**SCG-02-WP**

**Workpapers Supporting the Prepared Direct Testimony of**

**Jordan A. Zeoli, Fidel Galvan, and Travis T. Sera**

**(Technical – Project Execution and Management, Volume IV of VII)**

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# I. LINE 3003 AND LINE 1205 [redacted] TIMP PROJECT

## A. Background and Summary

Line 3003 and Line 1205 [redacted] the Transmission Integrity Management Program (TIMP) Project assessed Line 3003, a [redacted] diameter transmission line that runs approximately 28.9 miles from [redacted] The Project also assessed Line 1205, a [redacted] diameter transmission line that runs approximately 7.7 miles from [redacted]. The pipelines are routed across Class 1, 2, 3, and 4 locations with 27.9 miles within High Consequence Area(s) (HCAs) and 8.7 miles within non-HCAs This Workpaper describes the activities and costs associated with two Inspections using In-Line Inspection (ILI) and the Direct Examinations made to four sites. The Project activities were located in Los Angeles County. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $4,031,866.

SoCalGas

## Final Workpaper for Line 3003 and Line 1205 [redacted] TIMP Project

### Table 1: General Project Information

| **Inspection Details** | |
|---|---|
| Pipelines | 3003 and 1205 |
| Segment | [redacted] |
| Inspection Type | [redacted] Tools |
| Location | Santa Clarita, Encino, Los Angeles |
| Class | 1, 2, 3, 4 |
| HCA Length | 27.9 miles |
| Vintage | Multiple vintages from [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Final Tool Run Date | [redacted] |
| Inspection Due Date | [redacted] |
| **Direct Examination Details** | |
| Site | 1 |
| Examination ID | [redacted] |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 2 |
| Examination ID | [redacted] |
| Mitigation/Remediation Type | No Repair |
| Within HCA | Yes |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 3 |
| Examination ID | [redacted] |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Final Workpaper for Line 3003 and Line 1205 [redacted] TIMP Project

Table 1: General Project Information (Continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 4 | | |
| Examination ID | [redacted] | | |
| Mitigation/Remediation Type | Replacement | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 1,244,617 | 2,787,249 | 4,031,866 |

## B. Maps and Images

Figure 1: Satellite Image of Line 3003 and Line 1205 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post Assessment. This Workpaper outlines construction activities during the Assessment process that typically occur during the Inspections including Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2 and 3 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 3003 and Line 1205 [redacted] TIMP Project for Inspection using ILI which was completed in two parts.
   a. Part 1 of the ILI from a temporary launcher site within [redacted] to a temporary receiver site near the intersection of [redacted].
   b. Part 2 of the ILI from a temporary launcher site near the intersection of [redacted] to a temporary receiver site near [redacted].
   c. The Project required installation of two temporary launcher sites, two temporary receiver sites, including all associated piping and filter separators.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspections using ILI, four Direct Examination sites were identified for validation.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of no repairs.
   c. Direct Examination Site #3 consisted of soft pad repairs.

d. Direct Examination Site #4 consisted of a 49 foot pipeline replacement.

3. Post Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in two additional examinations that will be addressed after 2023.
4. Final Project Scope: The final project scope of this Workpaper includes Inspections using ILI, and four Direct Examinations.

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 3003 | 28.9 mi | [redacted] | [redacted] | [redacted] | No |
| 3003 | 28.9 mi | [redacted] | [redacted] | [redacted] | No |
| 1205 | 7.7 mi | [redacted] | [redacted] | [redacted] | No |
| 1205 | 7.7 mi | [redacted] | [redacted] | [redacted] | No |

Table 3: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 3003 | 1 | No | No | 22 ft | Soft Pad | N/A | O&M |
| 3003 | 2 | Yes | No | 15 ft | No Repairs | N/A | O&M |
| 3003 | 3 | No | No | 24 ft | Soft Pad | N/A | O&M |
| 1205 | 4 | Yes | No | 53 ft | Replacement | 49 ft | Capital |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 3003 and Line 1205 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: The Project Team completed the Inspections in two parts by considering similar pipeline diameters and configurations for Line 3003 and Line 1205.
   a. Part 1 from a temporary launcher site within [redacted] to a temporary receiver site near the intersection of [redacted]. Part 1 inspected sections of Line 3003 that are [redacted] and [redacted] in diameter.
   b. Part 2 from a temporary launcher site near the intersection of [redacted] to a temporary receiver site near [redacted]. Part 2 inspected sections of Line 3003 that are [redacted] in diameter, and Line 1205 which is [redacted] in diameter.
2. HCA Threats:
   [redacted]
3. Pipe Vintage: Multiple vintages from [redacted].
4. Long Seam Type:

[redacted]

[redacted]

5. Inspection Tools and Technologies: The Project utilized [redacted] capabilities during the Inspection of the pipelines. [redacted] were also utilized in preparation for the Inspection.
6. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the pipelines could be inspected without system impacts.
7. Customer Impacts: No customer impacts.
8. Community Impacts: The Project caused occasional noise and traffic impacts at the following locations:
   a. The temporary launcher and receiver locations at [redacted]
   b. The temporary receiver location near [redacted].
9. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
10. Environmental:
11. Permit Restrictions: The Project Team obtained approved permits from the following entities for the Inspection:
    a. Utility Permit for excavation from the City of Los Angeles for the temporary launcher and receiver sites near [redacted].
    b. Construction Noise Variance Permit for Excavation from the Los Angeles Police Commission for construction activities for the temporary launcher and receiver sites near [redacted].
    c. Construction Noise Variance Permit for Excavation from the Los Angeles Police Commission for construction activities at the receiver site near [redacted].

d. Peak Hour Exemption from the City of Los Angeles for construction activities at the temporary receiver site near [redacted].

12. Land Use: No identified impacts.
13. Traffic Control: The Project obtained Traffic Control Plan (TCP) approval from the following entities:
    a. City of Los Angeles Department of Transportation for the temporary launcher and receiver assemblies at [redacted].
    b. City of Los Angeles Department of Transportation for the temporary receiver near [redacted].
14. Schedule Delay:
    a. The Project experienced schedule delays due to construction activities for another SoCalGas TIMP Project within [redacted].
    b. The Project experienced a delayed start for the Inspection due to a company-wide Restricted Maintenance Operations (RMO).

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were four Direct Examination Sites selected for validation within the Line 3003 and Line 1205 [redacted] TIMP Project.
    a. Direct Examination Site #1 consisted of soft pad repairs.
    b. Direct Examination Site #2 consisted of no repairs.
    c. Direct Examination Site #3 consisted of soft pad repairs.
    d. Direct Examination Site #4 consisted of a 49 foot pipeline replacement.
2. SRC/IRC: There were no Safety Related Conditions (SRCs) or Immediate Repair Conditions (IRCs) during the Direct Examinations.

3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Direct Examinations could be completed without system impacts.
4. Customer Impacts: No customer impacts.
5. Community Impacts:
   a. The Project Team was required to communicate project activities and timelines to locations in the vicinity of Direct Examination Site #2.
   b. The Project Team temporarily disturbed areas within private property for Direct Examination Site #2.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: The Project required compliance with the company's programmatic Lake or Streambed Alteration Agreement from California Department of Fish and Wildlife for Direct Examination Site #3.
8. Permit Restrictions: The Project Team obtained approved permits from the following entities:
   a. Excavation Permit from the City of Los Angeles, which allotted work hours from 9:00am to 4:00pm, Monday through Saturday for Direct Examination Site #4.
9. Land Use:
   a. The Project Team abided by existing Right of Ways on privately owned land for Direct Examination Site #1. Courtesy notifications were sent to the landowner.
   b. The Project Team obtained a temporary right of entry (TRE) from a private landowner for Direct Examination Site #2.
   c. The Project Team executed the work within SoCalGas owned property for Direct Examination Site #3.
   d. Direct Examination Site #4 was in the public Right of Way.
10. Traffic Control: The Project Team obtained approved Traffic Control Plans (TCP) from the City of Los Angeles Department of Transportation for Direct Examination Site #4.

11. Schedule Delay: The Project Team experienced delays to the project schedules due to coordination with another SoCalGas Project. Coordination was required before beginning construction activities for Direct Examination Site #4.

## D. Engineering, Design, and Constructability Factors – Post Assessment

During the Post Assessment step, the Project Team used the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipelines, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in two additional examinations that will be addressed after 2023.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractors that best met the criteria for this Project.

## B. Construction Schedule

Table 4: Construction Timeline – Inspection

| | |
|---|---|
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Inspection Due Date | [redacted] |

Table 5: Construction Timeline – Direct Examination

| | |
|---|---|
| **Mobilization 1: Direct Examination Sites #1, #2, and #3** | |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Mobilization 2: Direct Examination Site #4** | |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Figure 2: Temporary Launcher Site at [redacted]

Figure 3: Direct Examination Site #1

Figure 4: Direct Examination Site #2

Figure 5: Direct Examination Site #3

## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipelines to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design. Specific examples of cost efficiency actions taken on this Project were:

1. Bundling of Projects: The Project Team executed Inspections for two pipelines, Line 3003 and Line 1205, as one Project by utilizing an Inspection tool that is capable of inspecting multiple diameters. Considering similar pipeline diameters and configurations for Line 3003 and Line 1205.
2. Permit Conditions: The Project Team coordinated with another SoCalGas project to ensure excavation activities for the temporary receiver near [redacted] were included in a permit for a separate SoCalGas project.

## B. Actual Costs[2]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $4,031,866.

### Table 6: Actual Direct Costs[3]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 105,302 | 302,797 | 408,098 |
| Contract Costs | 742,672 | 1,260,975 | 2,003,648 |
| Material | 42,717 | 93,130 | 135,847 |
| Other Direct Charges | 146,138 | 873,079 | 1,019,217 |
| **Total Direct Costs** | 1,036,829 | 2,529,981 | 3,566,810 |

### Table 7: Actual Indirect Costs[4]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 204,371 | 257,268 | 461,640 |
| AFUDC | 2,632 | 0 | 2,632 |
| Property Taxes | 784 | 0 | 784 |
| **Total Indirect Costs** | 207,788 | 257,268 | 465,056 |

### Table 8: Total Costs[5]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 1,244,617 | 2,787,249 | 4,031,866 |

[2] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[3] Values may not add to total due to rounding.
[4] Ibid.
[5] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 3003 and Line 1205 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $4,031,866.

**End of Line 3003 and Line 1205 [redacted] TIMP Project Final Workpaper**

Final Workpaper for Line 3007 and Line 1170 [redacted] TIMP Project

# I. LINE 3007 AND LINE 1170 [redacted] TIMP PROJECT

## A. Background and Summary

Line 3007 and Line 1170 [redacted] Transmission Integrity Management Program (TIMP) Project assessed [redacted] diameter transmission lines that run approximately 10.4 miles from [redacted], through commercial and residential areas. The pipeline is routed across [redacted] locations with 8.6 miles within High Consequence Area(s) (HCAs) and 1.84 miles within non-HCAs. This Workpaper describes the activities and costs associated with Direct Examinations made to three sites. The Project activities were located in the City of Los Angeles. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $4,749,524.

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Final Workpaper for Line 3007 and Line 1170 [redacted] TIMP Project

Table 1: General Project Information

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 1 | | |
| Examination ID | [redacted] | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | Yes | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 2 | | |
| Examination ID | [redacted] | | |
| Mitigation/Remediation Type | Soft Pad and Replacement | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 3 | | |
| Examination ID | [redacted] | | |
| Mitigation/Remediation Type | Replacement | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 4,711,449 | 38,075 | 4,749,524 |

Final Workpaper for Line 3007 and Line 1170 [redacted]
[redacted] TIMP Project

## B. Maps and Images

Figure 1: Satellite Image of Line 3007 and Line 1170 [redacted]
[redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Table 2 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 3007 and Line 1170 [redacted] TIMP for Inspection using ILI, activities related to the ILI were completed for this Project before the TY 2019 General Rate Case (GRC) cycle.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, three Direct Examination sites were identified for validation.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs and a 42 foot pipe replacement.
   c. Direct Examination Site #3 consisted of a 31 foot pipe replacement.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in no additional examinations.
4. Final Project Scope: The final project scope of this Workpaper includes three Direct Examinations.

Table 2: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 3007 | 1 | Yes | No | 12 ft | Soft Pad | N/A | O&M |
| 3007 | 2 | Yes | No | 54 ft | Soft Pad and Replacement | 42 ft | Capital |
| 1170 | 3 | Yes | No | 39 ft | Replacement | 31 ft | Capital |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas completed the Inspection for the Line 3007 and Line 1170 [redacted] TIMP Project before the TY 2019 GRC cycle.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were three Direct Examination Sites selected for validation within the Line 3007 and Line 1170 [redacted] TIMP Project.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs and a 42 foot pipe replacement.

c. Direct Examination Site #3 consisted of a 31 foot pipe replacement.

2. SRC/IRC: There were no Safety Related Conditions (SRCs) or Immediate Repair Conditions (IRCs) during the Direct Examinations.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded:
   a. Coordination was required with another SoCalGas project to ensure system capacity was maintained.
   b. Isolation of Line 3007 for Direct Examination Site #2 repairs required a temporary bypass.
4. Customer Impacts: No customer impacts.
5. Community Impacts: No identified impacts.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: No identified impacts.
8. Permit Restrictions: Two initial Direct Examination locations were within a heavily trafficked intersection resulting in significant permit approval delays by the permitting agency. To avoid further impacts, the Project Team prepared and executed alternate Direct Examinations. The Project Team obtained the following approved permits:
   a. City of Los Angeles Excavation Permit for all Direct Examinations.
   b. City of Los Angeles Peak Hour Exemptions for Direct Examinations #1 and #2.
   c. City of Los Angeles Noise Variance Permit for Direct Examination #3.
   d. The Project experienced permitting constraints for Direct Examination #3 due to neighboring projects.
   e. Permitting approvals for all Direct Examinations required work to be completed during nighttime hours; Monday through Friday, from 9pm to 7am.
9. Land Use: The Project Team obtained the use of adjacent areas as temporary laydown yards.

10. Traffic Control: The Project Team obtained approved Traffic Control Plans (TCPs) from the City of Los Angeles for all Direct Examinations. Permitting approvals required all work to be completed Monday through Friday, from 9pm to 7am.
11. Constructability:
    a. The Project Team initially mobilized for Direct Examination Site #3 in [redacted], however upon potholing for this location, it was determined the depth of the pipe was greater than anticipated. Direct Examination Site #3 demobilized on [redacted] and remained so for approximately eight months.
    b. During the second mobilization for Direct Examination Site #3, the Project Team coordinated schedules with a neighboring project.
    c. Initial repairs for Direct Examination Site #2 consisted of soft pad repairs. Due to sited anomalies, the Project Team also completed a pipe replacement at the site.
    d. The Project Team completed Direct Examination Site #2 in conjunction with construction activities for a neighboring project.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractors that best met the criteria for this Project.

## B. Construction Schedule

Table 3: Construction Timeline – Direct Examination

| | |
|---|---|
| **Mobilization 1: Direct Examination Sites #1, #2, #3** | |
| Construction Start Date | [redacted] |
| Construction Completion Date | |
| **Mobilization 2: Direct Examination Site #3** | |
| Construction Start Date | [redacted] |
| Construction Completion Date | |

Figure 2: Direct Examination Site #1

Final Workpaper for Line 3007 and Line 1170 [redacted]
[redacted] TIMP Project

Figure 3: Direct Examination Site #2

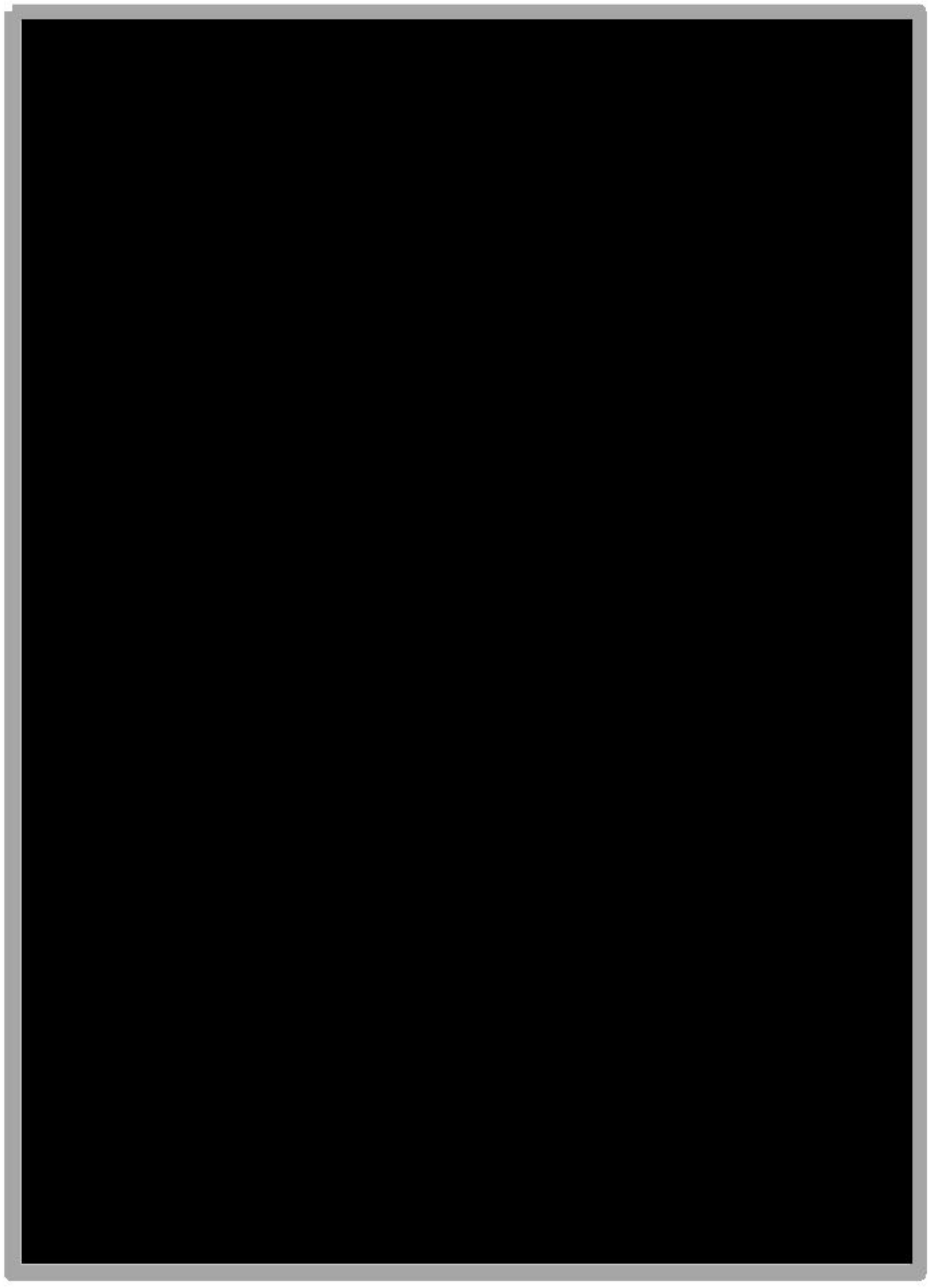

Figure 4: Direct Examination Site #2

Final Workpaper for Line 3007 and Line 1170 [redacted]
[redacted] TIMP Project

Figure 5: Direct Examination Site #3

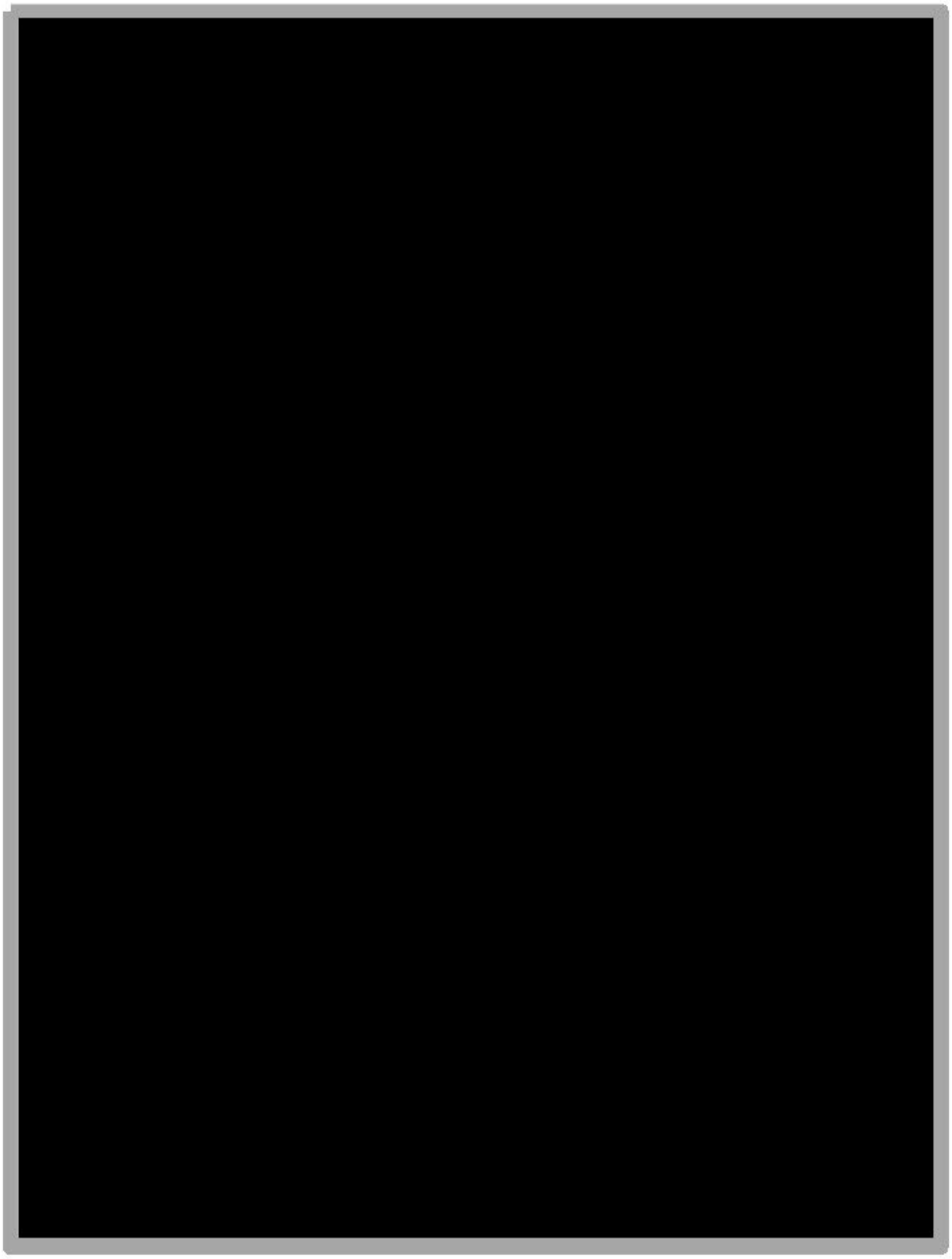

Figure 6: Direct Examination Site #3

## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas exercised due diligence in the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the Project plan and design. Specific examples of cost efficiency actions taken on this Project were:

1. Land Use: The Project Team obtained the use of adjacent areas as temporary laydown yards, reducing cost for additional laydown areas.
2. Permit Conditions: The Project Team coordinated permitting efforts with a neighboring SoCalGas project when completing Direct Examination Site #3.
3. Construction Execution: The Project Team coordinated with a neighboring SoCalGas project to complete construction for Direct Examination Site #2.

## B. Actual Costs[1]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $4,749,524.

### Table 4: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 345,272 | 5,091 | 350,363 |
| Contract Costs | 3,107,129 | 64,494 | 3,171,623 |
| Material | 106,863 | -51,816 | 55,047 |
| Other Direct Charges | 424,165 | 27,827 | 451,993 |
| **Total Direct Costs** | 3,983,429 | 45,596 | 4,029,025 |

### Table 5: Actual Indirect Costs[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 725,225 | -7,521 | 717,704 |
| AFUDC | 1,728 | 0 | 1,728 |
| Property Taxes | 1,067 | 0 | 1,067 |
| **Total Indirect Costs** | 728,020 | -7,521 | 720,499 |

### Table 6: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 4,711,449 | 38,075 | 4,749,524 |

[1] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[2] Values may not add to total due to rounding.
[3] Ibid.
[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 3007 and Line 1170 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and report findings of the assessment. The total loaded cost of the Project is $4,749,524.

**End of Line 3007 and Line 1170 [redacted] TIMP Project Final Workpaper**

# I. LINE 3008 [redacted] TIMP PROJECT

## A. Background and Summary

Line 3008 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a predominantly [redacted] diameter transmission line that runs approximately two miles from [redacted], through residential neighborhoods. The pipeline is routed across Class 1, and 3 locations with 1.4 miles within High Consequence Area(s) (HCAs) and 0.6 miles within non-HCAs. This Workpaper describes the activities and costs associated with an Inspection using In-Line Inspection (ILI) and the Direct Examinations made to three sites. The Project activities were located in the City of Santa Clarita. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $8,999,750.

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## Final Workpaper for Line 3008 [redacted] TIMP Project

### Table 1: General Project Information

| | |
|---|---|
| **Inspection Details** | |
| Pipeline | 3008 |
| Segment | [redacted] |
| Inspection Type | [redacted] ILI Tool |
| Location | Santa Clarita |
| Class | 1, 3 |
| HCA Length | 1.4 miles |
| Vintage | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Final Tool Run Date | [redacted] |
| Inspection Due Date | [redacted] |
| **Direct Examination Details** | |
| Site | 1 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | Yes |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

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## Final Workpaper for Line 3008 [redacted] TIMP Project

### Table 1: General Project Information (Continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 2 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 3 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 3,904,887 | 5,094,864 | 8,999,750 |

## B. Maps and Images

Figure 1: Satellite Image of Line 3008 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspection and Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2 and 3 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 3008 for Inspection using ILI.
   a. ILI from a temporary launcher site within [redacted] to a temporary receiver site on [redacted]
   b. The Project Team installed a permanent [redacted] valve at the receiver site.
   c. The Project required a permanent spool piece retrofit at the launcher site to facilitate future ILIs.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, three Direct Examination sites were identified for validation.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs.
   c. Direct Examination Site #3 consisted of soft pad repairs.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in no additional examinations.

4. Final Project Scope: The final project scope of this Workpaper includes Inspection using ILI and three Direct Examinations.

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 3008 | 2.1 mi | [redacted] | [redacted] | [redacted] | Yes |

Table 3: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 3008 | 1 | Yes | No | 15.5 ft | Soft Pad | N/A | O&M |
| 3008 | 2 | No | No | 15.5 ft | Soft Pad | N/A | O&M |
| 3008 | 3 | Yes | No | 15.5 ft | Soft Pad | N/A | O&M |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 3008 [redacted] Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: The Inspection length was two miles from a temporary launcher site within [redacted] to a temporary receiver site on [redacted]

2. HCA Threats:
   [redacted]
3. Pipe Vintage: [redacted]
4. Long Seam Type:
   [redacted]
5. Inspection Tools and Technologies: The Project utilized a combination tool with [redacted] capabilities during the Inspection of the pipeline. [redacted] were also utilized in preparation for the Inspection.
6. Inspection Retrofits: The Project Team installed a permanent [redacted] valve at the receiver site and a permanent spool piece at the launcher site.
7. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the pipeline could be inspected without system impacts.
8. Customer Impacts: The Project Team did not identify any anticipated service disruptions to customers.
9. Community Impacts: No identified impacts.
10. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
11. Environmental: No identified impacts.
12. Permit Restrictions: The Project Team required an Encroachment permit from the City of Santa Clarita.
13. Land Use: The Project Team obtained a Temporary Right of Entry (TRE) from a private property owner for extra workspace at the receiver site.
14. Traffic Control: The Project Team required a Traffic Control Plan (TCP) for the City of Santa Clarita at the receiver site.

## C. Engineering, Design, and Constructability Factors – Direct Examination

Continuing the planning process for the Line 3008 [redacted] TIMP Project, SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were three Direct Examination Sites selected for validation of the ILI within the Line 3008 [redacted] TIMP Project.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs.
   c. Direct Examination Site #3 consisted of soft pad repairs.
2. SRC/IRC: There were no SRCs or IRCs during the Direct Examinations.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Direct Examinations could be completed without system impacts.
4. Customer Impacts: The Project Team did not identify any anticipated service disruptions to customers.
5. Community Impacts: No identified impacts.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: No identified impacts.
8. Permit Restrictions: No identified impacts.
9. Land Use: The Project Team required a TRE for Direct Examination Site #1.
10. Traffic Control: The Project Team did not identify any traffic control needs at the site.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations that involved preventative and mitigative measures to enhance the overall integrity and safety of the pipeline.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

Table 4: Construction Timeline – Inspection

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

Table 5: Construction Timeline – Direct Examination

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

Final Workpaper for Line 3008 [redacted] TIMP Project

Figure 2: Receiver Site on [redacted] – Permanent Retrofits

Final Workpaper for Line 3008 [redacted] TIMP Project

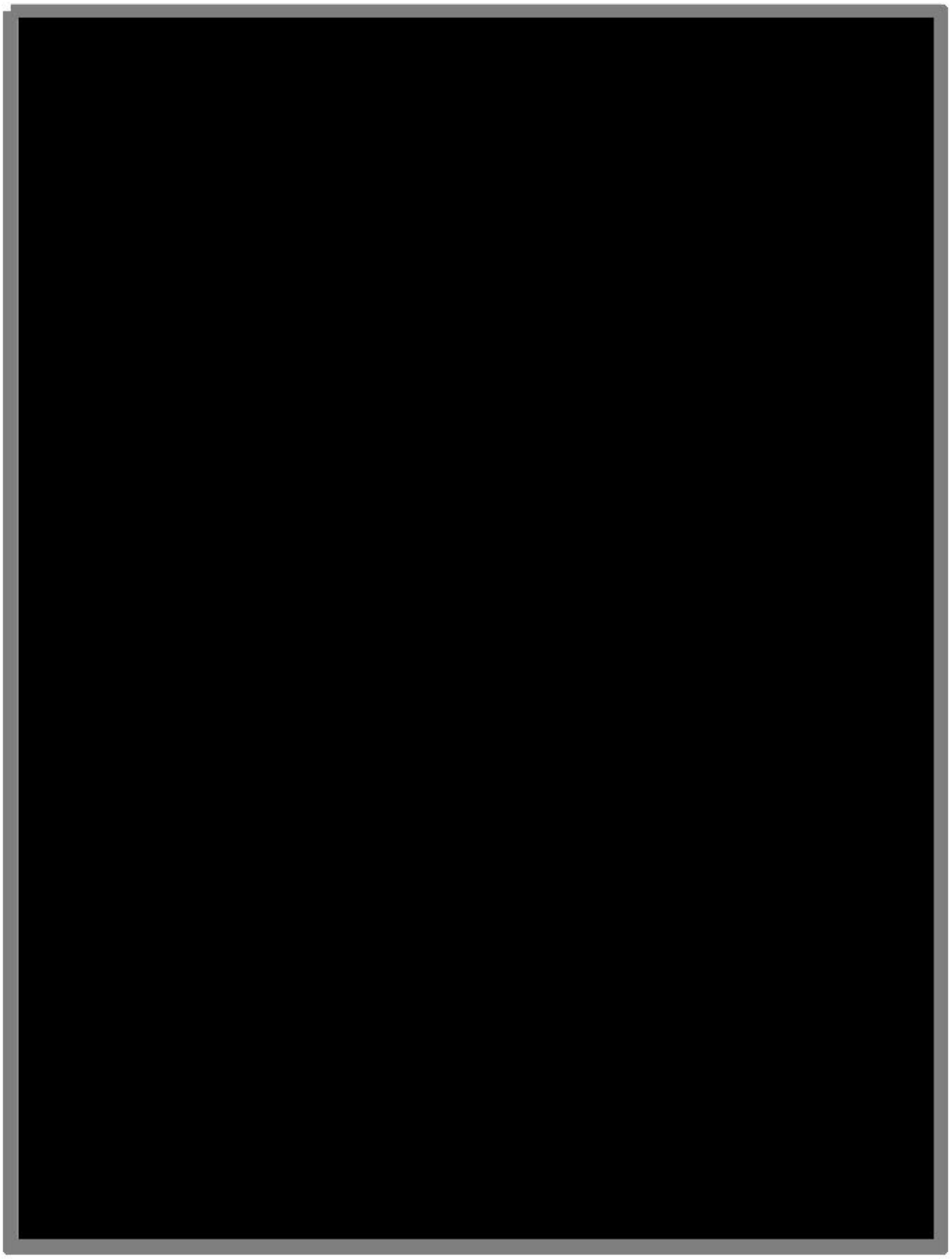
Figure 3: Launcher Site at [redacted] – Temporary Piping

Final Workpaper for Line 3008 [redacted] TIMP Project

Figure 4: Launcher Site at [redacted] – Permanent Spool Piece

Figure 5: Launcher Site at [redacted] – Temporary Launcher Piping

Figure 6: Direct Examination Site #1 Overview



## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design.

## B. Actual Costs[1]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $8,999,750.

### Table 6: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 332,273 | 254,643 | 586,916 |
| Contract Costs | 2,385,943 | 3,558,087 | 5,944,030 |
| Material | 185,996 | 270,681 | 456,676 |
| Other Direct Charges | 343,950 | 568,256 | 912,205 |
| **Total Direct Costs** | 3,248,161 | 4,651,667 | 7,899,828 |

### Table 7: Actual Indirect Costs[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 608,439 | 442,668 | 1,051,107 |
| AFUDC | 39,552 | 529 | 40,081 |
| Property Taxes | 8,735 | 0 | 8,735 |
| **Total Indirect Costs** | 656,726 | 443,197 | 1,099,922 |

### Table 8: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 3,904,887 | 5,094,864 | 8,999,750 |

[1] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[2] Values may not add to total due to rounding.
[3] Ibid.
[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 3008 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $8,999,750.

**End of Line 3008 [redacted] TIMP Project Final Workpaper**

# I. LINE 4000 PHASE 1 [redacted] TIMP PROJECT

## A. Background and Summary

Line 4000 Phase 1 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 76.4 miles from [redacted]. The pipeline is routed across Class 1, 2, and 3 locations with 8.8 miles within High Consequence Area(s) (HCAs) and 67.6 miles within non-HCAs. This Workpaper describes the activities and costs associated with a TIMP Assessment that includes an Inspection using In-Line Inspection (ILI), [redacted], the Direct Examinations made to six sites, and Post-Assessment examinations made to 26 sites. The Project activities were located in the cities of Newberry Springs, Lucerne Valley, and Fontana. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $63,177,343.

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## Final Workpaper for Line 4000 Phase 1 [redacted] TIMP Project

### Table 1: General Project Information

| | |
|---|---|
| **Inspection Details** | |
| Pipeline | 4000 |
| Segment | Phase 1 – [redacted] |
| Inspection Type | [redacted] ILI Tool |
| Location | [redacted] |
| Class | 1, 2, 3 |
| HCA Length | 8.8 miles |
| Vintage | Multiple vintages from [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | Multiple MAOP values from [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Final Tool Run Date | [redacted] |
| Inspection Due Date | [redacted] |
| **Direct Examination Details** | |
| Site | 1 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

[1] [redacted]

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 2 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 3 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| SRC/IRC | No |
| Within HCA | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 4 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| | |
|---|---|
| **Direct Examination Details** | |
| Site | 5 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | |
| SMYS | |
| Construction Start Date | |
| Construction Completion Date | |
| **Direct Examination Details** | |
| Site | 6 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | |
| SMYS | |
| Construction Start Date | |
| Construction Completion Date | |
| **Post-Assessment Details** | |
| Site | 1 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | |
| SMYS | |
| Construction Start Date | |
| Construction Completion Date | |

Table 1: General Project Information (Continued)

| **Post-Assessment Details** | |
|---|---|
| Site | 2 |
| Examination IDs | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Post-Assessment Details** | |
| Site | 3 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Post-Assessment Details** | |
| Site | 4 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Post-Assessment Details | |
|---|---|
| Site | 5 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Post-Assessment Details** | |
| Site | 6 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Post-Assessment Details** | |
| Site | 7 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

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Final Workpaper for Line 4000 Phase 1 [redacted] TIMP Project

Table 1: General Project Information (Continued)

| **Post-Assessment Details** | |
|---|---|
| Site | 8 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | |
| SMYS | |
| Construction Start Date | |
| Construction Completion Date | |
| **Post-Assessment Details** | |
| Site | 9 |
| Examination IDs | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | |
| SMYS | |
| Construction Start Date | |
| Construction Completion Date | |

Table 1: General Project Information (Continued)

| Post-Assessment Details | |
|---|---|
| Site | 10 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | |
| SMYS | |
| Construction Start Date | |
| Construction Completion Date | |
| **Post-Assessment Details** | |
| Site | 11 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | |
| SMYS | |
| Construction Start Date | |
| Construction Completion Date | |

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Final Workpaper for Line 4000 Phase 1 [redacted] TIMP Project

Table 1: General Project Information (Continued)

| Post-Assessment Details | |
|---|---|
| Site | 12 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Post-Assessment Details** | |
| Site | 13 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Post-Assessment Details** | |
| Site | 14 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

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Final Workpaper for Line 4000 Phase 1 [redacted] TIMP Project

Table 1: General Project Information (Continued)

| Post-Assessment Details | |
|---|---|
| Site | 15 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Post-Assessment Details** | |
| Site | 16 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Post-Assessment Details** | |
| Site | 17 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Post-Assessment Details | |
|---|---|
| Site | 18 |
| Examination ID | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Post-Assessment Details** | |
| Site | 19 |
| Examination IDs | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Post-Assessment Details** | |
| Site | 20 |
| Examination IDs | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

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Final Workpaper for Line 4000 Phase 1 [redacted] TIMP Project

Table 1: General Project Information (Continued)

| Post-Assessment Details | |
|---|---|
| Site | 21 |
| Examination IDs | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | |
| SMYS | |
| Construction Start Date | |
| Construction Completion Date | |
| **Post-Assessment Details** | |
| Site | 22 |
| Examination IDs | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | |
| SMYS | |
| Construction Start Date | |
| Construction Completion Date | |
| **Post-Assessment Details** | |
| Site | 23 |
| Examination IDs | [redacted] |
| Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | |
| SMYS | |
| Construction Start Date | |
| Construction Completion Date | |

Table 1: General Project Information (Continued)

| Post-Assessment Details | | | |
|---|---|---|---|
| Site | 24 | | |
| Examination ID | [redacted] | | |
| Remediation Type | Replacement | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | | | |
| SMYS | | | |
| Construction Start Date | | | |
| Construction Completion Date | | | |
| **Post-Assessment Details** | | | |
| Site | 25 | | |
| Examination IDs | [redacted] | | |
| Remediation Type | Replacement | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | | | |
| SMYS | | | |
| Construction Start Date | | | |
| Construction Completion Date | | | |
| **Post-Assessment Details** | | | |
| Site | 26 | | |
| Examination IDs | [redacted] | | |
| Remediation Type | Replacement | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | | | |
| SMYS | | | |
| Construction Start Date | | | |
| Construction Completion Date | | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 60,399,326 | 2,778,016 | 63,177,343 |

## B. Maps and Images

Figure 1: Satellite Image of Line 4000 Phase 1 [redacted] TIMP Project – Inspection and Direct Examinations

Figure 2: Satellite Image of Line 4000 Phase 1 [redacted] TIMP Project – Post-Assessment

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspection, Direct Examinations and Post-Assessment.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2, 3, and 4 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 4000 Phase 1 [redacted] TIMP Project for Inspection using ILI.
   a. ILI from a permanent launcher site within [redacted] to a permanent receiver site within [redacted]
   b. The Project installed a temporary filter separator at the permanent receiver site within [redacted]
   c. The Project installed 13 temporary span supports to withstand the weight of the Inspection tools.
   d. The Project also completed [redacted] to evaluate effectiveness of the pipeline Cathodic Protection (CP) system.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, six Direct Examination sites were identified for validation.
   a. Direct Examination Site #1 consisted of a 126 foot replacement.
   b. Direct Examination Site #2 consisted of a 114 foot replacement.
   c. Direct Examination Site #3 consisted of a 88 foot replacement.
   d. Direct Examination Site #4 consisted of a 107 foot replacement.

e. Direct Examination Site #5 consisted of a 66 foot replacement.
f. Direct Examination Site #6 consisted of a 60 foot replacement.

3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection and [redacted] resulted in 26 additional examinations for remediation.
   a. Post-Assessment Site #1 consisted of a 361 foot replacement.
   b. Post-Assessment Site #2 consisted of a combined 0.4 mile replacement for three examinations.
   c. Post-Assessment Site #3 consisted of a 243 foot replacement.
   d. Post-Assessment Site #4 consisted of a 124 foot replacement.
   e. Post-Assessment Site #5 consisted of a 0.3 mile replacement.
   f. Post-Assessment Site #6 consisted of a 215 foot replacement.
   g. Post-Assessment Site #7 consisted of a 43 foot replacement.
   h. Post-Assessment Site #8 consisted of a 559 foot replacement.
   i. Post-Assessment Site #9 consisted of a combined 0.3 mile replacement for four examinations.
   j. Post-Assessment Site #10 consisted of a combined 160 foot replacement for two examinations.
   k. Post-Assessment Site #11 consisted of a 597 foot replacement.
   l. Post-Assessment Site #12 consisted of a 170 foot replacement.
   m. Post-Assessment Site #13 consisted of a 721 foot replacement.
   n. Post-Assessment Site #14 consisted of a 77 foot replacement.
   o. Post-Assessment Site #15 consisted of a 520 foot replacement.
   p. Post-Assessment Site #16 consisted of a 402 foot replacement.
   q. Post-Assessment Site #17 consisted of a 125 foot replacement.
   r. Post-Assessment Site #18 consisted of a 252 foot replacement.
   s. Post-Assessment Site #19 consisted of a combined 0.2 mile replacement for two examinations.

t. Post-Assessment Site #20 consisted of a combined 439 foot replacement for two examinations.
u. Post-Assessment Site #21 consisted of a combined 393 foot replacement for two examinations.
v. Post-Assessment Site #22 consisted of a 795 foot replacement.
w. Post-Assessment Site #23 consisted of a combined 713 foot replacement for two examinations.
x. Post-Assessment Site #24 consisted of a 120 foot replacement.
y. Post-Assessment Site #25 consisted of a combined 481 foot replacement for two examinations.
z. Post-Assessment Site #26 consisted of a combined 720 foot replacement for two examinations.

4. Final Project Scope: The final project scope of this Workpaper includes Inspection using ILI, [redacted] six Direct Examinations and 26 Post-Assessment examinations.

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 4000 | 76.4 mi | [redacted] | [redacted] | [redacted] | No |

SoCalGas

## Final Workpaper for Line 4000 Phase 1 [redacted] TIMP Project

### Table 3: Final Inspection Project Scope – [redacted]

| Final Project Scope | | | |
|---|---|---|---|
| Line | Inspection Length | Threat Type | Survey Type |
| 4000 | 76.4 mi | [redacted] | [redacted] |

### Table 4: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 4000 | 1 | No | No | 141 ft | Replacement | 126 ft | Capital |
| 4000 | 2 | No | No | 113 ft | Replacement | 114 ft | Capital |
| 4000 | 3 | No | No | 99 ft | Replacement | 88 ft | Capital |
| 4000 | 4 | No | No | 107 ft | Replacement | 107 ft | Capital |
| 4000 | 5 | No | No | 44 ft | Replacement | 66 ft | Capital |
| 4000 | 6 | No | No | 59 ft | Replacement | 60 ft | Capital |

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Final Workpaper for Line 4000 Phase 1 [redacted] TIMP Project

Table 5: Final Post-Assessment Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 4000 | 1 | No | No | 372 ft | Replacement | 361 ft | Capital |
| 4000 | 2 | No | No | 0.4 mi | Replacement | 0.4 mi | Capital |
| 4000 | 3 | No | No | 250 ft | Replacement | 243 ft | Capital |
| 4000 | 4 | No | No | 130 ft | Replacement | 124 ft | Capital |
| 4000 | 5 | No | No | 0.3 mi | Replacement | 0.3 mi | Capital |
| 4000 | 6 | No | No | 224 ft | Replacement | 215 ft | Capital |
| 4000 | 7 | No | No | 50 ft | Replacement | 43 ft | Capital |
| 4000 | 8 | No | No | 566 ft | Replacement | 559 ft | Capital |
| 4000 | 9 | No | No | 0.3 mi | Replacement | 0.3 mi | Capital |
| 4000 | 10 | No | No | 171 ft | Replacement | 160 ft | Capital |
| 4000 | 11 | No | No | 608 ft | Replacement | 597 ft | Capital |
| 4000 | 12 | No | No | 170 ft | Replacement | 170 ft | Capital |
| 4000 | 13 | No | No | 722 ft | Replacement | 721 ft | Capital |
| 4000 | 14 | No | No | 90 ft | Replacement | 77 ft | Capital |
| 4000 | 15 | No | No | 530 ft | Replacement | 520 ft | Capital |
| 4000 | 16 | No | No | 371 ft | Replacement | 402 ft | Capital |
| 4000 | 17 | No | No | 130 ft | Replacement | 125 ft | Capital |
| 4000 | 18 | No | No | 263 ft | Replacement | 252 ft | Capital |
| 4000 | 19 | No | No | 0.2 mi | Replacement | 0.2 mi | Capital |
| 4000 | 20 | No | No | 450 ft | Replacement | 439 ft | Capital |
| 4000 | 21 | No | No | 402 ft | Replacement | 393 ft | Capital |
| 4000 | 22 | No | No | 833 ft | Replacement | 795 ft | Capital |
| 4000 | 23 | No | No | 730 ft | Replacement | 713 ft | Capital |
| 4000 | 24 | No | No | 130 ft | Replacement | 120 ft | Capital |
| 4000 | 25 | No | No | 510 ft | Replacement | 481 ft | Capital |
| 4000 | 26 | No | No | 700 ft | Replacement | 720 ft | Capital |

## B. Engineering, Design, and Planning Factors – Inspection

SoCalGas initiated the planning process for the Line 4000 Phase 1 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate assessment method(s), and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: The Inspection started at a permanent launcher site within [redacted] and ended at a permanent receiver site within [redacted]. The Project installed a filter separator at the receiver site to facilitate the Inspection.
2. HCA Threats:
   [redacted]
3. Pipe Vintage: Multiple vintages from [redacted].
4. Long Seam Type:
   [redacted]
5. Inspection Tools and Technologies: The Project utilized [redacted] capabilities during the Inspection of the pipeline. [redacted] were also utilized in preparation for the Inspection.
6. [redacted]

[redacted]

7. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Project could be completed without system impacts.
8. Customer Impacts: No customer impacts.
9. Community Impacts: No identified impacts.
10. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
11. Environmental: No identified impacts.
12. Permit Restrictions: The Project Team obtained a Right of Way (ROW) Road Maintenance Notice to Proceed Form from the United States Department of Agriculture.
13. Land Use: The Project Team utilized [redacted] as laydown yards.
14. Traffic Control: No identified impacts.
15. Constructability: The Project Team identified 15 spans within the Inspection that required 13 temporary span supports to withstand the weight of the Inspection tools.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were six Direct Examination Sites selected for validation within the Line 4000 Phase 1 [redacted] TIMP Project.
   a. Direct Examination Site #1 consisted of a 126 foot replacement.
   b. Direct Examination Site #2 consisted of a 114 foot replacement.
   c. Direct Examination Site #3 consisted of a 88 foot replacement.
   d. Direct Examination Site #4 consisted of a 107 foot replacement.
   e. Direct Examination Site #5 consisted of a 66 foot replacement.
   f. Direct Examination Site #6 consisted of a 60 foot replacement.

g. Additional analyses were incorporated with the Direct Examinations to evaluate pipeline conditions.

2. SRC/IRC: There were no Safety Related Conditions (SRCs) or Immediate Repair Conditions (IRCs) during the Direct Examinations.
3. Constructability: The Direct Examinations required full isolation of 32 miles of pipeline that was accomplished by temporary isolations from [redacted]
4. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Project could be completed without system impacts.
5. Customer Impacts: No customer impacts.
6. Community Impacts: No identified impacts.
7. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
8. Environmental: The Project required notification to the Bureau of Land Management and California Fish and Wildlife for coverage under SoCalGas programmatic California Desert Conservation Area (CDCA) Biological Opinion and the CDCA Memorandum of Understanding permits[3].
9. Permit Restrictions: No identified impacts.
10. Land Use: The Project Team obtained a Bureau of Land Management (BLM) Notice to Proceed for the Direct Examination Sites #1, #5 and #6.
11. Traffic Control: No identified impacts.

[3] Various work areas were identified as being in a geographical area addressed by a Biological Opinion for Ongoing Operations and Maintenance Activities on Southern California Gas Company's Pipeline System in the Southern California Deserts (BO) (USFWS, 1995) and California Endangered Species Act 2081 Memorandum of Understanding and Management Authorization (CESA MOU) (California Department of Fish and Wildlife [CDFW], 1997).

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required remediations, and to establish the next reassessment interval for the threats assessed. The Project Team also evaluated results of the [redacted] performed to evaluate the effectiveness of the pipeline Cathodic Protection (CP) system. These analyses resulted in 26 examinations for remediation and additional preventative and mitigative measures to enhance the overall integrity and safety of the pipeline. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Analysis:
   a. Post-Assessment Site #1 consisted of a 361 foot replacement.
   b. Post-Assessment Site #2 consisted of a combined 0.4 mile replacement for three examinations.
   c. Post-Assessment Site #3 consisted of a 243 foot replacement.
   d. Post-Assessment Site #4 consisted of a 124 foot replacement.
   e. Post-Assessment Site #5 consisted of a 0.3 mile replacement.
   f. Post-Assessment Site #6 consisted of a 215 foot replacement.
   g. Post-Assessment Site #7 consisted of a 43 foot replacement.
   h. Post-Assessment Site #8 consisted of a 559 foot replacement.
   i. Post-Assessment Site #9 consisted of a combined 0.3 mile replacement for four examinations.
   j. Post-Assessment Site #10 consisted of a combined 160 foot replacement for two examinations.
   k. Post-Assessment Site #11 consisted of a 597 foot replacement.
   l. Post-Assessment Site #12 consisted of a 170 foot replacement.
   m. Post-Assessment Site #13 consisted of a 721 foot replacement.
   n. Post-Assessment Site #14 consisted of a 77 foot replacement.
   o. Post-Assessment Site #15 consisted of a 520 foot replacement.

p. Post-Assessment Site #16 consisted of a 402 foot replacement.
q. Post-Assessment Site #17 consisted of a 125 foot replacement.
r. Post-Assessment Site #18 consisted of a 252 foot replacement.
s. Post-Assessment Site #19 consisted of a combined 0.2 mile replacement for two examinations.
t. Post-Assessment Site #20 consisted of a combined 439 foot replacement for two examinations.
u. Post-Assessment Site #21 consisted of a combined 393 foot replacement for two examinations.
v. Post-Assessment Site #22 consisted of a 795 foot replacement.
w. Post-Assessment Site #23 consisted of a combined 713 foot replacement for two examinations.
x. Post-Assessment Site #24 consisted of a 120 foot replacement.
y. Post-Assessment Site #25 consisted of a combined 481 foot replacement for two examinations.
z. Post-Assessment Site #26 consisted of a combined 720 foot replacement for two examinations.

2. SRC/IRC: There were no SRCs or IRCs during Post-Assessment.
3. Constructability:
   a. The Post-Assessment examinations required full isolation of 36.8 miles of the pipeline which was accomplished by temporary isolations near [redacted] and a valve station near [redacted]. As the Project progressed, the isolation segment was shortened, from [redacted]. At the completion of the isolation, the isolation locations required pipeline replacement totaling to 116 feet.
   b. The Project Team identified Post-Assessment Site #2 was located on a steep slope which required rockfall mitigation.
   c. The Project Team identified a monolithic insulating joint (MIJ) replacement was required for Post-Assessment Site #5.

4. System Analysis: The Project Team completed a review of the pipeline system to evaluate project feasibility, which concluded the Project required isolation of Line 4000 to complete the Post-Assessment examinations. Coordination was required for this isolation to minimize system impacts.
5. Customer Impacts: The Project Team identified one customer tap that required CNG during isolation of the segment. To minimize impacts, the Project Team prioritized construction activities for the Post-Assessment Sites that impacted customer service.
6. Community Impacts: No identified impacts.
7. Permit Restrictions: The Project Team obtained approved permits from the following entities:
   a. Road Excavation Permit from the County of San Bernardino Department of Public Works.
   b. The Mojave Desert Air Quality Management District required a dust control plan for various locations.
8. Substructures: The Project Team identified an existing vault at the location for Post-Assessment Site #5. The Project Team determined that the vault could be removed.
9. Environmental: The Project locations cross jurisdictional features[4] regulated by various Regional Water Quality Control Boards (RWQCB), and California Department of Fish and Wildlife (CDFW) and required the following:
   a. Colorado River Basin RWQCB 401 Water Quality Certification.
   b. CDFW Lake and Streambed Alteration Agreement.
10. Traffic Control: The Project Team obtained approved Traffic Control Plans (TCPs) for the [redacted] cut and cap location.
11. Land Use:
    a. The Project Team utilized two laydown yards for the Post-Assessment examinations. One laydown yard within [redacted] and the other at [redacted]

[4] Features such as waterways, creeks, and dry washes.

b. The Project Team obtained a Bureau of Land Management (BLM) Notice to Proceed for various Post-Assessment Sites.

12. Schedule Delays: The Project demobilized due to a change in pipeline contractor resulting in a one-month schedule delay and accelerated scheduling to meet isolation requirements.

13. Other Identified Risks: The Project Team installed a CP anode at each connection of replaced pipeline and existing pipeline.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractors that best met the criteria for this Project.

## B. Construction Schedule

### Table 6: Construction Timeline – Inspection

| | |
|---|---|
| Construction Start Date | [redacted] |
| Construction Completion Date | |
| Inspection Due Date | |

### Table 7: Construction Timeline – Direct Examination

| | |
|---|---|
| Construction Start Date | [redacted] |
| Construction Completion Date | |

### Table 8: Construction Timeline – Post-Assessment

| | |
|---|---|
| Construction Start Date | [redacted] |
| Construction Completion Date | |

[5] [redacted]

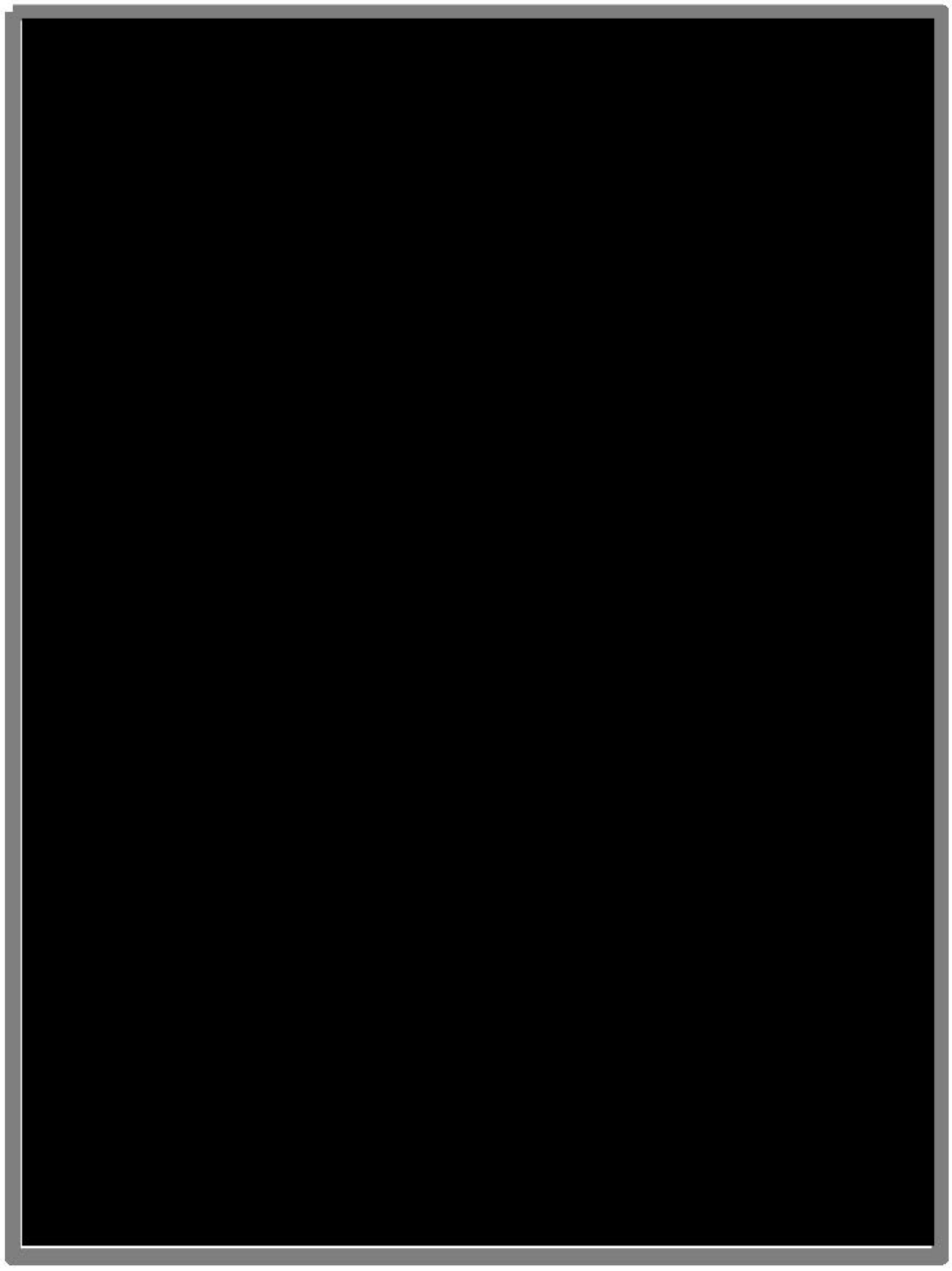
Figure 3: Receiver Site within [redacted]

Figure 4: Post-Assessment Site #2 Rockfall Mitigation

Figure 5: Temporary Isolation – Post-Assessment

Figure 6: Pipeline Abatement – Post-Assessment

Figure 7: Lowering of Replaced Pipe into Trench – Post-Assessment



## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas exercised due diligence in the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design. Specific examples of cost efficiency actions taken on this Project were:

1. Schedule Coordination:
   a. The Project Team scheduled the isolations for Post-Assessment examinations in a matter that minimized the need for CNG to a customer tap, reducing project costs.
   b. The Project Team prefabricated replacement material to reduce fabrication time during construction.
2. Land Use: The Project Team utilized SoCalGas facilities as laydown yards for the Inspection, minimizing costs.

## B. Actual Costs[6]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $63,177,343.

### Table 7: Actual Direct Costs[7]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 1,101,879 | 313,493 | 1,415,372 |
| Contract Costs | 35,783,823 | 426,116 | 36,209,939 |
| Material | 2,939,047 | 13,159 | 2,952,206 |
| Other Direct Charges | 12,723,540 | 1,787,959 | 14,511,499 |
| **Total Direct Costs** | 52,548,289 | 2,540,728 | 55,089,017 |

### Table 8: Actual Indirect Costs[8]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 7,247,992 | 237,289 | 7,485,281 |
| AFUDC | 441,542 | 0 | 441,542 |
| Property Taxes | 161,503 | 0 | 161,503 |
| **Total Indirect Costs** | 7,851,037 | 237,289 | 8,088,326 |

### Table 9: Total Costs[9]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 60,399,326 | 2,778,016 | 63,177,343 |

[6] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[7] Values may not add to total due to rounding.
[8] Ibid.
[9] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 4000 Phase 1 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $63,177,343.

**End of Line 4000 Phase 1 [redacted] TIMP Project Final Workpaper**

# I. LINE 4000 PHASE 2 [redacted] TIMP PROJECT

## A. Background and Summary

Line 4000 Phase 2 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 34.5 miles from [redacted]. The Project also assessed five short segments of [redacted] and [redacted] lateral pipeline associated with Phase 2 of Line 4000 using the [redacted] assessment method. The pipeline is routed across Class 1 and Class 3 locations with 28.5 miles within High Consequence Area(s) (HCAs) and six miles within non-HCAs. This Workpaper describes the activities and costs associated with an Inspection using In-Line Inspection (ILI) and Direct Examinations made to nine sites. The Project activities were located in the cities of Fontana, Rancho Cucamonga, Ontario, Montclair, Upland and Yorba Linda. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is $3,435,959.

SoCalGas

# Final Workpaper for Line 4000 Phase 2 [redacted] TIMP Project

## Table 1: General Project Information

| **Inspection Details** | |
|---|---|
| Pipeline | 4000 |
| Segment | Phase 2 – [redacted] |
| Inspection Type | [redacted] Tools |
| Location | Fontana and Yorba Linda |
| Class | 1 and 3 |
| HCA Length | 29 miles |
| Vintage | Multiple vintages from [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | |
| Final Tool Run Date | |
| Inspection Due Date | |
| **Direct Examination Details** | |
| Line | 4000-85.88-BR2 |
| Site | 1 |
| Examination ID | [redacted] |
| Type | [redacted] |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | Yes |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | |
| Due Date | |

Table 1: General Project Information (continued)

| Direct Examination Details | |
|---|---|
| Line | 4000-85.88-BR1 |
| Site | 2 |
| Examination ID | [redacted] |
| Type | [redacted] |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | Yes |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Due Date | [redacted] |
| **Direct Examination Details** | |
| Line | 41-228 |
| Site | 3 |
| Examination ID | [redacted] |
| Type | [redacted] |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | Yes |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Due Date | [redacted] |

Table 1: General Project Information (continued)

| Direct Examination Details | |
|---|---|
| Line | 4000BR4 |
| Site | 4 |
| Examination ID | [redacted] |
| Type | [redacted] |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | Yes |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Due Date | [redacted] |
| **Direct Examination Details** | |
| Line | 41-228BR1 |
| Site | 5 |
| Examination ID | [redacted] |
| Type | [redacted] |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | Yes |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Due Date | [redacted] |

Table 1: General Project Information (continued)

| Direct Examination Details | |
|---|---|
| Site | 6 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | Yes |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 7 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | Yes |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Final Workpaper for Line 4000 Phase 2 [redacted] TIMP Project

Table 1: General Project Information (continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 8 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Replacement | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 9 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 597,329 | 2,838,631 | 3,435,959 |

## B. Maps and Images

Figure 1: Satellite Image of Line 4000 Phase 2 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspection and Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2 and 3 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 4000 Phase 2 [redacted] TIMP Project for Inspection using ILI.
   a. ILI from a permanent launcher site within [redacted] to a permanent receiver site within [redacted].
   b. The Project required installation of a temporary filter separator and associated piping at the receiver site within [redacted].
   c. The Project installed temporary supports for one span to withstand the weight of the Inspection tools.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, nine Direct Examination sites were identified to either assess pipeline segments that could not accommodate an ILI tool or for validation.
   a. [redacted] Site #1 consisted of soft pad repairs.
   b. [redacted] Site #2 consisted of soft pad repairs.
   c. [redacted] Site #3 consisted of soft pad repairs.
   d. [redacted] Site #4 consisted of soft pad repairs.
   e. [redacted] Site #5 consisted of soft pad repairs.

f. Direct Examination Site #6 consisted of soft pad repairs.

g. Direct Examination Site #7 consisted of soft pad repairs.

h. Direct Examination Site #8 consisted of a 52 foot replacement.

i. Direct Examination Site #9 consisted of soft pad repairs.

3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in no additional examinations.

4. Final Project Scope: The final project scope of this Workpaper includes Inspection using ILI and nine Direct Examinations.

Table 2: Final Inspection Project Scope - ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 4000 | 34.5 mi | [redacted] | [redacted] | [redacted] | No |

Table 3: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 4000-85.88-BR2 | 1 | Yes | No | 7 ft | Soft Pad | N/A | O&M |
| 4000-85.88-BR1 | 2 | Yes | No | 7 ft | Soft Pad | N/A | O&M |
| 41-228 | 3 | Yes | No | 7 ft | Soft Pad | N/A | O&M |
| 4000BR4 | 4 | Yes | No | 26 ft | Soft Pad | N/A | O&M |
| 41-228BR1 | 5 | Yes | No | 7 ft | Soft Pad | N/A | O&M |
| 4000 | 6 | Yes | No | 21 ft | Soft Pad | N/A | O&M |
| 4000 | 7 | Yes | No | 34 ft | Soft Pad | N/A | O&M |
| 4000 | 8 | No | No | 7 ft | Replacement | 52 ft | Capital |
| 4000 | 9 | Yes | No | 19 ft | Soft Pad | N/A | O&M |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 4000 Phase 2 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: The Inspection started at a permanent launcher site within [redacted] and ended at a permanent receiver site within [redacted] The Project installed a temporary filter separator and associated piping at the receiver site to facilitate the Inspection.
2. HCA Threats:
   [redacted]
3. Pipe Vintage: Multiple vintages from [redacted]
4. Long Seam Type:
   [redacted]
5. Inspection Tools and Technologies: The Project utilized [redacted] capabilities during the Inspection of the pipeline. [redacted] were also utilized in preparation for the Inspection.
6. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Project could be completed with minimal impacts by scheduling the Inspection during summer months.

[redacted]

7. Customer Impacts: No identified impacts.
8. Community Impacts: The Project required lane closure near the receiver site causing traffic impacts to the community.
9. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
10. Environmental: No identified impacts.
11. Permit Restrictions: The Project Team obtained a Public Right of Way (ROW) Encroachment Permit from the City of Yorba Linda to install temporary facilities at the receiver site. The permit restricted work hours from 7:30am to 4:30pm.
12. Land Use: No identified impacts.
13. Traffic Control: The Project Team obtained traffic control plan (TCP) approval from the City of Yorba Linda to access the receiver site and utilize large construction equipment at the project site. Approval restricted land closure hours from 9:00am to 3:00pm.
14. Constructability: The Project Team identified a total of 11 spans within the Inspection. One span required temporary span support to withstand the weight of the Inspection tools.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

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## Final Workpaper for Line 4000 Phase 2 [redacted] TIMP Project

1. Engineering Assessment:
   a. There were five [redacted] Sites selected to assess pipeline segments that could not accommodate an ILI tool within the Line 4000 Phase 2 [redacted] TIMP Project.
      i. Direct Examination Site #1 consisted of soft pad repairs.
      ii. Direct Examination Site #2 consisted of soft pad repairs.
      iii. Direct Examination Site #3 consisted of soft pad repairs.
      iv. Direct Examination Site #4 consisted of soft pad repairs.
      v. Direct Examination Site #5 consisted of soft pad repairs.
   b. There were four Direct Examination Sites selected for validation within the Line 4000 Phase 2 [redacted] TIMP Project.
      i. Direct Examination Site #6 consisted of soft pad repairs.
      ii. Direct Examination Site #7 consisted of soft pad repairs.
      iii. Direct Examination Site #8 consisted of a 52 foot replacement.
      iv. Direct Examination Site #9 consisted of soft pad repairs.
2. SRC/IRC: There were no SRCs or IRCs during the Direct Examinations.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Project could be completed without system impacts.
4. Customer Impacts: No customer impacts.
5. Community Impacts: The Project Team issued notifications to schools and hospitals near the following Direct Examinations:
   a. Direct Examination Site #6 in City of Fontana.
   b. Direct Examination Site #7 in the City of Ontario.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: No identified impacts.

8. Permit Restrictions:
   a. The Project Team obtained a Utilities Construction Permit and a Lane Closure Permit from the City of Rancho Cucamonga for Direct Examination Sites #1, #2, and #9. Approval of this permit restricted working hours from 9:00pm to 5:00am.
   b. The Project Team obtained a Construction Permit and a Lane Closure Permit from the City of Montclair for Direct Examination Sites #3, #4, and #5.
   c. The Project Team obtained a Construction Permit from the City of Upland for Direct Examination Sites #3, #4, and #5.
   d. The Project Team obtained an Encroachment Permit from the City of Ontario for Direct Examination Site #7.
9. Land Use:
   a. The Project Team utilized an existing SoCalGas Easement for Direct Examination Site #6.
   b. The Project Team utilized SoCalGas owned [redacted] as a laydown yard to examine pipe from Direct Examination Site #8.
   c. The Project Team obtained a temporary right of entry (TRE) agreement to utilize private property as a laydown yard for Direct Examination Sites #3, #4, #5 and #7.
10. Traffic Control: The Project Team prepared combined TCP for the Project as follows:
    a. Combined TCP for Direct Examination Sites #1, #2, and #9. This TCP was approved by City of Rancho Cucamonga.
    b. Combined TCP for Direct Examination Sites #3, #4, #5 and #7. This TCP was approved by the City of Montclair, the City of Ontario, and the City of Upland.
11. Schedule Delay: No identified impacts.
12. Constructability: The Project Team coordinated with another SoCalGas project to complete a pipeline replacement for Direct Examination Site #8.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations or remediations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractors that best met the criteria for this Project.

## B. Construction Schedule

Table 4: Construction Timeline – Inspection

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

Table 5: Construction Timeline – Direct Examination

| | | |
|---|---|---|
| **Mobilization 1: Direct Examination Sites #1, #2, #3, #4, #5, #6, #7, #9** | | |
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| **Mobilization 2: Direct Examination Site #8** | | |
| Construction Start | [redacted] | |
| Construction Completion | | |

Final Workpaper for Line 4000 Phase 2 [redacted] TIMP Project

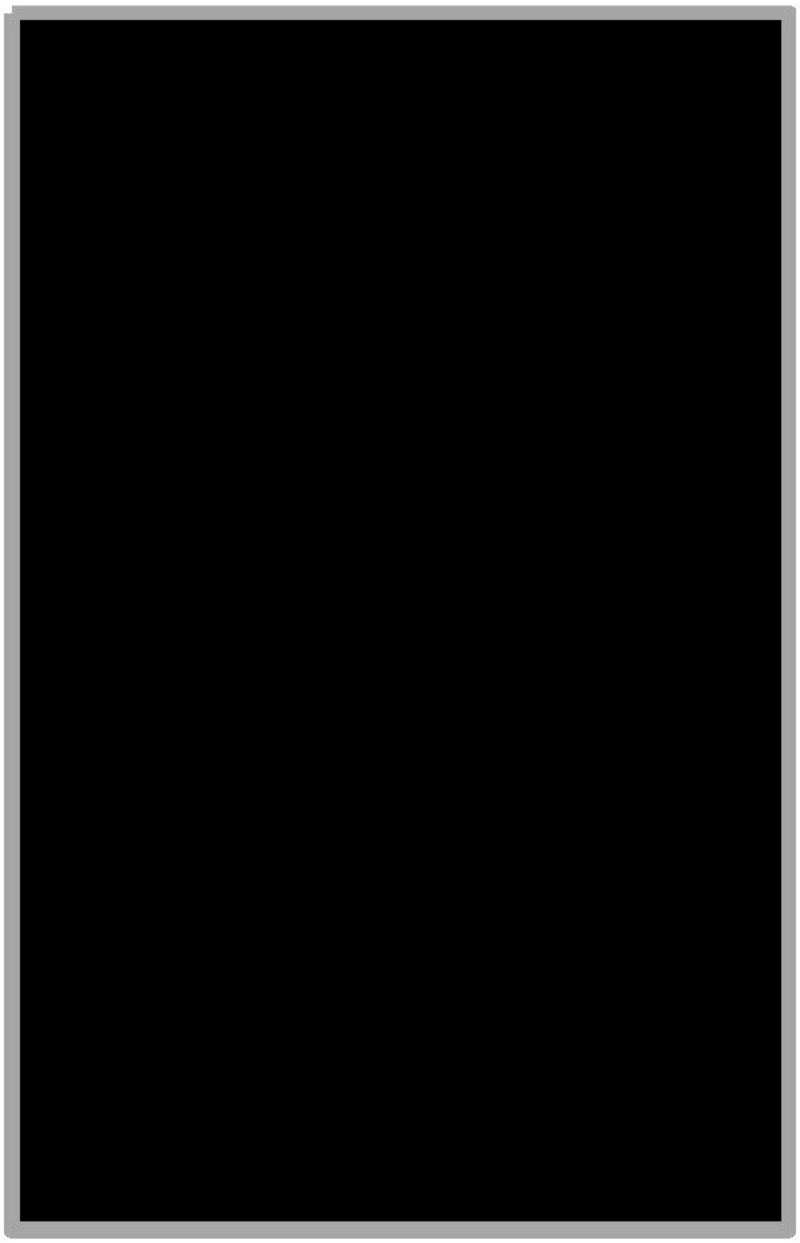
Figure 2: Permanent Receiver within [redacted]

Figure 3: Permanent Receiver within [redacted]

Figure 4: Fabrication of Temporary Associated Piping for Filter Separator

Figure 5: Direct Examination Site #7

Figure 6: Direct Examination Site #9



## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas exercised due diligence in the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design. Specific examples of cost efficiency actions taken on this Project were:

1. Land Use: The Project Team utilized an existing SoCalGas easement for Direct Examination Site #6, including area for a laydown yard.
2. Permit Conditions: Due to the vicinity of Direct Examination locations, the Project Team increased efficiencies during the permitting process by preparing combined TCP submittals for multiple locations, eliminating multiple submittals and approvals for the Project.
3. Construction Execution: The Project Team coordinated with another SoCalGas project to complete a pipeline replacement that would address Direct Examination Site #8.

## B. Actual Costs[2]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $3,435,959.

### Table 6: Actual Direct Costs[3]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 0 | 290,772 | 290,772 |
| Contract Costs | 532,800 | 1,429,339 | 1,962,139 |
| Material | 0 | 109,008 | 109,008 |
| Other Direct Charges | -7,873 | 691,985 | 684,112 |
| **Total Direct Costs** | 524,927 | 2,521,104 | 3,046,031 |

### Table 7: Actual Indirect Costs[4]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 72,401 | 317,527 | 389,928 |
| AFUDC | 0 | 0 | 0 |
| Property Taxes | 0 | 0 | 0 |
| **Total Indirect Costs** | 72,401 | 317,527 | 389,928 |

### Table 8: Total Costs[5]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 597,329 | 2,838,631 | 3,435,959 |

[2] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[3] Values may not add to total due to rounding.
[4] Ibid.
[5] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 4000 Phase 2 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $3,435,959.

**End of 4000 Phase 2 [redacted] TIMP Project Final Workpaper**

# I. LINE 4000 PHASE 3 [redacted] TIMP PROJECT

## A. Background and Summary

Line 4000 Phase 3 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately seven miles from [redacted], through residential neighborhoods and commercial areas. The pipeline is routed across Class 3 and 4 locations entirely within High Consequence Area(s) (HCAs) locations. This Workpaper describes the activities associated with a TIMP Assessment that includes an Inspection using In-Line Inspection (ILI) and the Direct Examinations made to three sites, of which one contained Immediate Repair Conditions (IRCs). The Project activities were located in the cities of Placentia, Anaheim, and Yorba Linda. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $5,333,806.

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# Final Workpaper for Line 4000 Phase 3 Yorba to Placentia TIMP Project

## Table 1: General Project Information

| | |
|---|---|
| **Inspection Details** | |
| Pipeline | 4000 |
| Segment | Phase 3 – [redacted] |
| Inspection Type | [redacted] Tools |
| Location | Yorba Linda and Placentia |
| Class | 3 and 4 |
| HCA Length | 7 miles |
| Vintage | Multiple vintages from [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Final Tool Run Date | [redacted] |
| Inspection Due Date | [redacted] |
| **Direct Examination Details** | |
| Site | 1 |
| Examination ID | [redacted] |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | Yes |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

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Final Workpaper for Line 4000 Phase 3 [redacted] TIMP Project

Table 1: General Project Information (continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 2 | | |
| Examination ID | [redacted] | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 3 | | |
| Examination ID | [redacted] | | |
| Mitigation/Remediation Type | Band | | |
| Within HCA | Yes | | |
| SRC/IRC | Yes | | |
| IRC Discovery Date | [redacted] | | |
| Repair Date | [redacted] | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 963,040 | 4,370,766 | 5,333,806 |

## B. Maps and Images

Figure 1: Satellite Image of Line 4000 Phase 3 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), Transmission Integrity Management Program (TIMP) projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspection and Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2 and 3 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 4000 Phase 3 [redacted] TIMP Project for Inspection using ILI.
   a. ILI from a temporary launcher site within [redacted] to a temporary receiver site in [redacted]
   b. The Project required installation of a temporary launcher and associated piping within [redacted].
   c. The Project required installation of a temporary receiver, filter separator, and associated piping on [redacted].
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, three Direct Examination sites were identified for validation.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs.
   c. Direct Examination Site #3 consisted of a band repair.
   d. The Project identified one Direct Examination Site containing IRCs.

3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in no additional examinations.
4. Final Project Scope: The final project scope of this Workpaper consists of an Inspection using ILI and three Direct Examinations.

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 4000 | 7 mi | [redacted] | [redacted] | [redacted] | No |
| 4000 | 7 mi | [redacted] | [redacted] | [redacted] | No |

Table 3: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 4000 | 1 | Yes | No | 17 ft | Soft Pad | N/A | O&M |
| 4000 | 2 | Yes | No | 31 ft | Soft Pad | N/A | O&M |
| 4000 | 3 | Yes | Yes | 36 ft | Band | N/A | Capital |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 4000 Phase 3 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

SoCalGas

## Final Workpaper for Line 4000 Phase 3 [redacted] TIMP Project

1. Site Description: The Inspection started at a temporary launcher site assembled within [redacted] and ended at a temporary receiver site in Placentia, near [redacted] The Project installed a temporary filter separator at the receiver site to facilitate the Inspection.
2. HCA Threats:
   [redacted]
3. Pipe Vintage: Multiple vintages from [redacted]
4. Long Seam Type:
   [redacted]
5. Inspection Tools and Technologies: The Project utilized [redacted] during the Inspection of the pipeline. [redacted] were also utilized in preparation for the Inspection.
6. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the pipeline could be inspected without system impacts.
7. Customer Impacts: The Project Team identified one impacted customer requiring feed within the Inspection scope. The customer was accommodated by completing the ILI during nighttime hours and reducing any impacts.
8. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
9. Environmental: No identified impacts.
10. Permit Restrictions: The Project Team obtained the following permits:

[redacted]

a. Public Right of Way Encroachment Permit from the City of Placentia for the temporary receiver site.
b. Right of Way Construction Permit from the City of Anaheim for the temporary receiver site.

11. Land Use: The Project Team obtained a temporary right of entry (TRE) for land near the receiver site on [redacted]. The TRE covered temporary blocking of a nearby driveway at the receiver site.
12. Traffic Control: The Project Team obtained approved traffic control plans (TCP) for the receiver site from the City of Placentia. The TCP allowed the Project to utilize two lanes on southbound [redacted].
13. Community Impacts: The Project caused minimal community impacts including traffic and temporary blocking of a driveway. The Project Team addressed both impacts with TCP and TRE for the respective locations.
14. Constructability: The Project Team utilized an existing mainline valve (MLV) at each site to isolate the pipeline during construction activities for both temporary sites.
15. Project Schedules: The Project Team executed the Inspection tool runs during nighttime hours to avoid daytime impacts to a core customer.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were three Direct Examination Sites selected for validation within the Line 4000 Phase 3 [redacted] TIMP Project.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs.
   c. Direct Examination Site #3 consisted of a band repair.

2. SRC/IRC: Direct Examination Site #3 contained two Immediate Repair Conditions (IRC's). The pipe condition required band repairs which resulted in isolating Line 4000 and temporarily reducing the pressure from [redacted]
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Project could be completed with no system impacts.
4. Customer Impacts: No customer impacts.
5. Community Impacts: The Project caused minimal community impacts due to traffic which was addressed by the Project Team with TCPs for the respective locations.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: No identified impacts.
8. Permit Restrictions: The Project Team obtained the following permits:
   a. City of Placentia Department of Public Works Encroachment Permit for Direct Examination Site #1.
   b. Right of Way Construction Permit from the City of Anaheim Department of Public Works for Direct Examination Site #2.
   c. Public Right of Way Encroachment Permit from the City of Yorba Linda for Direct Examination Site #3. The Project required extensions for this permit.
9. Land Use: No identified impacts.
10. Traffic Control: The Project Team obtained an approved TCP for all Direct Examination Sites. The TCP was submitted and approved by the City of Yorba Linda, City of Anaheim and City of Placentia.
11. Schedule Delay: The Project experienced delayed project schedules due to the following:
    a. Companywide Restricted Maintenance Operations (RMO) were declared during the construction stage of Direct Examinations.

b. The Project Team experienced delayed schedules due to system and personnel constraints resulting from a neighboring SoCalGas project.
c. The Project experienced delayed construction activities due to conflicting permitting requirements from the City of Anaheim. The permit was updated to incorporate the following unanticipated items:
    i. Additional construction requirements by the City of Anaheim impacted project schedules.
    ii. Site restoration activities for Direct Examination Site #2 were delayed at the request of the City of Anaheim.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

### Table 4: Construction Timeline – Inspection

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

### Table 5: Construction Timeline – Direct Examination

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

### Table 6: Construction Timeline – IRC

| | | |
|---|---|---|
| IRC Discovery Date – Site #3 | [redacted] | |
| Repair Date – Site #3 | | |

Figure 2: Temporary Receiver Site

Figure 3: Direct Examination Site #1

Figure 4: Direct Examination Site #2

Figure 5: Direct Examination Site #3

## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas exercised due diligence in the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design. Specific examples of cost efficiency actions taken on this Project were:

1. Project Design: The Project Team utilized an existing MLV at the launcher and receiver sites to isolate the pipeline during construction activities for both temporary sites, saving construction costs.

## B. Actual Costs[2]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $5,333,806.

### Table 7: Actual Direct Costs[3]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 62,844 | 295,249 | 358,093 |
| Contract Costs | 546,224 | 2,650,414 | 3,196,638 |
| Material | 882 | 385,083 | 385,966 |
| Other Direct Charges | 186,749 | 721,220 | 907,968 |
| **Total Direct Costs** | 796,699 | 4,051,967 | 4,848,665 |

### Table 8: Actual Indirect Costs[4]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 137,752 | 318,799 | 456,551 |
| AFUDC | 24,955 | 0 | 24,955 |
| Property Taxes | 3,635 | 0 | 3,635 |
| **Total Indirect Costs** | 166,341 | 318,799 | 485,140 |

### Table 9: Total Costs[5]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 963,040 | 4,370,766 | 5,333,806 |

[2] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[3] Values may not add to total due to rounding.
[4] Ibid.
[5] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 4000 Phase 3 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determining the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $5,333,806.

**End of Line 4000 Phase 3 [redacted] TIMP Project Final Workpaper**

# I. LINE 4002 PHASE 2 [redacted] TIMP PROJECT

## A. Background and Summary

Line 4002 Phase 2 [redacted] the Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 33.3 miles from [redacted]. The pipeline is routed across Class 1, 2, and 3 locations with 26.6 miles within High Consequence Area(s) (HCAs) and 6.6 miles within non-HCAs. This Workpaper describes the activities and costs associated with an Inspection using In-Line Inspection (ILI) and the Direct Examinations made to two sites. The Project activities were located in the cities of Fontana, Ontario, and Yorba Linda. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $4,006,301.

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## Final Workpaper for Line 4002 Phase 2 [redacted] TIMP Project

### Table 1: General Project Information

| **Inspection Details** | |
|---|---|
| Pipeline | 4002 |
| Segment | Phase 2 – [redacted] |
| Inspection Type | [redacted] Tool |
| Location | Fontana and Yorba Linda |
| Class | 1, 2, 3 |
| HCA Length | 26.6 miles |
| Vintage | Multiple vintages from [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Final Tool Run Date | [redacted] |
| Inspection Due Date | [redacted] |
| **Direct Examination Details** | |
| Site | 1 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Band |
| Within HCA | Yes |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

SoCalGas

Final Workpaper for Line 4002 Phase 2 [redacted] TIMP Project

Table 1: General Project Information (Continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 2 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | No repairs | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Station Retrofit** | | | |
| Installation Scope | Permanent Receiver | | |
| Location | [redacted] | | |
| Line | 4002 | | |
| Class | [redacted] | | |
| Size | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 2,502,676 | 1,503,626 | 4,006,301 |

## B. Maps and Images

Figure 1: Satellite Image of Line 4002 Phase 2 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspection and Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2 and 3 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 4002 Phase 2 [redacted] TIMP Project for Inspection using ILI.
   a. ILI from a permanent launcher site within [redacted] to a new permanent receiver site within [redacted].
   b. The Project Team installed a temporary filter separator and associated piping at the receiver site to facilitate the Inspection.
   c. The Project Team completed station retrofits before and after the Inspection to install the new permanent receiver at [redacted]
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, two Direct Examination sites were identified for validation.
   a. Direct Examination Site #1 consisted of band repairs.
   b. Direct Examination Site #2 consisted of no repairs.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in no additional examinations.

4. Final Project Scope: The final project scope of this Workpaper includes Inspection using ILI, two Direct Examinations, and station retrofits made within [redacted] to install a new permanent receiver.

Table 2: Final Inspection Project Scope - ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 4002 | 33.3 mi | [redacted] | [redacted] | [redacted] | Yes |

Table 3: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Remediation Type | Replacement Length | Cost Category |
| 4002 | 1 | Yes | No | 16 ft | Band | N/A | Capital |
| 4002 | 2 | Yes | No | 26 ft | No Repairs | N/A | O&M |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 4002 Phase 2 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: The Inspection started at a permanent launcher site within [redacted] and ended at a new permanent receiver site within [redacted]. The Project installed a new receiver and new mainline valve (MLV) for the Inspection.

2. HCA Threats:
   [redacted]
3. Pipe Vintage: Multiple vintages from [redacted]
4. Long Seam Type:
   [redacted]
5. Inspection Tools and Technologies: The Project utilized [redacted] capabilities during the Inspection of the pipeline. [redacted] were also utilized in preparation for the Inspection.
6. Inspection Retrofits: The Project required replacement of existing receiver facilities within [redacted] including a new MLV, a new [redacted] receiver barrel and associated piping. Installations were completed under separate mobilizations.
   a. During the first mobilization, the Project Team installed the new MLV, new permanent receiver barrel on temporary supports, temporary filter separator and associated piping at the receiver site, prior to the Inspection.
   b. During the second mobilization, the Project Team installed permanent receiver supports and completed rerouting and installation of associated piping, after the Inspection.
7. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Inspection and all required retrofit installations could be completed without system impacts.
8. Customer Impacts: No customer impacts.

[redacted]

9. Community Impacts: The Project resulted in traffic impacts and occasional noise to nearby residential homes.
10. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
11. Environmental: No identified impacts.
12. Permit Restrictions: The Project Team obtained a Public Right of Way (ROW) Encroachment Permit from the City of Yorba Linda for construction activities required near the receiver site.
13. Land Use: The Project Team utilized [redacted] as a laydown yard for retrofit activities completed after the Inspection.
14. Traffic Control: The Project Team obtained traffic control plan (TCP) approval from the City of Yorba Linda for lane closure required near the temporary receiver site.

C. Constructability: Retrofit installations were partially completed prior to the Inspection, from [redacted] Retrofit activities were halted to facilitate the Inspection, and were resumed under a later mobilization, from [redacted]

## D. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas initiated the planning process for the Line 4002 Phase 2 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follow:

1. Engineering Assessment: There were two Direct Examination Sites selected for validation within the Line 4002 Phase 2 [redacted] TIMP Project.
   a. Direct Examination Site #1 consisted of band repairs.
   b. Direct Examination Site #2 consisted of no repairs.
2. SRC/IRC: There were no SRCs or IRCs during the Direct Examinations.

3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Direct Examinations could be completed without system impacts.
4. Customer Impacts: No customer impacts.
5. Community Impacts: The Project Team identified Direct Examination Site #1 was only accessible through a gated home driveway. The Project Team coordinated with the homeowners and the Homeowners' Association (HOA) to ingress and regress to the site.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: The Project required active biological monitoring at Direct Examination Site #1 due to bird species in the project vicinity.
8. Permit Restrictions: The Project Team obtained approved permits from the following entities:
   a. Encroachment Permit from City of Ontario for Direct Examination Site #2.
   b. Extension for a Right of Way Encroachment Permit from the City of Yorba Linda Public Works Department to use a nearby location as a laydown area for the Direct Examinations.
9. Land Use: The Project Team worked within pipeline easements for Direct Examination Site #1.
10. Traffic Control: The Project Team obtained an approved TCP from the City of Ontario for Direct Examination Site #2.
11. Schedule Delay:
    a. The Project experienced schedule delays due to accessibility of Direct Examination Site #1. The Project Team initially coordinated ingress and regress with the homeowners and HOA, however the home was sold during the project timeframe and required new coordination efforts.
    b. The Project Team coordinated construction schedules for Direct Examination Site #1 with another SoCalGas project to minimize system impacts.

## E. Engineering, Design, and Constructability Factors – Post-Assessment

The Project Team used the data collected from the Inspection and Direct Examinations during the Post-Assessment step to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractors that best met the criteria for this Project.

## B. Construction Schedule

Table 4: Construction Timeline – Inspection

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

Table 5: Construction Timeline – Direct Examination

| | | |
|---|---|---|
| **Mobilization #1 – Direct Examination Sites #1 and #2** | | |
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| **Mobilization #2 – Direct Examination Site #1** | | |
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

Final Workpaper for Line 4002 Phase 2 [redacted] TIMP Project

Figure 2: Permanent Receiver within [redacted]

Figure 3: Direct Examination Site #1

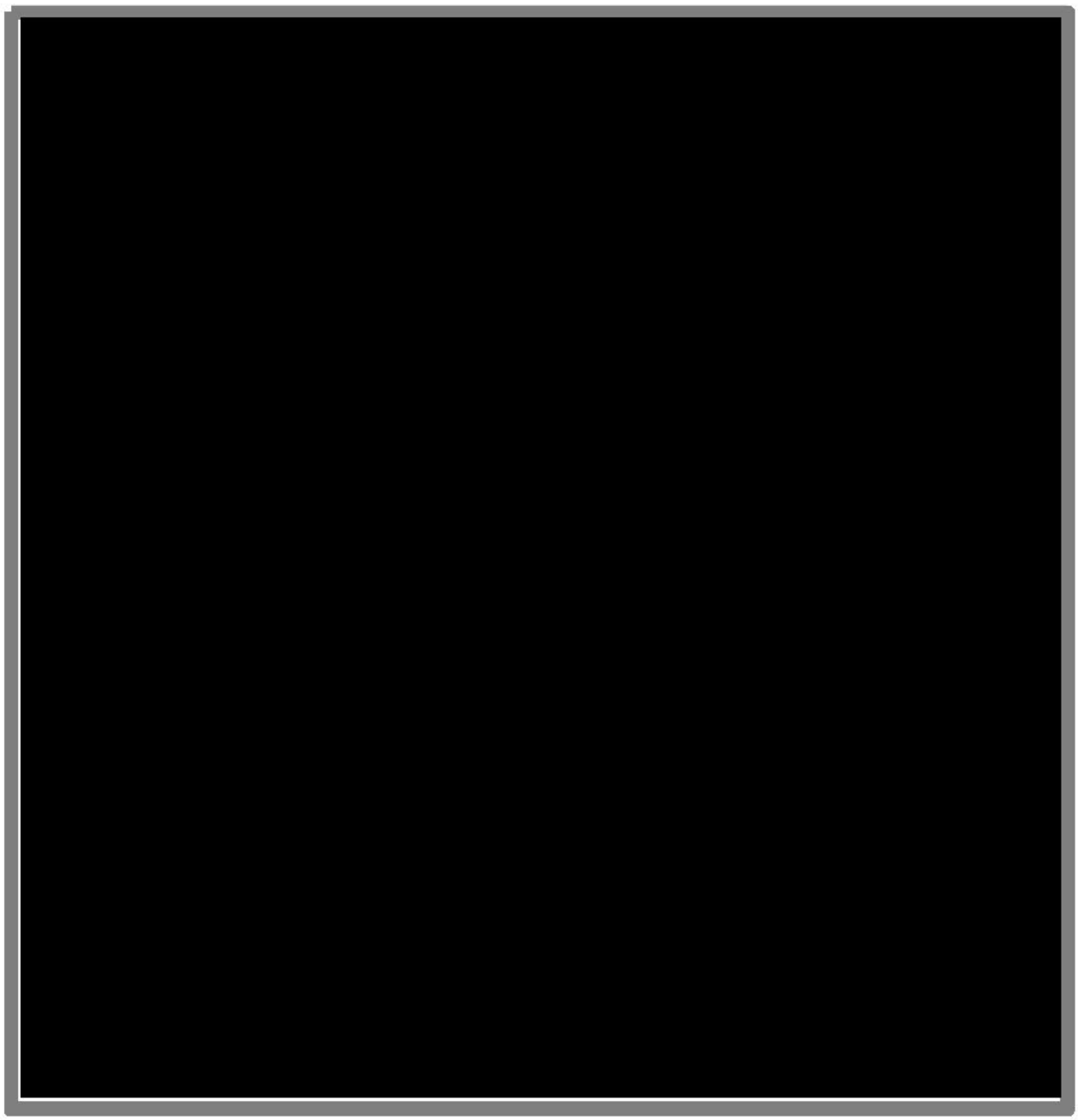
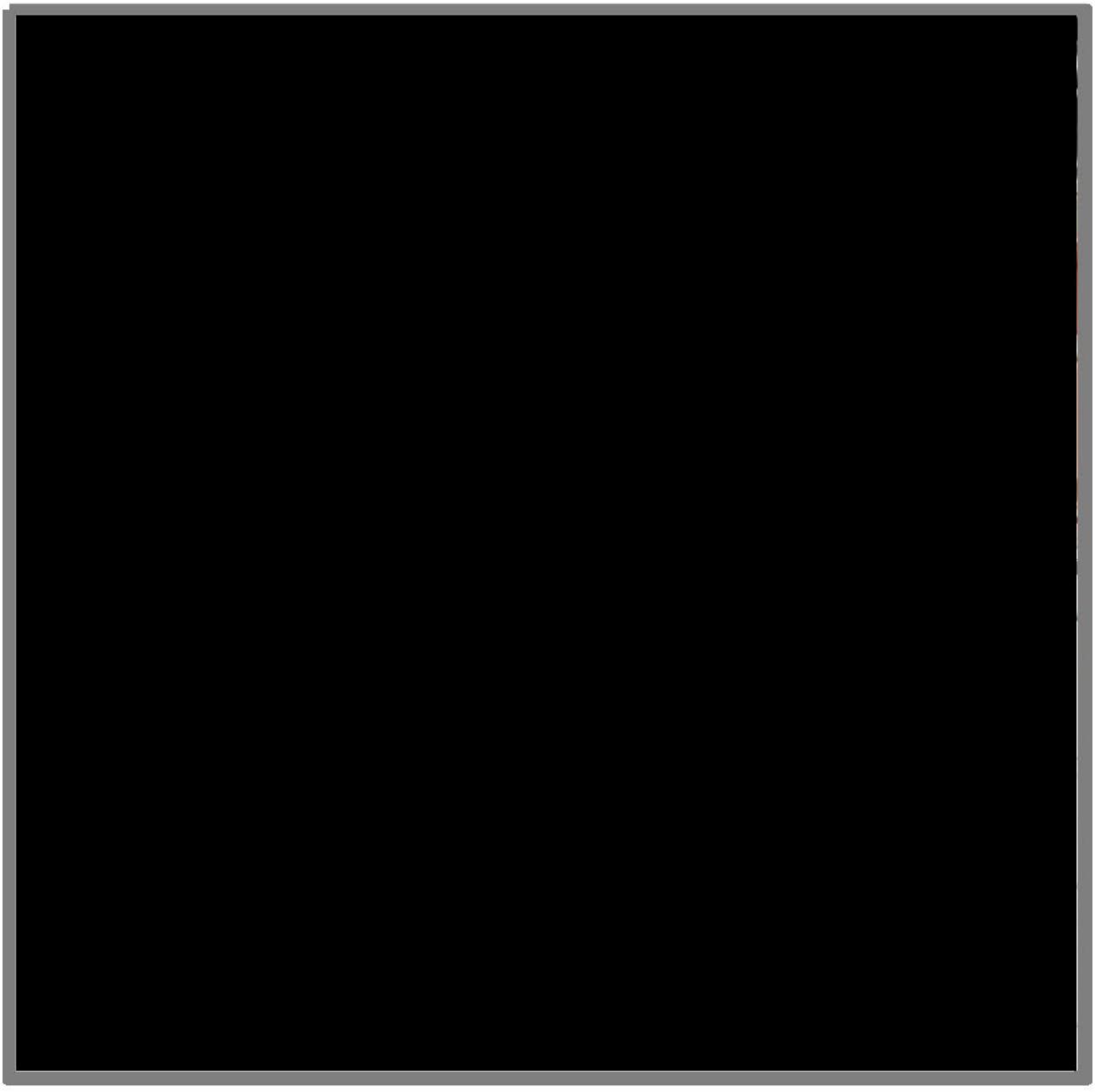


Figure 4: Direct Examination Site #2



## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design. Specific examples of cost efficiency actions taken on this Project were:

1. Materials: The Project Team utilized contingency pipe from the Inspection to fabricate the band required for Direct Examination Site #1.
2. Land Use: The Project Team worked within pipeline easements for Direct Examination Site #1, eliminating the need for a separate laydown yard or area.

## B. Actual Costs[2]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $4,006,301.

### Table 7: Actual Direct Costs[3]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 148,531 | 243,402 | 391,932 |
| Contract Costs | 1,201,066 | 541,341 | 1,742,407 |
| Material | 305,783 | 150,482 | 456,266 |
| Other Direct Charges | 471,596 | 381,000 | 852,596 |
| **Total Direct Costs** | 2,126,976 | 1,316,225 | 3,443,201 |

### Table 8: Actual Indirect Costs[4]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 333,818 | 187,400 | 521,218 |
| AFUDC | 34,237 | 0 | 34,237 |
| Property Taxes | 7,645 | 0 | 7,645 |
| **Total Indirect Costs** | 375,700 | 187,400 | 563,100 |

### Table 9: Total Costs[5]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 2,502,676 | 1,503,626 | 4,006,301 |

[2] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[3] Values may not add to total due to rounding.
[4] Ibid.
[5] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 4002 Phase 2 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $4,006,301.

**End of Line 4002 Phase 2 [redacted] TIMP Project Final Workpaper**

# I. LINE 5000 PHASE 1 [redacted] TIMP PROJECT

## A. Background and Summary

Line 5000 Phase 1 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 8.13 miles from [redacted] through agricultural land and commercial areas. The pipeline is routed across Class 1, 2, and 3 locations with 0.98 miles within High Consequence Area(s) (HCAs) and 6.82 miles within non-HCAs. This Workpaper describes the activities and costs associated with an In-Line Inspection (ILI) and Direct Examinations at two sites located in Blythe. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $970,307.

SoCalGas

Final Workpaper for Line 5000 Phase 1 [redacted] TIMP Project

Table 1: General Project Information

| Inspection Details | |
|---|---|
| Pipeline | 5000 |
| Segment | [redacted] |
| InspectionType | [redacted] ILI Tools |
| Location | Ehrenberg, Blythe |
| Class | 1, 2, 3 |
| HCA Length | 0.98 miles |
| Vintage | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Tool Run Date | [redacted] |
| Inspection Due Date | [redacted] |
| **Direct Examination Details** | |
| Site | 1 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Soft Pad Repair |
| Within HCA | No |
| SRC/IRC | No |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Final Workpaper for Line 5000 Phase 1 [redacted] TIMP Project

Table 1: General Project Information (continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 2 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | | | |
| SMYS | | | |
| Construction Start Date | | | |
| Construction Completion Date | | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 0 | 970,307 | 970,307 |

## B. Maps and Images

Figure 1: Satellite Image of Line 5000 Phase 1 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that typically occur during the Inspection and Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2 and 3 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 5000 Phase 1 for Inspection using ILI.
   a. The Project launched the ILI tools for Line 5000 from an Out of State Operator facility in [redacted] near the [redacted] and initiated assessment of the pipeline to a permanent launcher site at [redacted]
2. Direct Examination – Engineering, Design, and Constructability:
   a. Following the completion of the Inspection using ILI, two Direct Examination sites were identified for validation.
   a. Direct Examinations #1 and #2 consisted of soft pad repairs.
3. Final Project Scope: The final project scope of this Workpaper includes Inspection using ILI and two Direct Examinations.

Table 2: Final Inspection Scope - ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 5000 | 8.13 miles | [redacted] | [redacted] | [redacted] | No |
| 5000 | 8.13 miles | [redacted] | [redacted] | [redacted] | No |

Table 3: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 5000 | 1 | No | No | 15 ft | Soft Pad | N/A | O&M |
| 5000 | 2 | No | No | 15 ft | Soft Pad | N/A | O&M |

## B. Engineering, Design, and Planning Factors – Inspection

SoCalGas initiated the planning process for the Line 5000 Phase 1 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: The Inspection started at an Out of State Operator facility and ended at [redacted].

2. HCA Threats:
   [redacted]
3. Pipe Vintage: [redacted]
4. Long Seam Type: [redacted]
5. Inspection Technologies: The Project utilized [redacted] capabilities during the Inspection of the pipeline. [redacted] were also utilized in preparation for the Inspection.
6. System Analysis: The Project Team completed a review of the Pipeline system to evaluate Project feasibility and concluded that the pipeline could be inspected without system impacts.
7. Customer Impacts: No customer impacts.
8. Community Impacts: No identified impacts.
9. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
10. Environmental: The Project Team did not identify any notable environmental concerns at the Project sites.
11. Permit Restrictions: The Project Team did not identify any permit requirements.
12. Land Use: The Project Team did not identify any land use concerns.
13. Traffic Control: The Project Team did not identify any traffic control requirements.

[redacted]

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were two Direct Examination Sites selected for validation within the Line 5000 Phase 1 [redacted] TIMP Project.
   a. Direct Examination Sites #1 and #2 consisted of soft pad repairs.
2. SRC/IRC: There were no SRCs or IRCs during the Direct Examinations.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Direct Examinations could be completed without system impacts.
4. Customer Impacts: No customer impacts.
5. Community Impacts: No identified impacts.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: The Project Team did not identify any notable environmental concerns at the Project sites.
8. Permit Restrictions: The Project Team did not identify any permit requirements.
9. Land Use: The Project Team did not identify any land use concerns.
10. Traffic Control: The Project Team did not identify any traffic control requirements.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractors that best met the assessment approach for this Project.

## B. Construction Schedule

Table 4: Construction Timeline - Inspection

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

Table 5: Construction Timeline - Direct Examination

| Mobilization 1: Direct Examination Sites #1 and #2 | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

Figure 2: Site of Direct Examination #1

Figure 3: Target of Direct Examination #1 Repairs

Figure 4: Target of Direct Examination #2 Repairs

## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Avoidance Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design.

## B. Actual Costs[2]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $970,307.

### Table 6: Actual Direct Costs[3]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 0 | 88,497 | 88,497 |
| Contract Costs | 0 | 493,389 | 493,389 |
| Material | 0 | 52,645 | 52,645 |
| Other Direct Charges | 0 | 251,649 | 251,649 |
| **Total Direct Costs** | 0 | 886,181 | 886,181 |

### Table 7: Actual Indirect Costs[4]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 0 | 84,086 | 84,086 |
| AFUDC | 0 | 0 | 0 |
| Property Taxes | 0 | 41 | 41 |
| **Total Indirect Costs** | 0 | 84,127 | 84,127 |

### Table 8: Total Costs[5]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 0 | 970,307 | 970,307 |

[2] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[3] Values may not add to total due to rounding.
[4] Ibid
[5] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 5000 Phase 1 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $970,307.

**End of Line 5000 Phase 1 [redacted] TIMP Project Final Workpaper**

# I. LINE 5000 PHASE 2 [redacted] TIMP PROJECT

## A. Background and Summary

Line 5000 Phase 2 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a predominantly [redacted] diameter transmission line that runs approximately 74.6 miles from [redacted], through farmlands and desert. The pipeline is routed across Class 1 and 2 locations with 1.5 miles within High Consequence Areas (HCAs) and 73.1 miles within non-HCAs. This Workpaper describes the activities and costs associated with a TIMP Assessment that includes Direct Examinations made to two sites. The Project activities were located in Riverside County. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $1,872,543.

SoCalGas

Final Workpaper for Line 5000 Phase 2 [redacted] TIMP Project

Table 1: General Project Information

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 1 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 2 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediaiton Type | Soft Pad | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 1,872,543 | 0 | 1,872,543 |

Final Workpaper for Line 5000 Phase 2 [redacted] TIMP Project

## B. Maps and Images

Figure 1: Satellite Image of Line 5000 Phase 2 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND PLANNING

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), Transmission Integrity Management Program (TIMP) projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Table 2 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 5000 Phase 2 for Inspection using In-Line Inspection (ILI), activities related to the ILI were completed for this Project before the TY 2019 General Rate Case (GRC) cycle.
   a. ILI from [redacted].
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, two Direct Examination sites were identified for validation.
   a. Direct Examination Site #1 required soft pad repairs.
   b. Direct Examination Site #2 required soft pad repairs.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in no additional examinations.
4. Final Project Scope: The final project scope of this Workpaper includes two Direct Examinations.

Table 2: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 5000 | 1 | No | No | 45 ft | Soft Pad | N/A | Capital |
| 5000 | 2 | No | No | 81 ft | Soft Pad | N/A | Capital |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas completed the Inspection for the Line 5000 Phase 2 [redacted] TIMP Project before the TY 2019 GRC cycle.

## C. Engineering, Design, and Constructability Factors – Direct Examination

Continuing the planning process for the Line 5000 Phase 2 [redacted] TIMP Project, SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were two Direct Examination sites selected for validation within the Line 5000 Phase 2 [redacted] TIMP Project.
   a. Direct Examination #1 consisted of soft pad repairs.
   b. Direct Examination #2 consisted of soft pad repairs.
2. SRC/IRC: There were no Safety Related Conditions (SRCs) or Immediate Repair Conditions (IRCs) during the Direct Examinations.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded Line 5000 and adjacent pipelines could not be shut-in at the same time to maintain overall system capacity.
4. Customer Impacts: No customer impacts.
5. Community Impacts: No identified impacts.

6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental:
   a. The Project Team had biological monitors present at environmentally sensitive areas for work at Direct Examination Sites #1 and #2.
   b. The Project Team obtained approval of dust control plans from the South Coast Air Quality Management District (SCAQMD).
8. Permit Restrictions: No identified impacts.
9. Land Use: No identified impacts.
10. Traffic Control: No identified impacts.
11. Constructability: No identified impacts.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractors that best met the criteria for this Project.

## B. Construction Schedule

Table 3: Construction Timeline – Direct Examination

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

Figure 2: Existing Coating Condition at Site #1

Figure 3: Soft Pad Repairs at Site #1

Figure 4: Soft Pad Repairs at Site #2

## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the Project plan and design. Specific examples of cost efficiency actions taken on this Project were:

1. Land Use: The Project Team utilized a SoCalGas-owned station as a laydown yard, minimizing project costs.

## B. Actual Costs[1]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the is $1,872,543.

### Table 3: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 100,867 | 0 | 100,867 |
| Contract Costs | 938,459 | 0 | 938,459 |
| Material | 69,769 | 0 | 69,769 |
| Other Direct Charges | 513,994 | 0 | 513,994 |
| **Total Direct Costs** | 1,623,089 | 0 | 1,623,089 |

### Table 4: Actual Indirect Costs[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 242,316 | 0 | 242,316 |
| AFUDC | 5,674 | 0 | 5,674 |
| Property Taxes | 1,464 | 0 | 1,464 |
| **Total Indirect Costs** | 249,454 | 0 | 249,454 |

### Table 5: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 1,872,543 | 0 | 1,872,543 |

[1] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[2] Values may not add to total due to rounding.
[3] Ibid.
[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 5000 Phase 2 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $1,872,543.

**End of Line 5000 Phase 2 [redacted] TIMP Project Final Workpaper**

# I. LINE 5000 PHASE 2 [redacted] 2021 TIMP PROJECT

## A. Background and Summary

Line 5000 Phase 2 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 75.2 miles from [redacted]. The pipeline is routed across Class 1, 2, and 3 locations with 1.4 miles within High Consequence Area(s) (HCAs) and 73.8 miles within non-HCAs. This Workpaper describes the activities and costs associated with an Inspection using In-Line Inspection (ILI). The Project was located in the City of Blythe and Cactus City. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $1,569,626.

SoCalGas

## Final Workpaper for Line 5000 Phase 2 [redacted] TIMP Project

### Table 1: General Project Information

| Inspection Details | | | |
|---|---|---|---|
| Pipeline | 5000 | | |
| Segment | Phase 2 – [redacted] | | |
| Inspection Type | [redacted] ILI Tools | | |
| Location | City of Blythe and Cactus City | | |
| Class | 1, 2, 3 | | |
| HCA Length | 1.4 miles | | |
| Vintage | Multiple vintages from [redacted] | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | Multiple SMYS values from [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| Final Tool Run Date | [redacted] | | |
| Inspection Due Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 23,963 | 1,545,663 | 1,569,626 |

## B. Maps and Images

Figure 1: Satellite Image of Line 5000 Phase 2 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), Transmission Integrity Management Program (TIMP) projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspection.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Table 2 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 5000 Phase 2 [redacted] for Inspection using ILI.
   a. ILI from a permanent launcher site within [redacted] to a permanent receiver site within [redacted].
   b. The Project required temporary installation of associated piping and a filter separator at the receiver site.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, Direct Examination sites were identified for validation and will be addressed after 2023, outside the scope of this proceeding.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of any future Direct Examination(s) following the Inspection will be used to determine if additional examinations are required.
4. Final Project Scope: The final project scope of this Workpaper includes Inspection using ILI.

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 5000 | 75.2 mi | [redacted] | [redacted] | [redacted] | No |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 5000 Phase 2 [redacted] Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description:
   a. The Inspection started at a permanent launcher site within [redacted] and ended at a permanent receiver site within [redacted].
   b. The Project required temporary installation of associated piping and a filter separator at the receiver site.
2. HCA Threats:
   [redacted]
3. Pipe Vintage: Multiple vintages from [redacted]
4. Long Seam Type:
   [redacted].

5. Inspection Tools and Technologies: The Project utilized a [redacted] capabilities during the Inspection of the pipeline. [redacted] were also utilized in preparation for the Inspection.
6. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the pipeline could be inspected without system impacts.
7. Customer Impacts: No customer impacts.
8. Community Impacts: No identified impacts.
9. Substructures: No identified impacts.
10. Environmental: No identified impacts.
11. Permit Restrictions: No identified impacts.
12. Land Use: No identified impacts.
13. Traffic Control: No identified impacts.

## C. Engineering, Design, and Constructability Factors – Direct Examination

Continuing the planning process for the Line 5000 Phase 2 [redacted] TIMP Project, SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Following the completion of the Inspection using ILI, Direct Examination sites were identified for validation and will be addressed after 2023, outside the scope of this proceeding.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team will use the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and

evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis is still pending and will be used to determine if additional examinations are required to enhance the overall integrity and safety of the pipeline.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

Table 3: Construction Timeline – Inspection

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

Figure #2: [redacted]

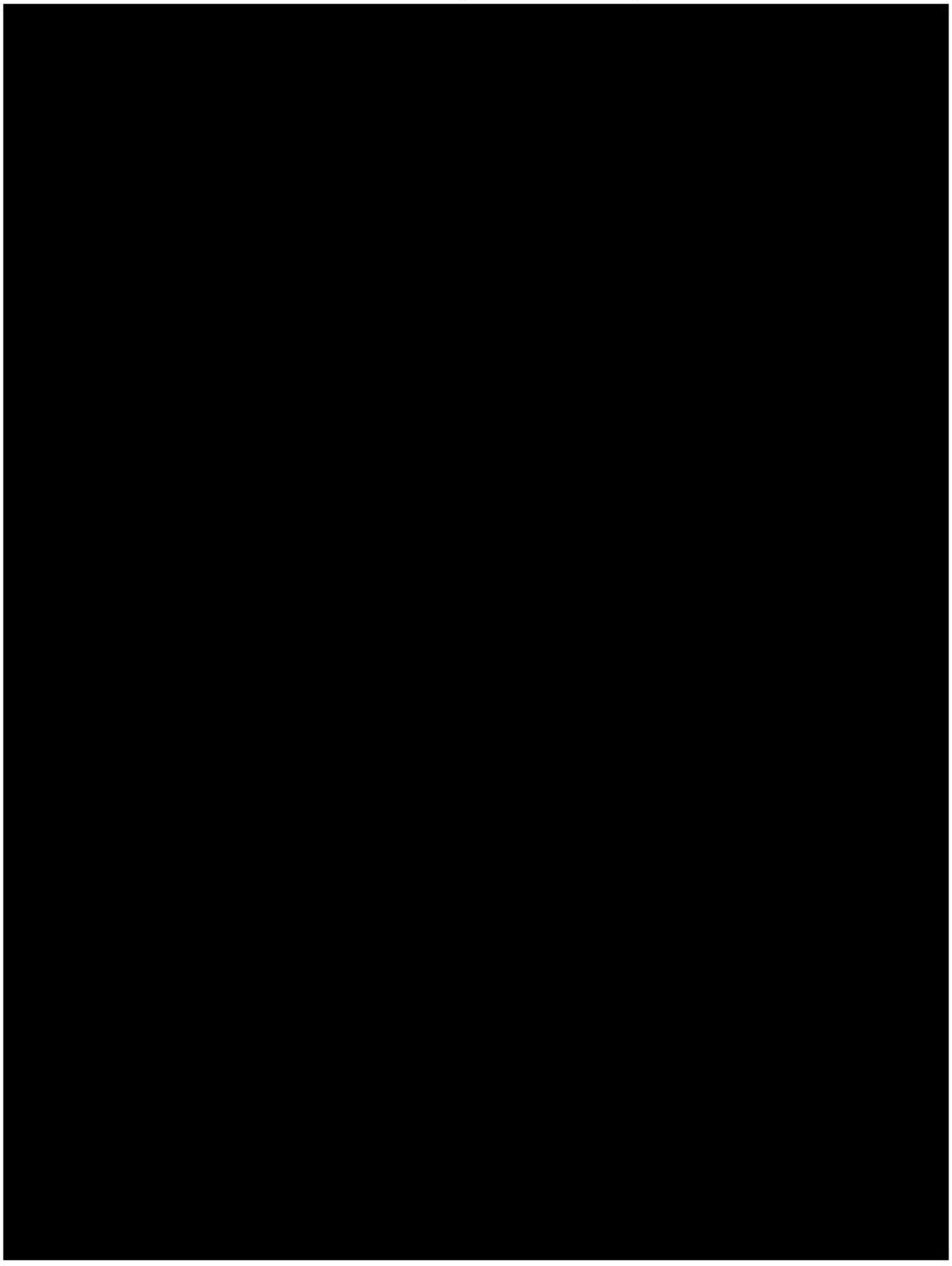


Figure #3: Pipe Bolted for Hydro Test

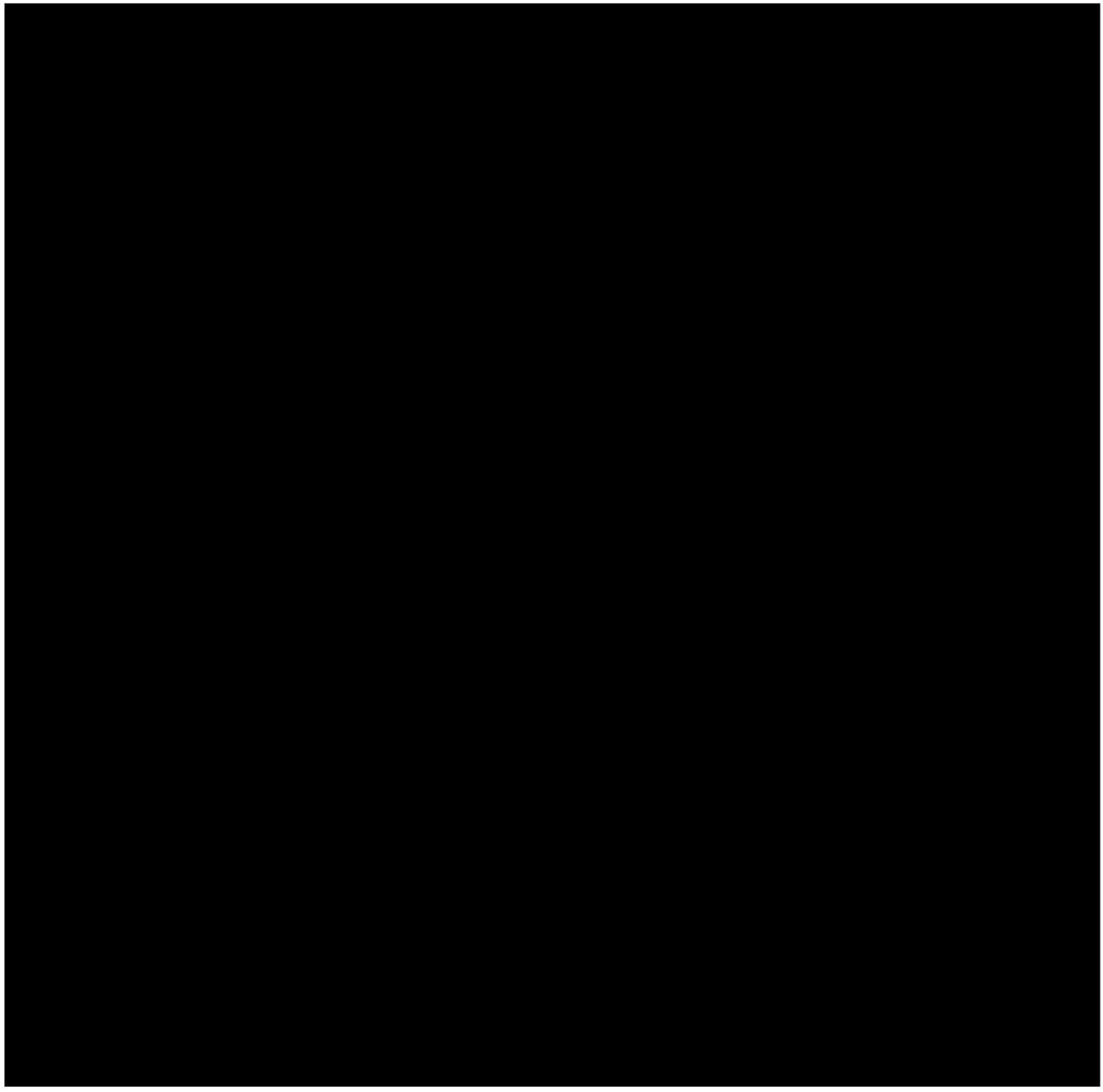
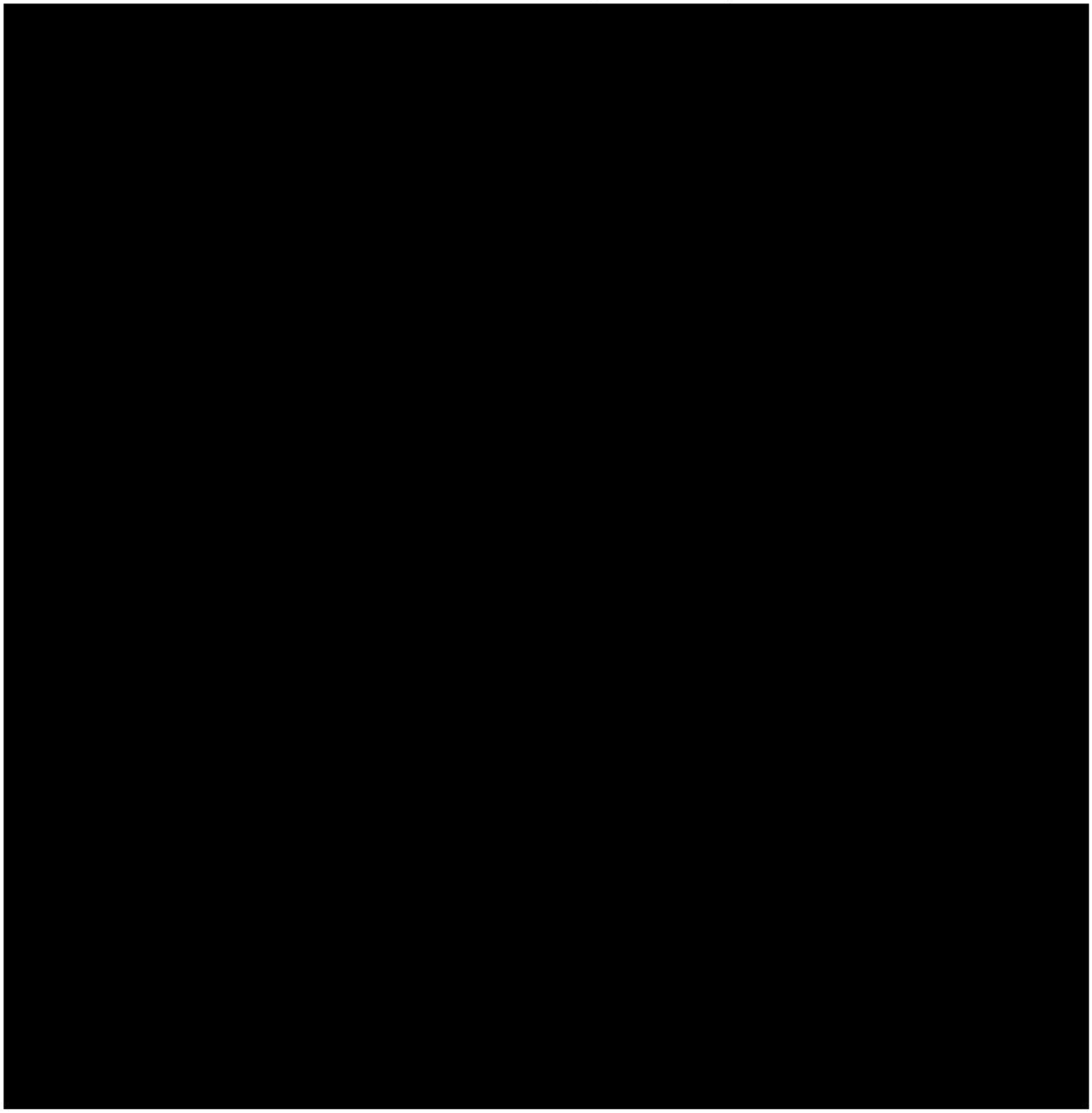


Figure #4: Bolt Up at [redacted]



## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation, and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design.

## B. Actual Costs[1]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $1,569,626.

### Table 4: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 10,660 | 272,918 | 283,578 |
| Contract Costs | 1,200 | 544,441 | 545,641 |
| Material | 0 | 21,550 | 21,550 |
| Other Direct Charges | 975 | 488,037 | 489,011 |
| **Total Direct Costs** | 12,835 | 1,326,945 | 1,339,780 |

### Table 5: Actual Indirect Costs[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 8,769 | 218,718 | 227,487 |
| AFUDC | 1,995 | 0 | 1,995 |
| Property Taxes | 363 | 0 | 363 |
| **Total Indirect Costs** | 11,128 | 218,718 | 229,846 |

### Table 6: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 23,963 | 1,545,663 | 1,569,626 |

[1] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[2] Values may not add to total due to rounding.
[3] Ibid.
[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 5000 Phase 2 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $1,569,626.

**End of Line 5000 Phase 2 [redacted] TIMP Project Final Workpaper**

# I. LINE 5000 PHASE 3 [redacted] TIMP PROJECT

## A. Background and Summary

Line 5000 Phase 3 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 31.4 miles from [redacted]. The pipeline is routed across Class 1, 2, and 3 locations with 17.1 miles within High Consequence Area(s) (HCAs) and 14.3 miles within non-HCAs. This Workpaper describes the activities and costs associated with an Inspection using In-Line Inspection (ILI) located in Riverside County. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $3,706,504.

Final Workpaper for Line 5000 Phase 3 [redacted] TIMP Project

Table 1: General Project Information

| Inspection Details | | | |
|---|---|---|---|
| Pipeline | 5000 | | |
| Segment | Phase 3 – [redacted] | | |
| Inspection Type | [redacted] Tool | | |
| Location | Riverside County | | |
| Class | 1, 2, 3 | | |
| HCA Length | 17.1 miles | | |
| Vintage | Multiple vintages from [redacted] | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | Multiple SMYS values from [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | | | |
| Final Tool Run Date | | | |
| Inspection Due Date | | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 652,352 | 3,054,152 | 3,706,504 |

## B. Maps and Images

Figure 1: Satellite Image of Line 5000 Phase 3 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspection.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Table 2 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 5000 Phase 3 [redacted] TIMP Project for Inspection using ILI.
   a. ILI from a permanent launcher site within [redacted] to a permanent receiver site within [redacted].
   b. The Project required installation of permanent associated piping at the launcher site.
   c. The Project required temporary installation of associated piping and a filter separator at the receiver site.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, Direct Examination sites will be identified for validation addressed after 2023, outside the scope of this proceeding.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of any future Direct Examination(s) will be used to determine if additional examinations are required.
4. Final Project Scope: The final project scope of this Workpaper includes Inspection using ILI.

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 5000 | 31.4 mi | [redacted] | [redacted] | [redacted] | Yes |
| 5000 | 31.4 mi | [redacted] | [redacted] | [redacted] | Yes |
| 5000 | 31.4 mi | [redacted] | [redacted] | [redacted] | Yes |
| 5000 | 31.4 mi | [redacted] | [redacted] | [redacted] | Yes |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 5000 Phase 3 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: The Project consisted of Inspection of Line 5000 Phase 3 from a permanent launcher site within [redacted] to a permanent receiver site within [redacted].
2. HCA Threats:
   [redacted]
3. Pipe Vintage: Multiple vintages from [redacted].

[redacted]

4. Long Seam Type:
   [redacted]
5. Inspection Tools and Technologies: The Project utilized the following Inspection tools: [redacted] capabilities during the Inspection of the pipeline. [redacted] were also utilized in preparation for the Inspection.
6. Inspection Retrofits: The Project required installation of permanent associated piping at the launcher site.
7. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the pipeline could be inspected without system impacts.
8. Customer Impacts: The Project Team determined that customer service could be maintained to one customer by alternate source of feed during the assessment.
9. Community Impacts: No identified impacts.
10. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
11. Environmental: The Project Team restricted work hours near the receiver location to daylight hours as much as possible to avoid impacting sensitive nocturnal species presence.
12. Permit Restrictions: No identified impacts.
13. Land Use: The Project utilized existing company facilities at the launcher and receiver locations as laydown yards.
14. Traffic Control: No identified impacts.

15. Constructability:
    a. The Project required modifications to the permanent associated piping configurations at the launcher site.
    b. The Project required additional coordination to complete survey activities due to rain causing inadequate field conditions.

## C. Engineering, Design, and Constructability Factors – Direct Examination

Continuing the planning process for the Line 5000 Phase 3 [redacted] TIMP Project, SoCalGas will review Inspection reports, complete various site evaluations, and communicate with project stakeholders. Following the completion of the Inspections using ILI, Direct Examination sites will be identified for validation and addressed after 2023, outside the scope of this proceeding.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used will use the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis is still pending and will be used to determine if additional examinations are required to enhance the overall integrity and safety of the pipeline.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

Table 3: Construction Timeline – Inspection

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

Figure 2: Launcher Location

Figure 3: Receiver Location

## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design.

## B. Actual Costs[2]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $3,706,504.

### Table 4: Actual Direct Costs[3]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 5,836 | 232,504 | 238,340 |
| Contract Costs | 3,064 | 1,348,625 | 1,351,689 |
| Material | 453,660 | 78,213 | 531,873 |
| Other Direct Charges | 18,012 | 1,112,058 | 1,130,070 |
| **Total Direct Costs** | 480,572 | 2,771,399 | 3,251,972 |

### Table 5: Actual Indirect Costs[4]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 148,415 | 282,752 | 431,168 |
| AFUDC | 20,397 | 0 | 20,397 |
| Property Taxes | 2,967 | 0 | 2,967 |
| **Total Indirect Costs** | 171,780 | 282,752 | 454,532 |

### Table 6: Total Costs[5]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 652,352 | 3,054,152 | 3,706,504 |

[2] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[3] Values may not add to total due to rounding.
[4] Ibid.
[5] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 5000 Phase 3 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $3,706,504.

**End of Line 5000 Phase 3 [redacted] TIMP Project Final Workpaper**

# I. LINE 5000 PHASE 3 [redacted] TIMP PROJECT

## A. Background and Summary

Line 5000 Phase 3 [redacted] Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 31.4 miles from [redacted], through residential neighborhoods and desert lands. The pipeline is routed across Class 1, 2, and 3 locations with 16.9 miles within High Consequence Area(s) (HCAs) and 14.5 miles within non-HCAs. This Workpaper describes the activities associated with a TIMP Assessment that includes Direct Examinations made to two sites. The Project activities were located in Riverside County. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is $1,402,728.

SoCalGas

## Final Workpaper for Line 5000 Phase 3 [redacted] TIMP Project

### Table 1: General Project Information

| **Direct Examination Details** | | | |
|---|---|---|---|
| Site | 1 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Band | | |
| Within HCA | Yes | | |
| SRC/IRC | Yes | | |
| SRC/IRC Discovery Date | [redacted] | | |
| Repair Date | [redacted] | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 2 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | $345,045 | $1,057,683 | $1,402,728 |

SoCalGas

Final Workpaper for Line 5000 Phase 3 [redacted] TIMP Project

## B. Maps and Images

Figure 1: Satellite Image of Line 5000 Phase 3 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), Transmission Integrity Management Program (TIMP) projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Table 2 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 5000 Phase 3 [redacted] for Inspection using ILI, activities related to the ILI were completed for this Project before the TY 2019 General Rate Case (GRC) cycle.
   a. ILI from the permanent launcher site at [redacted] to the permanent receiver site located at [redacted].
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, two Direct Examination sites were identified for validation.
   a. Direct Examination Site #1 was identified as a Safety Related Condition (SRC) during construction and required a band installation.
   b. Direct Examination Site #2 consisted of soft pad repairs.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in no additional examinations or remediations.
4. Final Project Scope: The final project scope of this Workpaper includes two Direct Examinations.

Table 2: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/IRC | Examination Length | Mitigation/ Remdiation Type | Replacement Length | Cost Category |
| 5000 | 1 | Yes | Yes | 23 ft | Band | N/A | Capital |
| 5000 | 2 | No | No | 40 ft | Soft Pad | 40 ft | O&M |

## B. Engineering, Design, and Planning Factors – Inspection

SoCalGas completed the Inspection for the Line 5000 Phase 3 [redacted] TIMP Project before the TY 2019 GRC cycle.

## C. Engineering, Design, and Constructability Factors – Direct Examination

Continuing the planning process for the Line 5000 Phase 3 [redacted] TIMP Project, SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of this Project are as follows:

1. Engineering Assessment: There were two Direct Examination sites selected for validation of the ILI within the Line 5000 Phase 3 [redacted] TIMP Project.
   a. Direct Examination Site #1 was identified as an SRC during construction and required a band installation.
   b. Direct Examination Site #2 consisted of soft pad repairs.
2. SRC/IRC: Direct Examination Site #1 contained an SRC and required an expedited project schedule.

3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Direct Examination could only be completed when work was not occurring on nearby parallel pipelines.
4. Customer Impacts: No customer impacts.
5. Community Impacts: No identified impacts.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering for the Direct Examinations.
7. Environmental: The Project Team obtained Environmental Clearance and approval of an Air Quality Management District (AQMD) Dust Control plan.
8. Permit Restrictions: The Project Team obtained an encroachment permit from the County of Riverside for construction at Direct Examination Site #1.
9. Land Use: No identified impacts.
10. Traffic Control: The Project Team obtained a Traffic Control Plan (TCP) for Direct Examination Site #1.
11. Constructability: No identified impacts.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

The Project Team used the data collected from the Inspection and Direct Examinations during the Post-Assessment step to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractors that best met the criteria for this Project.

## B. Construction Schedule

Table 3: Construction Timeline – Direct Examination

| | |
|---|---|
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 4: Construction Timeline – SRC

| | |
|---|---|
| SRC Discovery Date – Site #1 | [redacted] |
| Repair Date – Site #1 | [redacted] |

Figure 2: Band Repair at Direct Examination Site #1

Figure 3: Recoated Pipe at Direct Examination Site #2

SoCalGas

Final Workpaper for Line 5000 Phase 3 [redacted] TIMP Project

Figure 4: Direct Examination Site #1 Overview

Figure 5: Direct Examination Site #1 Overview

Figure 6: Direct Examination Site #2 Overview

## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design.

## B. Actual Costs[1]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $1,402,728.

### Table 5: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 7,387 | 118,153 | 125,540 |
| Contract Costs | 215,518 | 641,707 | 857,225 |
| Material | 0 | 0 | 0 |
| Other Direct Charges | 55,811 | 166,908 | 222,719 |
| **Total Direct Cost** | 278,715 | 926,769 | 1,205,484 |

### Table 6: Actual Indirect Cost[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 46,021 | 113,779 | 159,800 |
| AFUDC | 15,403 | 17,135 | 32,538 |
| Property Taxes | 4,905 | 0 | 4,905 |
| **Total Indirect Costs** | 66,330 | 130,914 | 197,244 |

### Table 7: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 345,045 | 1,057,683 | 1,402,728 |

[1] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[2] Values may not add to total due to rounding.
[3] Ibid.
[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the safety of its natural gas system by executing the Line 5000 Phase 3 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $1,402,728.

**End of Line 5000 Phase 3 [redacted] TIMP Project Final Workpaper**

# I. LINE 5000 PHASE 4 [redacted] TIMP PROJECT

## A. Background and Summary

Line 5000 Phase 4 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 7.2 miles from [redacted], through residential neighborhoods and commercial areas. The pipeline is routed across Class 1, 2, and 3 locations with 6.7 miles within High Consequence Area(s) (HCAs) and 0.5 miles within non-HCAs. This Workpaper describes the activities and costs associated with an Inspection using In-Line Inspection (ILI) and the Direct Examinations made to one site located in the cities of Mira Loma, Eastvale, and Chino. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $2,507,886.

SoCalGas

## Final Workpaper for Line 5000 Phase 4 [redacted] TIMP Project

### Table 1: General Project Information

| **Inspection Details** | | | |
|---|---|---|---|
| Pipeline | 5000 | | |
| Segment | Phase 4 – [redacted] | | |
| Inspection Type | [redacted] | | |
| Location | Mira Loma and Chino | | |
| Class | 1, 2, 3 | | |
| HCA Length | 6.7 miles | | |
| Vintage | Multiple vintages from [redacted] | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start | [redacted] | | |
| Construction Completion | [redacted] | | |
| Final Tool Run Date | [redacted] | | |
| Inspection Due Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 1 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | Yes | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start | [redacted] | | |
| Construction Completion | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 709,172 | 1,642,813 | 2,509,939 |

## B. Maps and Images

Figure 1: Satellite Image of Line 5000 Phase 4 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspection and Direct Examination.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2 and 3 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 5000 Phase 4 for Inspection using ILI.
   a. ILI from a permanent launcher site within [redacted]
   b. The Project Team installed temporary associated piping and filter separator at the receiver site.
   c. The Project Team installed a permanent [redacted] valve at the receiver site to facilitate the ILI.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, one Direct Examination site was identified for validation.
   a. Direct Examination Site #1 consisted of soft pad repairs.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examination following the Inspection resulted in no additional examinations.
4. Final Project Scope: The final project scope of this Workpaper includes Inspection using ILI and one Direct Examination.

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 5000(4) | 7.2 mi | [redacted] | [redacted] | [redacted] | No |

Table 3: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 5000 (4) | 1 | Yes | No | 51 ft | Soft Pad | N/A | Capital |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 5000 Phase 4 [redacted] Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: ILI from permanent launcher site within [redacted]
2. HCA Threats:
   [redacted]

[redacted]

3. Pipe Vintage: Multiple Vintages from [redacted].
4. Long Seam Type:
   [redacted]
5. Inspection Tools and Technologies: The Project utilized a [redacted] capabilities during the Inspection of the pipeline. [redacted] were also utilized in preparation for the Inspection.
6. Inspection Retrofits: The Project Team installed a permanent [redacted] valve at the receiver site to facilitate the ILI.
7. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the pipeline could be inspected without system impacts.
8. Customer Impacts: No customer impacts.
9. Community Impacts: No identified impacts.
10. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
11. Environmental: No identified impacts.
12. Permit Restrictions: The Project Team obtained an Encroachment Permit from the City of Jurupa Valley.
13. Land Use: The Project Team was able to utilize SoCalGas property as a laydown yard.
14. Traffic Control: No identified impacts.

## C. Engineering, Design, and Constructability Factors – Direct Examination

Continuing the planning process for the Line 5000 Phase 4 [redacted] TIMP Project, SoCalGas reviewed Inspection reports, completed various site evaluations, and

communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There was one Direct Examination Site selected for validation of the ILI within the Line 5000 Phase 4 [redacted] TIMP Project.
   a. Direct Examination Site #1 consisted of soft pad repairs.
2. SRC/IRC: There were no SRCs or IRCs during the Direct Examinations.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Direct Examinations could be completed without system impacts.
4. Customer Impacts: No customer impacts.
5. Community Impacts: No identified impacts.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: No identified impacts.
8. Permit Restrictions: The Project Team obtained an Encroachment Permit from the City of Eastvale.
9. Land Use: No identified impacts.
10. Traffic Control: The Project Team required a TCP from the City of Eastvale which consisted of multiple lane closures, traffic signage, and barricades.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and Direct Examination to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractors that best met the criteria for this Project.

## B. Construction Schedule

Table 4: Construction Timeline – Inspection

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

Table 5: Construction Timeline – Direct Examination

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

Figure 2: Direct Examination Site #1

Figure 3: Direct Examination Site #1

Figure 4: Direct Examination Site #1

## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design.

## B. Actual Costs[2]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $2,509,939.

### Table 10: Actual Direct Costs[3]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 74,217 | 167,310 | 241,526 |
| Contract Costs | 532,111 | 857,995 | 1,390,105 |
| Material | 4,614 | 35,306 | 39,921 |
| Other Direct Charges | 98,231 | 396,652 | 494,883 |
| **Total Direct Costs** | 709,172 | 1,457,263 | 2,166,435 |

### Table 11: Actual Indirect Costs[4]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 157,578 | 185,550 | 343,128 |
| AFUDC | 207 | 0 | 207 |
| Property Taxes | 169 | 0 | 169 |
| **Total Indirect Costs** | 157,954 | 185,550 | 343,504 |

### Table 12: Total Costs[5]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 867,126 | 1,642,813 | 2,509,939 |

[2] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[3] Values may not add to total due to rounding.
[4] Ibid.
[5] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 5000 Phase 4 Bain Street to Chino TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $2,509,939.

**End of Line 5000 Phase 4 [redacted] TIMP Project Final Workpaper**

# I. LINE 6904 [redacted] TIMP PROJECT

## A. Background and Summary

Line 6904 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 0.8 miles along [redacted] in Palm Springs, through commercial and industrial areas. The pipeline is routed across Class 1, 2, and 3 locations with 0.5 miles within High Consequence Area(s) (HCAs) and 0.3 miles within non-HCAs. This Workpaper describes the activities and costs associated with Inspection using In-Line Inspection (ILI) located in Riverside County. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $1,362,976.

SoCalGas

## Final Workpaper for Line 6904 [redacted] TIMP Project

### Table 1: General Project Information

| Inspection Details | | | |
|---|---|---|---|
| Pipeline | 6904 | | |
| Segment | Palm Springs | | |
| Inspection Type | [redacted] Tool | | |
| Location | Riverside County | | |
| Class | 1, 2, 3 | | |
| HCA Length | 0.5 miles | | |
| Vintage | Multiple vintages from [redacted] | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | Multiple SMYS values from [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| Final Tool Run Date | [redacted] | | |
| Inspection Due Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 515,202 | 847,774 | 1,362,976 |

SoCalGas

Final Workpaper for Line 6904 [redacted] TIMP Project

## B. Maps and Images

Figure 1: Satellite Image of Line 6904 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspection.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Table 2 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 6904 [redacted] TIMP Project for Inspection using [redacted].
   a. [redacted] using two temporary launcher and receiver sites on Line 6904 in Palm Springs.
   b. The Project utilized one existing [redacted] and required installation of a new [redacted] to facilitate the [redacted].
   c. The Project utilized an existing charging station and installed a new [redacted] to facilitate the [redacted]
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using [redacted], direct examination was done on a validation spool piece. It was determined that no additional Direct Examination sites were required for validation.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the spool piece following the Inspection resulted in no additional examinations.
4. Final Project Scope: The final project scope of this Workpaper includes Inspection using [redacted]

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 6904 | 0.8 mi | [redacted] | [redacted] | [redacted] | Yes |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 6904 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: The Project consisted of Inspection of Line 6904 using two temporary launcher and receiver sites used for [redacted]
2. HCA Threats:
   [redacted]
3. Pipe Vintage: Multiple vintages from [redacted].
4. Long Seam Type:
   [redacted]
5. Inspection Tools and Technologies: The Project utilized a [redacted] combination tool with [redacted] technology during the Inspection of the pipeline.
6. Inspection Retrofits: The Project required installation of a new [redacted] and a new [redacted] to facilitate the [redacted]

7. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the pipeline could be inspected without system impacts.
8. Customer Impacts: The Project required partial curtailment for two customers in the project vicinity during the [redacted] Inspection.
9. Community Impacts: No identified impacts.
10. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
11. Environmental: The Project required a pre-construction biological survey for the Inspection.
12. Permit Restrictions: The Project required a Fugitive Dust Control Plan Permit from the South Coast Air Quality Management District.
13. Land Use: The Project Team obtained a Temporary Right of Entry (TRE) for a nearby laydown yard. Excavations for the Project were completed within company Right of Way (ROW).
14. Constructability:
    a. The Project Team considered pipeline accessibility based on a previous ILI and installed an additional [redacted] to complete the Inspection from both the North and South extents.
    b. The Project required an unexpected isolation of Line 6904 due to a damaged sleeve at one of the temporary launcher and receiver sites.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas completed the Direct Examination for the Line 6904 [redacted] TIMP Project using a validation spool piece and it was determined that no additional Direct Examination Sites were required for validation.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and Direct Examination of the validation spool piece to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

Table 5: Construction Timeline – Inspection

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

Figure 2: New valve installation with concrete supports

Figure 3: Tapping Unit for New valve installation

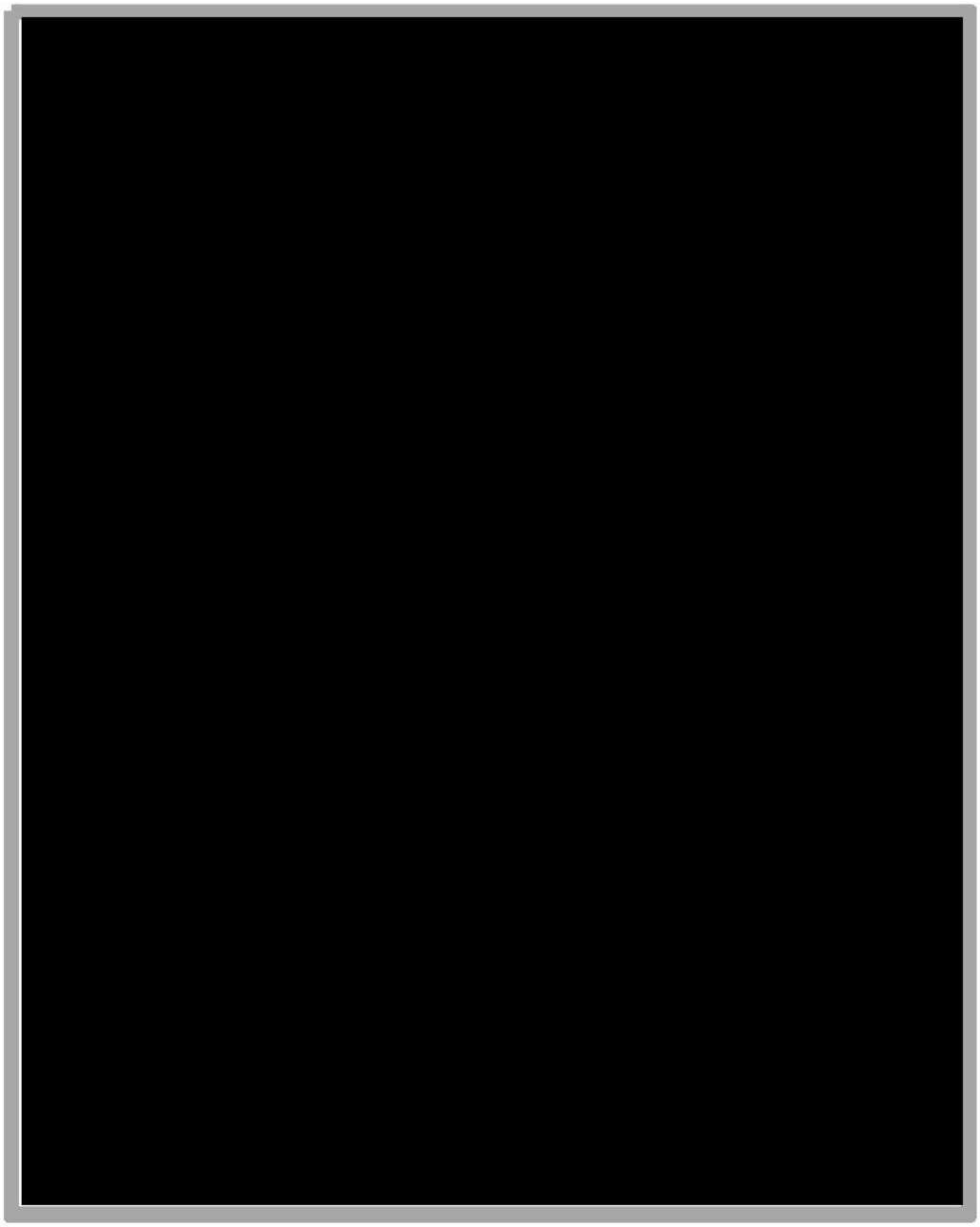
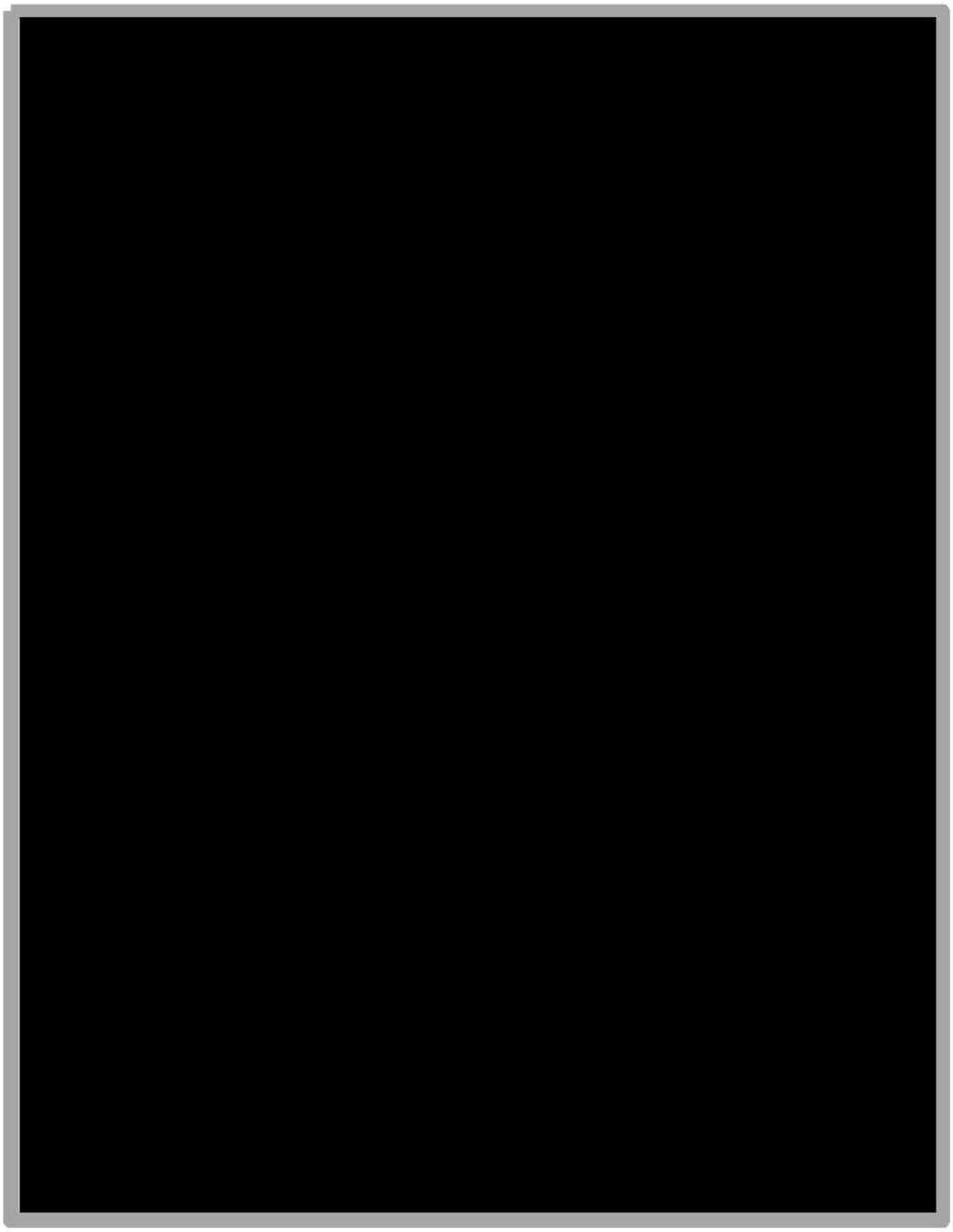


Figure 4: Tool Launcher and Charging Station



## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design.

SoCalGas

Final Workpaper for Line 6904 [redacted] TIMP Project

## B. Actual Costs[1]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $1,362,976.

Table 10: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 20,464 | 143,577 | 164,041 |
| Contract Costs | 238,493 | 129,530 | 368,023 |
| Material | 103,733 | 16,519 | 120,252 |
| Other Direct Charges | 57,523 | 457,930 | 515,454 |
| **Total Direct Costs** | 420,213 | 747,556 | 1,167,770 |

Table 11: Actual Indirect Costs[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 93,151 | 100,218 | 193,368 |
| AFUDC | 1,542 | 0 | 1,542 |
| Property Taxes | 296 | 0 | 296 |
| **Total Indirect Costs** | 94,989 | 100,218 | 195,207 |

Table 12: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 515,202 | 847,774 | 1,362,976 |

[1] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[2] Values may not add to total due to rounding.
[3] Ibid.
[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 6904 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $1,362,976.

**End of Line 6904 [redacted] TIMP Project Final Workpaper**

# I. LINE 6905 [redacted] TIMP PROJECT

## A. Background and Summary

Line 6905 [redacted] Transmission Integrity Management Program (TIMP) assessed a [redacted] diameter transmission line that runs approximately 31.7 miles from [redacted] The pipeline is routed across Class 1, 2, and 3 locations with 2.1 miles within High Consequence Area(s) (HCAs) and 29.6 miles within non-HCAs. This Workpaper describes the activities and costs associated with an Inspection using In-Line Inspection (ILI). The Project was located in Boron and Adelanto. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $1,515,592.

SoCalGas

## Final Workpaper for Line 6905 [redacted] TIMP Project

### Table 1: General Project Information

| Inspection Details | | | |
|---|---|---|---|
| Pipeline | 6905 | | |
| Segment | [redacted] | | |
| Inspection Type | [redacted] ILI Tool | | |
| Location | Boron and Adelanto | | |
| Class | 1, 2, 3 | | |
| HCA Mileage | 2.1 miles | | |
| Vintage | [redacted] | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | Multiple SMYS values from [redacted] | | |
| Construction Start | [redacted] | | |
| Construction Completion | [redacted] | | |
| Final Tool Run Date | [redacted] | | |
| Inspection Due Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 0 | 1,515,592 | 1,515,592 |

Final Workpaper for Line 6905 [redacted] TIMP Project

## B. Maps and Images

Figure 1: Satellite Image of Line 6905 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspection.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Table 2 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 6905 for Inspection using ILI.
   a. ILI from a permanent launcher site within [redacted] to a permanent receiver site within [redacted].
   b. Installation of temporary receiver piping and a filter separator.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, Direct Examination sites were identified for validation and will be addressed after 2023.
3. Post Assessment – Engineering, Design, and Constructability: The validation analysis of any future Direct Examinations will be used to determine if additional examinations are required.
4. Final Project Scope: The final project scope of this Workpaper includes Inspection using ILI.

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 6905 | 31.7 mi | [redacted] | [redacted] | [redacted] | No |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 6905 [redacted] Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: The Project completed the Inspection of the pipeline from a permanent receiver site at [redacted] to a permanent receiver site at [redacted]
2. HCA Threats:
   [redacted]
3. Pipe Vintage: [redacted]
4. Long Seam Type:
   [redacted]
5. Inspection Tools and Technologies: The Project utilized a combination tool with [redacted] capabilities during the Inspection of the pipeline. [redacted] were also utilized in preparation for the Inspection.
6. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the pipeline could be inspected without system impacts.

7. Customer Impacts: No customer impacts.
8. Community Impacts: No identified impacts.
9. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
10. Environmental: This Project occurred within habitat known to be occupied by the desert tortoise. Biological monitoring was required to escort vehicles and equipment to [redacted]. All tool tracking vendors driving the Right of Way (ROW) during ILI operations required a biological escort.
11. Permit Restrictions: No identified impacts.
12. Land Use: No identified impacts.
13. Traffic Control: The Project Team did not identify any traffic control needs at the site.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas reviewed Inspection reports, complete various site evaluations, and communicate with project stakeholders. Following the completion of the Inspection using ILI, Direct Examination sites were identified for validation and will be addressed after 2023.

## D. Engineering, Design, and Constructability Factors – Post Assessment

During the Post Assessment step, the Project Team will use the data collected from the Inspection and future Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis will be used to determine if additional examinations are required to enhance the overall integrity and safety of the pipeline.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

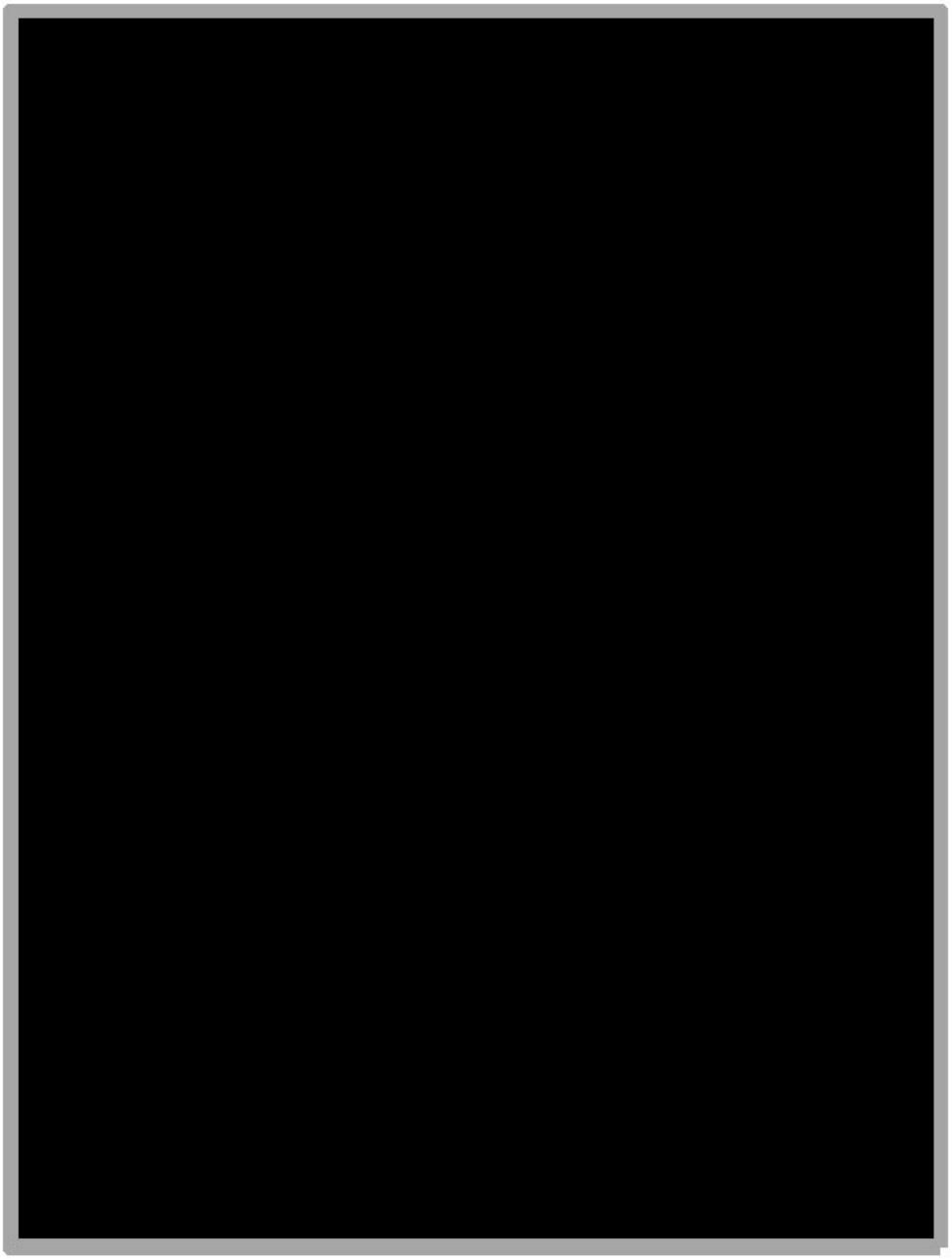
Table 3: Construction Timeline – Inspection

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

Figure 2: Receiver and Temporary Piping

Figure 3: Launcher

Figure 4: Launcher Temporary Piping



## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the Project plan and design.

## B. Actual Costs[1]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $1,515,592.

### Table 4: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 0 | 184,282 | 184,282 |
| Contract Costs | 0 | 727,363 | 727,363 |
| Material | 0 | 84,815 | 84,815 |
| Other Direct Charges | 0 | 341,866 | 341,866 |
| **Total Direct Costs** | 0 | 1,338,326 | 1,338,326 |

### Table 5: Actual Indirect Costs[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 0 | 177,267 | 177,267 |
| AFUDC | 0 | 0 | 0 |
| Property Taxes | 0 | 0 | 0 |
| **Total Indirect Costs** | 0 | 177,267 | 177,267 |

### Table 6: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 0 | 1,515,592 | 1,515,592 |

[1] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[2] Values may not add to total due to rounding.
[3] Ibid.
[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 6905 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $1,515,592.

**End of Line 6905 [redacted] TIMP Project Final Workpaper**

# I. LINE 6905 PHASE 1 [redacted] TIMP PROJECT

## A. Background and Summary

Line 6905 Phase 1 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 32 miles from [redacted], through desert locations. The associated In-line Inspection (ILI) for this Project was completed under a previous General Rate Case (GRC). The pipeline is routed across Class 1, 2, and 3 locations with 2.2 miles within High Consequence Area(s) (HCAs) and 29.8 miles within non-HCAs. This Workpaper describes the activities associated with a TIMP Assessment that includes the Direct Examinations made to three sites. The Project was located in desert locations between [redacted]. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $1,368,932.

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## Final Workpaper for Line 6905 Phase 1 [redacted] TIMP Project

### Table 1: General Project Information

| Direct Examination Details | |
|---|---|
| Site | 1 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 2 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Final Workpaper for Line 6905 Phase 1 [redacted] TIMP Project

Table 1: General Project Information (Continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 3 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 0 | 1,368,932 | 1,368,932 |

## B. Maps and Images

Figure 1: Satellite Image of Line 6905 Phase 1 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Table 2 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 6905 Phase 1 for Inspection using ILI, activities related to execution of the ILI were completed for this Project under a previous General Rate Case (GRC).
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, three Direct Examination sites were identified for validation.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs.
   c. Direct Examination Site #3 consisted of soft pad repairs.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in no additional examinations.
4. Final Project Scope: The final project scope of this Workpaper includes three Direct Examinations.

Table 2: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 6905 | 1 | No | No | 18 ft | Soft Pad | N/A | O&M |
| 6905 | 2 | No | No | 17 ft | Soft Pad | N/A | O&M |
| 6905 | 3 | No | No | 17 ft | Soft Pad | N/A | O&M |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas completed the Inspection for the Line 6905 Phase 1 [redacted] TIMP Project in a previous GRC.

## C. Engineering, Design, and Constructability Factors – Direct Examination

Continuing the planning process for the Line 6905 Phase 1 [redacted] TIMP Project, SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment:
   a. There were three Direct Examination Sites selected for validation of the ILI within the Line 6905 Phase 1 [redacted] TIMP Project.
      i. Direct Examination Site #1 consisted of soft pad repairs.
      ii. Direct Examination Site #2 consisted of soft pad repairs.
      iii. Direct Examination Site #3 consisted of soft pad repairs.
2. SRC/IRC: There were no SRCs or IRCs during the Direct Examinations.
3. System Analysis: The Project Team completed various reviews of the Pipeline system to evaluate project feasibility.

a. The Project Team identified the ideal construction window for this Project, taking into consideration factors such as system capacity and timelines of neighboring projects.
b. Once the scheduled date of [redacted] was determined feasible, system analysis concluded that the Direct Examinations could be completed without system impacts.

4. Customer Impacts: No customer impacts.
5. Community Impacts: No identified impacts.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: The Project required a pre-construction desert tortoise survey prior to work activities. The Project required biological monitoring with construction activity and escorting on access roads.
8. Permit Restrictions: There were no special permits or permit restrictions for this Project.
9. Land Use: The Project Team obtained a Temporary Right of Entry Agreement (TRE) from three private landowners at each of the dig sites.
10. Traffic Control: The Project Team did not identify any traffic control needs at the sites.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

Table 3: Construction Timeline – Direct Examination

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

Figure 2: Dig Site #1

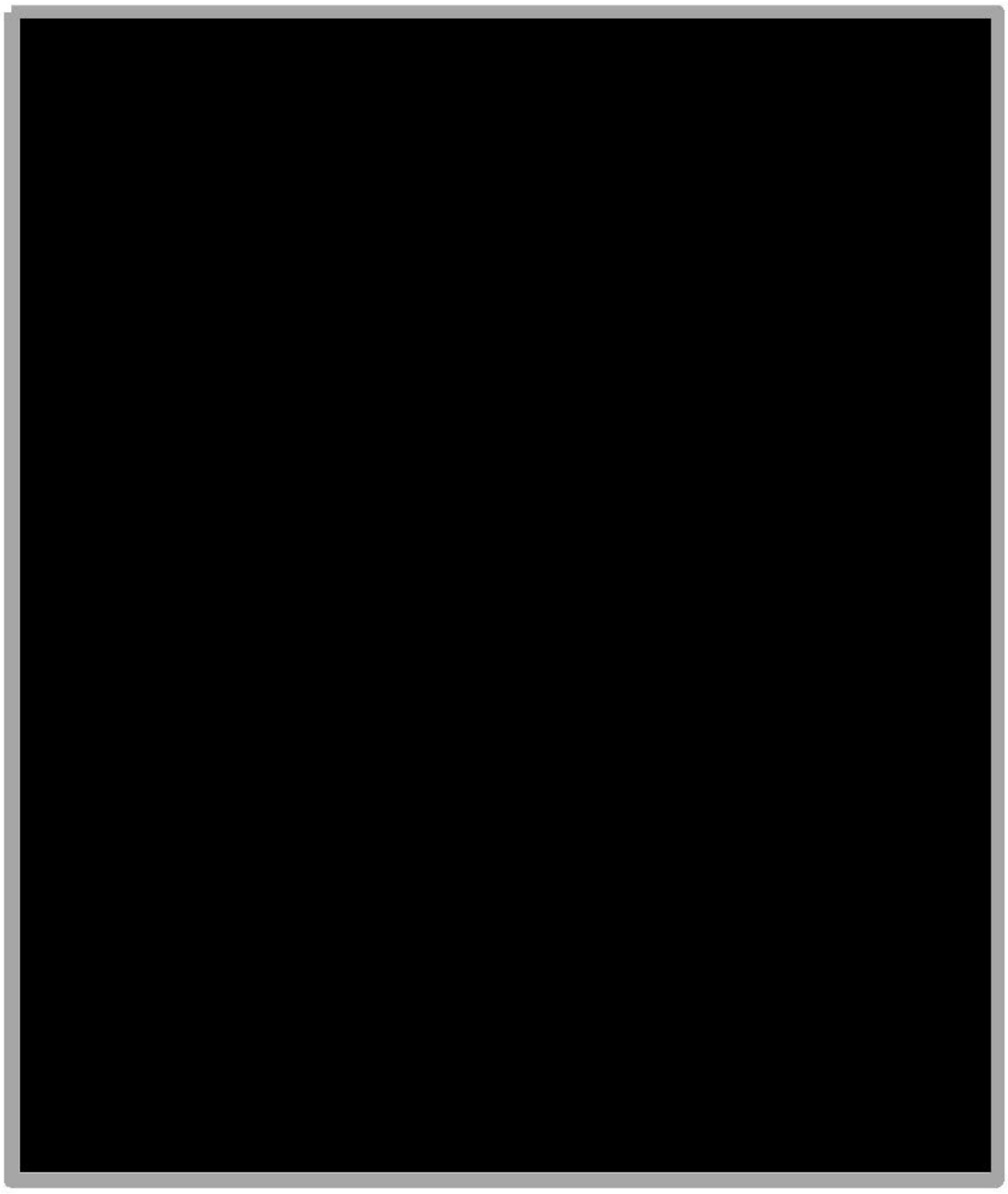


Figure 3: Dig Site #2

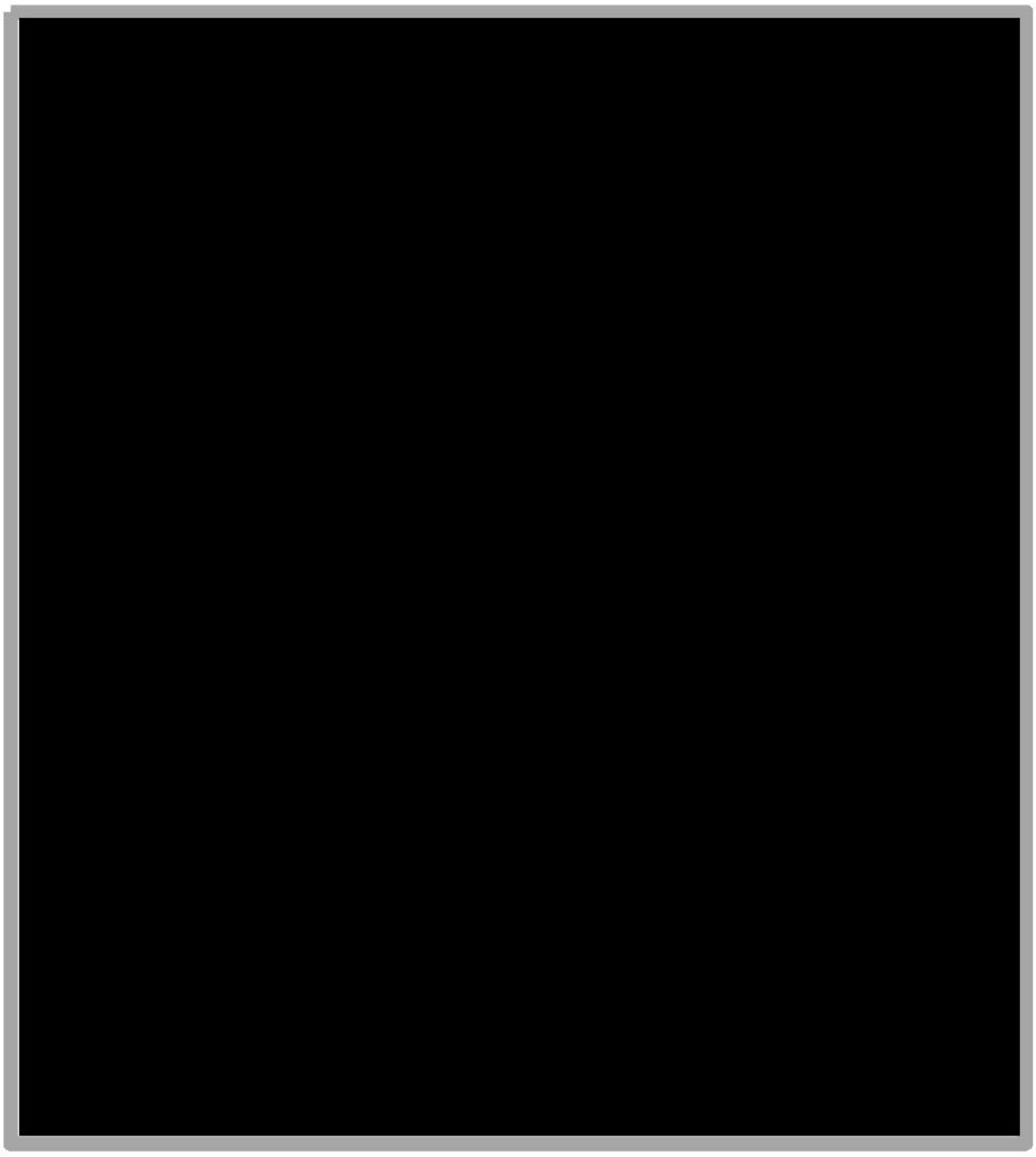
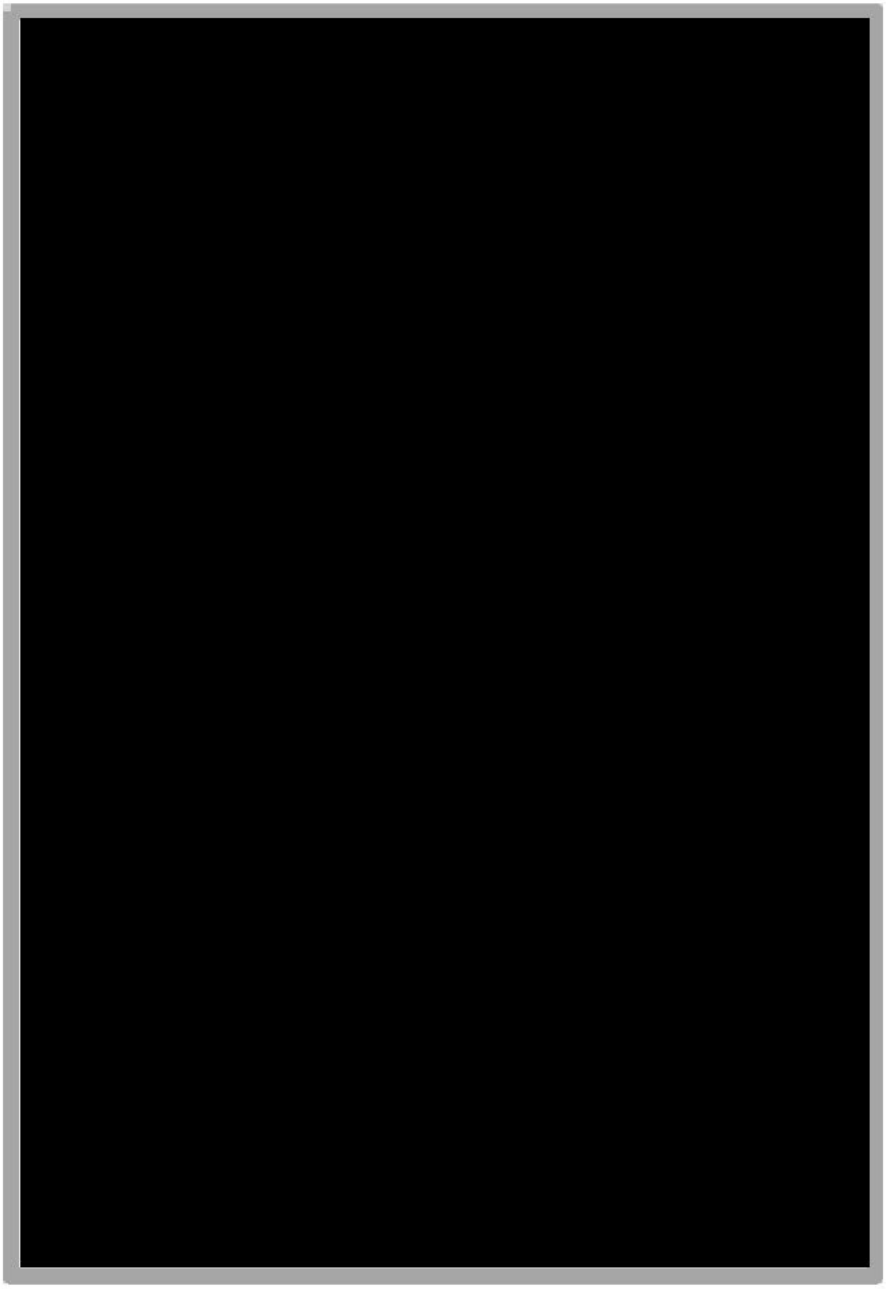


Figure 4: Dig Site #3



## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design.

## B. Actual Costs[1]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $1,368,932.

### Table 4: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 0 | 113,842 | 113,842 |
| Contract Costs | 0 | 513,913 | 513,913 |
| Material | 0 | -10,274 | -10,274 |
| Other Direct Charges | 0 | 620,662 | 620,662 |
| **Total Direct Costs** | 0 | 1,238,143 | 1,238,143 |

### Table 5: Actual Indirect Costs[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 0 | 119,728 | 119,728 |
| AFUDC | 0 | 10,063 | 10,063 |
| Property Taxes | 0 | 1,448 | 1,448 |
| **Total Indirect Costs** | 0 | 130,789 | 130,789 |

### Table 6: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 0 | 1,368,932 | 1,368,932 |

[1] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).

[2] Values may not add to total due to rounding.

[3] Ibid.

[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 6905 Phase 1 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $1,368,932.

**End of Line 6905 Phase 1 2022 [redacted] TIMP Project Final Workpaper**

Final Workpaper for Line 6906 and Line 6906XO1 [redacted] TIMP Project

# I. LINE 6906 AND LINE 6906XO1 [redacted] TIMP PROJECT

## A. Background and Summary

Line 6906 and Line 6906XO1 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a predominantly [redacted] diameter transmission line that runs approximately 18 miles from [redacted] through residential neighborhoods and commercial areas. The Project also assessed 185 feet of a [redacted] diameter transmission line in Rancho Cucamonga. The pipelines are routed across Class 1 and 3 locations, entirely within High Consequence Area(s) (HCAs). This Workpaper describes the activities and costs associated with the Direct Examinations made to two sites. The Project activities were located in the City of Fontana and City of San Bernardino. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $1,516,133.

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## Final Workpaper for Line 6906 and Line 6906XO1 [redacted] TIMP Project

### Table 1: General Project Information

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 1 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | | | |
| SMYS | | | |
| Construction Start Date | | | |
| Construction Completion Date | | | |
| **Direct Examination Details** | | | |
| Site | 2 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | | | |
| SMYS | | | |
| Construction Start Date | | | |
| Construction Completion Date | | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 423,265 | 1,092,867 | 1,516,133 |

## B. Maps and Images

Figure 1: Satellite Image of Line 6906 and Line 6906XO1 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Table 2 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 6906 and Line 6906XO1 for Inspection using [redacted] and [redacted] activities related to the ILI were completed for this Project before the TY 2019 General Rate Case (GRC) cycle.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspections using ILI, two Direct Examination Sites were identified for validation.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspections resulted in no additional examinations.
4. Final Project Scope: The final project scope of this Workpaper includes two Direct Examinations.

Table 2: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 6906 | 1 | Yes | No | 24 ft | Soft Pad | N/A | O&M |
| 6906 | 2 | Yes | No | 20 ft | Soft Pad | N/A | O&M |

## B. Engineering, Design, and Planning Factors – Inspection

SoCalGas completed the Inspection for the Line 6906 and Line 6906XO1 [redacted] TIMP Project before the TY 2019 GRC cycle.

## C. Engineering, Design, and Constructability Factors – Direct Examination

Continuing the planning process for the Line 6906 and Line 6906XO1 [redacted] TIMP Project, SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were two Direct Examination Sites selected for validation within the Line 6906 and Line 6906XO1 [redacted] TIMP Project.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs.
2. SRC/IRC: There were no SRCs or IRCs during the Direct Examinations.

3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Direct Examinations could be completed without system impacts.
4. Customer Impacts: No customer impacts.
5. Community Impacts: No identified impacts.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: No identified impacts.
8. Permit Restrictions: The Project Team obtained an Encroachment Permit from the City of San Bernardino Direct Examination Site #2.
9. Land Use: The Project Team obtained a Temporary Right of Entry (TRE) agreement to utilize private property in the City of San Bernardino near Direct Examination Site #2 as a laydown.
10. Traffic Control: The Project Team obtained an approved Traffic Control Plan (TCP) from the City of San Bernardino Direct Examination Site #2.
11. Other Identified Risks: The Project schedules for Direct Examination Site #2 were delayed due to safety requirements resulting from COVID-19.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and Direct Examinations step to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

Table 3: Construction Timeline – Direct Examination

| | |
|---|---|
| **Mobilization 1: Direct Examination Site #1** | |
| Construction Start Date | [redacted] |
| Construction Completion Date | |
| **Mobilization 2: Direct Examination Site #2** | |
| Construction Start Date | [redacted] |
| Construction Completion Date | |

Figure 2: Direct Examination Site #1

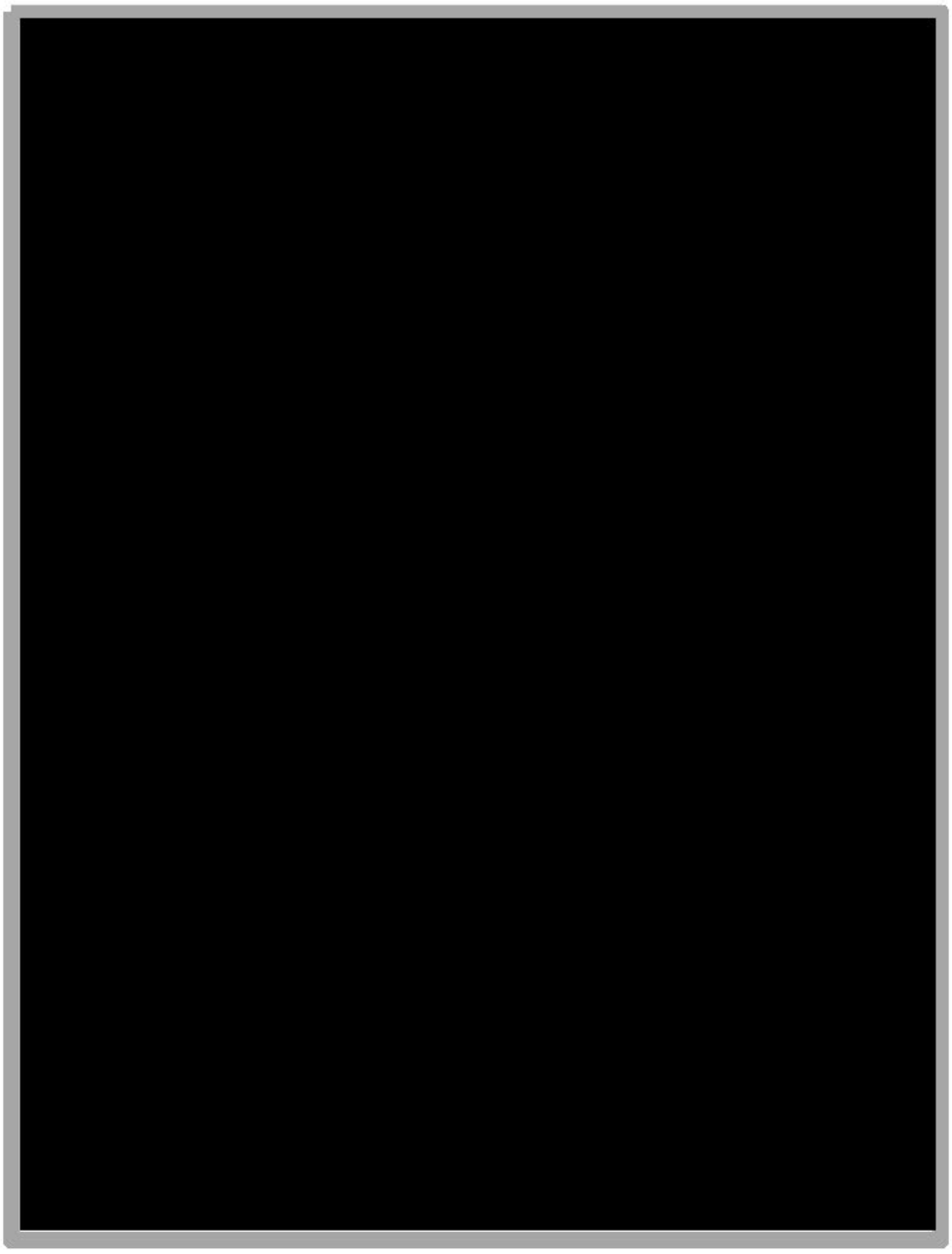

Figure 3: Direct Examination Site #2

## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas exercised due diligence in the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the Project plan and design.

## B. Actual Costs[1]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded Cost of the Project is $1,516,133.

### Table 4: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 2,393 | 40,428 | 42,820 |
| Contract Costs | 318,634 | 598,953 | 917,587 |
| Material | 0 | 56,817 | 56,817 |
| Other Direct Charges | 45,940 | 296,047 | 341,987 |
| **Total Direct Costs** | 366,967 | 992,245 | 1,359,212 |

### Table 5: Actual Indirect Costs[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 49,203 | 98,946 | 148,149 |
| AFUDC | 6,957 | 0 | 6,957 |
| Property Taxes | 139 | 1,677 | 1,815 |
| **Total Indirect Costs** | 56,298 | 100,623 | 156,921 |

### Table 6: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 423,265 | 1,092,867 | 1,516,133 |

[1] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[2] Values may not add to total due to rounding.
[3] Ibid.
[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 6906 and Line 6906XO1 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $1,516,133.

**End of Line 6906 and Line 6906XO1 [redacted] TIMP Project Final Workpaper**

# I. LINE 6914 [redacted] TIMP PROJECT

## A. Background and Summary

Line 6914 Best Avenue Transmission Integrity Management Program (TIMP) Project assessed a multi-diameter [redacted] diameter transmission line that runs approximately 1.5 miles in Brawley, through residential neighborhoods and agricultural land. The pipeline is routed across Class 1 and 3 locations entirely within High Consequence Area(s) (HCAs). This Workpaper describes the activities and costs associated with a TIMP Assessment that includes Inspection using [redacted] In-Line Inspection (ILI) located in the City of Brawley. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $1,632,825.

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# Final Workpaper for Line 6914 [redacted] TIMP Project

## Table 1: General Project Information

| Inspection Details | | | |
|---|---|---|---|
| Pipeline | 6914 | | |
| Segment | [redacted] | | |
| Inspection Type | [redacted] Tool | | |
| Location | Brawley | | |
| Class | 1, 3 | | |
| HCA Length | 1.5 miles | | |
| Vintage | [redacted] | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | Multiple SMYS values from [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| Final Tool Run Date | [redacted] | | |
| Inspection Due Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 909,456 | 723,369 | 1,632,825 |

SoCalGas

Final Workpaper for Line 6914 [redacted] TIMP Project

## B. Maps and Images

Figure 1: Satellite Image of Line 6914 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post Assessment. This Workpaper outlines construction activities during the Assessment process that typically occur during the Inspection and Post Assessment.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2, 3, 4, and 5 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 6914 [redacted] for Inspection using [redacted] ILI.
   a. A [redacted] ILI was launched and received at the same temporary launcher and receiver location near the midpoint of the pipeline assessment just north of the [redacted].
   b. A permanent [redacted] and an associated concrete support were installed on the line to facilitate the [redacted] ILI.
   c. Two additional locations were excavated near each end of the assessment so that the Project Team could install [redacted] ILI while it remained within the pipeline. This allowed the Project Team to increase the distance of the run to cover the entire HCA area without installing multiple launcher and receiver locations.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using [redacted] ILI, a Direct Examination was done on a validation spool piece.

3. Post Assessment – Engineering, Design, and Constructability: The validation analysis of the spool piece following the Inspection resulted in no additional examinations.
4. Final Project Scope: The final project scope of this Workpaper includes Inspection using [redacted] ILI.

Table 2: Final Inspection Project Scope - ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 6914 | 1.5 mi | [redacted] | [redacted] | [redacted] | Yes |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 6914 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: The Project is located on the east side of [redacted] and passes through Class 1 and 3 HCA locations.
2. HCA Threats:
   [redacted]
3. Pipe Vintage: [redacted]
4. Long Seam Type: [redacted]

5. Inspection Tools and Technologies: The Project utilized a [redacted] capabilities during the Inspection of the pipeline.
6. Inspection Retrofits: The Project began by installing a [redacted] and three sets of [redacted] fittings along the assessed pipeline segment prior to the Inspection. These pipeline features were installed in order to facilitate the ILI. The [redacted] was used for the launcher and receiver to insert and remove the tool while the fittings allowed deployment of [redacted] technology to increase the tool Inspection distance.
7. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the pipeline could be inspected without system impacts.
8. Customer Impacts: The Project Team determined that customer service could be maintained to core and non-core customers by installing a [redacted] and utilizing [redacted] technology that resulted in no customer impacts.
9. Community Impacts: Traffic impacts and occasional noise.
10. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
11. Environmental: No identified impacts.
12. Permit Restrictions: The Project Team obtained the following permit:
    a. City of Brawley Right of Way Permit
13. Land Use: No identified impacts.
14. Traffic Control: The Project Team required traffic control at each of the three work locations along [redacted] that included the use of Flaggers, K-Rail, barricades, signs, cones, and other measures.
15. Constructability: Large volume customer loads present on Line 6914 made [redacted] methods unfeasible. The Project Team instead utilized a [redacted] tool that can inspect the line while it is operational in order to maintain service to customers.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas completed the Direct Examination for Line 6914 [redacted] using a validation spool piece and it was determined that no additional Direct Examination Sites were required for validation.

## D. Engineering, Design, and Constructability Factors – Post Assessment

During the Post Assessment step, the Project Team used the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

Table 4: Construction Timeline – Inspection

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

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Final Workpaper for Line 6914 [redacted] TIMP Project

Figure 2: [redacted] In-Line Inspection Tool

Final Workpaper for Line 6914 [redacted] TIMP Project

Figure 3: [redacted] Installed for In-Line Inspection Launcher/Receiver

Final Workpaper for Line 6914 [redacted] TIMP Project

Figure 4: Fitting Installed for [redacted] of ILI Tool

## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design.

Final Workpaper for Line 6914 [redacted] TIMP Project

## B. Actual Costs[1]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $1,632,825.

### Table 7: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 68,304 | 20,416 | 88,720 |
| Contract Costs | 655,853 | 495,694 | 1,151,547 |
| Material | 316 | 330 | 646 |
| Other Direct Charges | 63,028 | 165,236 | 228,265 |
| **Total Direct Costs** | 787,502 | 681,676 | 1,469,178 |

### Table 8: Actual Indirect Costs[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 119,936 | 41,585 | 161,521 |
| AFUDC | 1,703 | 95 | 1,798 |
| Property Taxes | 315 | 13 | 328 |
| **Total Indirect Costs** | 121,955 | 41,693 | 163,648 |

### Table 9: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 909,456 | 723,369 | 1,632,825 |

[1] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[2] Values may not add to total due to rounding.
[3] Ibid.
[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 6914 [redacted] TIMP Project Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $1,632,825.

**End of Line 6914 [redacted] TIMP Project Final Workpaper**

# I. LINE 6916 PHASE 2 [redacted] TIMP PROJECT

## A. Background and Summary

Line 6916 Phase 2 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 60.2 miles from [redacted]. The pipeline is routed across Class 1, 2, and 3 locations with 10.3 miles within High Consequence Areas (HCAs) and 49.9 miles within non-HCAs. This Workpaper describes the activities and costs associated with a TIMP Assessment that includes Direct Examinations made to five sites. The Project activities were located in San Bernardino County and Yucca Valley. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is $8,335,774.

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## Final Workpaper for Line 6916 Phase 2 [redacted] TIMP Project

### Table 1: General Project Information

| **Direct Examination Details** | |
|---|---|
| Site | 1 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | Yes |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 2 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 3 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 4 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

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Final Workpaper for Line 6916 Phase 2 [redacted] TIMP Project

Table 1: General Project Information (Continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 5 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 8,335,774 | 0 | 8,335,774 |

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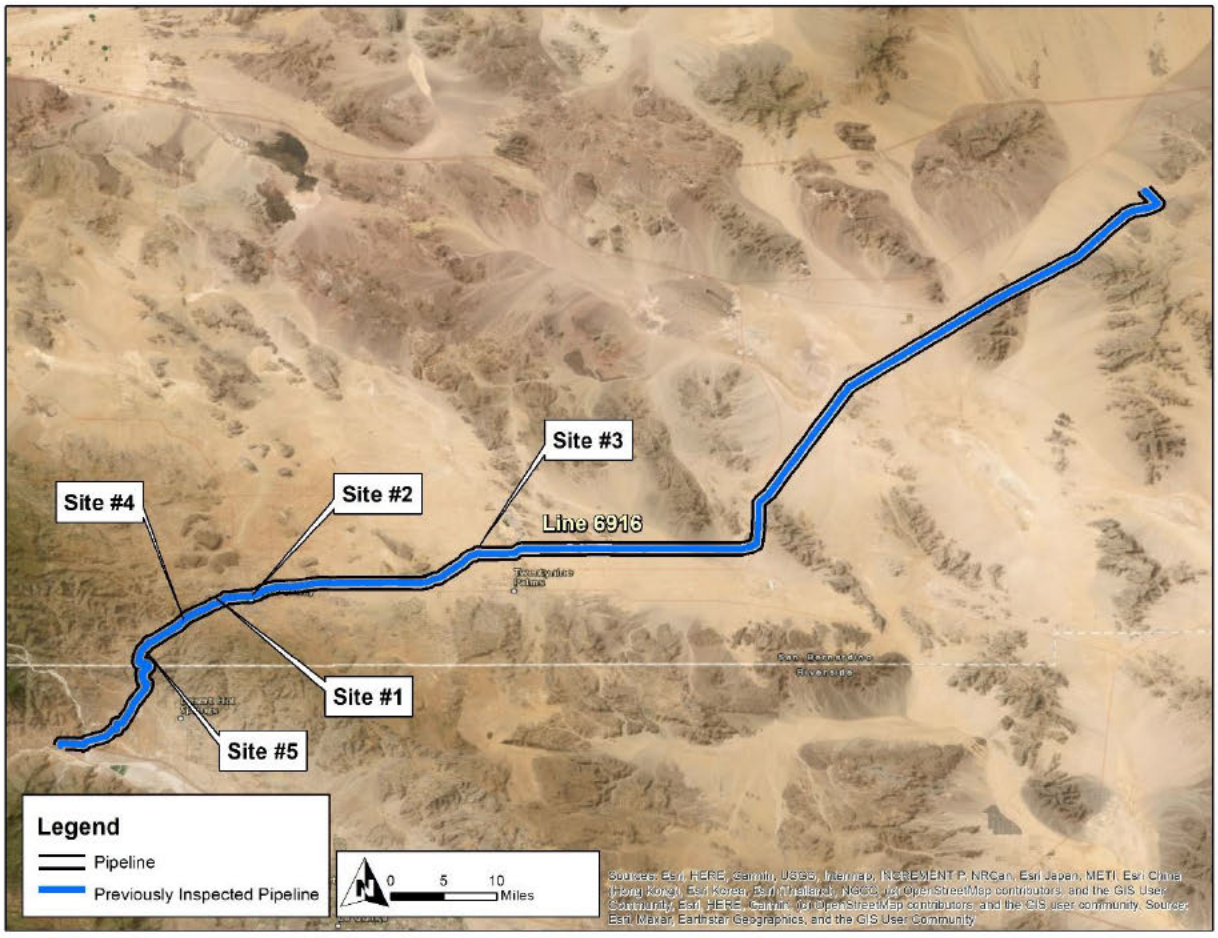
Final Workpaper for Line 6916 Phase 2 [redacted] TIMP Project

## B. Maps and Images

Figure 1: Satellite Image of Line 6916 Phase 2 [redacted] TIMP Project



# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Table 2 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 6916 Phase 2 for Inspection using ILI, activities related to execution of the ILI were completed for this Project before the TY 2019 General Rate Case (GRC) cycle.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, 12 Direct Examination sites were identified for validation. Activities for five of the 12 Direct Examinations were completed during the TY 2019 GRC cycle.
   a. Direct Examination Site #1 consisted of Soft Pad Repairs.
   b. Direct Examination Site #2 consisted of an 18 foot Replacement.
   c. Direct Examination Site #3 consisted of a 92 foot Replacement.
   d. Direct Examination Site #4 consisted of a 95 foot Replacement.
   e. Direct Examination Site #5 consisted of Soft Pad Repairs.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in no additional examinations.
4. Final Project Scope: The final project scope of this Workpaper includes five Direct Examinations.

Table 2: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 6916 | 1 | Yes | No | 52 ft | Soft Pad | N/A | Capital |
| 6916 | 2 | Yes | No | 25 ft | Replacement | 18 ft | Capital |
| 6916 | 3 | No | No | 98 ft | Replacement | 92 ft | Capital |
| 6916 | 4 | No | No | 112 ft | Replacement | 95 ft | Capital |
| 6916 | 5 | No | No | 23 ft | Soft Pad | N/A | Capital |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas completed the Inspection for the Line 6916 Phase 2 [redacted] TIMP Project before the TY 2019 GRC cycle.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were five Direct Examination Sites selected for validation of the ILI within the Line 6916 Phase 2 [redacted] TIMP Project.
   a. Direct Examination Site #1 consisted of Soft Pad Repairs.
   b. Direct Examination Site #2 consisted of an 18 foot Replacement.
   c. Direct Examination Site #3 consisted of a 92 foot Replacement.
   d. Direct Examination Site #4 consisted of a 95 foot Replacement.
   e. Direct Examination Site #5 consisted of Soft Pad Repairs.

2. SRC/IRC: There were no SRCs or IRCs during the Direct Examinations.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Direct Examinations could be completed without system impacts.
4. Customer Impacts: The Project Team determined that customer service could be maintained by installing a bypass to provide an alternate service to a non-core customer during construction.
5. Community Impacts: The Project had minimal community impact because most sites were in areas that did not require traffic control.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: No identified impacts.
8. Permit Restrictions: The Project Team obtained Excavation Permits from the San Bernardino Flood Control District and San Bernardino County for Direct Examination Sites #2 and #3.
9. Land Use: The Project Team obtained a Temporary Right of Entry (TRE) for a laydown yard and work at a golf course at Direct Examination Site #1.
10. Traffic Control: The Project Team performed traffic control for a shoulder closure at Direct Examination Site #3 as a requirement of the Excavation Permit.
11. Schedule Delay: The Project Team was required to temporarily demobilize during construction to provide resources to other high priority SoCalGas projects, delaying the completion of Direct Examination Sites #2 and #3 until resources were available.
12. Constructability: The Project Team coordinated with another SoCalGas Project to allow installation of [redacted] at Direct Examination Sites #2 and #5 to facilitate a future [redacted] of Line 6916.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

The Project Team used the data collected from the Inspection and Direct Examinations during the Post-Assessment step to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

Table 3: Construction Timeline – Direct Examination

| **Mobilization 1: Direct Examination Sites #1, #4, and #5** | |
|---|---|
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Mobilization 2: Direct Examination Sites #2 and #3** | |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Figure 2: Replacement at Site #3

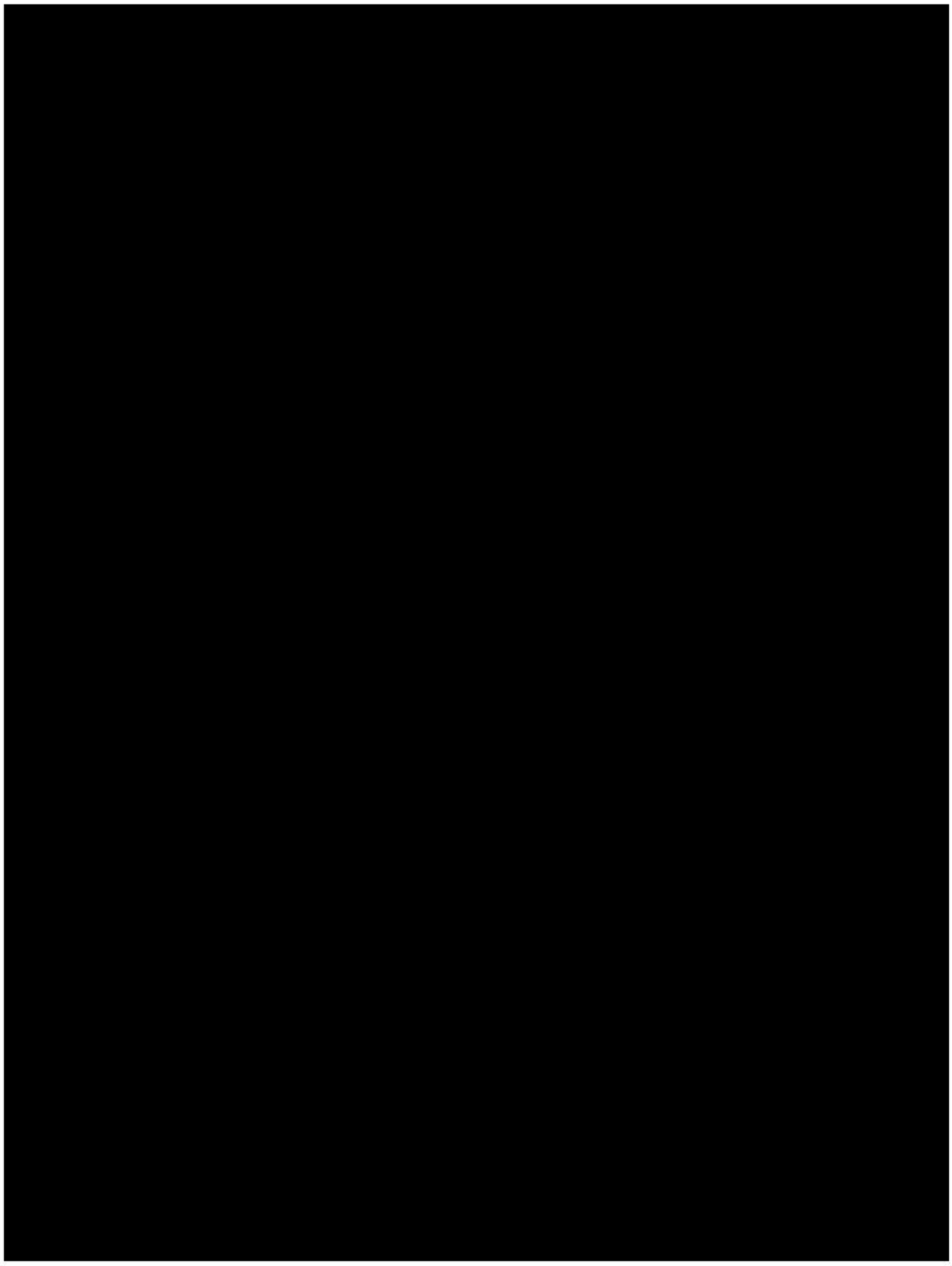
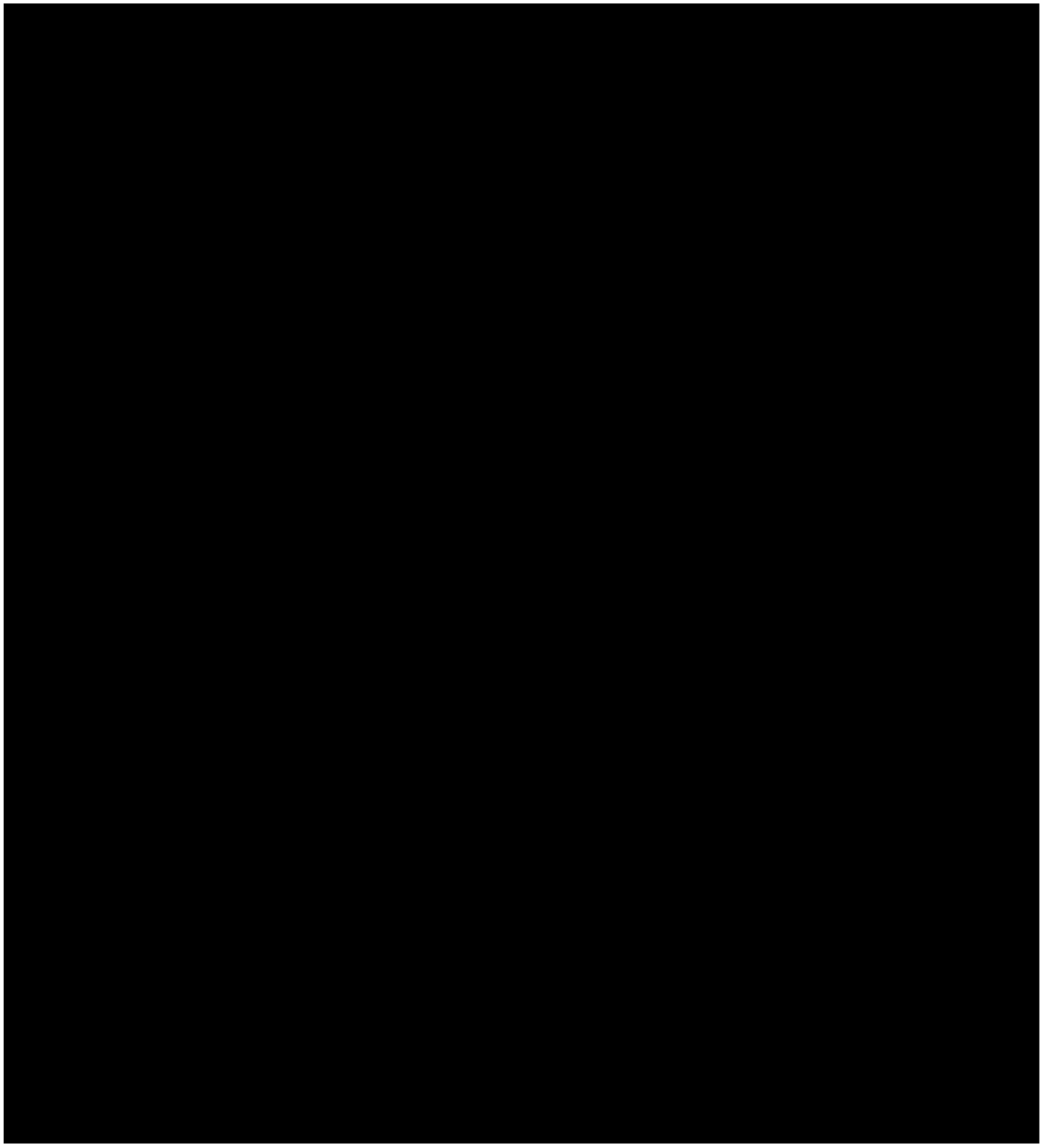


Figure 3: Pipe Removed at Site #4



## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design.

## B. Actual Costs[1]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $8,335,774.

### Table 4: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 365,522 | 0 | 365,522 |
| Contract Costs | 5,328,589 | 0 | 5,328,589 |
| Material | 170,055 | 0 | 170,055 |
| Other Direct Charges | 1,157,966 | 0 | 1,157,966 |
| **Total Direct Costs** | 7,022,131 | 0 | 7,022,131 |

### Table 5: Actual Indirect Costs[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 1,237,024 | 0 | 1,237,024 |
| AFUDC | 54,697 | 0 | 54,697 |
| Property Taxes | 21,922 | 0 | 21,922 |
| **Total Indirect Costs** | 1,313,644 | 0 | 1,313,644 |

### Table 6: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 8,335,774 | 0 | 8,335,774 |

[1] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[2] Values may not add to total due to rounding.
[3] Ibid.
[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of their integrated natural gas system by prudently executing the Line 6916 Phase 2 [redacted] TIMP Project. Through this Project, SoCalGas successfully implemented and managed the requirements set forth in 49 CFR 192, Subpart O to achieve the objective to continually identify threats to its pipelines, determine the risk posed by these threats, schedule and track assessments to address threats, conduct an appropriate assessment in a prescribed timeline, collect information about the condition of the pipelines, take actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and Report findings of Line 6916 in the San Bernardino County and Yucca Valley. The total loaded cost of the Project is $8,335,774.

**End of Line 6916 Phase 2 [redacted] TIMP Project Final Workpaper**

# I. L6916 PHASE 2 [redacted] TIMP PROJECT

## A. Background and Summary

Line 6916 Phase 2 [redacted] Transmission Integrity Management Program (TIMP) Project assessed covered segments (i.e. HCA) of a [redacted] diameter transmission line that runs approximately 60.2 miles from [redacted]. The pipeline is routed across Class 1, 2, and 3 locations with 10.3 miles within High Consequence Area(s) (HCAs) and 49.9 miles within non-HCAs. This Workpaper describes the activities and costs associated with a TIMP Assessment that includes an Inspection using In-Line Inspection (ILI) and the Direct Examinations made to 25 sites, of these sites one contained a Safety Related Condition (SRC) and 24 contained Immediate Repair Conditions (IRCs), located in the cities of Twentynine Palms, Joshua Tree, Yucca Valley, and Morongo Valley. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $40,238,912.

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## Final Workpaper for Line 6916 Phase 2 [redacted] TIMP Project

### Table 1: General Project Information

| Inspection Details | |
|---|---|
| Pipeline | 6916 |
| Segment | Phase 2 – [redacted] |
| Inspection Type | [redacted] tools |
| Location | Twentynine Palms, Joshua Tree, Yucca Valley, and Morongo Valley |
| Class | 1, 2, 3 |
| HCA Length | 10.3 miles |
| Vintage | Multiple vintages from [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Final Tool Run Date | [redacted] |
| Inspection Due Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 1 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 2 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 3 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 4 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 5 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 6 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 7 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 8 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 9 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 10 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 11 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 12 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 13 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Band |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 14 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 15 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 16 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Band |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 17 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 18 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Band |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 19 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Band |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 20 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 21 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Band |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 22 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Band |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 23 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Band |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 24 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Replacement |
| Within HCA | Yes |
| SRC/IRC | Yes |
| SRC/IRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Final Workpaper for Line 6916 Phase 2 [redacted] TIMP Project

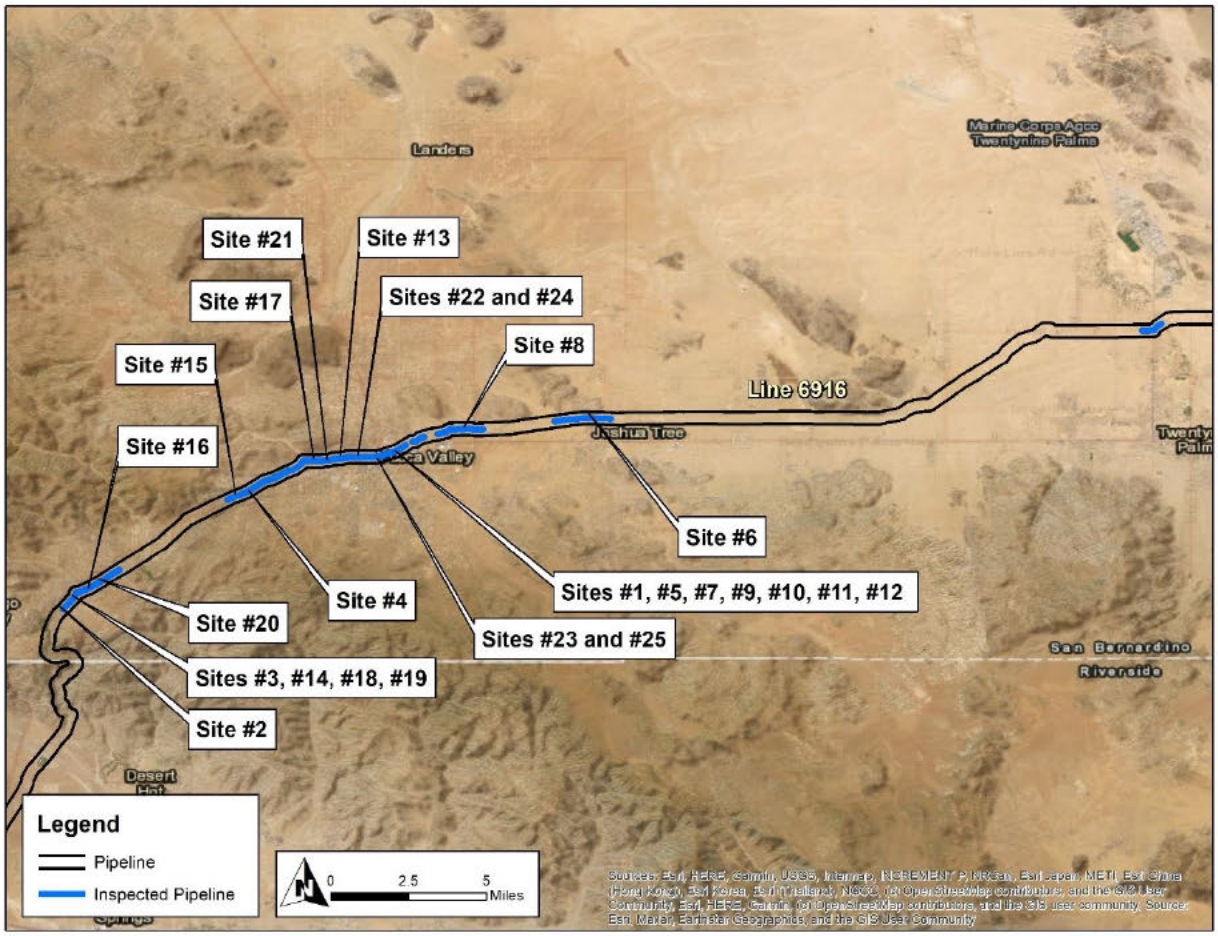
Table 1: General Project Information (Continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 25 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Replacement | | |
| Within HCA | Yes | | |
| SRC/IRC | Yes | | |
| SRC/IRC Discovery Date | [redacted] | | |
| Repair Date | [redacted] | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 29,190,035 | 11,048,877 | 40,238,912 |

Final Workpaper for Line 6916 Phase 2 [redacted] TIMP Project

## B. Maps and Images

Figure 1: Satellite Image of Line 6916 Phase 2 [redacted] TIMP Project – Inspection and Direct Examinations



# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspections and Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2 and 3 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 6916 Phase 2 for Inspection using [redacted]
   a. [redacted] tools were launched and received from seven separate launcher and receiver sites along L6916 from [redacted]. Due to system constraints making the use of [redacted] tools infeasible, the Project Team utilized [redacted] tools to the HCAs.
   b. The Project required the development of a new [redacted] tool to assess the longitudinal seam weld location.
   c. The Project Team installed six [redacted] and utilized one existing [redacted] to be used as entry and exit locations for the [redacted] segments.
   d. The Project Team installed 19 In-Line [redacted] to facilitate the [redacted].
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspections using [redacted], 25 Direct Examination sites were identified for validation during this GRC cycle.
   a. Direct Examination Site #1 consisted of a 192 foot Replacement.

b. Direct Examination Site #2 consisted of a 70 foot Replacement.
c. Direct Examination Site #3 consisted of a 194 foot Replacement.
d. Direct Examination Site #4 consisted of a 42 foot Replacement.
e. Direct Examination Site #5 consisted of a 59 foot Replacement.
f. Direct Examination Site #6 consisted of a 41 foot Replacement.
g. Direct Examination Site #7 consisted of a 120 foot Replacement.
h. Direct Examination Site #8 consisted of Soft Pad Repairs.
i. Direct Examination Site #9 consisted of a 41 foot Replacement.
j. Direct Examination Site #10 consisted of a 93 foot Replacement.
k. Direct Examination Site #11 consisted of a 41 foot Replacement.
l. Direct Examination Site #12 consisted of a 41 foot Replacement.
m. Direct Examination Site #13 consisted of a Band Repair.
n. Direct Examination Site #14 consisted of a 13 foot Replacement.
o. Direct Examination Site #15 consisted of Soft Pad Repairs.
p. Direct Examination Site #16 consisted of a Band Repair.
q. Direct Examination Site #17 consisted of a 15 foot Replacement.
r. Direct Examination Site #18 consisted of a Band Repair.
s. Direct Examination Site #19 consisted of a Band Repair.
t. Direct Examination Site #20 consisted of a 41 foot Replacement.
u. Direct Examination Site #21 consisted of a Band Repair.
v. Direct Examination Site #22 consisted of a Band Repair.
w. Direct Examination Site #23 consisted of a Band Repair.
x. Direct Examination Site #24 consisted of a 15 foot Replacement.
y. Direct Examination Site #25 consisted of a 13 foot Replacement.
z. The Project identified one Direct Examination site containing a Safety Related Condition (SRC) and 24 Direct Examination sites containing Immediate Repair Conditions (IRCs).

3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in additional examinations that will be addressed after 2023, outside the scope of this proceeding.
4. Final Project Scope: The final project scope of this Workpaper includes Inspections using [redacted] and 25 Direct Examinations.

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 6916 | 0.4 mi | [redacted] | [redacted] | [redacted] | Yes |
| 6916 | 0.2 mi | [redacted] | [redacted] | [redacted] | Yes |
| 6916 | 1.9 mi | [redacted] | [redacted] | [redacted] | Yes |
| 6916 | 1.6 mi | [redacted] | [redacted] | [redacted] | Yes |
| 6916 | 1.6 mi | [redacted] | [redacted] | [redacted] | Yes |
| 6916 | 3.3 mi | [redacted] | [redacted] | [redacted] | Yes |
| 6916 | 1.3 mi | [redacted] | [redacted] | [redacted] | Yes |
| 6916 | 0.5 mi | [redacted] | [redacted] | [redacted] | Yes |
| 6916 | 0.3 mi | [redacted] | [redacted] | [redacted] | Yes |
| 6916 | 2.0 mi | [redacted] | [redacted] | [redacted] | Yes |
| 6916 | 1.6 mi | [redacted] | [redacted] | [redacted] | Yes |
| 6916 | 1.8 mi | [redacted] | [redacted] | [redacted] | Yes |
| 6916 | 3.3 mi | [redacted] | [redacted] | [redacted] | Yes |
| 6916 | 1.3 mi | [redacted] | [redacted] | [redacted] | Yes |

Table 3: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 6916 | 1 | Yes | Yes | 203 ft | Replacement | 192 ft | Capital |
| 6916 | 2 | No | Yes | 46 ft | Replacement | 70 ft | Capital |
| 6916 | 3 | Yes | Yes | 202 ft | Replacement | 194 ft | Capital |
| 6916 | 4 | Yes | Yes | 47 ft | Replacement | 42 ft | Capital |
| 6916 | 5 | Yes | Yes | 65 ft | Replacement | 59 ft | Capital |
| 6916 | 6 | Yes | Yes | 49 ft | Replacement | 41 ft | Capital |
| 6916 | 7 | Yes | Yes | 129 ft | Replacement | 120 ft | Capital |
| 6916 | 8 | Yes | Yes | 42 ft | Soft Pad | N/A | Capital |
| 6916 | 9 | Yes | Yes | 47 ft | Replacement | 41 ft | Capital |
| 6916 | 10 | Yes | Yes | 87 ft | Replacement | 93 ft | Capital |
| 6916 | 11 | Yes | Yes | 46 ft | Replacement | 41 ft | Capital |
| 6916 | 12 | Yes | Yes | 46 ft | Replacement | 41 ft | Capital |
| 6916 | 13 | Yes | Yes | 42 ft | Band | N/A | Capital |
| 6916 | 14 | Yes | Yes | 35 ft | Replacement | 13 ft | Capital |
| 6916 | 15 | Yes | Yes | 46 ft | Soft Pad | N/A | Capital |
| 6916 | 16 | Yes | Yes | 46 ft | Band | N/A | Capital |
| 6916 | 17 | Yes | Yes | 28 ft | Replacement | 15 ft | Capital |
| 6916 | 18 | Yes | Yes | 18 ft | Band | N/A | Capital |
| 6916 | 19 | Yes | Yes | 58 ft | Band | N/A | Capital |
| 6916 | 20 | Yes | Yes | 28 ft | Replacement | 16 ft | Capital |
| 6916 | 21 | Yes | Yes | 17 ft | Band | N/A | Capital |
| 6916 | 22 | Yes | Yes | 22 ft | Band | N/A | Capital |
| 6916 | 23 | Yes | Yes | 44 ft | Band | N/A | Capital |
| 6916 | 24 | Yes | Yes | 44 ft | Replacement | 15 ft | Capital |
| 6916 | 25 | Yes | Yes | 22 ft | Replacement | 13 ft | Capital |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 6916 Phase 2 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: The Project addressed ten HCA segments that were each inspected using [redacted] tools. The segments included various launcher and receiver configurations along the pipeline using seven [redacted] locations and 19 [redacted].
2. HCA Threats:
   [redacted]
3. Pipe Vintage: Multiple vintages from [redacted].
4. Long Seam Type:
   [redacted]
5. Inspection Tools and Technologies:
   a. The Project utilized two [redacted] tools during the Inspection of the pipeline to assess the threats identified. These tools are described below:
      i. One [redacted] tool was outfitted with [redacted] technology and the other tool included [redacted] technology.

[redacted]

ii. Another [redacted] tool was outfitted with [redacted] technology and was the first of its kind in the country. The Project Team coordinated with a vendor to engineer and fabricate this tool prior to construction so that the [redacted] threat on the line could be assessed.

b. The Project included a total of 14 [redacted] Runs.

c. The Project required three [redacted] re-runs due to sensor loss and tool malfunctions.

6. Inspection Retrofits: The Project Team installed six new [redacted] and 19 [redacted] to facilitate the [redacted].

7. System Analysis:

a. The Project Team completed a review of the Pipeline system to evaluate project feasibility by installing a temporary flow meter. Due to low flow rates, the Project Team determined the pipeline to be unpiggable using [redacted] tools. As a result, the Project Team refined the project scope to a [redacted] Inspection and reduced the inspected length to only the HCA segments between [redacted]

8. Customer Impacts: No identified impacts.

9. Community Impacts: The Project had a minimal community noise impact due to [redacted] tools during twilight hours. The Project Team did notify the community ahead of time and utilized noise blankets to minimize the impact.

10. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.

11. Environmental:

a. Lake and Streambed Alteration Agreement notification to the California Department of Fish and Wildlife (CDFW).

b. Notice of Intent to the Colorado River Regional Water Quality Control Board (RWQCB).

12. Permit Restrictions:

a. City of Twentynine Palms Encroachment Permits.

b. County of San Bernardino Flood Control Permits.
c. Town of Yucca Valley Encroachment Permits.

13. Land Use:
    a. The Project Team obtained a Temporary Right of Entry (TRE) from a private landowner in the City of Yucca Valley as a laydown yard.
    b. The Project Team obtained a (TRE) from a private landowner in the City of Yucca Valley for the use of a workspace to install an [redacted].
14. Traffic Control: The Project Team required traffic control at four separate project sites during construction.
15. Constructability:
    a. During the [redacted] tool runs, the Project Team worked continuously using day and night shift crews.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were 25 Direct Examination Sites selected for validation of the ILI within the Line 6916 Phase 2 [redacted] TIMP Project.
    a. Direct Examination Site #1 consisted of a 192 foot Replacement.
    b. Direct Examination Site #2 consisted of a 70 foot Replacement.
    c. Direct Examination Site #3 consisted of a 194 foot Replacement.
    d. Direct Examination Site #4 consisted of a 42 foot Replacement.
    e. Direct Examination Site #5 consisted of a 59 foot Replacement.
    f. Direct Examination Site #6 consisted of a 41 foot Replacement.
    g. Direct Examination Site #7 consisted of a 120 foot Replacement.
    h. Direct Examination Site #8 consisted of Soft Pad Repairs.

i. Direct Examination Site #9 consisted of a 41 foot Replacement.
j. Direct Examination Site #10 consisted of a 93 foot Replacement.
k. Direct Examination Site #11 consisted of a 41 foot Replacement.
l. Direct Examination Site #12 consisted of a 41 foot Replacement.
m. Direct Examination Site #13 consisted of a Band Repair.
n. Direct Examination Site #14 consisted of a 13 foot Replacement.
o. Direct Examination Site #15 consisted of Soft Pad Repairs.
p. Direct Examination Site #16 consisted of a Band Repair.
q. Direct Examination Site #17 consisted of a 15 foot Replacement.
r. Direct Examination Site #18 consisted of a Band Repair.
s. Direct Examination Site #19 consisted of a Band Repair.
t. Direct Examination Site #20 consisted of a 41 foot Replacement.
u. Direct Examination Site #21 consisted of a Band Repair.
v. Direct Examination Site #22 consisted of a Band Repair.
w. Direct Examination Site #23 consisted of a Band Repair.
x. Direct Examination Site #24 consisted of a 15 foot Replacement.
y. Direct Examination Site #25 consisted of a 13 foot Replacement.

2. SRC/IRC: Direct Examination Sites #1 and #3 through #22 contained IRCs and Direct Examination Site #2 contained an SRC. These sites required expedited project schedules.
3. System Analysis:
   a. The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded with the Project Team utilizing underpressure protection at Adobe station.
   b. The results of the ILI required the Project Team to reduce the Maximum Operating Pressure (MOP). The Project Team installed sense lines at [redacted] in preparation to maintain the long-term pressure reduction while the SRC and IRCs were evaluated.

4. Customer Impacts: The Project Team determined that a partial curtailment was needed for a non-core customer load in order to complete the validation digs. The Project Team conducted weekly meetings with the customer during the duration of the curtailment and was also able to maintain their core load.
5. Community Impacts: The Project Team conducted significant outreach efforts to impacted customers. This included on-site meetings, door notices, and mail notifications as some sites were in the vicinity of several customers.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental:
   a. Direct Examination Sites #4 and #5 required an environmental monitor during vegetation removal.
   b. Direct Examination Site #4 required k-rail and silt fencing to prevent discharge of soil or other materials into the waterway.
   c. The Project Team completed Nesting Bird Surveys for multiple Direct Examination sites.
8. Permit Restrictions:
   a. Direct Examination Site #8 required a Flood Control Permit from San Bernardino.
   b. Direct Examination Sites #23, #24, and #25 required a Construction Permit from the Town of Yucca Valley that restricted work hours to night work only.
9. Land Use:
   a. The Project Team obtained a temporary right of entry (TRE) from a private landowner in the City of Yucca Valley as a laydown yard.
10. Traffic Control: Direct Examination Sites #23, #24, and #25 required traffic control that included the full street closure of two sections along [redacted] in Yucca Valley that included detour signs to route traffic and barricades to block off the road.

11. Constructability:
    a. Direct Examination Sites #1 through #7 and Sites #9 through #12 were replaced with pipe segments and inspected outside the trench in order to expedite construction and reduce the isolation duration.
    b. Direct Examination Sites #24 and #25 completed Band Repairs that failed Non-Destructive Examination (NDE), which required the Project Team to complete a replacement at each site.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in additional examinations that will be addressed after 2023, outside the scope of this proceeding.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractors that best met the criteria for this Project.

## B. Construction Schedule

### Table 4: Construction Timeline – Inspection

| | |
|---|---|
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Inspection Due Date | [redacted] |

### Table 5: Construction Timeline – Direct Examination

| | |
|---|---|
| **Mobilization 1: Direct Examination Sites #1 - #12** | |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Mobilization 2: Direct Examination Sites #13 - #25** | |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

### Table 6: Construction Timeline – SRC or IRC

| | |
|---|---|
| SRC/IRC Discovery Date – Site #1 | [redacted] |
| Repair Date – Site #1 | [redacted] |
| SRC/IRC Discovery Date – Site #2 | [redacted] |
| Repair Date – Site #2 | [redacted] |
| SRC/IRC Discovery Date – Site #3 | [redacted] |
| Repair Date – Site #3 | [redacted] |
| SRC/IRC Discovery Date – Site #4 | [redacted] |
| Repair Date – Site #4 | [redacted] |
| SRC/IRC Discovery Date – Site #5 | [redacted] |
| Repair Date – Site #5 | [redacted] |
| SRC/IRC Discovery Date – Site #6 | [redacted] |
| Repair Date – Site #6 | [redacted] |
| SRC/IRC Discovery Date – Site #7 | [redacted] |

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| | |
|---|---|
| Repair Date – Site #7 | [redacted] |
| SRC/IRC Discovery Date – Site #8 | [redacted] |
| Repair Date – Site #8 | [redacted] |
| SRC/IRC Discovery Date – Site #9 | [redacted] |
| Repair Date – Site #9 | [redacted] |
| SRC/IRC Discovery Date – Site #10 | [redacted] |
| Repair Date – Site #10 | [redacted] |
| SRC/IRC Discovery Date – Site #11 | [redacted] |
| Repair Date – Site #11 | [redacted] |
| SRC/IRC Discovery Date – Site #12 | [redacted] |
| Repair Date – Site #12 | [redacted] |
| SRC/IRC Discovery Date – Site #13 | [redacted] |
| Repair Date – Site #13 | [redacted] |
| SRC/IRC Discovery Date – Site #14 | [redacted] |
| Repair Date – Site #14 | [redacted] |
| SRC/IRC Discovery Date – Site #15 | [redacted] |
| Repair Date – Site #15 | [redacted] |
| SRC/IRC Discovery Date – Site #16 | [redacted] |
| Repair Date – Site #16 | [redacted] |
| SRC/IRC Discovery Date – Site #17 | [redacted] |
| Repair Date – Site #17 | [redacted] |
| SRC/IRC Discovery Date – Site #18 | [redacted] |
| Repair Date – Site #18 | [redacted] |
| SRC/IRC Discovery Date – Site #19 | [redacted] |
| Repair Date – Site #19 | [redacted] |
| SRC/IRC Discovery Date – Site #20 | [redacted] |
| Repair Date – Site #20 | [redacted] |
| SRC/IRC Discovery Date – Site #21 | [redacted] |
| Repair Date – Site #21 | [redacted] |
| SRC/IRC Discovery Date – Site #22 | [redacted] |
| Repair Date – Site #22 | [redacted] |
| SRC/IRC Discovery Date – Site #23 | [redacted] |
| Repair Date – Site #23 | [redacted] |
| SRC/IRC Discovery Date – Site #24 | [redacted] |
| Repair Date – Site #24 | [redacted] |
| SRC/IRC Discovery Date – Site #25 | [redacted] |
| Repair Date – Site #25 | [redacted] |

Figure 2: [redacted] fitting installation for [redacted]

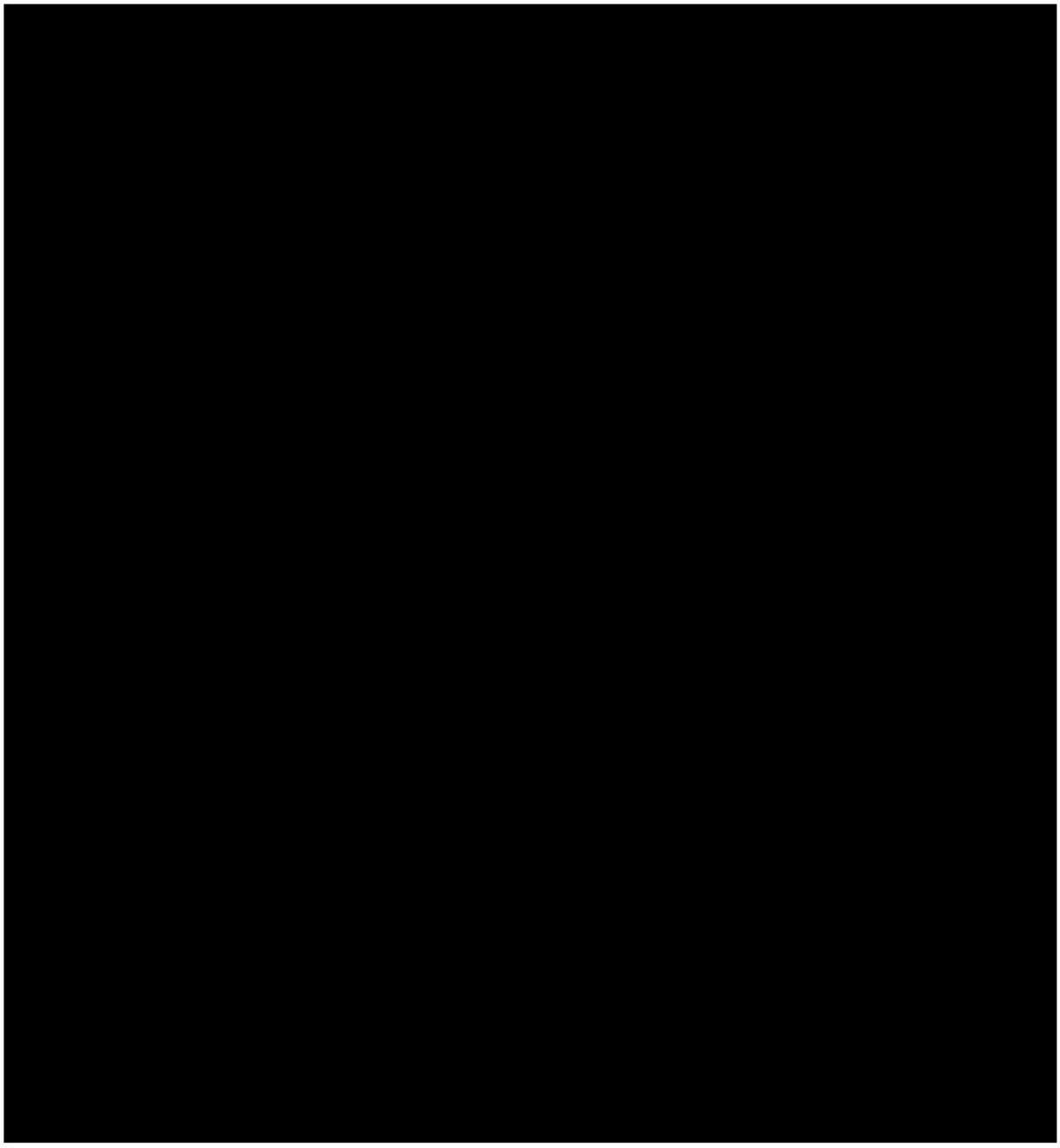
Figure 3: [redacted] Location for [redacted]

Figure 4: [redacted] tool

Figure 5: [redacted] Launcher Site

Figure 6: Direct Examination Excavation with Pipe Removal

Figure 7: Direct Examination Site Pipe Replacement



## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas exercised due diligence in the design, planning, and construction activities for this Project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design.

## B. Actual Costs[2]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $40,238,912.

### Table 7: Actual Direct Costs[3]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 1,357,037 | 931,864 | 2,288,901 |
| Contract Costs | 17,320,209 | 3,152,685 | 20,472,894 |
| Material | 1,339,011 | 27,811 | 1,366,822 |
| Other Direct Charges | 4,361,164 | 6,064,632 | 10,425,797 |
| **Total Direct Costs** | 24,377,420 | 10,176,993 | 34,554,413 |

### Table 8: Actual Indirect Costs[4]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 4,544,317 | 871,885 | 5,416,201 |
| AFUDC | 210,150 | 0 | 210,150 |
| Property Taxes | 58,148 | 0 | 58,148 |
| **Total Indirect Costs** | 4,812,615 | 871,885 | 5,684,499 |

### Table 9: Total Costs[5]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 29,190,035 | 11,048,877 | 40,238,912 |

[2] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[3] Values may not add to total due to rounding.
[4] Ibid.
[5] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing Line 6916 Phase 2 [redacted] TIMP Project Narrative TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $40,238,912.

**End of Line 6916 Phase 2 [redacted] TIMP Project Final Workpaper**

# I. LINE 7000 PHASE 1 [redacted] TIMP PROJECT

## A. Background and Summary

Line 7000 Phase 1 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 29.4 miles from [redacted]. The Project also assessed approximately 0.7 miles of Line 293, a [redacted] diameter pipeline[1]. The pipeline is routed across Class 1, 2, and 3 locations with 6.9 miles within High Consequence Area(s) (HCAs) and 23.3 miles within non-HCAs[2]. This Workpaper describes the activities and costs associated with an Inspection using In-Line Inspection (ILI) and the Direct Examinations made to eight sites, of which three contained Safety Related Conditions (SRCs). The Project activities were located in Kern County. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $11,952,527.

[1] See Workpaper Line 293 [redacted] TIMP Project Narrative for assessment of remaining footage for Line 293.
[2] Values may not add to total due to rounding.

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## Final Workpaper for Line 7000 Phase 1 Rio Bravo to Delano TIMP Project

### Table 1: General Project Information

| **Inspection Details** | |
|---|---|
| Pipeline | 7000 and 293[3] |
| Segment | Phase 1 – [redacted] |
| Inspection Type | [redacted] Tools |
| Location | Shafter, Delano |
| Class | 1, 2, and 3 |
| HCA Length | 6.9 miles |
| Vintage | Multiple vintages from [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Final Tool Run Date | [redacted] |
| Inspection Due Date | [redacted] |
| **Direct Examination Details** | |
| Site | 1 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Soft Pad and Band |
| Within HCA | No |
| SRC/IRC | Yes |
| SRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

[3] See Workpaper Line 293 [redacted] TIMP Project Narrative for assessment of remaining footage of Line 293.

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 2 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | No repairs |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 3 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 4 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Table 1: General Project Information (Continued)

| Direct Examination Details | |
|---|---|
| Site | 5 |
| Examination ID | [redacted] |
| Mitigation/Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | Yes |
| SRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 6 |
| Examination ID | [redacted] |
| Mitigation/Remediation Type | Replacement |
| Within HCA | No |
| SRC/IRC | Yes |
| SRC Discovery Date | [redacted] |
| Repair Date | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

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Final Workpaper for Line 7000 Phase 1 [redacted] TIMP Project

Table 1: General Project Information (Continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 7 | | |
| Examination ID | [redacted] | | |
| Mitigation/Remediation Type | Replacement | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 8 | | |
| Examination ID | [redacted] | | |
| Mitigation/Remediation Type | Replacement | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 7,305,203 | 4,647,324 | 11,952,527 |

## B. Maps and Images

Figure 1: Satellite Image of Line 7000 Phase 1 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspection and Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2 and 3 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 7000 Phase 1 [redacted] for Inspection using ILI.
   a. ILI from a temporary launcher site south of [redacted] to a permanent receiver site within [redacted].
   b. The temporary launcher site required installation of a temporary launcher barrel and associated piping south of [redacted]
   c. The temporary launcher site was installed on Line 293, resulting in approximately 0.7 miles of Line 293 assessed with this segment[4].
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, eight Direct Examination sites were identified for validation.
   a. Direct Examination Site #1 consisted of soft pad and band repairs.
   b. Direct Examination Site #2 resulted in no repairs.
   c. Direct Examination Site #3 consisted of soft pad repairs.
   d. Direct Examination Site #4 consisted of soft pad repairs.

[4] See Workpaper Line 293 [redacted] TIMP Project Narrative for assessment of remaining footage for Line 293.

e. Direct Examination Site #5 consisted of a 40 foot replacement.
f. Direct Examination Site #6 consisted of a 40 foot replacement.
g. Direct Examination Site #7 consisted of a 40 foot replacement.
h. Direct Examination Site #8 consisted of a 41 foot replacement.
i. The Project identified three Direct Examination sites containing SRCs.

3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in no additional examinations or repair.
4. Final Project Scope: The final project scope of this Workpaper includes Inspection using ILI including eight Direct Examinations.

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 7000 | 29.4 miles | [redacted] | [redacted] | [redacted] | Yes |
| 293 | 0.7 miles | | | | |
| 7000 | 29.4 miles | [redacted] | [redacted] | [redacted] | Yes |
| 293 | 0.7 miles | | | | |
| 7000 | 29.4 miles | [redacted] | [redacted] | [redacted] | Yes |
| 293 | 0.7 miles | | | | |

Table 3: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 7000 | 1 | No | Yes | 15 ft | Soft Pad and Band | N/A | Capital |
| 7000 | 2 | No | No | 15 ft | No Repair | N/A | O&M |
| 7000 | 3 | No | No | 33 ft | Soft Pad | N/A | O&M |
| 7000 | 4 | No | No | 15 ft | Soft Pad | N/A | O&M |
| 7000 | 5 | No | Yes | 39 ft | Replacement | 40 ft | Capital |
| 7000 | 6 | No | Yes | 35 ft | Replacement | 40 ft | Capital |
| 7000 | 7 | No | No | 39 ft | Replacement | 40 ft | Capital |
| 7000 | 8 | No | No | 40 ft | Replacement | 41 ft | Capital |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 7000 Phase 1 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: The Inspection started at a temporary launcher site assembled near [redacted] and ended at a permanent receiver site within [redacted]. The temporary launcher site was installed on Line 293, resulting in approximately 0.7 miles of Line 293 assessed with this segment[5].
2. HCA Threats:
   [redacted]
3. Pipe Vintage: Multiple vintages from [redacted].

[5] See Workpaper Line 293 [redacted] TIMP Project Narrative for assessment of remaining footage for Line 293.

4. Long Seam Type: [redacted]
5. Inspection Retrofits: The Project Team completed retrofits to return the pipeline to normal operating conditions. Retrofit installations included approximately 67 feet of new [redacted] pipeline.
6. Inspection Tools and Technologies: The Project utilized [redacted] capabilities during the Inspection of the pipeline. [redacted] were also utilized in preparation for the Inspection.
7. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Project could be completed without system impacts.
8. Customer Impacts: No identified impacts.
9. Community Impacts: No identified impacts.
10. Substructures: The Project Team evaluated various substructures in the Project vicinity to select an appropriate location for the temporary launcher site near [redacted]
11. Environmental: No identified impacts.
12. Permit Restrictions: No identified impacts.
13. Land Use: No identified impacts.
14. Traffic Control: No identified impacts.
15. Schedule Delay: No identified impacts.
16. Constructability: [redacted] was undergoing reconstruction at the time of Inspection, which required the Project Team to coordinate a temporary launcher site south of the station location. The temporary installation required concrete supports to withstand the weight of valves.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment:
   a. There were eight Direct Examination Sites selected for validation within the Line 7000 Phase 1 [redacted] TIMP Project.
      i. Direct Examination Site #1 consisted of soft pad and band repairs.
      ii. Direct Examination Site #2 resulted in no repairs.
      iii. Direct Examination Site #3 consisted of soft pad repairs.
      iv. Direct Examination Site #4 consisted of soft pad repairs.
      v. Direct Examination Site #5 consisted of a 40 foot replacement.
      vi. Direct Examination Site #6 consisted of a 40 foot replacement.
      vii. Direct Examination Site #7 consisted of a 40 foot replacement.
      viii. Direct Examination Site #8 consisted of a 41 foot replacement.
2. SRC/IRC: Direct Examination Sites #1, #5 and #6 contained SRCs.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the following:
   a. Direct Examination Sites #1, #2, #3, and #4 could be completed with no system impacts.
   b. Direct Examination Sites #5 and #6 required pipeline isolation to complete remediations. A temporary bypass was installed to maintain system capacity.
   c. Direct Examination Sites #7 and #8 could only be completed in [redacted] and required a temporary bypass to maintain system capacity. Additional coordination with neighboring SoCalGas projects was required to ensure project schedule alignment.
4. Customer Impacts: The Project Team identified four customers impacted within the isolation scope for Direct Examination Sites #5 and #6.
5. Community Impacts: No identified impacts.

6. Substructures: No identified impacts.
7. Environmental: No identified impacts.
8. Permit Restrictions: The Project Team obtained the following permits for the Direct Examinations:
   a. Encroachment Permit from the City of Delano for Direct Examination Site #3.
   b. Three Road Encroachment Permits from the County of Kern for Direct Examination Sites #4, #5, and #7.
   c. Caltrans Encroachment Permit for Direct Examination Site #6.
9. Land Use:
   a. The Project Team utilized existing easements to access pipeline for Direct Examination Site #1.
   b. The Project Team secured two laydown yards for Direct Examination Sites #1, #3, and #4.
   c. The Project Team obtained two laydown yards for Direct Examination Sites #2, #5, and #6 in unincorporated Kern County.
   d. The Project Team obtained two laydown yards for Direct Examination Sites #7 and #8.
   e. The Project Team obtained a temporary right of entry for Direct Examination Site #8 near Martin Avenue and 7th Standard Road.
10. Traffic Control: The Project Team obtained approved traffic control plans for the following:
    a. Direct Examination Site #1, approved by the City of Shafter.
    b. Direct Examination Site #3, approved by the City of Delano.
    c. Direct Examination Site #4, approved by the City of McFarland.
    d. Direct Examination Site #5, approved by the City of McFarland.
    e. Direct Examination Site #7, approved by City of McFarland.
11. Schedule Delay: The Project experienced schedule delays due to system analysis and recommendations that would minimize capacity constraints.

a. Requirement to combine Direct Examination Site #2 timeline with Direct Examination Sites #5 and #6.
b. Requirement to execute Direct Examination Sites #7 and #8 in a timeline that did not impact system capacity.

12. Constructability: The Project Team obtained approved concrete support designs for PCF fittings installed to facilitate isolations for the Direct Examinations.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

### Table 4: Construction Timeline – Inspection

| | |
|---|---|
| Construction Start Date | [redacted] |
| Construction Completion Date | |
| Inspection Due Date | |

### Table 5: Construction Timeline – Direct Examination

| | |
|---|---|
| **Mobilization 1 – Direct Examination Sites #1, #3, and #4** | |
| Construction Start Date | [redacted] |
| Construction Completion Date | |
| **Mobilization 2 – Direct Examination Sites #2, #5, and #6** | |
| Construction Start Date | [redacted] |
| Construction Completion Date | |
| **Mobilization 3 – Direct Examination Sites #7 and #8** | |
| Construction Start Date | [redacted] |
| Construction Completion Date | |

### Table 6: Construction Timeline – SRC

| | |
|---|---|
| **Direct Examination Site #1** | |
| SRC Discovery Date | [redacted] |
| Repair Date | |
| **Direct Examination Site #5** | |
| SRC Discovery Date | [redacted] |
| Repair Date | |
| **Direct Examination Site #6** | |
| SRC Discovery Date | [redacted] |
| Repair Date | |

Figure 2: Temporary Launcher Site

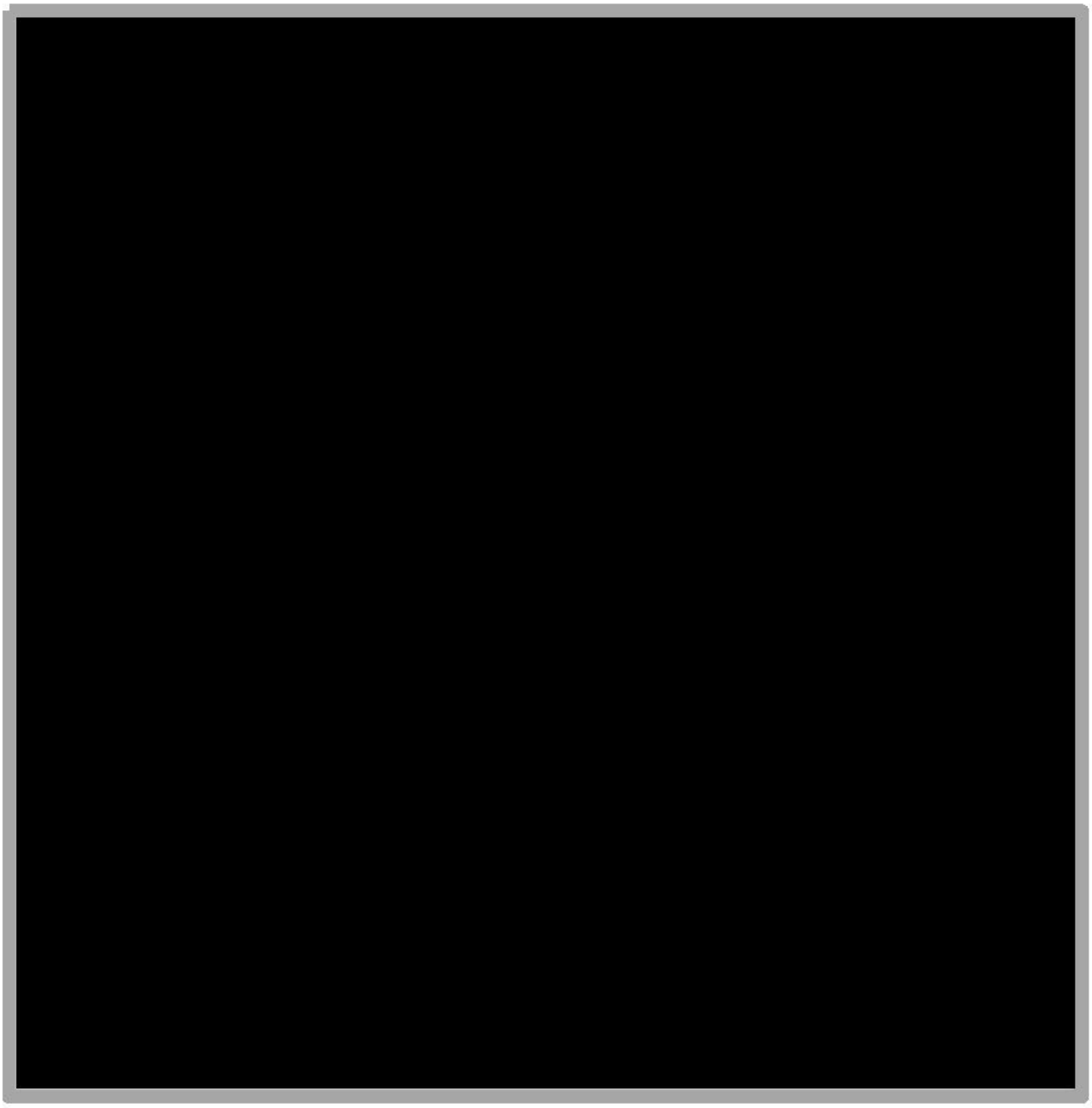


Figure 3: Direct Examination Site #3

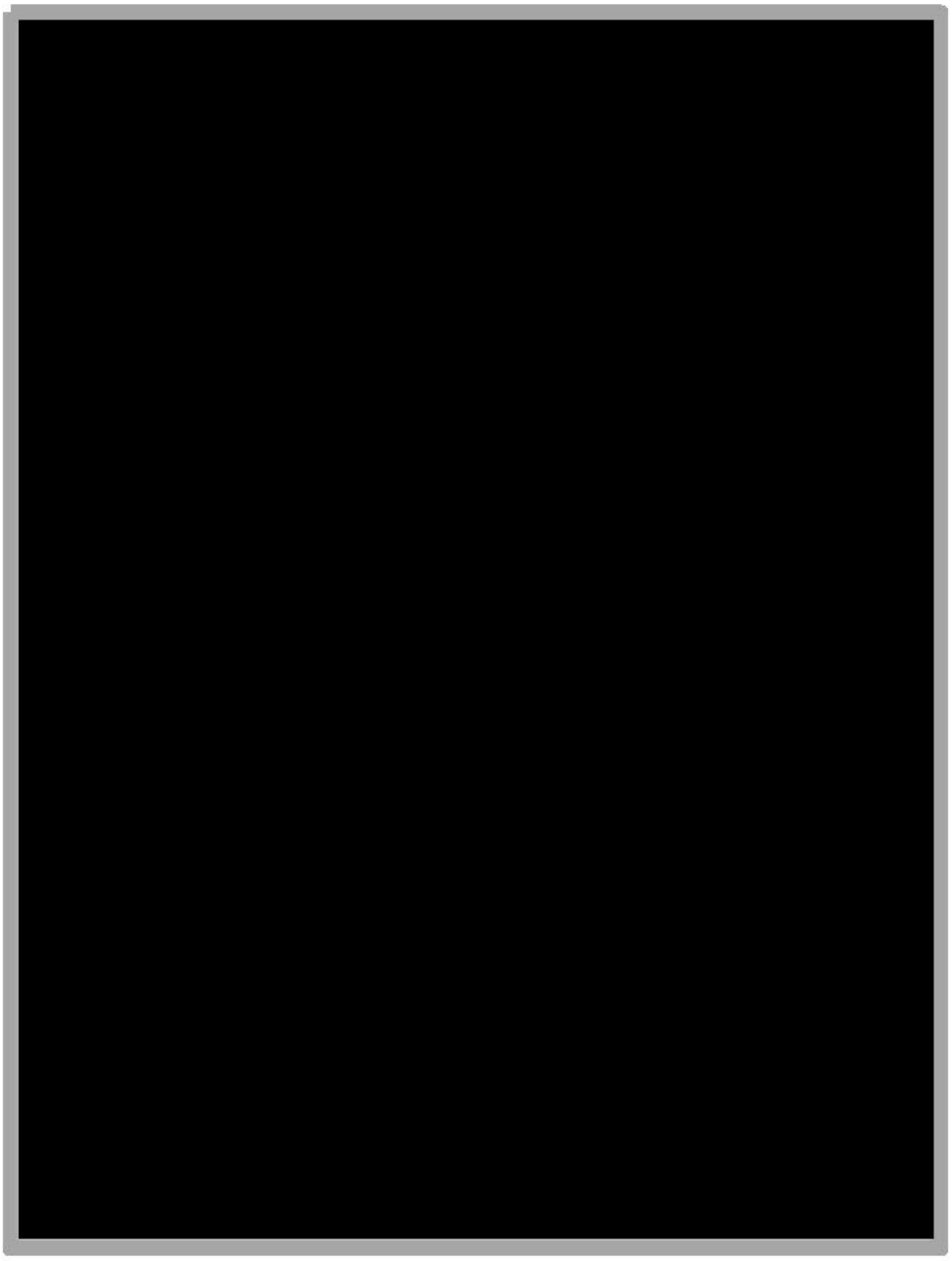


Figure 4: Direct Examination Site #6

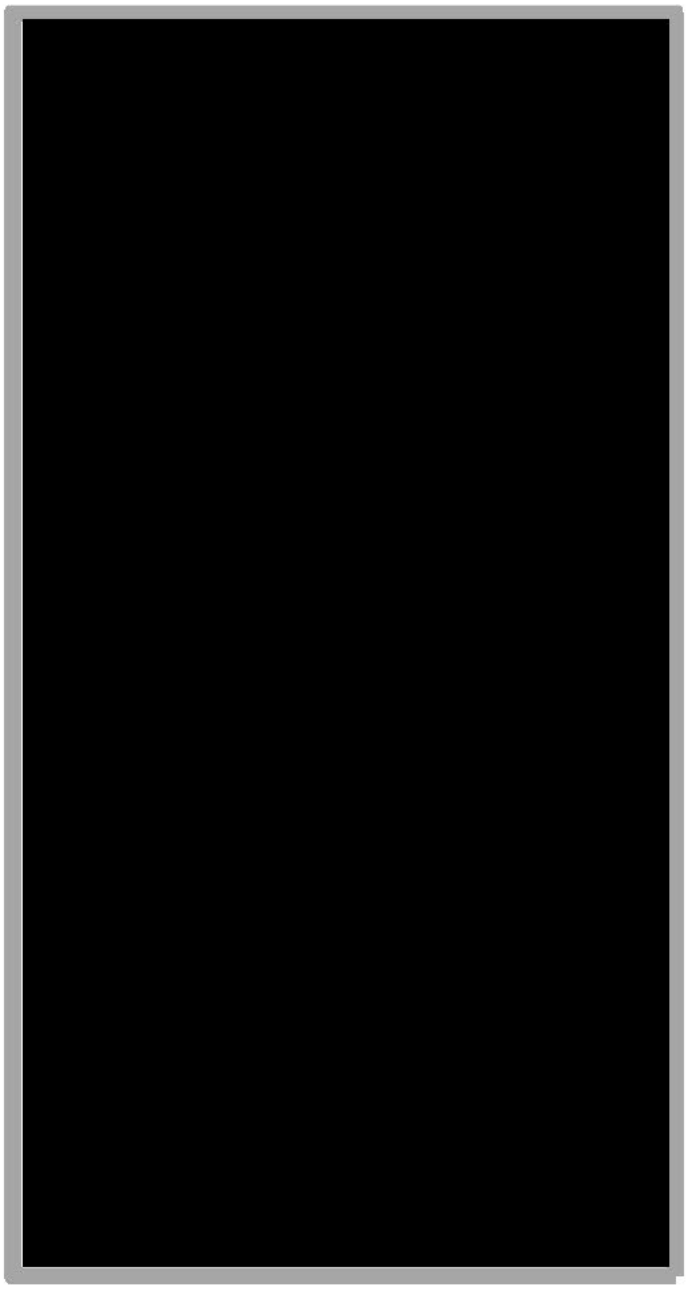


Figure 5: Direct Examination Site #7

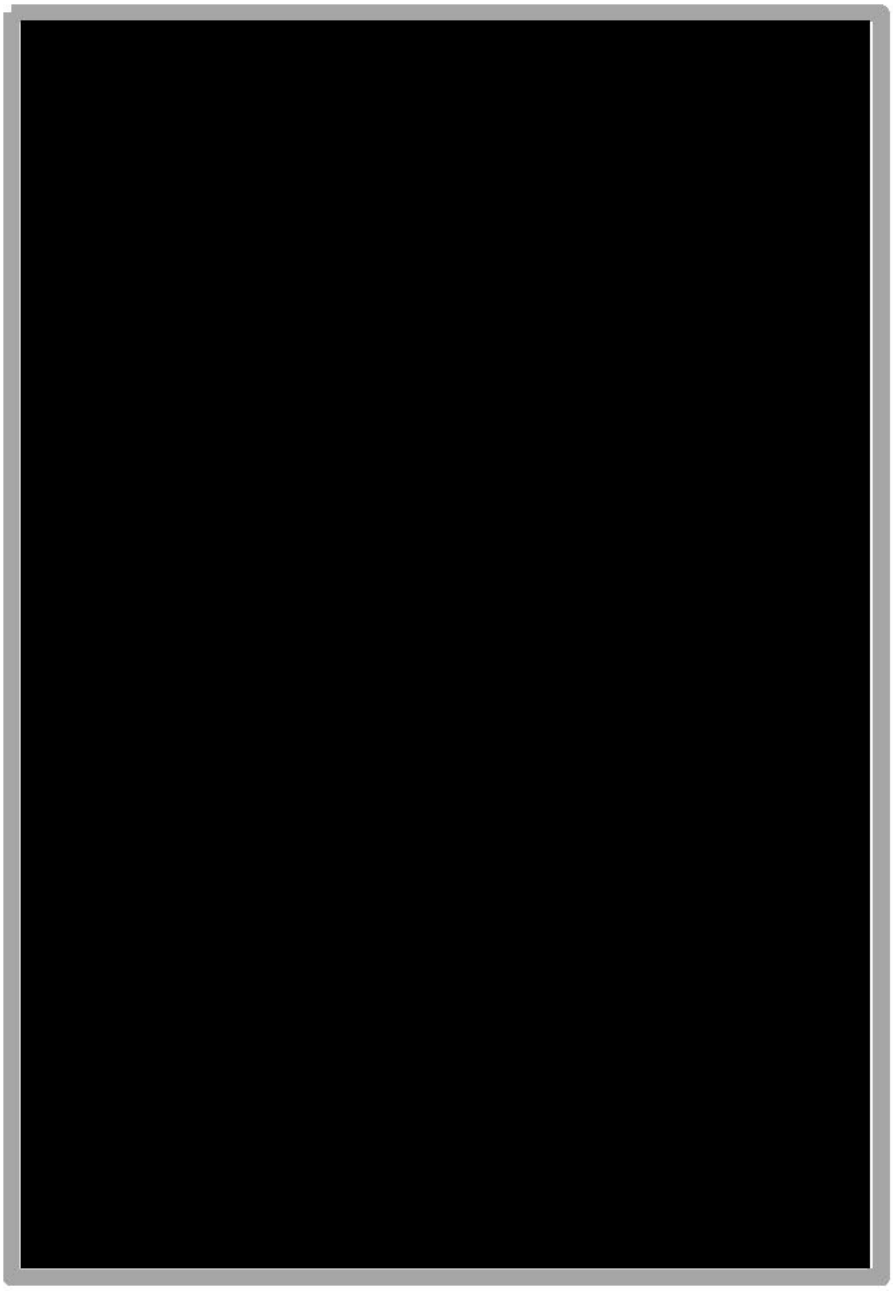
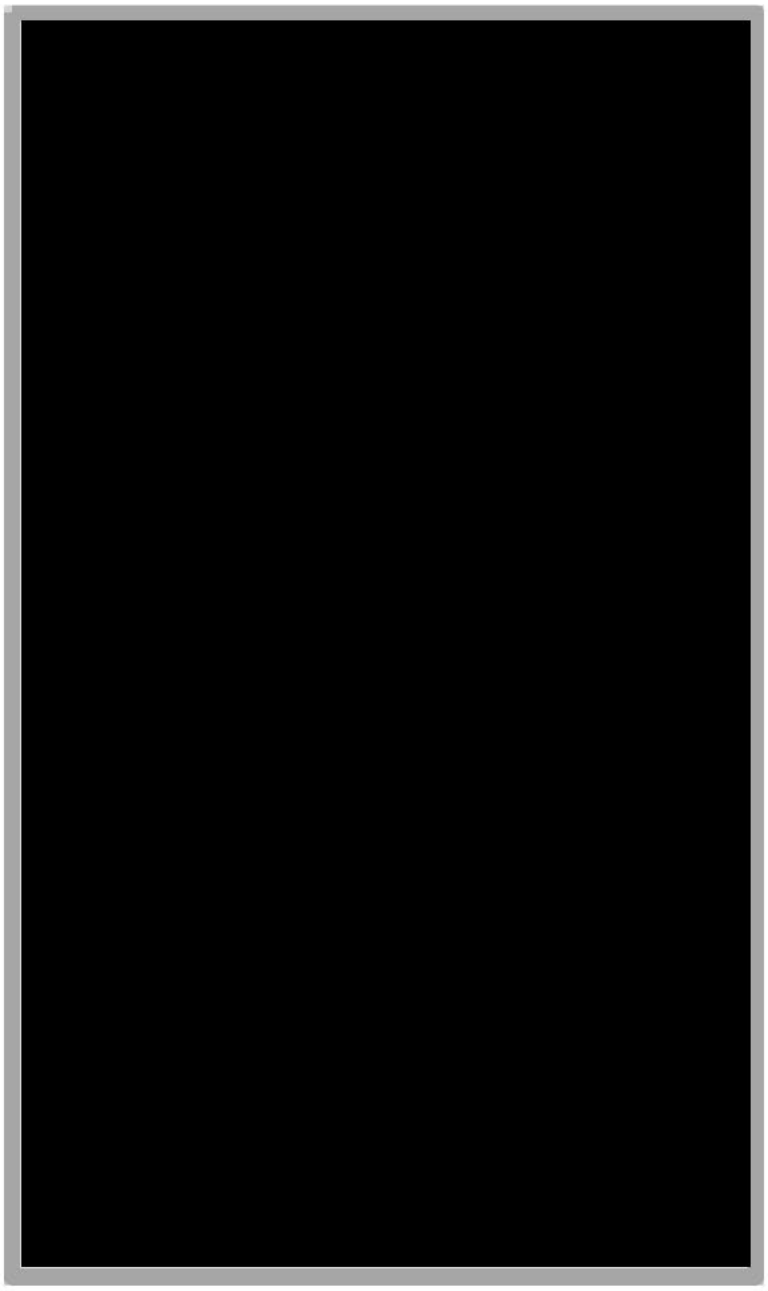


Figure 6: Direct Examination Site #8



## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas exercised due diligence in the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the Project plan and design. Specific examples of cost efficiency actions taken on this Project were:

1. Materials: The Project Team utilized material from another TIMP Project to fabricate the temporary launcher near [redacted].
2. Schedule Coordination: The Project Team combined this Project's mobilization with other TIMP Projects.
3. Land Use: The Project Team utilized a nearby laydown yard that was obtained for another TIMP Project.

## B. Actual Costs[6]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $11,952,527.

### Table 7: Actual Direct Costs[7]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 661,974 | 569,671 | 1,231,646 |
| Contract Costs | 4,267,284 | 2,169,179 | 6,436,463 |
| Material | 221,284 | 57,606 | 278,890 |
| Other Direct Charges | 882,880 | 1,358,748 | 2,241,628 |
| **Total Direct Costs** | 6,033,422 | 4,155,204 | 10,188,626 |

### Table 8: Actual Indirect Costs[8]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 1,198,384 | 492,120 | 1,690,504 |
| AFUDC | 51,109 | 0 | 51,109 |
| Property Taxes | 22,288 | 0 | 22,288 |
| **Total Indirect Costs** | 1,271,781 | 492,120 | 1,763,901 |

### Table 8: Total Costs[9]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 7,305,203 | 4,647,324 | 11,952,527 |

[6] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[7] Values may not add to total due to rounding.
[8] Ibid.
[9] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 7000 Phase 1 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $11,952,527.

**End of Line 7000 Phase 1 [redacted] TIMP Project Final Workpaper**

# I. LINE 7000 PHASE 2 [redacted] TIMP PROJECT

## A. Background and Summary

Line 7000 Phase 2 [redacted] the Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 39.4 miles from [redacted]. The pipeline is routed across Class 1, 2, and 3 locations with 2.8 miles within High Consequence Area(s) (HCAs) and 36.7 miles within non-HCAs. This Workpaper describes the activities and costs associated with an Inspection using In-Line Inspection (ILI) and the Direct Examinations made to four sites. The Project activities were located in Kern County and Tulare County. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $3,471,107.

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# Final Workpaper for Line 7000 Phase 2 [redacted] TIMP Project

## Table 1: General Project Information

| **Inspection Details** | |
|---|---|
| Pipeline | 7000 |
| Segment | Phase 2 – [redacted] |
| Inspection Type | [redacted] ILI Tool |
| Location | Delano and Visalia |
| Class | 1, 2, 3 |
| HCA Length | 2.8 miles |
| Vintage | Multiple vintages from [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Final Tool Run Date | [redacted] |
| Inspection Due Date | [redacted] |
| **Direct Examination Details** | |
| Site | 1 |
| Examination ID | [redacted] |
| Type | Validation |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

SoCalGas

Final Workpaper for Line 7000 Phase 2 [redacted] TIMP Project

Table 1: General Project Information (continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 2 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 3 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 4 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 0 | 3,471,107 | 3,471,107 |

## B. Maps and Images

Figure 1: Satellite Image of Line 7000 Phase 2 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspection and Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2 and 3 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 7000 Phase 2 [redacted] TIMP Project for Inspection using ILI.
   a. ILI from a permanent launcher site within [redacted] to a permanent receiver site within [redacted]
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, four Direct Examination sites were identified for validation.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs.
   c. Direct Examination Site #3 consisted of soft pad repairs.
   d. Direct Examination Site #4 consisted of soft pad repairs.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in no additional examinations.
4. Final Project Scope: The final project scope of this Workpaper includes Inspection using ILI, and four Direct Examinations.

Final Workpaper for Line 7000 Phase 2 [redacted] TIMP Project

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 7000 | 39.4 mi | [redacted] | [redacted] | [redacted] | No |

Table 3: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 7000 | 1 | No | No | 16 ft | Soft Pad | N/A | O&M |
| 7000 | 2 | No | No | 46 ft | Soft Pad | N/A | O&M |
| 7000 | 3 | No | No | 10 ft | Soft Pad | N/A | O&M |
| 7000 | 4 | No | No | 22 ft | Soft Pad | N/A | O&M |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 7000 Phase 2 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: The Inspection started at a permanent launcher site within [redacted] and ended at a permanent receiver site within [redacted].
2. HCA Threats:
   [redacted]
3. Pipe Vintage: Multiple vintages from [redacted].
4. Long Seam Type:
   [redacted]
5. Inspection Tools and Technologies:
   a. The Project utilized a combination tool with [redacted] capabilities during the Inspection of the pipeline. [redacted] were also utilized in preparation for the Inspection.
   b. The Project required an additional ILI due to distance recorded discrepancies that occurred during the first Inspection.
6. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the pipeline could be inspected without system impacts.
7. Customer Impacts: No customer impacts.
8. Community Impacts: No identified impacts.

9. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
10. Environmental: No identified impacts.
11. Permit Restrictions: No identified impacts.
12. Land Use: The Project Team obtained a Temporary Right of Entry (TRE) for parking area near the receiver location.
13. Traffic Control: No identified impacts.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were four Direct Examination Sites selected for validation within the Line 7000 Phase 2 [redacted] TIMP Project.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs.
   c. Direct Examination Site #3 consisted of soft pad repairs.
   d. Direct Examination Site #4 consisted of soft pad repairs.
2. SRC/IRC: There were no SRCs or IRCs during the Direct Examinations.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Direct Examinations could be completed without system impacts.
4. Customer Impacts: No customer impacts.
5. Community Impacts: No identified impacts.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: No identified impacts.

8. Permit Restrictions: The Project Team obtained approved permits from the following entities:
   a. Utility Encroachment Permit from the County of Tulare for Direct Examination Site #1.
   b. Utility Encroachment Permit from the County of Tulare for Direct Examination Site #2.
   c. Utility Encroachment Permit from the County of Tulare for Direct Examination Site #3.
   d. Utility Encroachment Permit from the County of Tulare for Direct Examination Site #4.
9. Land Use: The Project Team obtained the following TRE agreements for the Direct Examinations:
   a. TRE from a private landowner for temporary workspace area near Direct Examination Site #2.
   b. TRE from a private landowner for temporary workspace area near Direct Examination Site #4.
10. Traffic Control: The Project Team obtained approved Traffic Control Plans (TCPs) from the following entities:
   a. County of Tulare for Direct Examination Site #2
   b. County of Tulare for Direct Examination Site #3.
   c. County of Tulare for Direct Examination Site #4.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

Table 4: Construction Timeline – Inspection

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

Table 5: Construction Timeline – Direct Examination

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

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Final Workpaper for Line 7000 Phase 2 [redacted] TIMP Project

Figure 2: Permanent Launcher Site within [redacted]

Final Workpaper for Line 7000 Phase 2 [redacted] TIMP Project

Figure 3: Permanent Receiver Site within [redacted]

Figure 4: Direct Examination Site #1

Figure 5: Direct Examination Site #1

Figure 6: Direct Examination Site #2 – Site and TRE Location

Figure 7: Direct Examination Site #2 – Site and TRE Location

Figure 8: Direct Examination Site #4

## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas exercised due diligence in the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the Project plan and design. Specific examples of cost efficiency actions taken on this Project were:

1. Schedule Coordination: The Project Team combined this Project's mobilization with other TIMP projects.

## B. Actual Costs[1]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $3,471,107.

### Table 6: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 0 | 428,832 | 428,832 |
| Contract Costs | 0 | 1,773,477 | 1,773,477 |
| Material | 0 | 128,626 | 128,626 |
| Other Direct Charges | 0 | 716,467 | 716,467 |
| **Total Direct Costs** | 0 | 3,047,403 | 3,047,403 |

### Table 7: Actual Indirect Costs[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 0 | 408,009 | 408,009 |
| AFUDC | 0 | 13,719 | 13,719 |
| Property Taxes | 0 | 1,977 | 1,977 |
| **Total Indirect Costs** | 0 | 423,705 | 423,705 |

### Table 8: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 0 | 3,471,107 | 3,471,107 |

[1] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[2] Values may not add to total due to rounding.
[3] Ibid.
[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 7000 Phase 2 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $3,471,107.

**End of Line 7000 Phase 2 [redacted] TIMP Project Final Workpaper**

# I. LINE 7039 [redacted] TIMP PROJECT

## A. Background and Summary

Line 7039 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 17.0 miles from [redacted] in Bakersfield to [redacted] through residential neighborhoods, agricultural land, and commercial areas. The pipeline is routed across Class 1 and 3 locations with 14.0 miles within High Consequence Area(s) (HCAs) and 2.9 miles within non-HCAs. This Workpaper describes the activities and costs associated with an Inspection using In-Line Inspection (ILI) and the Direct Examinations made to two sites. The Project activities were located in Bakersfield, Kern County. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $2,027,889.

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## Final Workpaper for Line 7039 [redacted] TIMP Project

### Table 1: General Project Information

| Inspection Details | |
|---|---|
| Pipeline | 7039 |
| Segment | [redacted] |
| Inspection Type | [redacted] Tools |
| Location | Bakersfield, Kern County |
| Class | 1, 3 |
| HCA Length | 14.0 miles |
| Vintage | Multiple vintages from [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Final Tool Run Date | [redacted] |
| Inspection Due Date | [redacted] |

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## Final Workpaper for Line 7039 [redacted] TIMP Project

### Table 1: General Project Information (Continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 1 | | |
| Examination ID | [redacted] | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 2 | | |
| Examination ID | [redacted] | | |
| Remediation Type | Soft Pad | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 0 | 2,027,889 | 2,027,889 |

Final Workpaper for Line 7039 [redacted] TIMP Project

## B. Maps and Images

Figure 1: Satellite Image of Line 7039 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspections including Direct Examinations and Post-Assessment.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2 and 3 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 7039 for Inspection using ILI.
   a. ILI from a permanent launcher site within a permanent easement at [redacted] to a permanent receiver site at [redacted].
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspections using ILI, two Direct Examination sites were identified for validation.
   a. Direct Examination Site #1 consisted of Soft Pad Repairs.
   b. Direct Examination Site #2 consisted of Soft Pad Repairs.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in no additional examinations.
4. Final Project Scope: The final project scope of this Workpaper includes Inspection using ILI and two Direct Examinations.

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 7039 | 17.0 mi | [redacted] | [redacted] | [redacted] | No |

Table 3: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 7039 | 1 | No | No | 15 ft | Soft Pad | N/A | O&M |
| 7039 | 2 | Yes | No | 17 ft | Soft Pad | N/A | O&M |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Line 7039 [redacted] Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: ILI from a permanent launcher site within a permanent station at [redacted] to a permanent receiver site at [redacted]
2. HCA Threats:
   [redacted]

[redacted]

[redacted]

3. Pipe Vintage: Multiple vintages from [redacted]
4. Long Seam Type:
   [redacted]
5. Inspection Tools and Technologies: The Project utilized a combination tool with [redacted] capabilities during the Inspection of the pipeline. [redacted] were also utilized in preparation for the Inspection.
6. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the pipeline could be inspected without system impacts.
7. Customer Impacts: The Project Team did not identify any anticipated service disruptions to customers.
8. Community Impacts: No identified impacts.
9. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
10. Environmental: No identified impacts.
11. Permit Restrictions: There were no special permits or permit restrictions for this Project.
12. Land Use: No identified impacts.
13. Traffic Control: The Project Team did not identify any traffic control needs at the site.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were two Direct Examination Sites selected for validation within the Line 7039 [redacted] TIMP Project.
   a. Direct Examination Site #1 consisted of Soft Pad Repairs.
   b. Direct Examination Site #2 consisted of Soft Pad Repairs.
2. SRC/IRC: There were no SRCs or IRCs during the Direct Examinations.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the pipeline could be inspected without system impacts.
4. Customer Impacts: No customer impacts.
5. Community Impacts: No identified impacts.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: No identified impacts.
8. Permit Restrictions: There were no special permits or permit restrictions for this Project.
9. Land Use: No identified impacts.
10. Traffic Control: The Project Team did not identify any traffic control needs at the site.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

Table 4: Construction Timeline – Inspection

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

Table 5: Construction Timeline – Direct Examination

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

Figure 2: Inspection Tool before ILI Run

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Final Workpaper for Line 7039 [redacted] TIMP Project

Figure 3: Inspection Tool after ILI Run Completion

SoCalGas

Final Workpaper for Line 7039 [redacted] TIMP Project

Figure 4: Bare Pipe at Direct Examination Site #1

Final Workpaper for Line 7039 [redacted] TIMP Project

Figure 5: Exposed Pipe with Coating at Direct Examination Site #2

SoCalGas

Final Workpaper for Line 7039 [redacted] TIMP Project

Figure 6: Direct Examination Site #1 Overview

SoCalGas

Final Workpaper for Line 7039 [redacted] TIMP Project

Figure 7: Direct Examination Site #2 Overview

## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design.

## B. Actual Costs[2]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $2,027,889.

### Table 6: Actual Direct Costs[3]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 0 | 228,890 | 228,890 |
| Contract Costs | 0 | 936,241 | 936,241 |
| Material | 0 | 36,513 | 36,513 |
| Other Direct Charges | 0 | 577,305 | 577,305 |
| **Total Direct Costs** | 0 | 1,778,948 | 1,778,948 |

### Table 7: Actual Indirect Costs[4]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 0 | 239,615 | 239,615 |
| AFUDC | 0 | 7,699 | 7,699 |
| Property Taxes | 0 | 1,628 | 1,628 |
| **Total Indirect Costs** | 0 | 248,941 | 248,941 |

### Table 8: Total Costs[5]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Total Loaded Costs | 0 | 2,027,889 | 2,027,889 |

[2] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[3] Values may not add to total due to rounding.
[4] Ibid.
[5] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 7039 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $2,027,889.

**End of Line 7039 [redacted] TIMP Project Final Workpaper**

# I. LINE 7200 [redacted] TIMP PROJECT

## A. Background and Summary

Line 7200 [redacted] the Transmission Integrity Management Program (TIMP) Project assessed approximately nine miles of predominantly [redacted] diameter transmission line from [redacted], through agricultural land. The pipeline is routed across [redacted] locations entirely within non-High Consequence Areas (non-HCAs). This Workpaper describes the activities and costs associated with the Direct Examinations made to four sites. The Project activities were located in Kern County. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $3,679,085.

SoCalGas

## Final Workpaper for Line 7200 [redacted] TIMP Project

### Table 1: General Project Information

| Direct Examination Details | |
|---|---|
| Site | 1 |
| Examination ID | [redacted] |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 2 |
| Examination ID | [redacted] |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| **Direct Examination Details** | |
| Site | 3 |
| Examination ID | [redacted] |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | No |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |

Final Workpaper for Line 7200 [redacted] TIMP Project

Table 1: General Project Information (continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 4 | | |
| Examination ID | [redacted] | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 2,333,268 | 1,345,817 | 3,679,085 |

## B. Maps and Images

Figure 1: Satellite Image of Line 7200 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the prepared direct testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Direct Examinations and Station Retrofits.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Table 2 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 7200 [redacted] TIMP Project for Inspection using ILI, activities related to the ILI were completed for this Project before the TY 2019 General Rate Case (GRC) cycle.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using ILI, four Direct Examination sites were identified for validation.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs.
   c. Direct Examination Site #3 consisted of soft pad repairs.
   d. Direct Examination Site #4 consisted of soft pad repairs.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in no additional examinations.
4. Final Project Scope: The final project scope of this Workpaper includes four Direct Examinations and Station Retrofits.

Table 2: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 7200 | 1 | No | No | 21 ft | Soft Pad | N/A | O&M |
| 7200 | 2 | No | No | 24 ft | Soft Pad | N/A | O&M |
| 7200 | 3 | No | No | 25 ft | Soft Pad | N/A | O&M |
| 7200 | 4 | No | No | 15 ft | Soft Pad | N/A | O&M |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas completed the Inspection for the Line 7200 [redacted] TIMP Project before the TY 2019 GRC cycle.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were four Direct Examination Sites selected for validation within the Line [redacted] TIMP Project.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs.
   c. Direct Examination Site #3 consisted of soft pad repairs.
   d. Direct Examination Site #4 consisted of soft pad repairs.
2. SRC/IRC: There were no SRCs or IRCs during the Direct Examinations.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded additional system adjustments were required to maintain system capacity.

4. Customer Impacts: No customer impacts.
5. Community Impacts: No identified impacts.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: No identified impacts.
8. Permit Restrictions: No identified impacts.
9. Land Use: The Project Team obtained temporary right of entry (TRE) agreements from private landowners for all Direct Examination Sites. In addition to existing easements at the location, the Project Team obtained a TRE agreement for additional area near the launcher location at [redacted]
10. Traffic Control: No identified impacts.
11. Constructability: The Project included permanent pipeline retrofits and new facility installations to facilitate future assessments of Line 7200. Although permanent pipeline installations were completed before the TY 2019 GRC cycle, significant delays for the launcher and receiver barrels resulted in their installations during the Direct Examination step. The installations included the following:
    a. Installation of a permanent [redacted] launcher barrel for Line 7200 within [redacted]
    b. Installation of a permanent [redacted] receiver barrel for Line 7200 within [redacted]
    c. The Project experienced significant schedule delays during these installations due to heavy rainfall.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and Direct Examinations to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

Table 3: Construction Timeline – Direct Examination

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

Figure 2: Permanent Launcher in [redacted]

Figure 3: Permanent Receiver in [redacted]

## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas exercised due diligence in the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design. Specific examples of cost efficiency actions taken on this Project were:

1. Future Maintenance: The Project Team installed a permanent ladder well with catwalk assemblies at both [redacted] and [redacted]. This installation elevates Project safety by minimizing ladder usage and avoids future installations of scaffolding for consequent Inspections.

## B. Actual Costs[1]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $3,679,085.

### Table 4: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 46,805 | 67,498 | 114,303 |
| Contract Costs | 1,416,740 | 928,556 | 2,345,296 |
| Material | 242,530 | 8,045 | 250,575 |
| Other Direct Charges | 325,489 | 221,468 | 546,957 |
| **Total Direct Costs** | 2,031,564 | 1,225,567 | 3,257,131 |

### Table 5: Actual Indirect Costs[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 270,809 | 120,237 | 391,046 |
| AFUDC | 23,584 | 13 | 23,597 |
| Property Taxes | 7,311 | 0 | 7,311 |
| **Total Indirect Costs** | 301,704 | 120,250 | 421,954 |

### Table 6: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 2,333,268 | 1,345,817 | 3,679,085 |

[1] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[2] Values may not add to total due to rounding.
[3] Ibid.
[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 7200 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $3,679,085.

**End of Line 7200 [redacted] TIMP Project Final Workpaper**

# I. LINE 8109 PHASE 2 [redacted] TIMP PROJECT

## A. Background and Summary

Line 8109 Phase 2 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter transmission line that runs approximately 425 feet crossing [redacted], near rural areas. The pipeline is routed across [redacted] locations, entirely within non-High Consequence Areas (non-HCAs). This Workpaper describes the activities and costs associated with a TIMP Assessment that includes the Direct Examinations made to three sites. The Project activities were located in unincorporated Ventura County. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $1,236,395.

SoCalGas

## Final Workpaper for Line 8109 Phase 2 [redacted] TIMP Project

### Table 1: General Project Information

| **Direct Examination Details** | | | |
|---|---|---|---|
| Site | 1 | | |
| Examination ID | [redacted] | | |
| Mitigation/Remediation Type | Replacement | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 2 | | |
| Examination ID | [redacted] | | |
| Mitigation/Remediation Type | Replacement | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 3 | | |
| Examination ID | [redacted] | | |
| Mitigation/Remediation Type | Replacement | | |
| Within HCA | No | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 1,236,395 | 0 | 1,236,395 |

## B. Maps and Images

Figure 1: Satellite Image of Line 8109 Phase 2 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Table 2 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Line 8109 at [redacted] for Inspection using [redacted] activities related to the ILI were completed for this Project before the TY 2019 General Rate Case (GRC) cycle.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using [redacted] three Direct Examination sites were identified for validation.
   a. Direct Examination Sites #1, #2, and #3 consisted of a combined 588 foot pipeline replacement.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations following the Inspection resulted in no additional examinations or remediations.
4. Final Project Scope: The final project scope of this Workpaper includes three Direct Examinations.

Table 2: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 8109 | 1, 2, 3 | No | No | 9 ft | Replacement | 588 ft | Capital |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas completed the Inspection for the Line 8109 Phase 2 [redacted] TIMP Project before the TY 2019 GRC cycle.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were three Direct Examinations sites selected for validation of the ILI within the Line 8109 Phase 2 [redacted] TIMP Project.
   a. Direct Examination Sites #1, #2, and #3 consisted of a combined 588 foot pipeline replacement.
   b. Direct Examinations were completed on the pipeline at an offsite location.
2. SRC/IRC: There were no SRCs or IRCs during the Direct Examinations.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Project required coordination with other SoCalGas project to minimize system impacts.
4. Customer Impacts: No customer impacts.

5. Community Impacts: The Project location was within private property and required extensive coordination to obtain adequate clearances for work to be completed.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Permit Restrictions: The Project Team obtained the following permits for the Project:
   a. Regional General Permit from the U.S. Army Corps of Engineers (USACE). This permit was submitted and approved multiple times due to amended water diversions plans caused by weather conditions.
   b. Watercourse Permit from the County of Ventura Public Works Agency.
8. Environmental:
   a. The Project required active biological monitoring throughout the Direct Examinations.
   b. Landowners of the Project location required active monitoring of hot spring pools within the property.
9. Land Use:
   a. The Project Team obtained a Temporary Right of Entry (TRE) agreement from the Project site landowners. Delayed project schedules resulted in increased costs for the TRE.
   b. The Project Team implemented a Restoration Memorandum to ensure full environmental restoration within the Project site.
10. Traffic Control: The Project Team provided traffic control signage throughout the duration of the Project.
11. Constructability:
    a. The Project Team increased the initial replacement section to 588 feet to provide sufficient pipeline coating protection.
    b. The Project Team increased the depth of cover over the pipeline to 14 feet within the section crossing [redacted] to comply with waterway design requirements.
    c. The Project required temporary water diversions to safely access the pipeline.

d. The Project experienced multiple demobilizations due to severe weather conditions within a three-month period. The demobilizations included the removal and reinstallation of all temporary water diversions.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

Table 3: Construction Timeline – Direct Examination

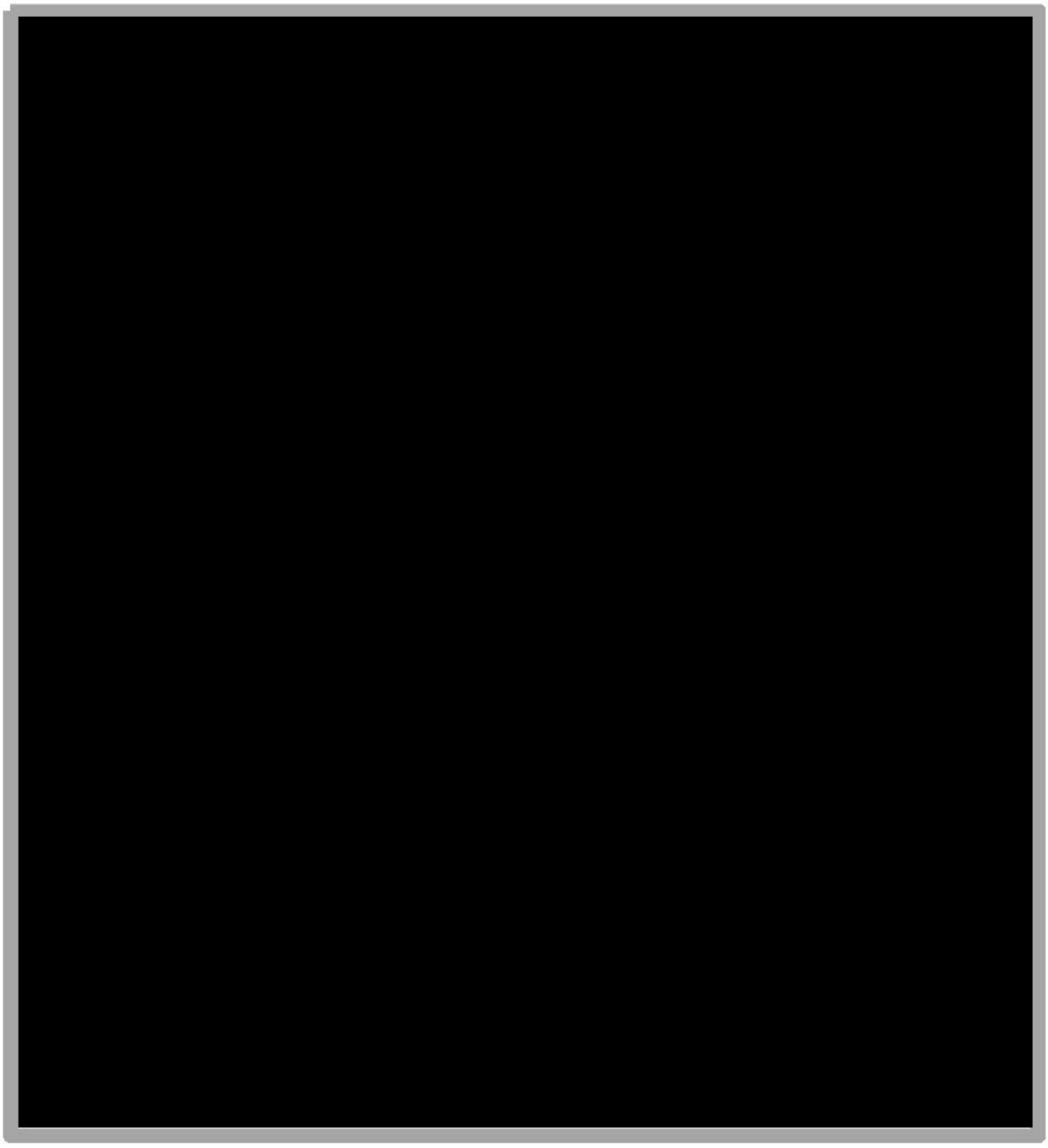
| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

SoCalGas

Final Workpaper for Line 8109 Phase 2 [redacted] TIMP Project

Figure 2: Aerial Overview of Project Site

Figure 3: Temporary Bridge to access Project Site



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Final Workpaper for Line 8109 Phase 2 [redacted] TIMP Project

Figure 4: Excavation at Project Site – Elevation Visual

Figure 5: Open Trench at Project Site

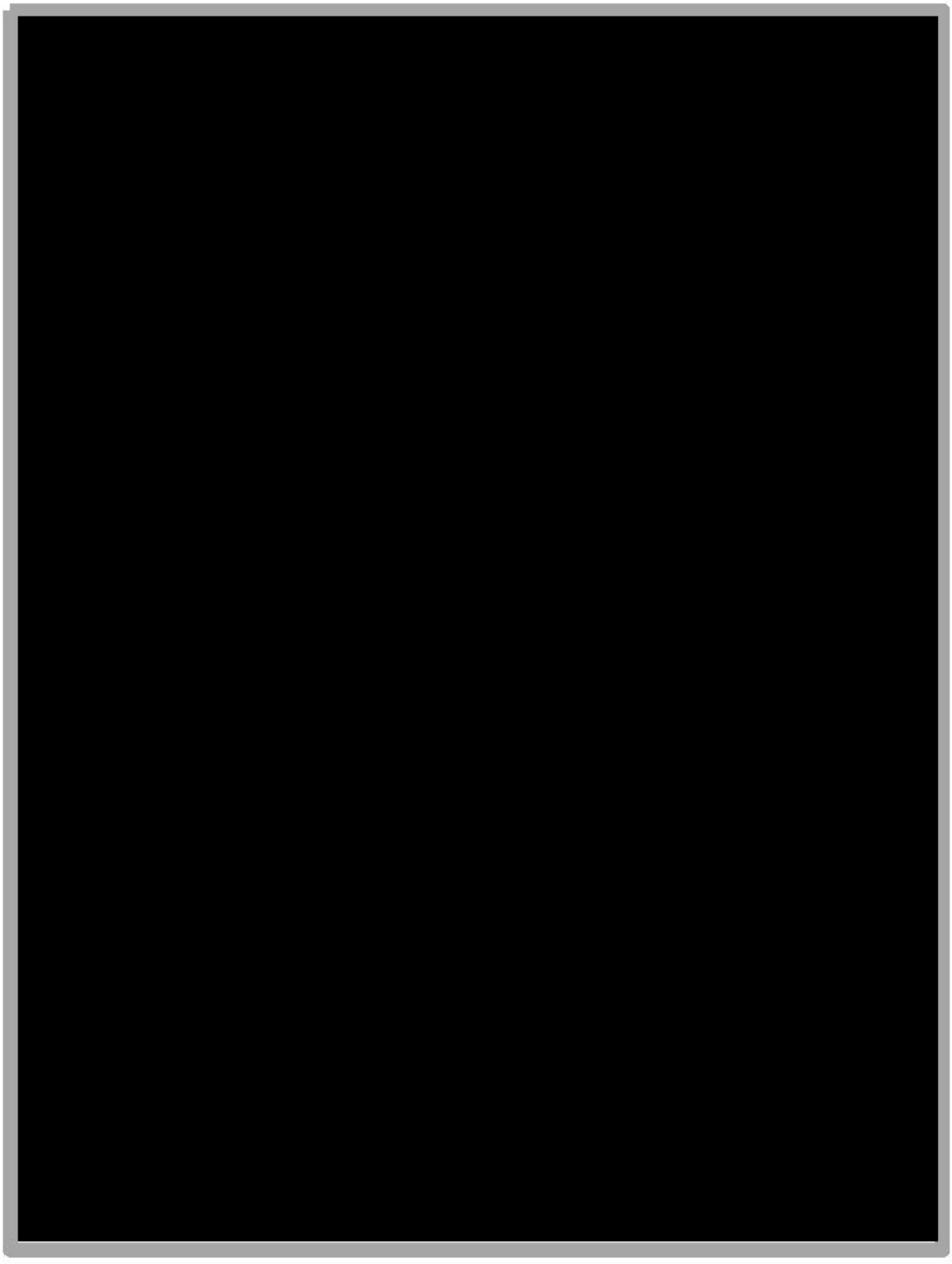
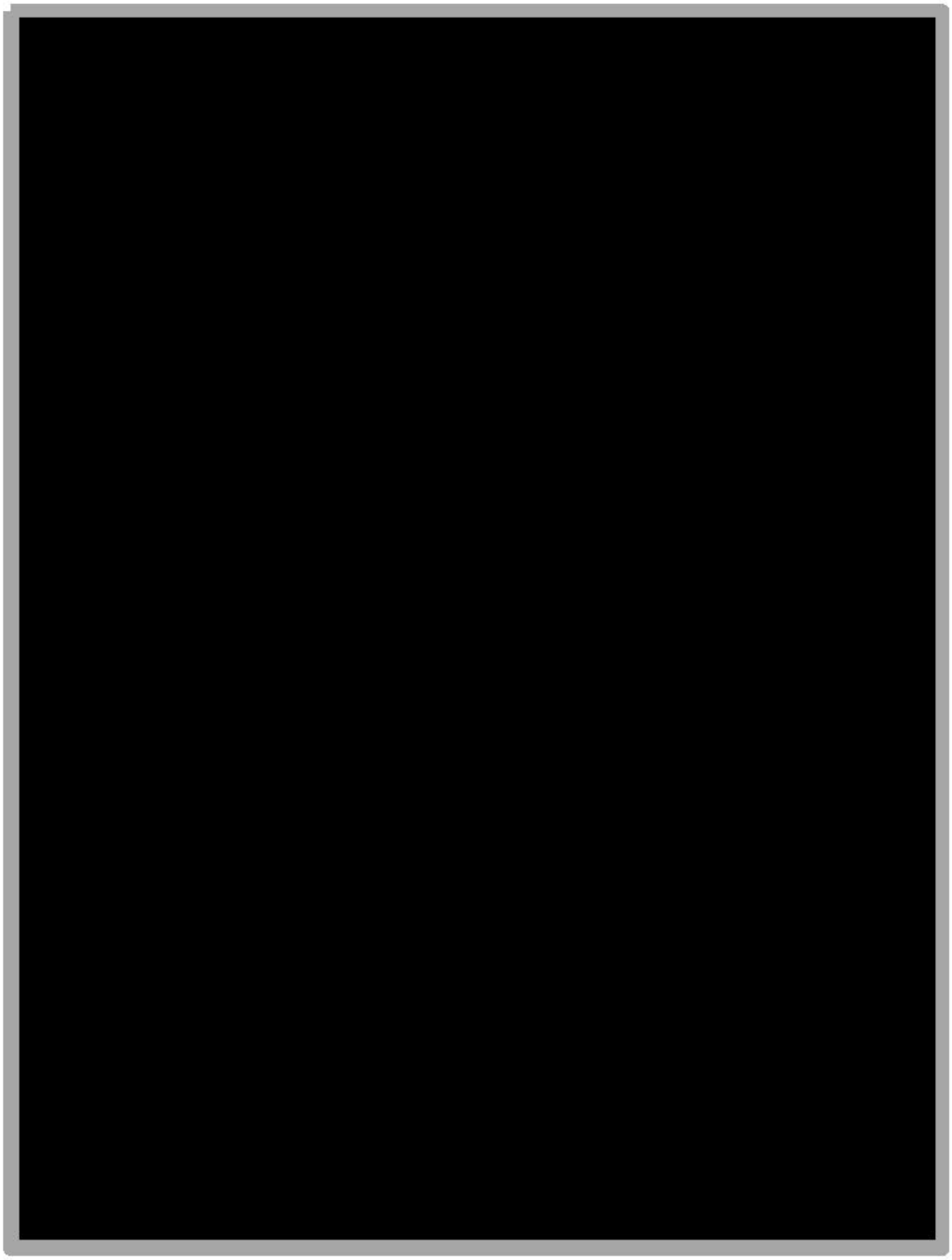


Figure 6: Water Pump at Project Site



## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation, and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design. Specific examples of cost efficiency actions taken on this Project were:

1. Construction Execution: This Project was completed in coordination with another SoCalGas project. Project costs were distributed between both project budgets to complete the 588 foot replacement.

## B. Actual Costs[1]

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $1,236,395.

### Table 7: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 28,277 | 0 | 28,277 |
| Contract Costs | 1,042,854 | 0 | 1,042,854 |
| Material | 1,222 | 0 | -59,651 |
| Other Direct Charges | 49,571 | 0 | 110,444 |
| **Total Direct Costs** | 1,121,924 | 0 | 1,121,924 |

### Table 8: Actual Indirect Costs[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 93,859 | 0 | 93,859 |
| AFUDC | 13,843 | 0 | 13,843 |
| Property Taxes | 6,770 | 0 | 6,770 |
| **Total Indirect Costs** | 114,471 | 0 | 114,471 |

### Table 9: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 1,236,395 | 0 | 1,236,395 |

[1] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[2] Values may not add to total due to rounding.
[3] Ibid.
[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Line 8109 Phase 2 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $1,236,395.

**End of Line 8109 Phase 2 [redacted] TIMP Project Final Workpaper**

# I. SUPPLY LINE 30-58 [redacted] TIMP PROJECT

## A. Background and Summary

Supply Line 30-58 [redacted] Transmission Integrity Management Program (TIMP) Project assessed an [redacted] and [redacted] multi-diameter line that runs approximately 208 feet from [redacted] into a customer private property, near industrial and commercial areas. The pipeline is routed across a [redacted] location entirely within High Consequence Areas (HCAs). This Workpaper describes the activities associated with a TIMP Assessment that include the Direct Examinations made to two sites. The Project activities were located in the City of Carson. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is $3,504,653.

SoCalGas

## Final Workpaper for Supply Line 30-58 [redacted] TIMP Project

### Table 1: General Project Information

| **Direct Examination Details** | | | |
|---|---|---|---|
| Site | 1 | | |
| Examination ID | [redacted] | | |
| Type | [redacted] | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | Multiple SMYS values from [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Direct Examination Details** | | | |
| Site | 2 | | |
| Examination ID | [redacted] | | |
| Type | [redacted] | | |
| Mitigation/Remediation Type | Soft Pad | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | Multiple SMYS values from [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 92,841 | 3,411,812 | 3,504,653 |

## B. Maps and Images

Figure 1: Satellite Image of Supply Line 30-58 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the prepared direct testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that typically occur during the Direct Examinations.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Table 2 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Supply Line 30-58 for Inspection using the [redacted] assessment method in lieu of ILI.
2. Direct Examination – Engineering, Design, and Constructability: Two Direct Examination sites were identified to assess pipeline segments that could not accommodate an ILI tool.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs.
3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the Direct Examinations resulted in no additional examinations.
4. Final Project Scope: The final project scope of this Workpaper consists of two Direct Examinations.

Table 2: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 30-58 | 1 | Yes | No | 180 ft | Soft Pad | N/A | O&M |
| 30-58 | 2 | Yes | No | 28 ft | Soft Pad | N/A | O&M |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Supply Line 30-58 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the project, confirm the appropriate Inspection methods, and select the inspection tools. It was determined that this pipeline segment could not accommodate an ILI tool and would need to be assessed using the [redacted] method.

## C. Engineering, Design, and Constructability Factors – Direct Examination

Continuing the planning process for the Supply Line 30-58 [redacted] TIMP Project, SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: There were two [redacted] Sites selected to assess pipeline segments that could not accommodate an ILI tool within the Supply Line 30-58 [redacted] TIMP Project.
   a. Direct Examination Site #1 consisted of soft pad repairs.

b. Direct Examination Site #2 consisted of soft pad repairs.

2. SRC/IRC: There were no SRCs or IRCs during the Direct Examinations.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Direct Examinations could be completed without system impacts.
4. Customer Impacts: The Project Team did not identify any anticipated service disruptions to customers.
5. Community Impacts: No identified impacts.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
7. Environmental: No identified impacts.
8. Permit Restrictions: The City of Carson required traffic analysis and signal modification as a contingency for the standard encroachment permit. The permit also required specific backfill requirements due to heavy trucks in the area.
9. Land Use: The Project Team obtained a temporary workspace area adjacent [redacted] and a portion of a customer's private property.
10. Traffic Control: Ongoing monitoring of traffic impact and flow was requested by the city. There was a full road closure at the south end [redacted]
11. Constructability: During construction for Direct Examination Site #1 and Site #2, the Project Team required the removal of pipe casing in order to complete the Direct Examination of the pipe.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

The Project Team used the data collected from the Direct Examinations during the Post-Assessment step to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

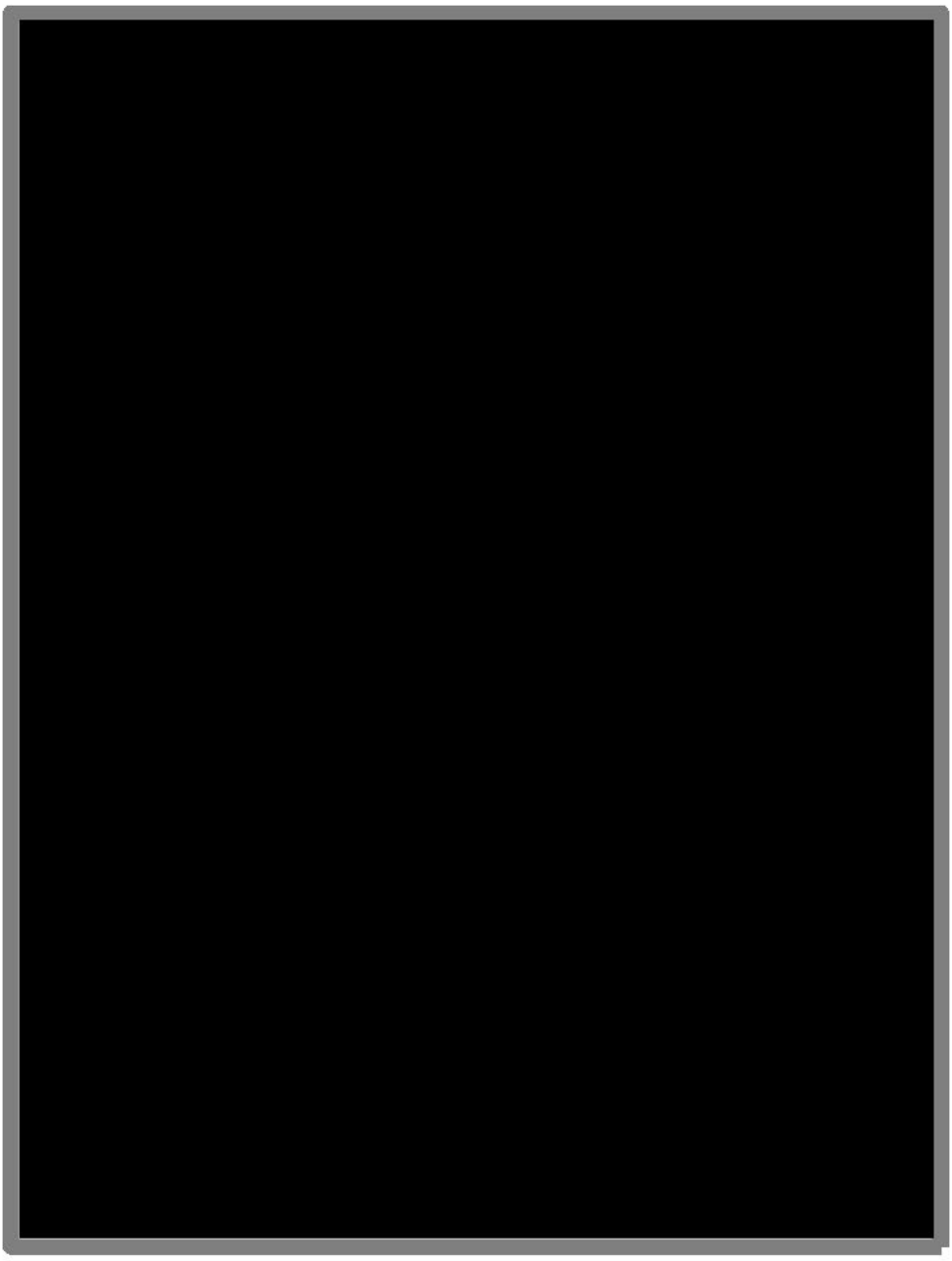
## B. Construction Schedule

Table 3: Construction Timeline – Direct Examination

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

Figure 2: Direct examination Site #1

Figure 3: Direct examination Site #2



## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final inspection and returning pipeline to normal operating conditions, transportation and disposal of hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas exercised due diligence in the design, planning, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design.

## B. Actual Costs[1]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $3,504,653.

### Table 4: Actual Direct Costs[2]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 2,095 | 147,022 | 149,117 |
| Contract Costs | 2,414 | 2,348,818 | 2,351,232 |
| Material | 69,414 | 361,002 | 430,416 |
| Other Direct Charges | 11,789 | 349,619 | 361,408 |
| **Total Direct Costs** | 85,711 | 3,206,461 | 3,292,173 |

### Table 5: Actual Indirect Costs[3]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | -1,320 | 205,350 | 204,030 |
| AFUDC | 6,781 | 0 | 6,781 |
| Property Taxes | 1,668 | 0 | 1,668 |
| **Total Indirect Costs** | 7,129 | 205,350 | 212,480 |

### Table 6: Total Costs[4]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 92,841 | 3,411,812 | 3,504,653 |

[1] These are the total project costs incurred between January 1, 2019, and December 31st, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[2] Values may not add to total due to rounding.
[3] Ibid.
[4] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Supply Line 30-58 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $3,504,653.

**End of Supply Line 30-58 [redacted] TIMP Project Final Workpaper**

# I. SUPPLY LINE 31-09 [redacted] TIMP PROJECT

## A. Background and Summary

Supply Line 31-09 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter line that runs approximately 838 feet underneath a railroad crossing near [redacted] in the County of Los Angeles. The pipeline is routed across [redacted] locations with 406 feet within High Consequence Area(s) (HCAs) and 432 feet within non-HCAs. This Workpaper describes the activities and costs associated with an Inspection using In-Line Inspection (ILI), a Direct Examination made to one site, which contained an Immediate Repair Condition (IRC), and a Post-Assessment examination made to one site. The Project activities were located in the County of Los Angeles. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $4,584,016.

SoCalGas

## Final Workpaper for Supply Line 31-09 [redacted] TIMP Project

### Table 1: General Project Information

| Inspection Details | |
|---|---|
| Pipeline | 31-09 |
| Segment | [redacted] |
| Inspection Type | [redacted] Tool |
| Location | Walnut and Industry |
| Class | [redacted] |
| HCA Length | 406 feet |
| Vintage | Multiple vintages from [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | Multiple SMYS values from [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Final Tool Run Date | [redacted] |
| Inspection Due Date | [redacted] |

SoCalGas

Final Workpaper for Supply Line 31-09 [redacted] TIMP Project

Table 1: General Project Information (Continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Site | 1 | | |
| Examination ID | [redacted] | | |
| Type | Validation | | |
| Mitigation/Remediation Type | Soft Pad and Replacement | | |
| Within HCA | Yes | | |
| SRC/IRC | Yes | | |
| SRC/IRC Discovery Date | [redacted] | | |
| Repair Date | [redacted] | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Post-Assessment Details** | | | |
| Site | 1 | | |
| Examination ID | [redacted] | | |
| Remediation Type | Soft Pad | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 1,689,211 | 2,894,805 | 4,584,016 |

## B. Maps and Images

Figure 1: Satellite Image of Supply Line 31-09 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that occurred during the Inspection, Direct Examination, and Post-Assessment.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2, 3, and 4 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Supply Line 31-09 [redacted] TIMP Project for Inspection using [redacted]
   a. [redacted] from a temporary launcher and receiver site near the south extent of the Project.
   b. The Project required installation of a permanent [redacted] to facilitate the Inspection.
   c. The Project required temporary launcher and receiver dewater locations to complete dewatering activities before the Inspection. This also required permanent replacement of approximately 40 feet of [redacted] pipeline.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using [redacted] Direct Examination was completed

using a validation spool piece and it was determined that one additional Direct Examination site was required.

a. Direct Examination Site #1 consisted of soft pad repairs and a 14 foot pipeline replacement.

b. The Project identified one Direct Examination site containing an IRC.

3. Post-Assessment – Engineering, Design, and Constructability: The validation analyses of the validation spool piece and Direct Examination following the Inspection resulted in one additional examination.

a. Post-Assessment Site #1 consisted of soft pad repairs.

4. Final Project Scope: The final project scope of this Workpaper includes Inspection using ILI, one Direct Examination and one Post-Assessment Examination.

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| 31-09 | 838 ft | [redacted] | [redacted] | [redacted] | Yes |

Table 3: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 31-09 | 1 | Yes | Yes | 19 ft | Soft Pad and Replacement | 14 ft | Capital |

Table 4: Final Post-Assessment Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| 31-09 | 1 | Yes | No | 5 ft | Soft Pad | N/A | O&M |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Supply Line 31-09 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description:
   a. [redacted] of Supply Line 31-09 [redacted] through a temporary launcher and receiver site.
   b. The Project required installation of a temporary launcher and receiver to support dewatering.
2. HCA Threats:
   [redacted]
3. Pipe Vintage: Multiple vintages from [redacted]
4. Long Seam Type:

[redacted]

[redacted]

5. Inspection Tools and Technologies: The Project utilized a [redacted] technology during the Inspection of the pipeline.
6. Inspection Retrofits:
   a. The Project required permanent installation of a [redacted] to facilitate the [redacted]
   b. The Project required permanent replacement of approximately 40 ft of [redacted] pipeline to access the pipeline and support dewatering activities for the segment prior to Inspection.
7. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Inspection and retrofits could be completed in planned construction window without system impacts.
8. Customer Impacts: No customer impacts.
9. Community Impacts: No identified impacts.
10. Substructures: The Project Team identified an adjacent utility pipe at the dewatering receiver site.
11. Environmental: The Inspection launcher and receiver locations were located adjacent to the [redacted]. The Project Team took additional precautions to ensure project materials or debris did not access the waterways.
12. Permit Restrictions: The Project Team obtained approved permits from the following entities:
    a. Encroachment Permit from the City of Industry.
    b. Excavation Permit from the County of Los Angeles.
13. Land Use: The Project Team obtained a Temporary Right of Entry (TRE) agreement from a private landowner for workspace near the Project.
14. Traffic Control: The Project Team utilized a standard Traffic Control Plan (TCP) to comply with the Encroachment Permit from the City of Industry.

15. Schedule Delay: No identified impacts.
16. Constructability:
    a. The Project Team installed temporary installations of launcher and receiver dewater assemblies. These assemblies helped facilitate dewatering activities prior to Inspection.
    b. The Project required full isolation of the pipeline in preparation for dewatering activities.

## C. Engineering, Design, and Constructability Factors – Direct Examination

SoCalGas completed Direct Examination for the Supply Line 31-09 [redacted] TIMP Project using a validation spool piece and it was determined that one additional Direct Examination Site was required for validation. Key factors that influenced the engineering and design of this Project are as follows:

1. Engineering Assessment: There was one Direct Examination Site selected for validation of the ILI within the Supply Line 31-09 [redacted] TIMP Project.
    a. Direct Examination Site #1 consisted of soft pad repairs and a 14 foot pipeline replacement.
2. SRC/IRC: Direct Examination Site #1 contained an IRC and required an expedited project schedule.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded a full isolation of the pipeline segment would have a significant impact on the system. Therefore, the Project required installation of a temporary bypass.
4. Customer Impacts: No customer impacts.
5. Community Impacts: No identified impacts.
6. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.

7. Environmental: The Project Team utilized the environmental guidelines provided for the Inspection during the Direct Examination.
8. Permit Restrictions: The Project Team completed the following for the Direct Examination:
   a. Courtesy notification letter to Union Pacific Railroad.
   b. Expedited Excavation Permit from the County of Los Angeles Department of Public Works.
9. Land Use: The Project Team utilized the immediate work area as a laydown yard.
10. Traffic Control: No identified impacts.
11. Schedule Delay: The Project experienced a delay in excavation activities due to large depth of cover at the Direct Examination site.
12. Constructability:
    a. The Project required installation of one new permanent [redacted] and a temporary [redacted] bypass to complete the Direct Examination and minimize system impacts.
    b. The Project required trench plate designs and rentals for the excavation site as well as engineered shoring due depth of the pipeline.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

During the Post-Assessment step, the Project Team used the data collected from the Inspection and validation spool piece to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in one additional examination that involved preventative and mitigative measures to enhance the overall integrity and safety of the pipeline. Key factors that influenced the engineering and design of the Project are as follows:

SoCalGas

## Final Workpaper for Supply Line 31-09 [redacted] TIMP Project

1. Engineering Analysis:
   a. Post-Assessment Site #1 consisted of soft pad repairs.
2. SRC/IRC: There were no SRCs or IRCs during Post-Assessment.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded Post-Assessment Site #1 could be completed without system impacts.
4. Customer Impacts: No customer impacts.
5. Community Impacts: The Project Team notified nearby residents and businesses of construction activities required for Post-Assessment Site #1.
6. Permit Restrictions: The Project Team obtained approved permits from the following entities:
   a. Encroachment Permit from the City of Industry for a laydown yard near the project site. The permit required the Project Team to coordinate with the Los Angeles County Flood Control District.
   b. Flood Permit from the County of Los Angeles Public Works to access right of way. The permit allowed the Project Team to remove approximately 50 feet of right of way fence on both sides of the nearby [redacted] for access. The Project Team restored fencing upon project completion.
7. Constructability: Post-Assessment Site #1 was located on a pipe span which required aboveground Inspection.
8. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
9. Environmental: Post-Assessment Site #1 was located adjacent to the [redacted]
   a. The Project Team took additional precautions to ensure project materials or debris did not access the waterways.
   b. The Project Team was required to attend Workers Environmental Awareness Training (WEAP) due to the Project location.

10. Traffic Control: The Project Team obtained a TCP approved by the City of Industry that included a lane closure on [redacted], flaggers, cones, and signage.
11. Land Use: The Project Team obtained a TRE agreement from a private landowner for workspace near the Project.
12. Schedule Delay: No identified impacts.
13. Other Identified Impacts: The Project required additional nondestructive evaluation of the Post-Assessment Site since it was located on a pipe span.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractors that best met the criteria for this Project.

## B. Construction Schedule

Table 5: Construction Timeline – Inspection

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

Table 6: Construction Timeline – Direct Examination

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

Table 7: Construction Timeline – IRC

| | | |
|---|---|---|
| IRC Discovery Date – Site #1 | [redacted] | |
| Repair Date – Site #1 | | |

Table 8: Construction Timeline – Post-Assessment

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

Figure 2: Temporary Launcher and Receiver Site

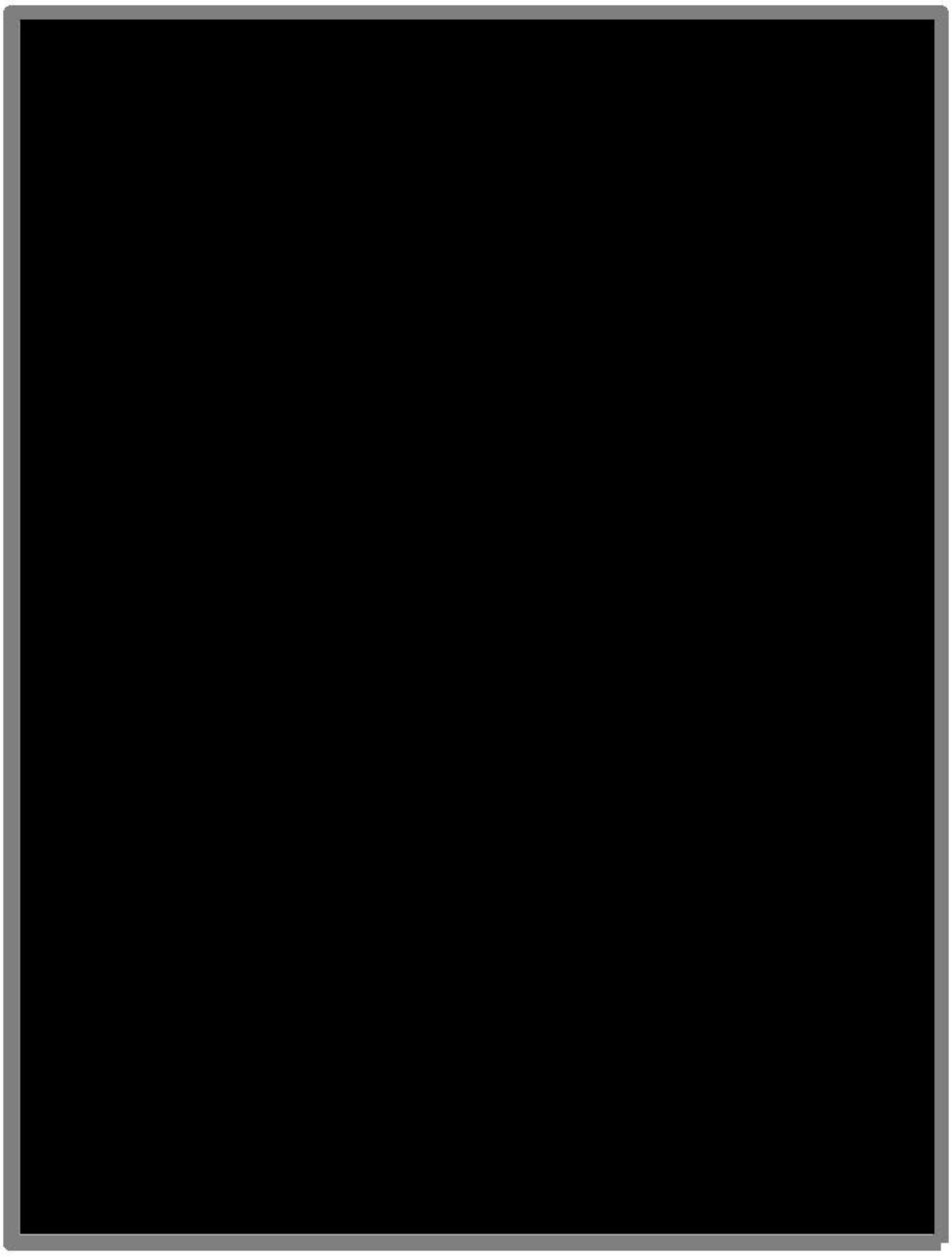


Figure 3: Temporary Launcher and Receiver Site

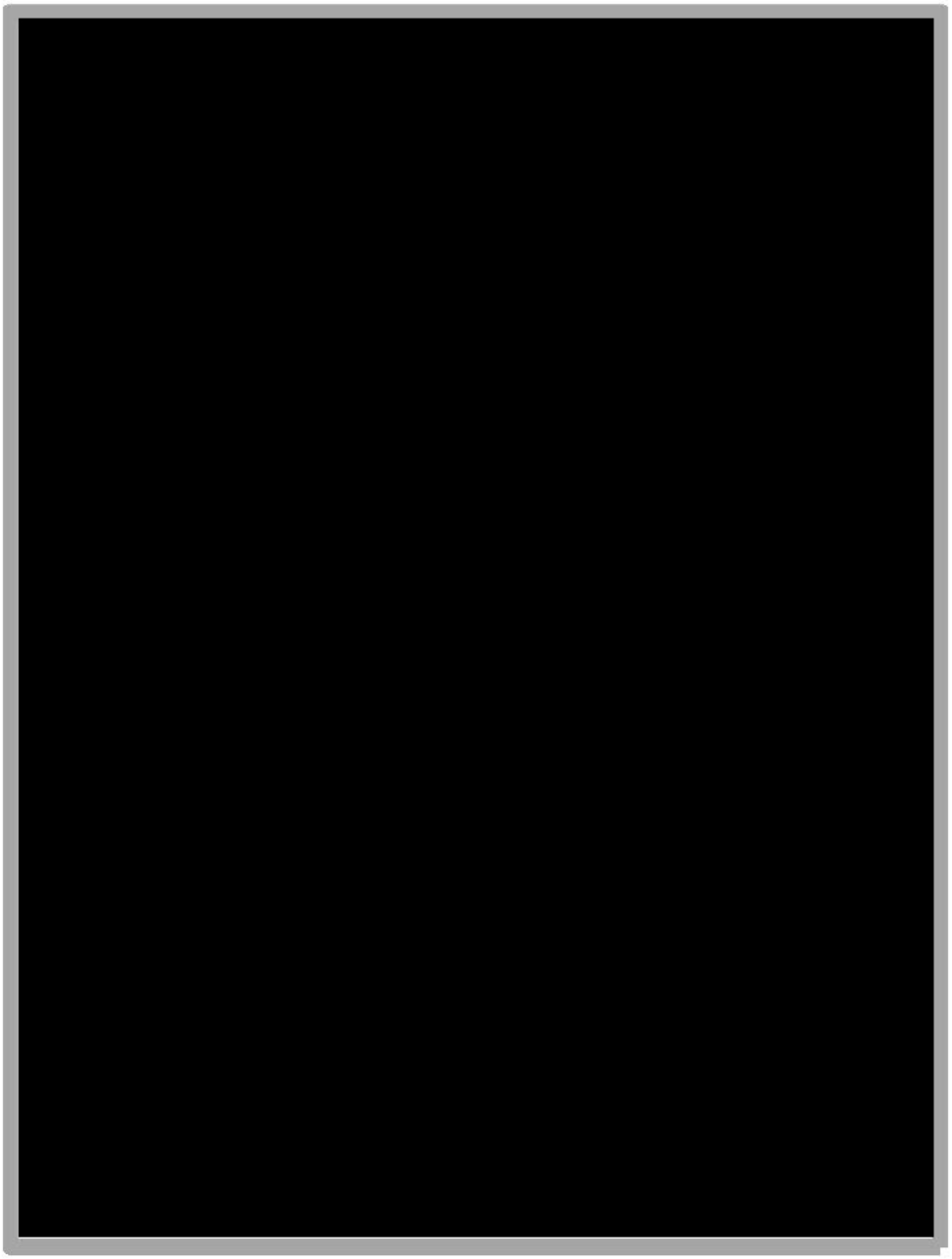


Figure 4: Dewatering Location

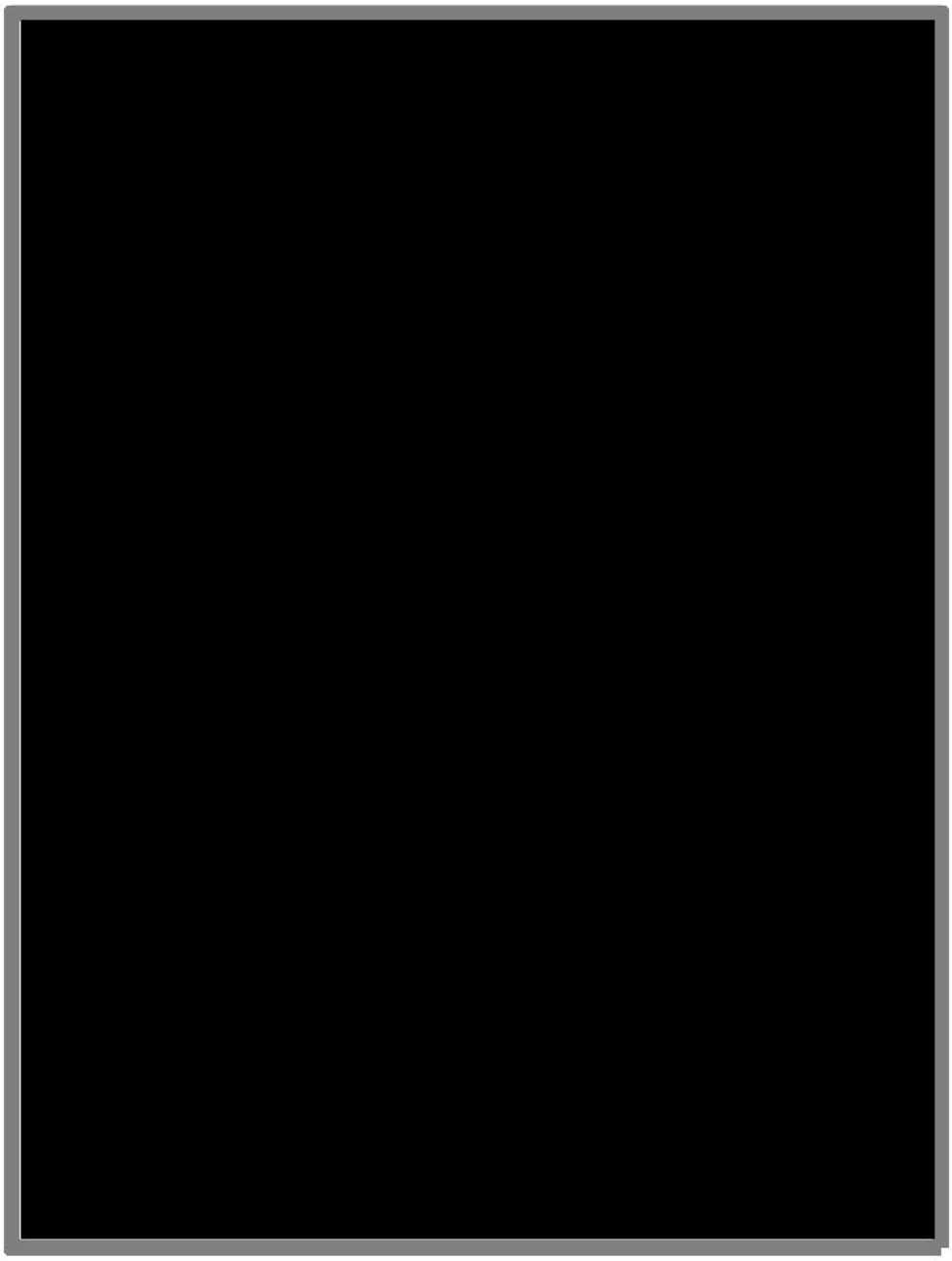
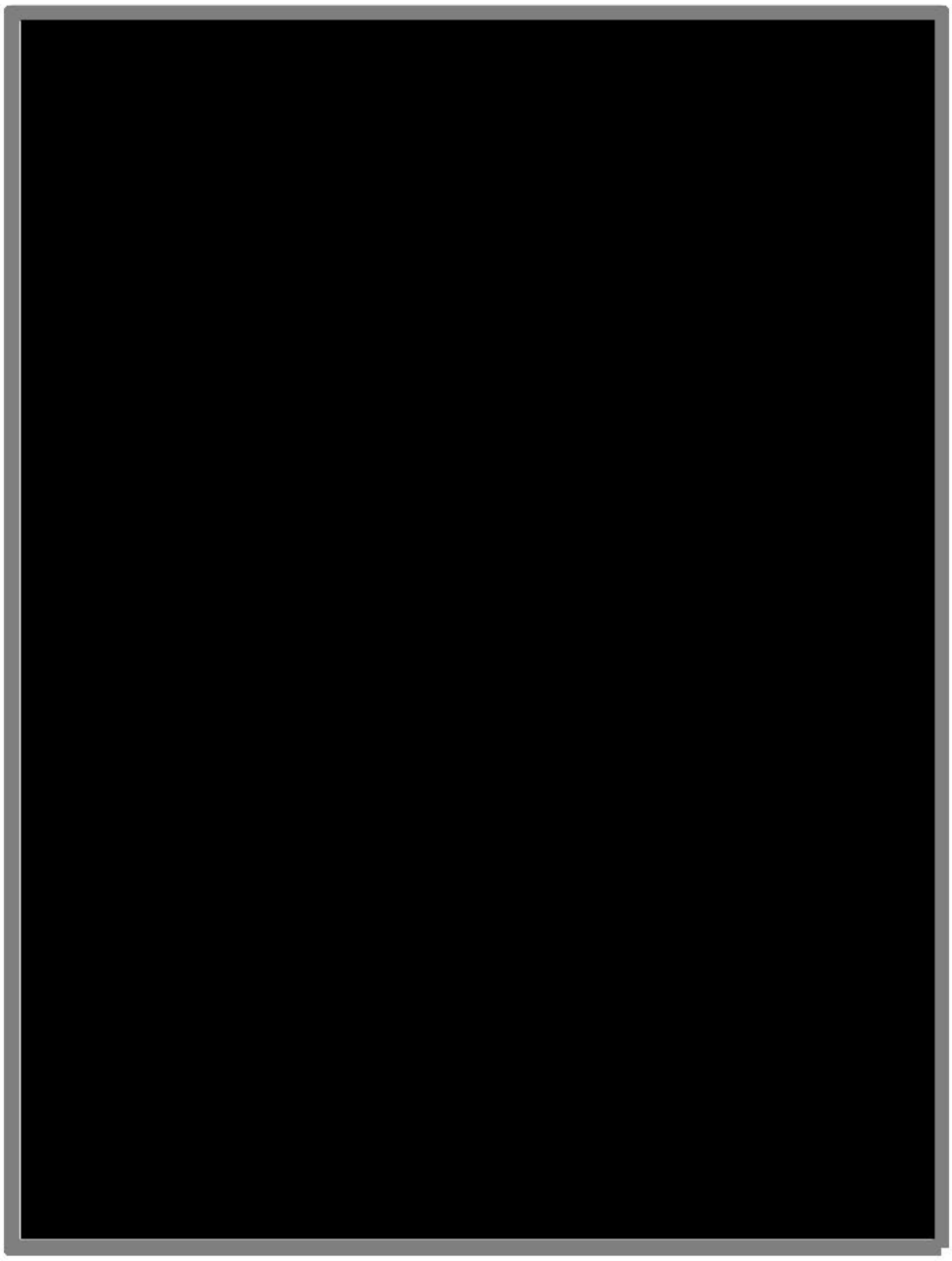


Figure 5: Dewatering Location



## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas executed the design, planning, and construction activities for this Project to minimize or avoid costs where appropriate. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the Project plan and design.

## B. Actual Costs[2]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $4,584,016.

### Table 9: Actual Direct Costs[3]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 116,180 | 284,119 | 400,299 |
| Contract Costs | 717,927 | 1,604,556 | 2,322,483 |
| Material | 2,955 | 120,353 | 123,308 |
| Other Direct Charges | 362,528 | 621,545 | 984,073 |
| **Total Direct Costs** | 1,199,590 | 2,630,573 | 3,830,163 |

### Table 10: Actual Indirect Costs[4]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 463,822 | 264,232 | 728,054 |
| AFUDC | 11,862 | 0 | 11,862 |
| Property Taxes | 13,937 | 0 | 13,937 |
| **Total Indirect Costs** | 489,621 | 264,232 | 753,853 |

### Table 11: Total Costs[5]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 1,689,211 | 2,894,805 | 4,584,016 |

[2] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[3] Values may not add to total due to rounding.
[4] Ibid.
[5] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of its natural gas system by executing the Supply Line 31-09 [redacted] TIMP Project. Through this Project, SoCalGas implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, including the continual identification of threats to its pipelines, determination of the risk posed by these threats, scheduling and tracking assessments to address threats, conducting an appropriate assessment in a prescribed timeline, collecting information about the condition of the pipelines, taking actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and reporting the findings of the assessment. The total loaded cost of the Project is $4,584,016.

**End of Supply Line 31-09 [redacted] TIMP Project Final Workpaper**

# I. SUPPLY LINE 35-1179 [redacted] TIMP PROJECT

## A. Background and Summary

Supply Line 35-1179 [redacted] Transmission Integrity Management Program (TIMP) Project assessed a [redacted] diameter line that runs approximately 0.45 miles along [redacted], through residential neighborhoods and commercial areas. The pipeline is routed across [redacted] locations with 0.45 miles within High Consequence Areas (HCAs) and no non-HCAs. This Workpaper describes the activities associated with a TIMP Assessment that includes an Inspection using [redacted] In-Line Inspection (ILI) and the Direct Examinations made to two sites. The Project activities were located in the City of Garden Grove. The specific attributes of this Workpaper are detailed in Table 1 below. The total loaded cost of the Project is $3,741,326.

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# Final Workpaper for Supply Line 35-1179 [redacted] TIMP Project

## Table 1: General Project Information

| **Inspection Details** | |
|---|---|
| Pipeline | 35-1179 |
| Segment | [redacted] |
| Inspection Type | [redacted] Tool |
| Location | Garden Grove |
| Class | [redacted] |
| HCA Length | 0.5 miles |
| Vintage | [redacted] |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Final Tool Run Date | [redacted] |
| Inspection Due Date | [redacted] |
| **Direct Examination Details** | |
| Pipeline | Supply Line 35-1179 |
| Site | 1 |
| Examination ID | [redacted] |
| Type | [redacted] |
| Mitigation/Remediation Type | Soft Pad |
| Within HCA | Yes |
| SRC/IRC | No |
| Pipe Diameter | [redacted] |
| MAOP | [redacted] |
| SMYS | [redacted] |
| Construction Start Date | [redacted] |
| Construction Completion Date | [redacted] |
| Due Date | [redacted] |

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## Final Workpaper for Supply Line 35-1179 [redacted] TIMP Project

### Table 1: General Project Information (Continued)

| Direct Examination Details | | | |
|---|---|---|---|
| Pipeline | Supply Line 35-1179 | | |
| Site | 2 | | |
| Examination ID | [redacted] | | |
| Type | [redacted] | | |
| Mitigation/Remediation Type | Soft Pad, Band | | |
| Within HCA | Yes | | |
| SRC/IRC | No | | |
| Pipe Diameter | [redacted] | | |
| MAOP | [redacted] | | |
| SMYS | [redacted] | | |
| Construction Start Date | [redacted] | | |
| Construction Completion Date | [redacted] | | |
| Due Date | [redacted] | | |
| **Project Costs ($)** | **Capital** | **O&M** | **Total** |
| Loaded Project Costs | 1,210,022 | 2,531,304 | 3,741,326 |

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Final Workpaper for Supply Line 35-1179 [redacted] TIMP Project

## B. Maps and Images

Figure 1: Satellite Image of Supply Line 35-1179 [redacted] TIMP Project

# II. ENGINEERING, DESIGN, AND CONSTRUCTABILITY

## A. Project Scope

As described in the Prepared Direct Testimony of Jordan Zeoli, Fidel Galvan, and Travis Sera (Chapter II), TIMP projects follow the four-step assessment process: Pre-Assessment, Inspection, Direct Examination, and Post-Assessment. This Workpaper outlines construction activities during the Assessment process that typically occur during the Inspection and Direct Examination.

Prior to initiating execution of the assessment, SoCalGas reviewed available information and performed a detailed system analysis to verify the scope of the Project. The final scope of this Project is summarized in Tables 2 and 3 below.

1. Inspection – Engineering, Design, and Constructability: SoCalGas identified Supply Line 35-1179 for Inspection using [redacted]
   a. [redacted] of 0.45 miles of pipeline along [redacted]
   b. The [redacted] was completed using a [redacted] tool which can access the pipeline through a [redacted] installed by the Project Team and therefore did not require launcher or receiver locations.
   c. The Project Team executed a retrofit consisting of a 32-foot pipeline replacement to support pipeline piggability to facilitate future Inspections.
2. Direct Examination – Engineering, Design, and Constructability: Following the completion of the Inspection using [redacted], two Direct Examination sites were identified to either assess pipeline segments that could not accommodate an ILI tool or for validation.
   a. Direct Examination Site #1 consisted of soft pad repairs.
   b. Direct Examination Site #2 consisted of soft pad repairs, and a band repair.

3. Post-Assessment – Engineering, Design, and Constructability: The validation analysis of the spool piece following the Inspection resulted in no additional examinations.
4. Final Project Scope: The final project scope of this Workpaper includes Inspection using [redacted] and Direct Examination of two sites.

Table 2: Final Inspection Project Scope – ILI

| Final Project Scope | | | | | |
|---|---|---|---|---|---|
| Line | Inspection Length | Threat Type | Inspection Technology | Tool Method of Travel | Retrofits |
| SL35-1179 | 0.45 miles | [redacted] | [redacted] | [redacted] | Yes |

Table 3: Final Direct Examination Project Scope

| Final Project Scope | | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | Site | Within HCA | SRC/ IRC | Examination Length | Mitigation/ Remediation Type | Replacement Length | Cost Category |
| SL35-1179 | 1 | Yes | No | 12 ft | Soft Pad | N/A | O&M |
| SL35-1179 | 2 | Yes | No | 203 ft | Soft Pad, Band | N/A | Capital |

## B. Engineering, Design, and Constructability Factors – Inspection

SoCalGas initiated the planning process for the Supply Line 35-1179 [redacted] TIMP Project by performing a Pre-Assessment engineering analysis to determine existing conditions and any impacts to the Project, confirm the appropriate Inspection methods, and select the Inspection tools. Key factors that influenced the engineering and design of this Project are as follows:

1. Site Description: The [redacted] was completed using a [redacted] tool which can access the pipeline through a [redacted] fitting installed by the Project Team and did not require launcher or receiver locations.
2. HCA Threats:
   [redacted]
3. Pipe Vintage: [redacted]
4. Long Seam Type:
   a. [redacted]
   Inspection Tools and Technologies: The Project utilized [redacted] technology during the Inspection of the pipeline.
5. Inspection Retrofits: The Project required a retrofit consisting of a 32-foot pipeline replacement of a back-to-back elbow and installation of straight pipe to support pipeline piggability for future Inspections.
6. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the pipeline could be inspected without system impacts.
7. Customer Impacts: No customer impacts.
8. Community Impacts: Traffic impacts and occasional noise.
9. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
10. Environmental: No identified impacts.

11. Permit Restrictions: The Project Team required an Encroachment Permit for the City of Garden Grove.
12. Land Use: No identified impacts.
15. Traffic Control: The Project Team obtained Traffic Control Plans (TCPs) from Caltrans Right of Way (ROW) for potholing, installation, and usage of the [redacted]

## C. Engineering, Design, and Constructability Factors – Direct Examination

Continuing the planning process for the Supply Line 35-1179 [redacted] TIMP Project, SoCalGas reviewed Inspection reports, completed various site evaluations, and communicated with project stakeholders. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment:
   a. There were two [redacted] Sites selected to assess pipeline segments that could not accommodate an ILI tool within the Supply Line 35-1179 [redacted] TIMP Project.
      i. Direct Examination Site #1 consisted of soft pad repairs.
      ii. Direct Examination Site #2 consisted of soft pad repairs, and a band repair.
      iii. The Project Team completed these Direct Examinations during the Inspection Phase of the Project.
   b. SoCalGas completed the Direct Examination using a validation spool piece and it was determined that no additional Direct Examination Sites were required for validation of the ILI within the Supply Line 35-1179 [redacted] TIMP Project.
2. SRC/IRC: There were no SRCs or IRCs during the Direct Examinations.
3. System Analysis: The Project Team completed a review of the Pipeline system to evaluate project feasibility, which concluded the Direct Examinations could be completed without system impacts.
4. Customer Impacts: No customer impacts.

1. Community Impacts: No identified impacts.
2. Substructures: The Project Team did not identify any existing substructures that impacted the design and engineering.
3. Environmental: No identified impacts.
4. Permit Restrictions: The Project Team required an Encroachment Permit for the City of Garden Grove.
5. Land Use: No identified impacts.
6. Traffic Control: The Project Team obtained TCPs were required for Caltrans ROW for Direct Examination Site #1 and Site #2.
7. Constructability: The Project Team completed Direct Examination Sites #1 and #2 during the Inspection Phase of the Project.

## D. Engineering, Design, and Constructability Factors – Post-Assessment

The Project Team used the data collected from the Inspection during the Post-Assessment step to determine the effectiveness of the Inspection and evaluate the tool's performance to review the integrity of the pipeline, identify potential required examinations or remediations, and to establish the next reassessment interval for the threats assessed. This analysis resulted in no additional examinations.

# III. CONSTRUCTION

## A. Construction Contractor Selection

Following completion of the engineering, design, and planning activities described above, SoCalGas selected the Construction Contractor that best met the criteria for this Project.

## B. Construction Schedule

Table 4: Construction Timeline – Inspection and [redacted]

| | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |
| Inspection Due Date | | |

Table 5: Construction Timeline – Direct Examination

| Mobilization 1: Direct Examination Sites #1, #2 | | |
|---|---|---|
| Construction Start Date | [redacted] | |
| Construction Completion Date | | |

Figure 2: Direct Examination Site #2

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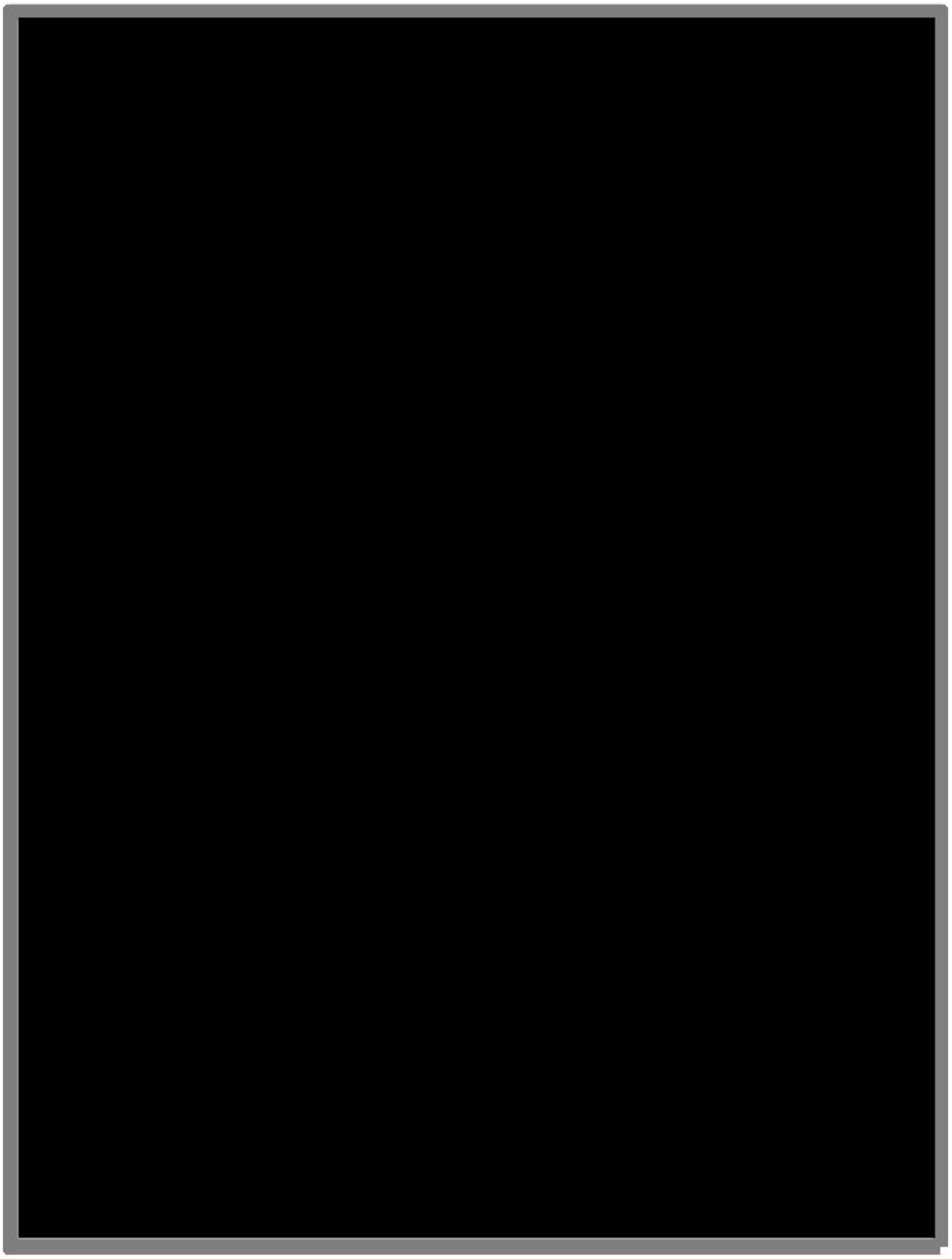
Final Workpaper for Supply Line 35-1179 [redacted] TIMP Project

Figure 3: Direct Examination Site #2

Figure 4: Direct Examination Site #2



SoCalGas

Final Workpaper for Supply Line 35-1179 [redacted] TIMP Project

Figure 5: Direct Examination Site #1

## C. Commissioning and Site Restoration

Commissioning activities include restoration of the site; final Inspection and returning pipeline to normal operating conditions, transportation and disposal of hydrotest water and hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

# IV. PROJECT COSTS

## A. Cost Efficiency Actions

SoCalGas exercised due diligence in the design, planning, and construction activities for this Project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team reviewed existing information, communicated with external stakeholders, and conducted a site evaluation to incorporate the site conditions in the project plan and design.

## B. Actual Costs[2]

Actual loaded costs reflect the Labor, Material, and Services costs incurred to execute the Project. The total loaded cost of the Project is $3,741,326.

### Table 6: Actual Direct Costs[3]

| Direct Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Company Labor | 11,278 | 161,745 | 173,023 |
| Contract Costs | 917,602 | 1,621,885 | 2,539,487 |
| Material | 0 | 1,082 | 1,082 |
| Other Direct Charges | 21,549 | 553,545 | 575,094 |
| **Total Direct Costs** | 950,429 | 2,338,257 | 3,288,687 |

### Table 7: Actual Indirect Costs[4]

| Indirect Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| Overheads | 256,535 | 193,047 | 449,582 |
| AFUDC | 2,182 | 0 | 2,182 |
| Property Taxes | 875 | 0 | 875 |
| **Total Indirect Costs** | 259,592 | 193,047 | 452,639 |

### Table 8: Total Costs[5]

| Total Costs ($) | Capital Costs | O&M Costs | Total Actual Costs |
|---|---|---|---|
| **Total Loaded Costs** | 1,210,022 | 2,531,304 | 3,741,326 |

[2] These are the total project costs incurred between January 1, 2019, and December 31, 2023. Only direct costs and vacation and sick contribute to the TIMPBA revenue requirement that is presented in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).
[3] Values may not add to total due to rounding.
[4] Ibid.
[5] Ibid.

## V. CONCLUSION

SoCalGas enhanced the integrity of their integrated natural gas system by prudently executing the Supply Line 35-1179 [redacted] TIMP Project. Through this Project, SoCalGas successfully implemented and managed the requirements set forth in 49 CFR Part 192, Subpart O, to achieve the objective to continually identify threats to its pipelines, determine the risk posed by these threats, schedule and track assessments to address threats, conduct an appropriate assessment in a prescribed timeline, collect information about the condition of the pipelines, take actions to minimize applicable threats and integrity concerns to reduce the risk of a pipeline failure, and Workpaper findings of Supply Line 35-1179 in the City of Garden Grove. The total loaded cost of the Project is $3,741,326.

**End of Supply Line 35-1179 [redacted] TIMP Project Final Workpaper**

**BEFORE THE PUBLIC UTILITIES**
**COMMISSION OF THE STATE OF CALIFORNIA**

# DECLARATION OF TRAVIS T. SERA REGARDING CONFIDENTIALITY OF CERTAIN DOCUMENTS PURSUANT TO D.21-09-020

I, Travis T. Sera, do declare as follows:

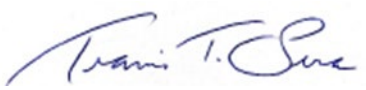
1. I am the Director of Integrity Management for Southern California Gas Company (SoCalGas). I have been delegated authority to sign this declaration by Gina Orozco, Vice President of Gas Engineering and System Integrity for SoCalGas. I have reviewed the confidential information included within SoCalGas-02-WP Workpapers Supporting the Prepared Direct Testimony of Jordan A. Zeoli, Fidel Galvan, and Travis T. Sera (Technical – Project Execution and Management) ("TIMP Workpapers"). I am personally familiar with the facts and representations in this Declaration and, if called upon to testify, I could and would testify to the following based upon my personal knowledge and/or information and belief.

2. I hereby provide this Declaration in accordance with Decision ("D.") 21-09-020 and General Order ("GO") 66-D to demonstrate that the confidential information ("Protected Information") provided in the TIMP Workpapers is within the scope of data protected as confidential under applicable law.

3. In accordance with the legal authority described in Attachment A, the Protected Information should be protected from public disclosure.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct to the best of my knowledge.

Executed this 30th day of April, 2025 at Los Angeles, California.



Travis T. Sera
Director of Integrity Management
Southern California Gas Company

**ATTACHMENT A**

**SoCalGas Request for Confidentiality on the following Protected Information in its Transmission Integrity Management Program (TIMP) Workpapers**

| Location of Data | Applicable Confidentiality Provisions | Basis for Confidentiality |
|---|---|---|
| SCG-02-WP (Volumes I-VII); Workpapers Supporting the Prepared Direct Testimony of Jordan A. Zeoli, Fidel Galvan, and Travis T. Sera (Technical – Project Execution and Management) have been marked/highlighted as confidential pursuant to PUC Section 583, GO 66-D, and D.21-09-020.<br><br>Confidential Information:<br><br>Critical Energy Infrastructure Information (CEII), Pipe attributes (SMYS, MAOP/MOP, Diameter, Seam type, Install date, Class location, HCA segment information, Assessment method, Assessment date, Coating type, Construction dates/schedules, Inspection results, Directional flow of natural gas), Threat type, Specific locational information and system pipeline map. | CPRA Exemption, Gov't Code § 7927.705 ("Records, the disclosure of which is exempted or prohibited pursuant to federal or state law")<br>• Cal. Civil Code §§ 3426 *et seq.* (Uniform Trade Secrets Act)<br>• *TMX Funding Inc. v. Impero Technologies, Inc.*, 2010 WL 2745484 at *4 (N.D. Cal. 2010) (defining trade secret in an injunction to include "business plans and strategies")<br>• *O2 Micro Int'l Ltd. v. Monolithic Power Sys., Inc.*, 420 F. Supp. 2d 1070, 1089–1090 (N.D. Cal. 2006) ("It does not matter if a portion of the trade secret is generally known, or even that every individual portion of the trade secret is generally known, so long as the combination of all such information is not generally known.")<br>• 18 CFR § 388.113(c) (defining CEII)<br>• FERC Order Nos. 630, 643, 649, 662, 683, and 702 (defining CEII)<br>• FERC Order 833 (including amendments to the CEII regulations, required by The FAST Act)<br>• Critical Energy Infrastructure Information, 68 Fed. Reg. 9857, 9862 (Dep't of Energy Mar. 3, 2003) (final rule) (listing what **gas** information qualifies as CEII)<br>• FERC's Guidelines for Filing Critical Energy/Electric | It is SoCalGas's practice to designate certain data as confidential because this data is similar to data protected by CEII regulations and, if made publicly available, could potentially present a risk to public and pipeline safety.<br><br>Engineering design values (i.e., Pipe attributes and production data) for existing critical infrastructure could be used to determine the criticality of a gas facility and identify vulnerabilities of the gas delivery network. Because of the critical nature of these attributes, they have been identified by PHMSA to be restricted attributes available only to government officials.<br><br>Inspection results (including assessment results/dates) are forms of production data that is protected and includes details related to the transmission and distribution of energy. This information if released to the public can be used to predict repair schedules and availability of segments of the transportation network. It may affect market pricing for gas transportation and delivery and lead to speculation in the energy markets that may be detrimental to consumers. This information could also be used to identify vulnerabilities of the gas network.<br><br>It is SoCalGas's practice to designate portions of their threat analysis, such as threat types, as confidential because this data is considered proprietary, not currently published by PHMSA, and, if made publicly available, could potentially present a risk to public and |

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| | Infrastructure Information, (Feb. 21, 2017), *available at* https://www.ferc.gov/sites/default/files/2020-04/CEII-Filing-guidelines.pdf<br>o Exhibits G, G-1, G-II of pipeline certificate applications. 18 CFR § 157.14<br>o Exhibit V of abandonment applications. 18 CFR § 157.18<br>o FERC Form 567. 18 CFR § 260.8<br>• CPUC Res. L-436, at 8 (stating CPUC will "refrain from making available to the public detailed maps and schematic diagrams showing the location of specific utility regulator stations, valves, and similar facilities")<br>• Cal. Pub. Util. Code § 364(d) ("The commission may, consistent with other provisions of law, withhold from the public information generated or obtained pursuant to this section that it deems would pose a security threat to the public if disclosed.")<br>• The Pipeline and Hazardous Materials Safety Administration's (PHMSA) guidelines consider the data to be restricted pipeline information. PHMSA Guidelines, 81 Fed. Reg. 40757, 40764 (June 22, 2016).<br>• PHMSA also issued an advisory bulletin on December 9, 2016: ABD-2016-0137; Pipeline Safety: Safeguarding and Securing Pipelines from Unauthorized Access detailing | pipeline safety, as well as a potential financial loss of future revenue as these documents could be monetized.<br><br>Pipeline locations (including street names) and maps at a scale of 1 inch to 24,000 feet scale or less are identified as confidential because the data would provide sufficient information to be used by a third party to excavate or access above ground facilities without notifying the Utility through the local Underground Service Alert (USA) or could be used to identify locations for illegal tapping or other acts that could impact the safety of residents living near the natural gas pipeline or gas facility. |

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| | the need for operators to protect their gas systems<br>• *See* Administrative Law Judge's Ruling Granting Applicant's Motion for Leave to Submit Confidential Materials Under Seal as to Appendix K Geographic Information System (GIS) Data at 2, Application 16-07-016 (December 1, 2016); Administrative Law Judge's Ruling Granting Applicant's Motion to File Specified Documents Under Seal, Application 16-04-022 (June 2, 2016)<br>• *See Mr. Doug Hall*, 114 FERC ¶ 62194, 2006 WL 463906 (Feb. 27, 2006) (letter from the FERC Office of External Affairs to an applicant seeking to review information containing CEII, explaining that "precise dam coordinates which could be used to target the dam. In addition, providing coordinate data for all facilities in a specific geographic region increases the vulnerability of those facilities to attack . . . this information could be used to compromise the dams, placing lives at risk.")<br>• *Ms. Alison Arnold*, 108 FERC ¶ 62287, 64538 (Sept. 30, 2004) (ruling on a request to the U.S. Department of Interior for a copy of GIS data regarding hydropower projects located in the State of Washington that "contains critical energy infrastructure information (CEII)")<br>• *N. Dakota Pipe Line Co., LLC 24-Inch Crude Oil Pipeline - Sandpiper Project Siting Application*, GE-13-193, 2014 | |

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| | WL 2567685, at *1 (May 13, 2014) (deeming confidential all the information in "a sealed envelope containing a CD and labeled 'Critical Energy Infrastructure Information.' The information also includes GIS mapping data, GIS data, and two plots of Souris River Crossing relating to the location of the Sandpiper Pipeline.")<br><br>CPRA Exemption, Gov't Code § 7929.205 (Critical Infrastructure Information) | |