by total number and location of:
 - a. Ells
 - b. Bends
 - c. Other fittings in line
 - d. Valves (by type)
 - i. Ball
 - ii. Plug
 - iii. Gate
 - iv. Other
 - e. Pig launchers or receivers
 - f. Pipe diameter changes/specs
 - g. Regulator stations or Pressure Limiting Stations
 - h. Taps to other entities
3. Maintenance records for past five years:
 - a. Leaks (grade, location and disposition)
 - i. Cause of leak
 - ii. Repair methodology
 - iii. Leak repair order
 - b. Other pipeline digs
 - c. Any transmission integrity information:
 - i. ECDA
 - ii. ICDA
 - iii. SCCDA

4. Any integrity reports or plans for Line 306
5. Any known areas of asbestos or other environmental hazards
6. Description for tap along the line:
 - a. Milepost
 - b. Contract delivery pressure and volume
 - c. Facilities description
7. Any information on potential compliance items such as:
 - a. Shallow line
 - b. Down CP systems
 - c. Current leaks
 - d. Other action plans

Appendix C – Daily Reports on Longitudinal Review






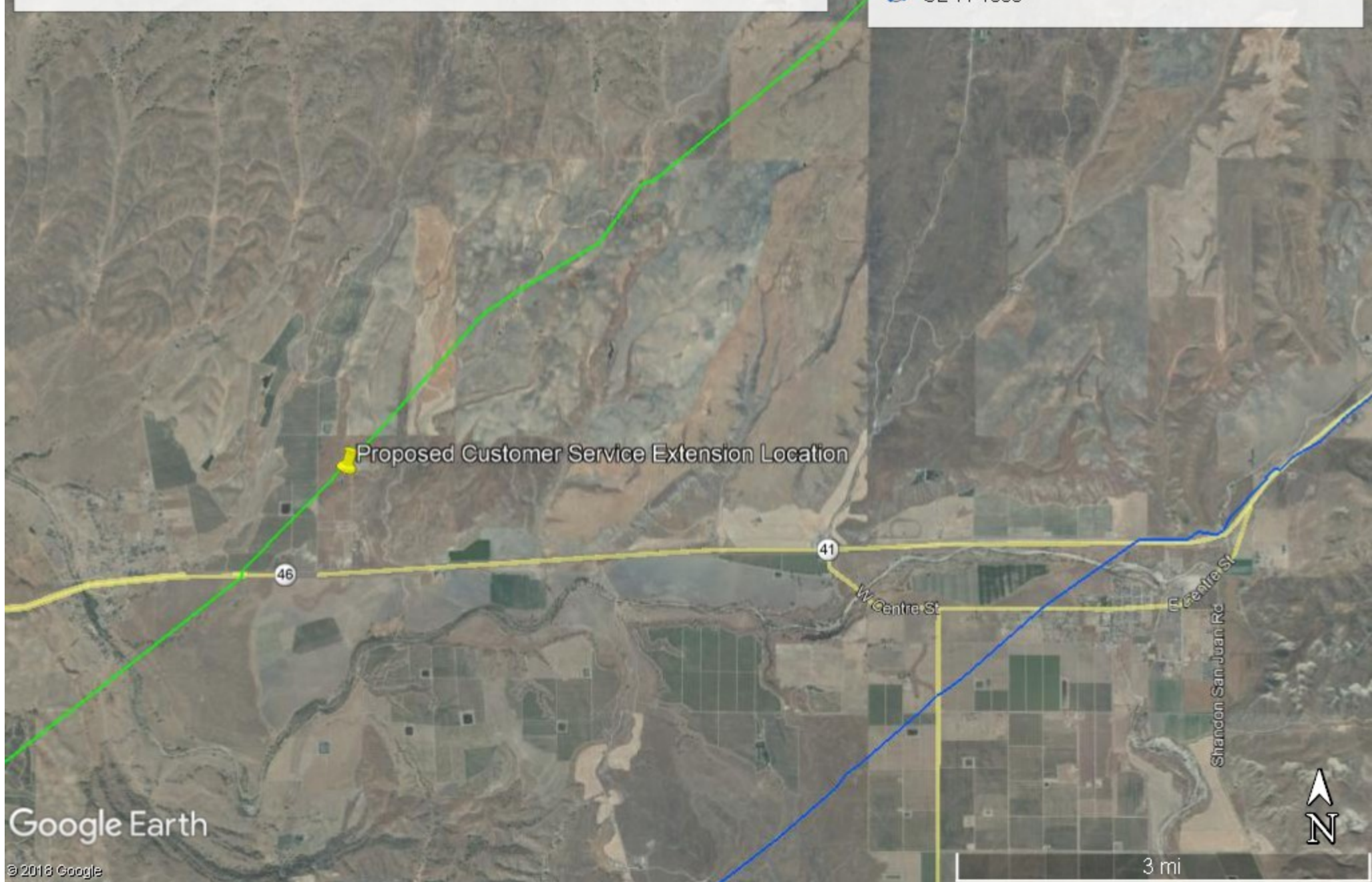
Line 306 Data Room
- Day 4 - Final Report

Customer Service Extension

An extension from PG&E L306 will be needed to SoCalGas SL 44-1008 to continue serving existing SoCalGas customers. The below pin represents a preliminary proposed location. Exact location of extension will be determined during project design.

Legend

-  PG&E L306
-  Proposed Customer Service Extension Location
-  SL 44-1008





Proposed Rectifier 1
Proposed Rectifier 1
Proposed Rectifier 2
Proposed Rectifier 2
Proposed Rectifier 3
Proposed Replace [redacted]
Proposed Replace [redacted]
Proposed Rectifier 4
Proposed New [redacted]
Proposed New [redacted]
Proposed Replace [redacted]
Proposed Customer Service Extension Location
Proposed Rectifier 5
Proposed Rectifier 5
Proposed Rectifier 6
Proposed Rectifier 6
Proposed Rectifier 6
Proposed Rectifier 7
Proposed Rectifier 7
Proposed Rectifier 7
Proposed New [redacted]
Proposed New [redacted]
Proposed New [redacted]
Proposed New [redacted]
Proposed 85' Morro Creek Crossing Replacement
Proposed 85' Morro Creek Crossing Replacement
Morrow Bay ID-431 B-N

Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat/ Copernicus
Data MBARI

Google Earth

36°25'00.38" N 121°24'08.20" W elev 0 ft eve alt 57.49 mi

