SCG-02-WP-A

Errata Workpapers (Redline) Supporting the Prepared Direct Testimony of Jordan A. Zeoli, Fidel Galvan, and Travis T. Sera

(Technical – Project Execution and Management, Volume IV of VII; Public Version)

TABLE OF CONTENTS

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.

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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	
SMYS	
Construction Start Date	
Construction Completion Date	
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	
SMYS	
Construction Start Date	
Construction Completion Date	
Direct Examination Details	
Site	3
Examination ID	[redacted]
Mitigation/Remediation Type	Replacement
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	4,711,449	38,075	4,749,524

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

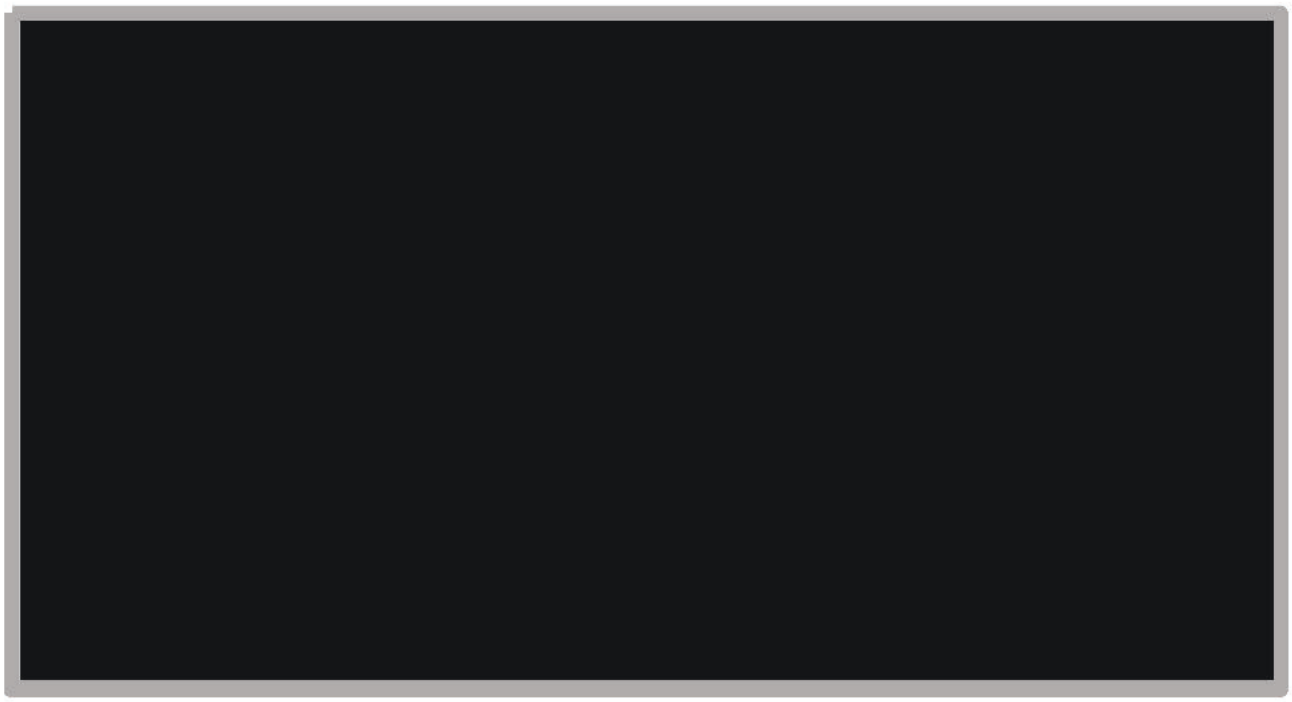


Figure 3: Direct Examination Site #2

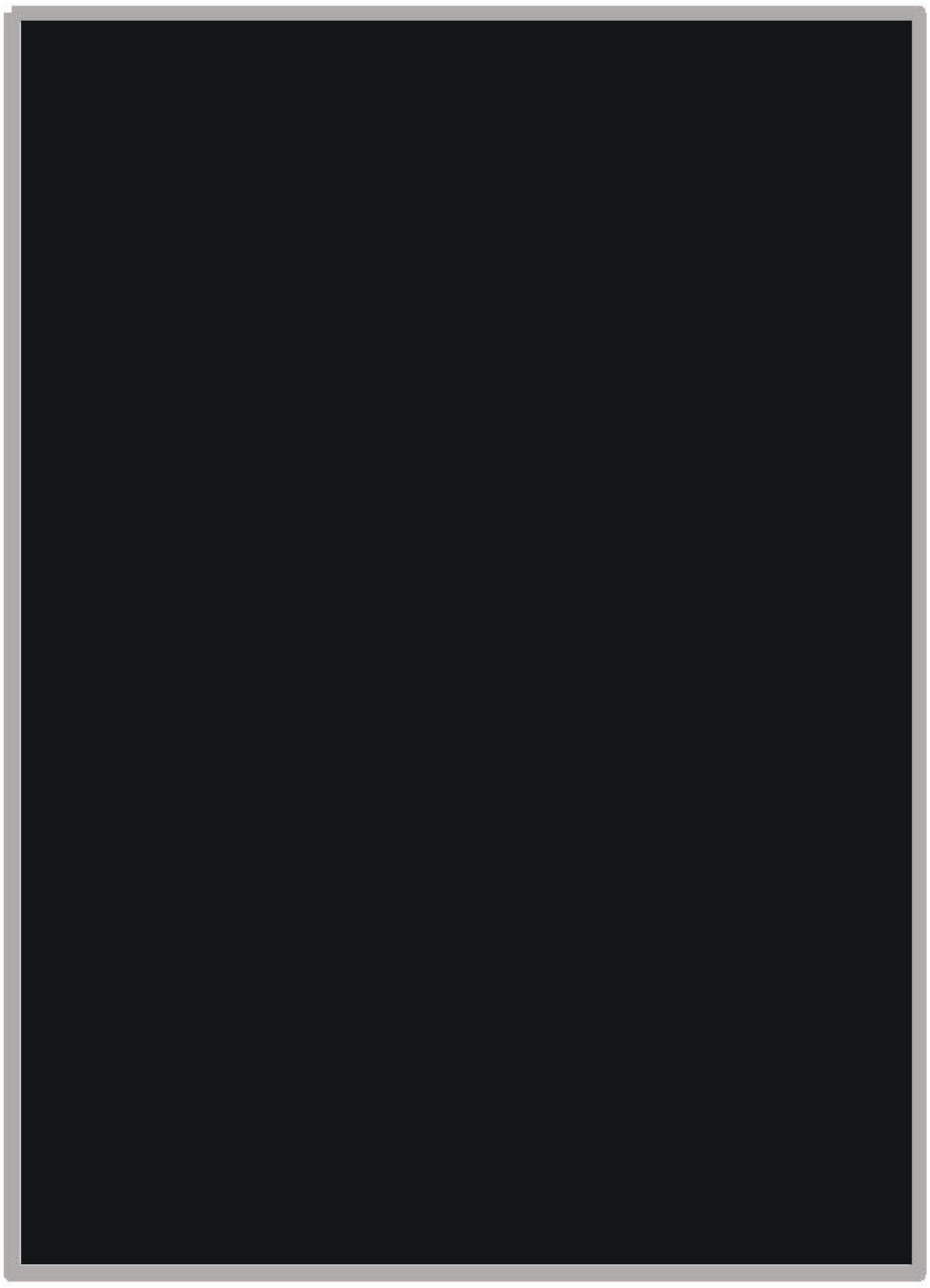


Figure 4: Direct Examination Site #2

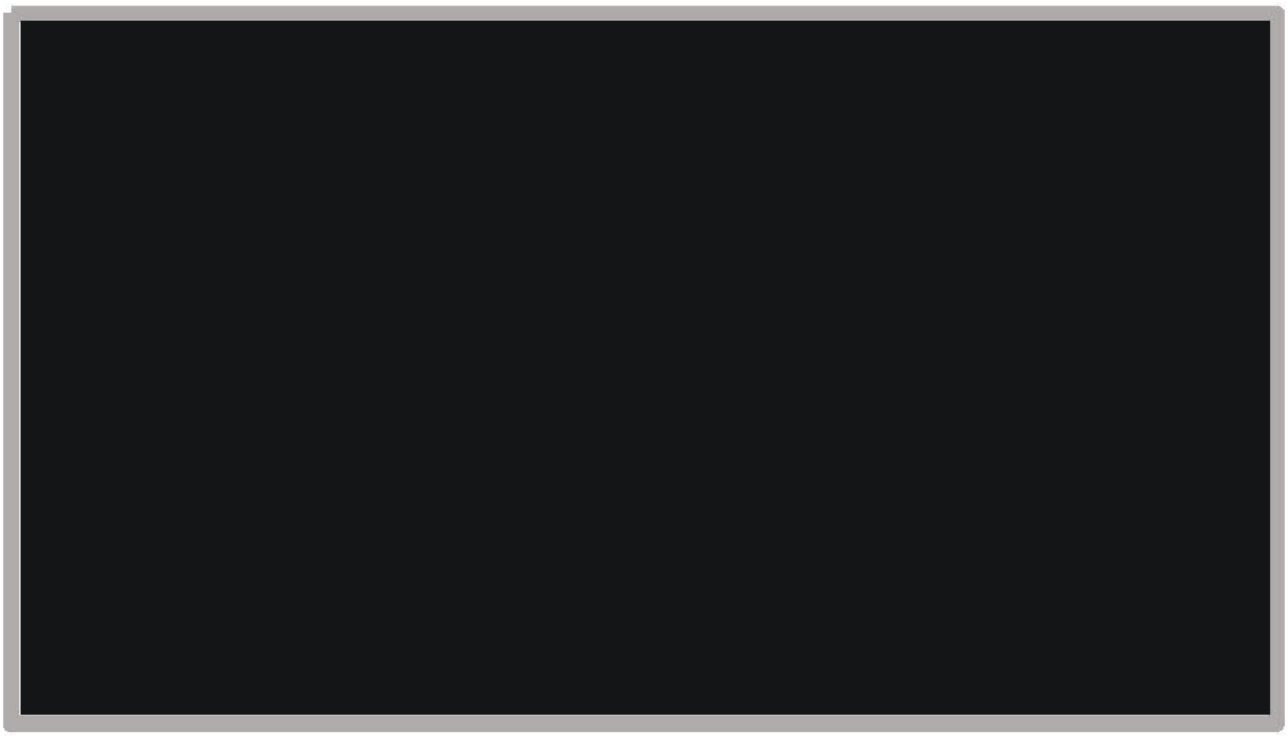


Figure 5: Direct Examination Site #3

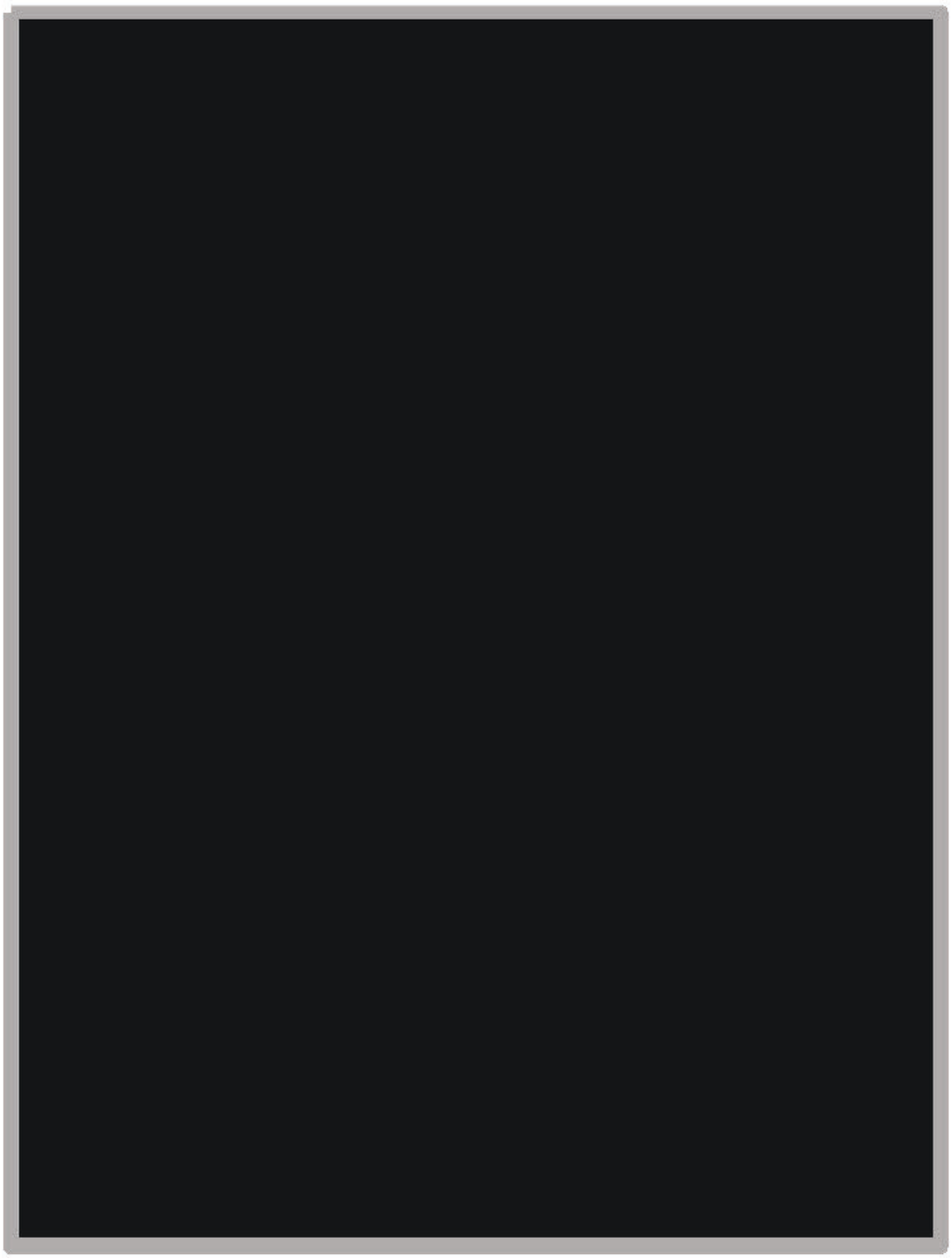
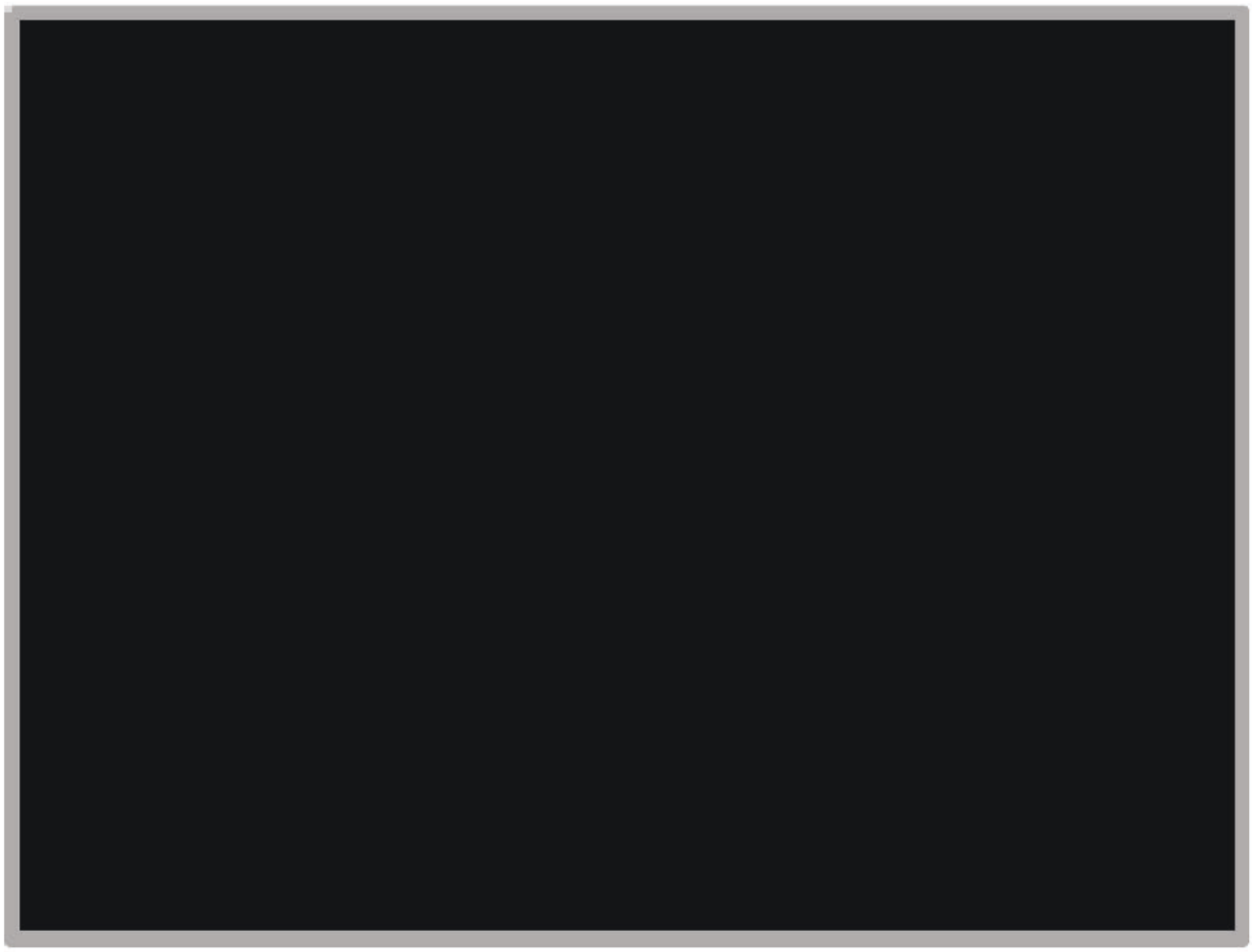


Figure 6: Direct Examination Site #3



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.

SoCalGas

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]

SoCalGas

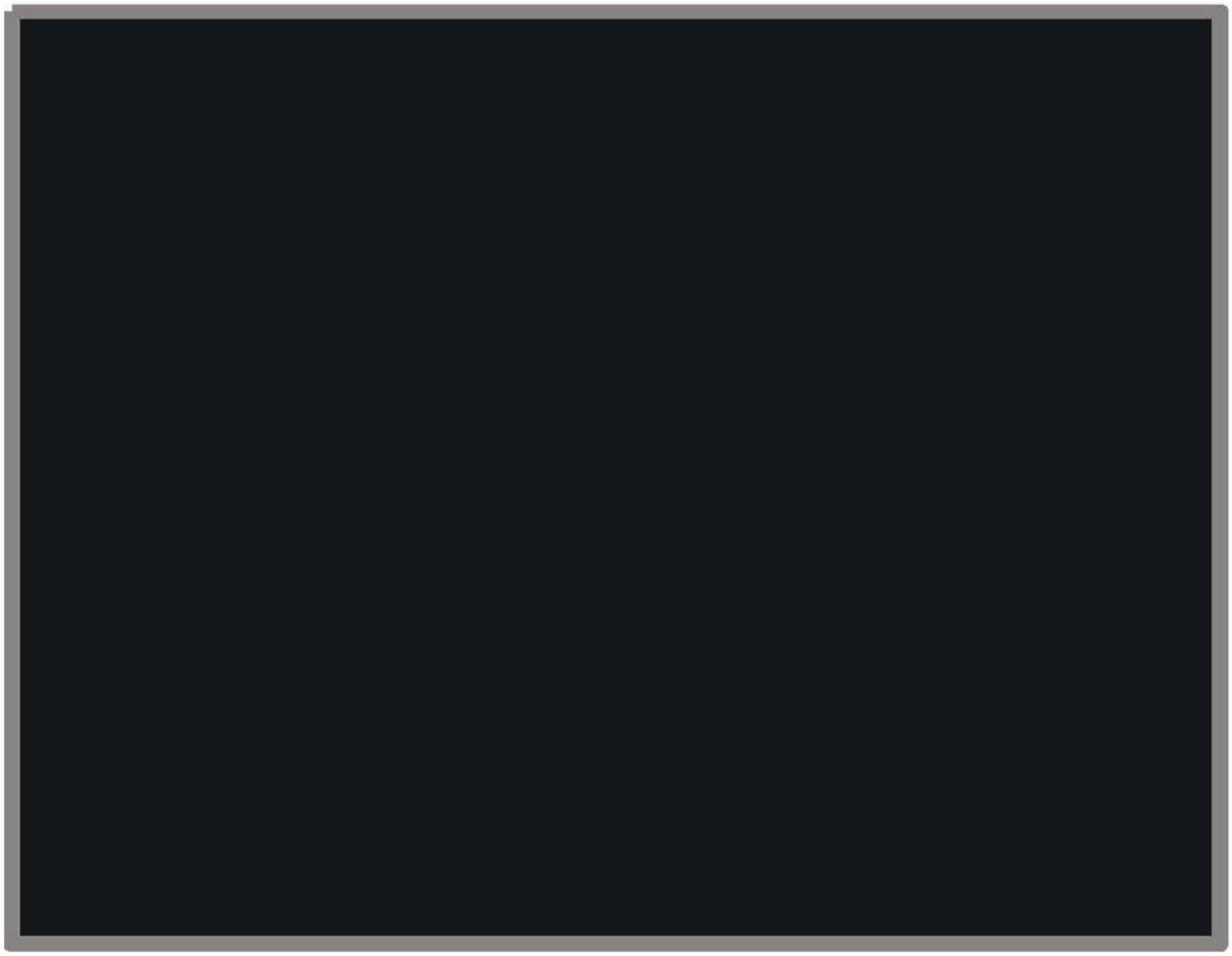
Final Workpaper for Line 3008 [redacted] TIMP Project

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			
SMYS			
Construction Start Date			
Construction Completion Date			
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			
SMYS			
Construction Start Date			
Construction Completion Date			
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

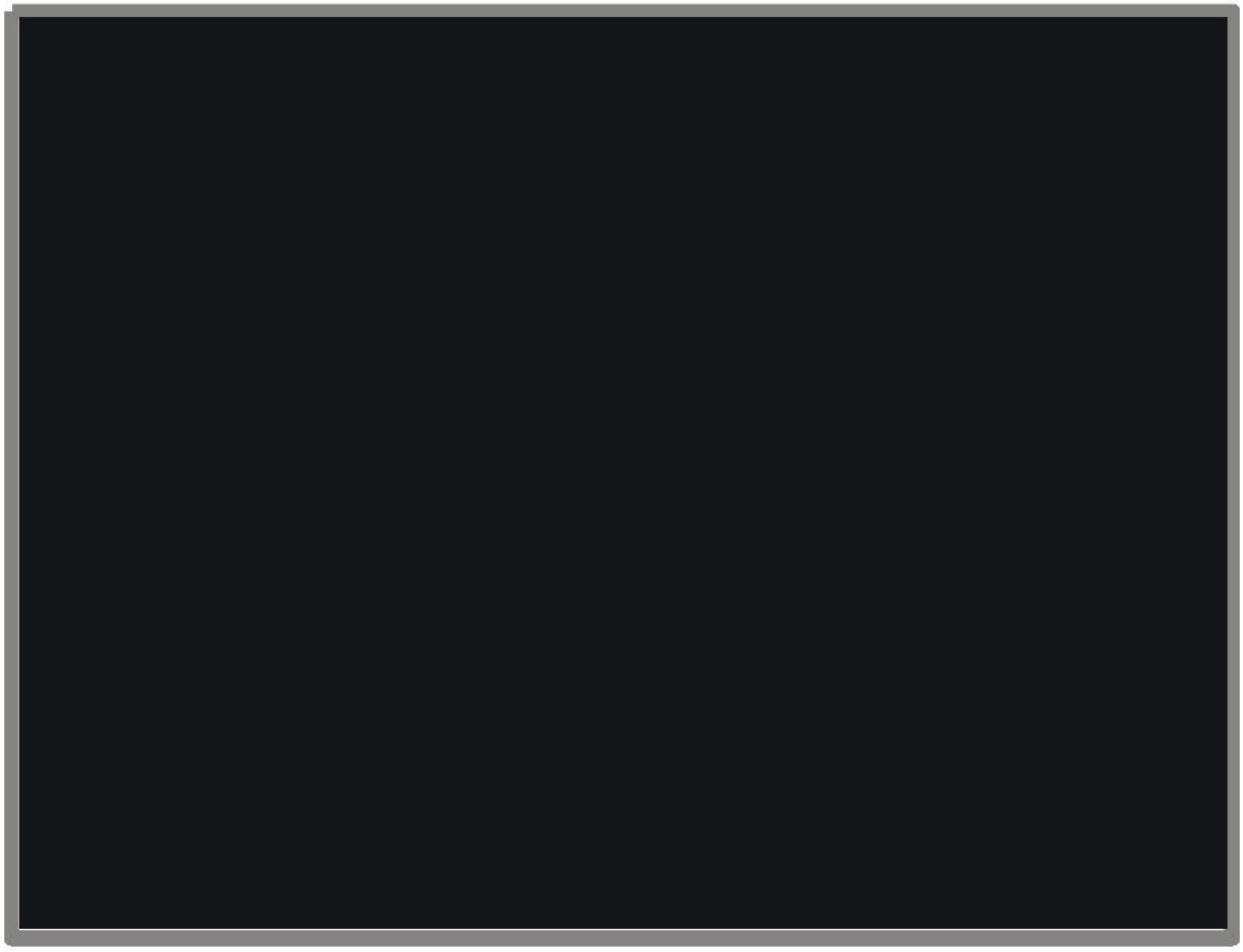
Construction Start Date	[redacted]	
Construction Completion Date		
Inspection Due Date		

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

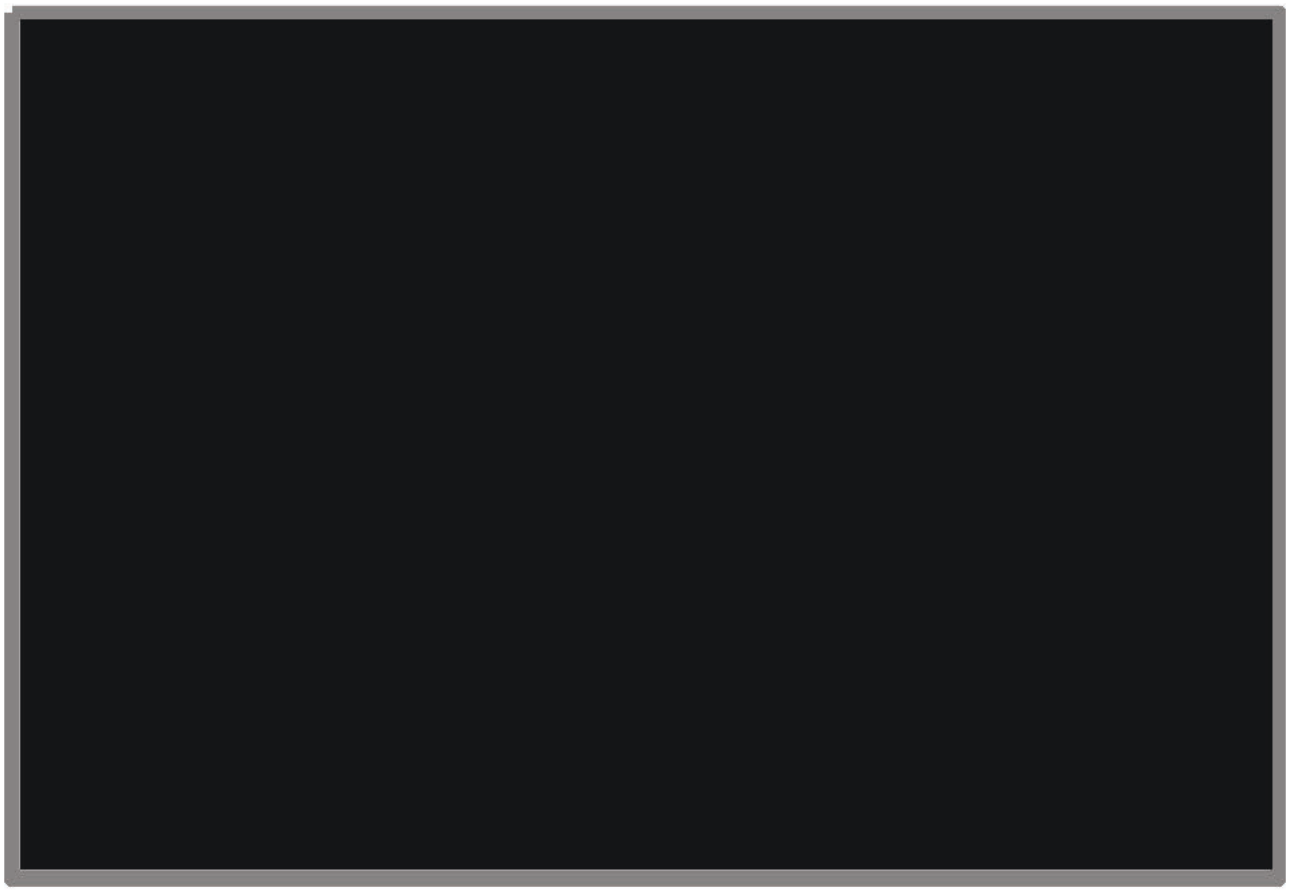


Figure 4: Launcher Site at [redacted] – Permanent Spool Piece

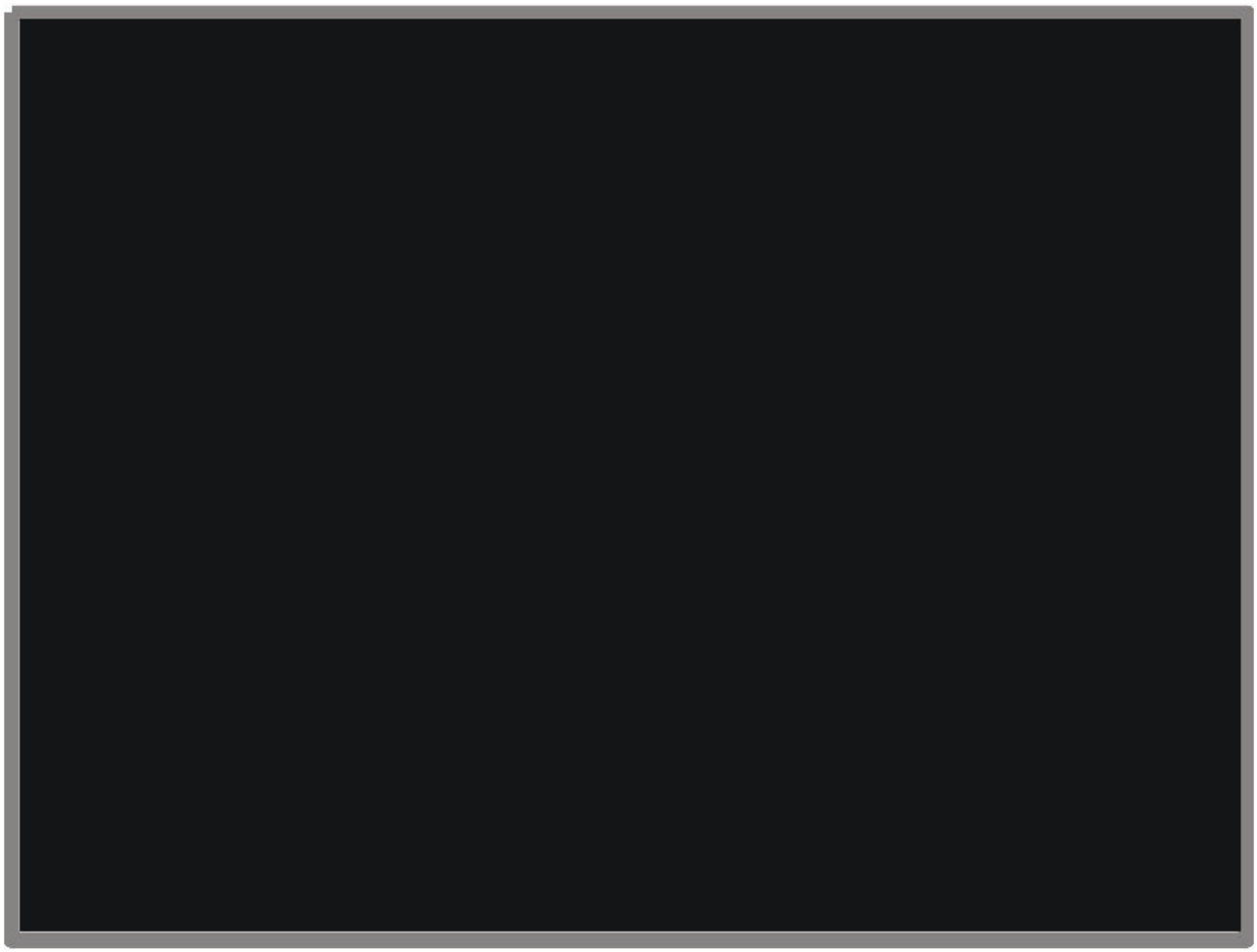


Figure 5: Launcher Site at [redacted] – Temporary Launcher Piping

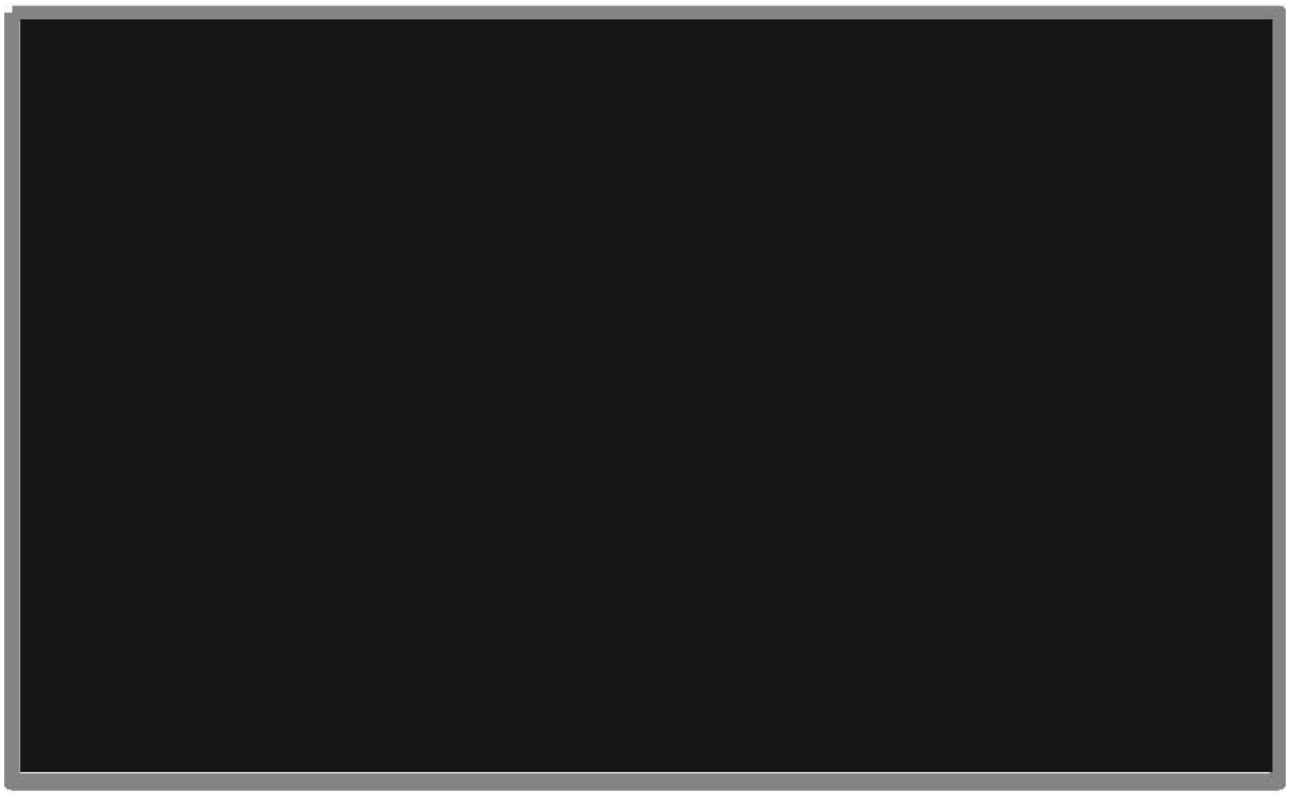
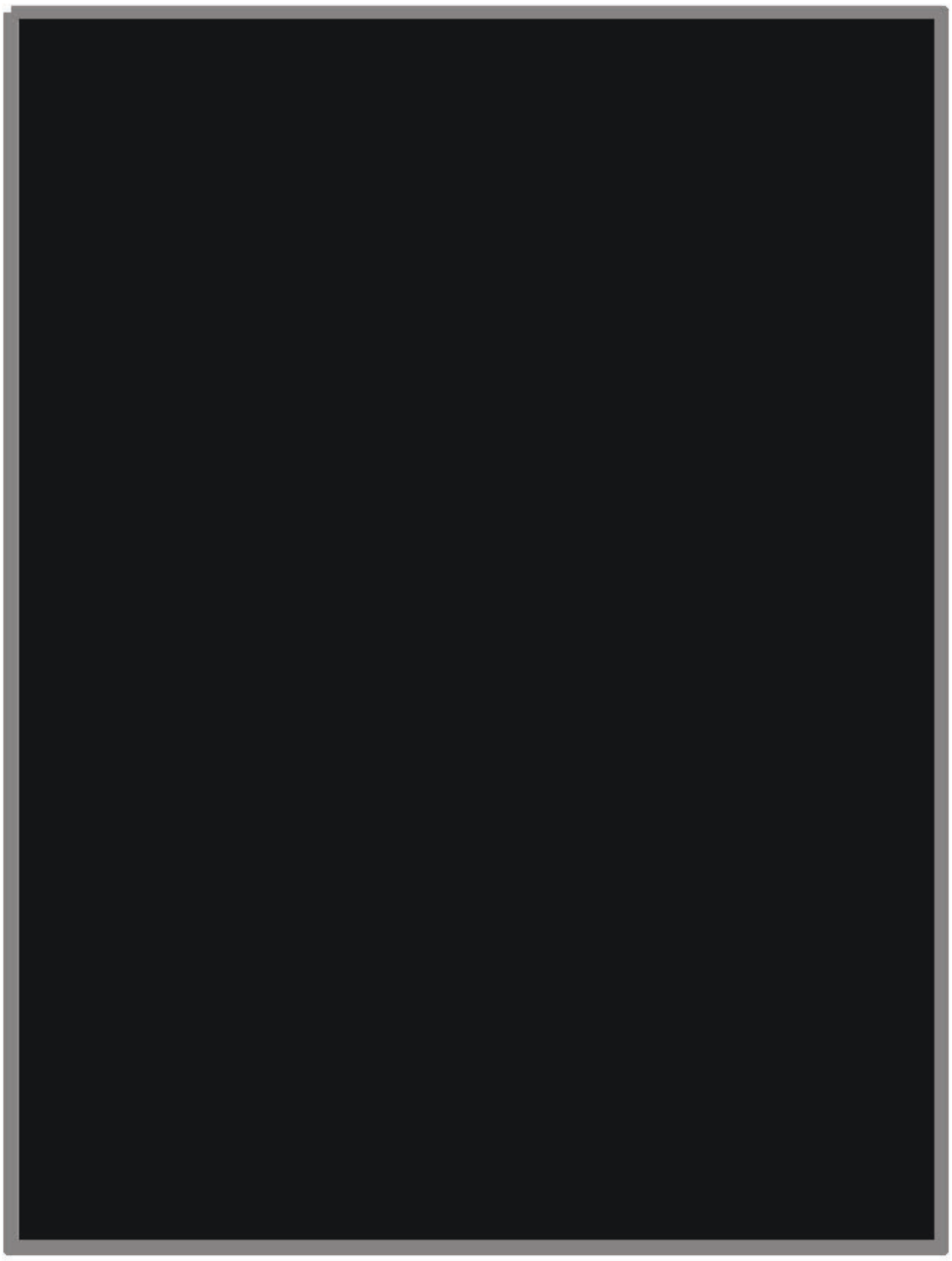


Figure 6: Direct Examination Site #1 Overview



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	

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

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]

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

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	[redacted]
SMYS	[redacted]
Construction Start Date	[redacted]
Construction Completion Date	[redacted]
Post-Assessment Details	
Site	9
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]

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	

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	
SMYS	
Construction Start Date	
Construction Completion Date	
Post-Assessment Details	
Site	13
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	14
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	15
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	16
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	17
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	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	

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

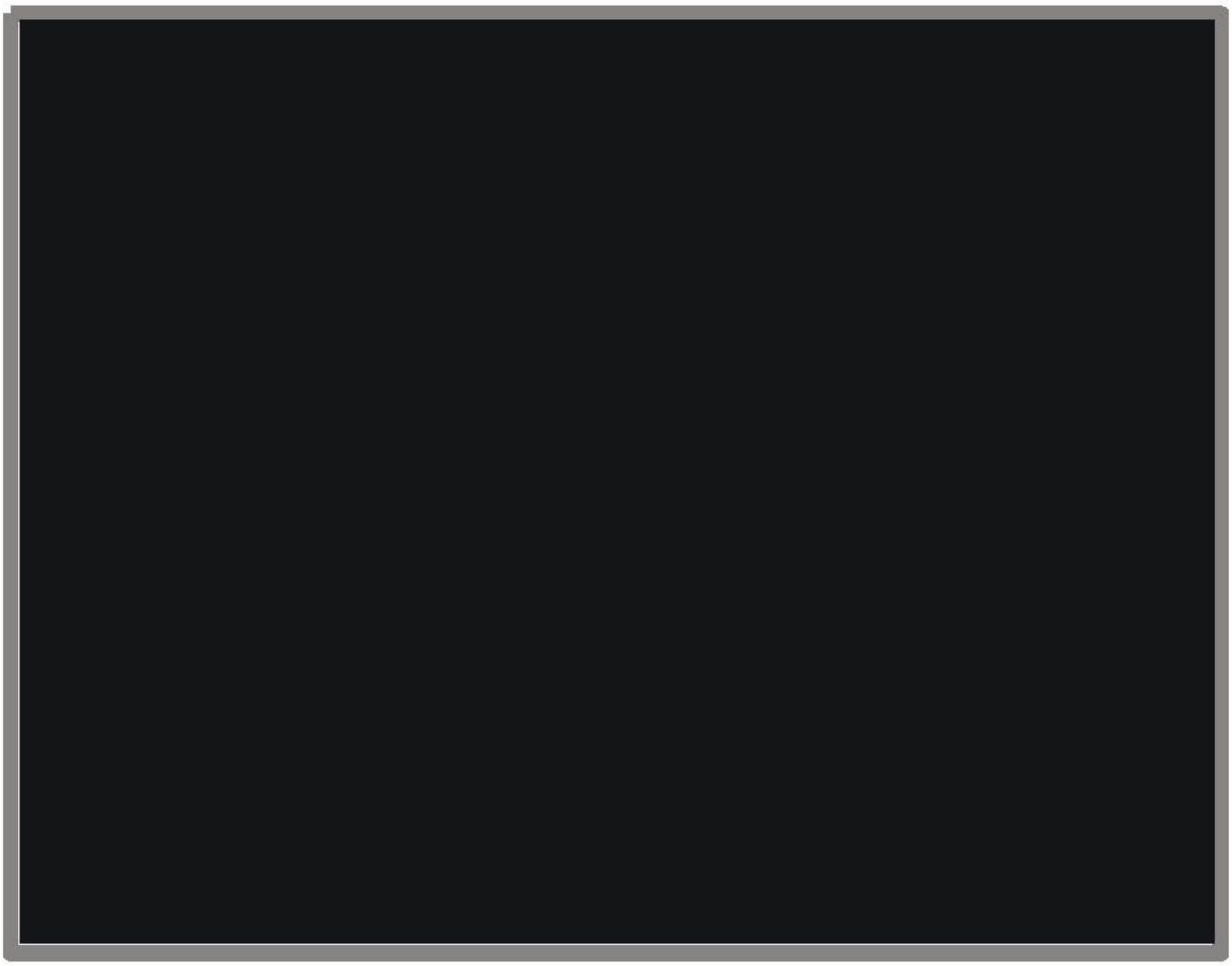
Table 1: General Project Information (Continued)

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

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

SoCalGas

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]

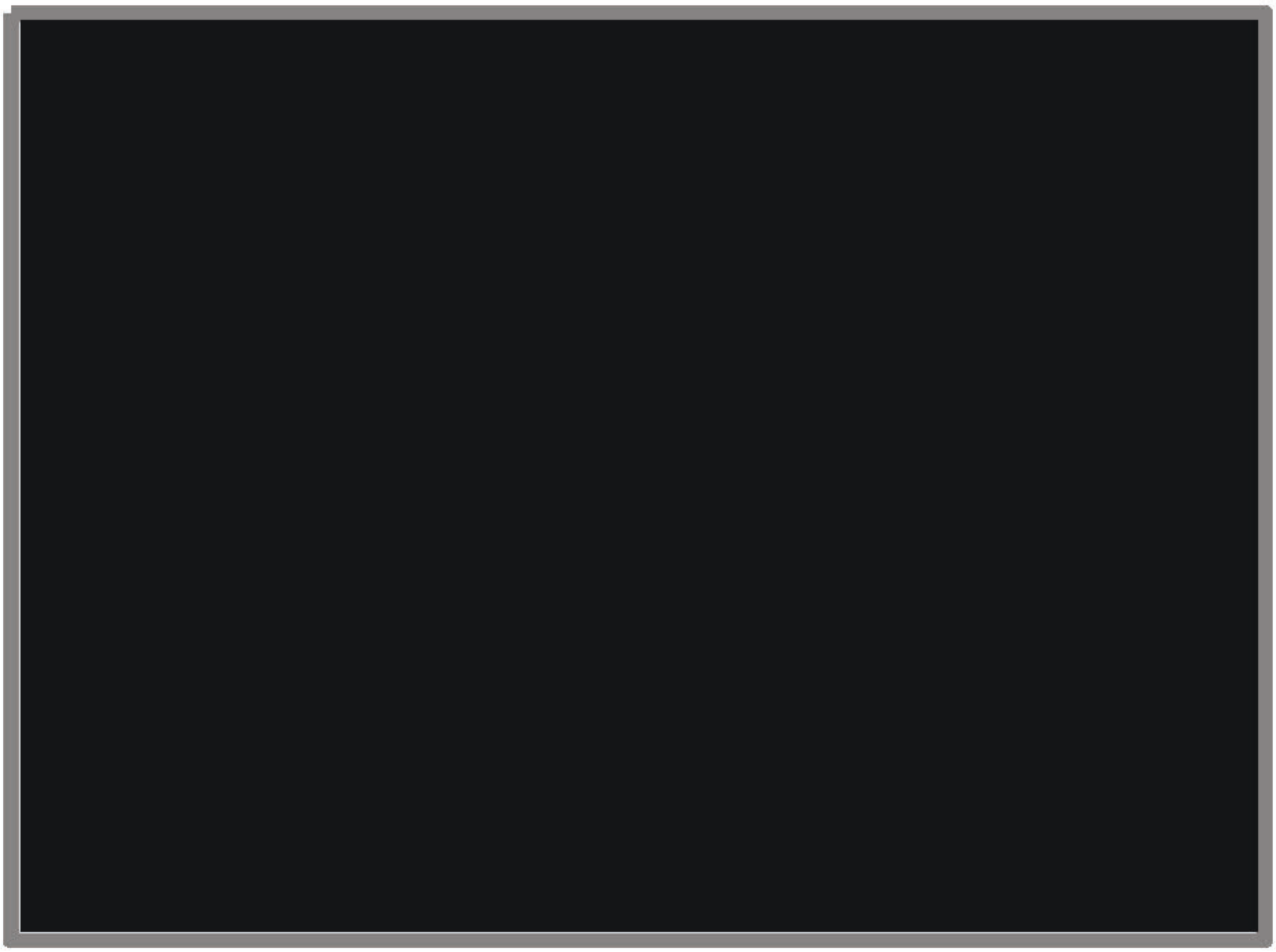


Figure 4: Post-Assessment Site #2 Rockfall Mitigation

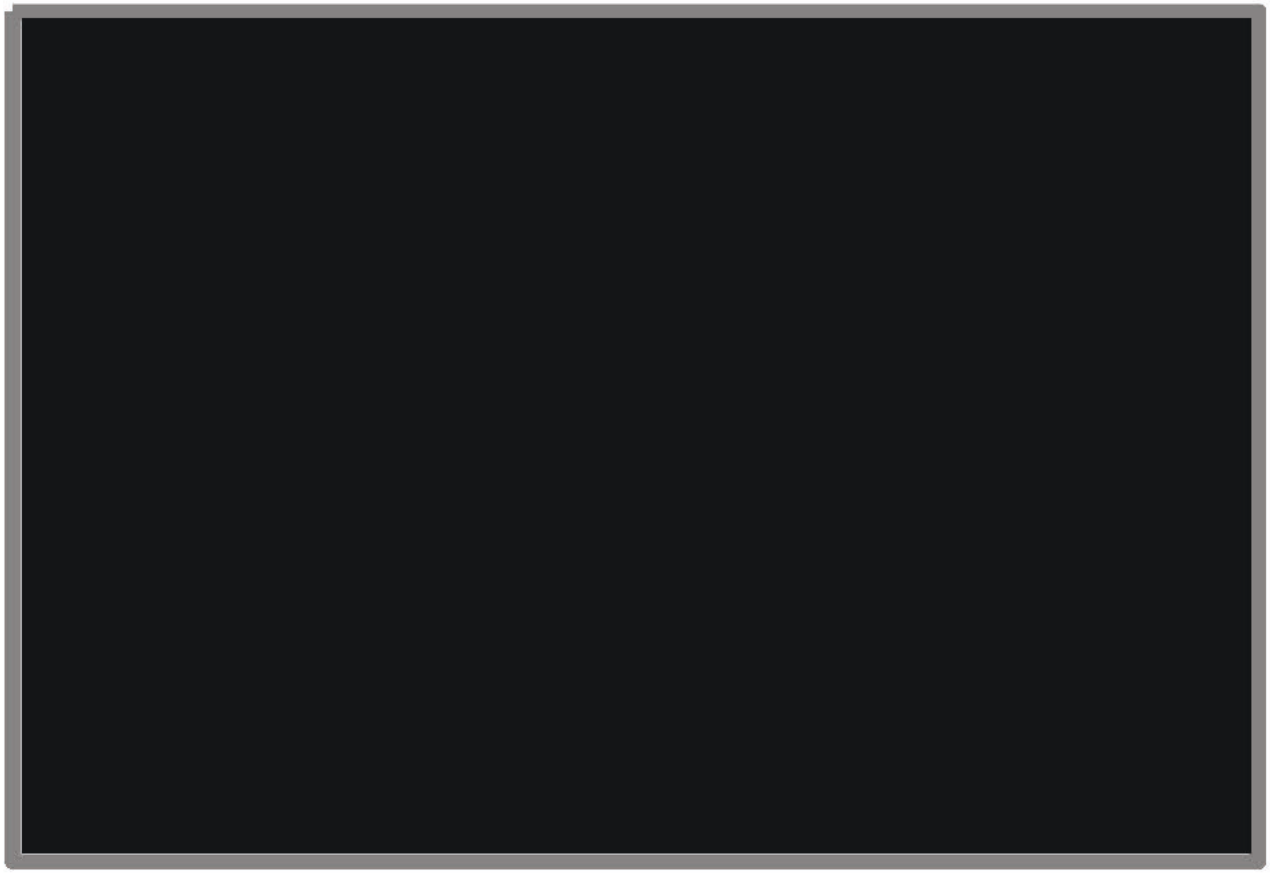


Figure 5: Temporary Isolation – Post-Assessment

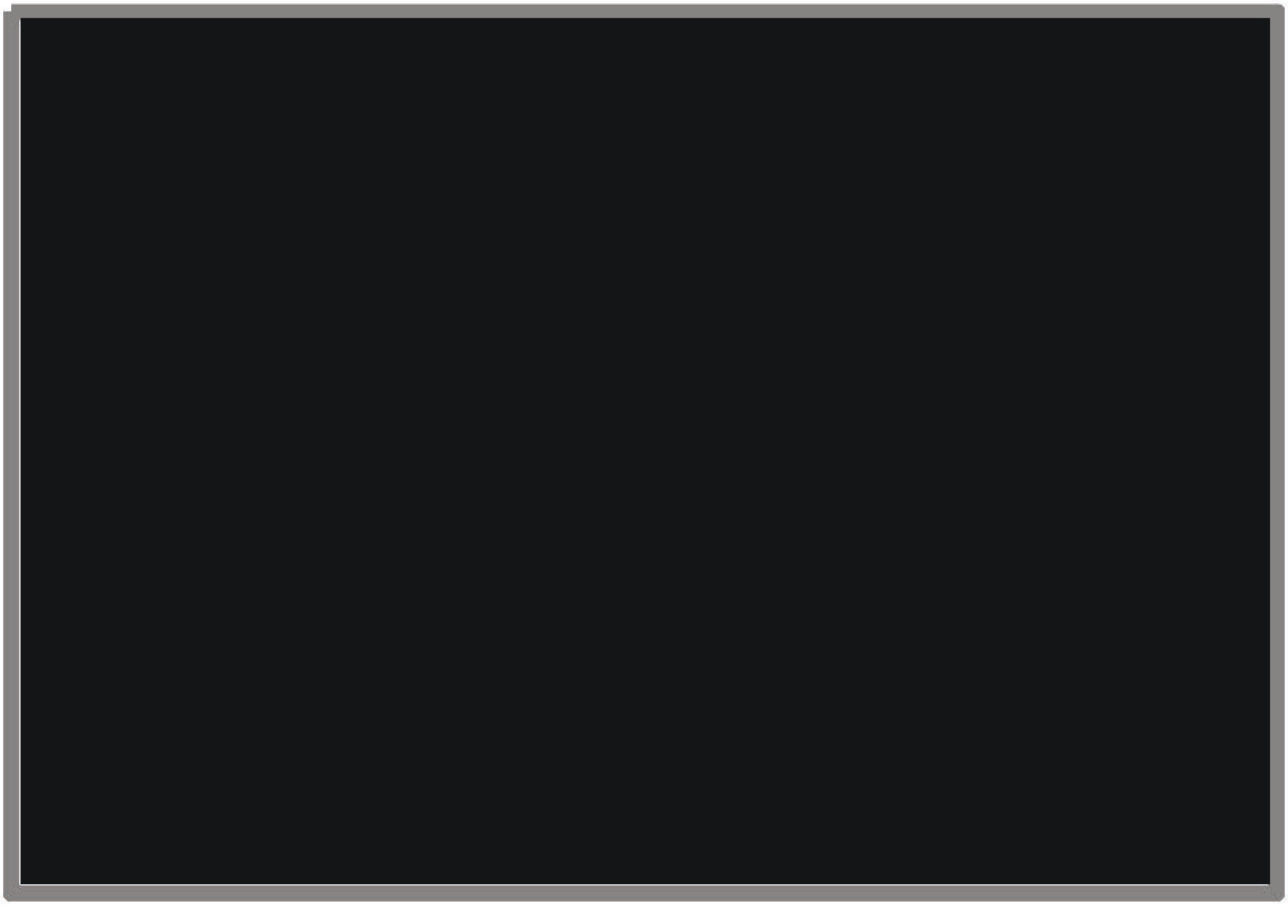


Figure 6: Pipeline Abatement – Post-Assessment

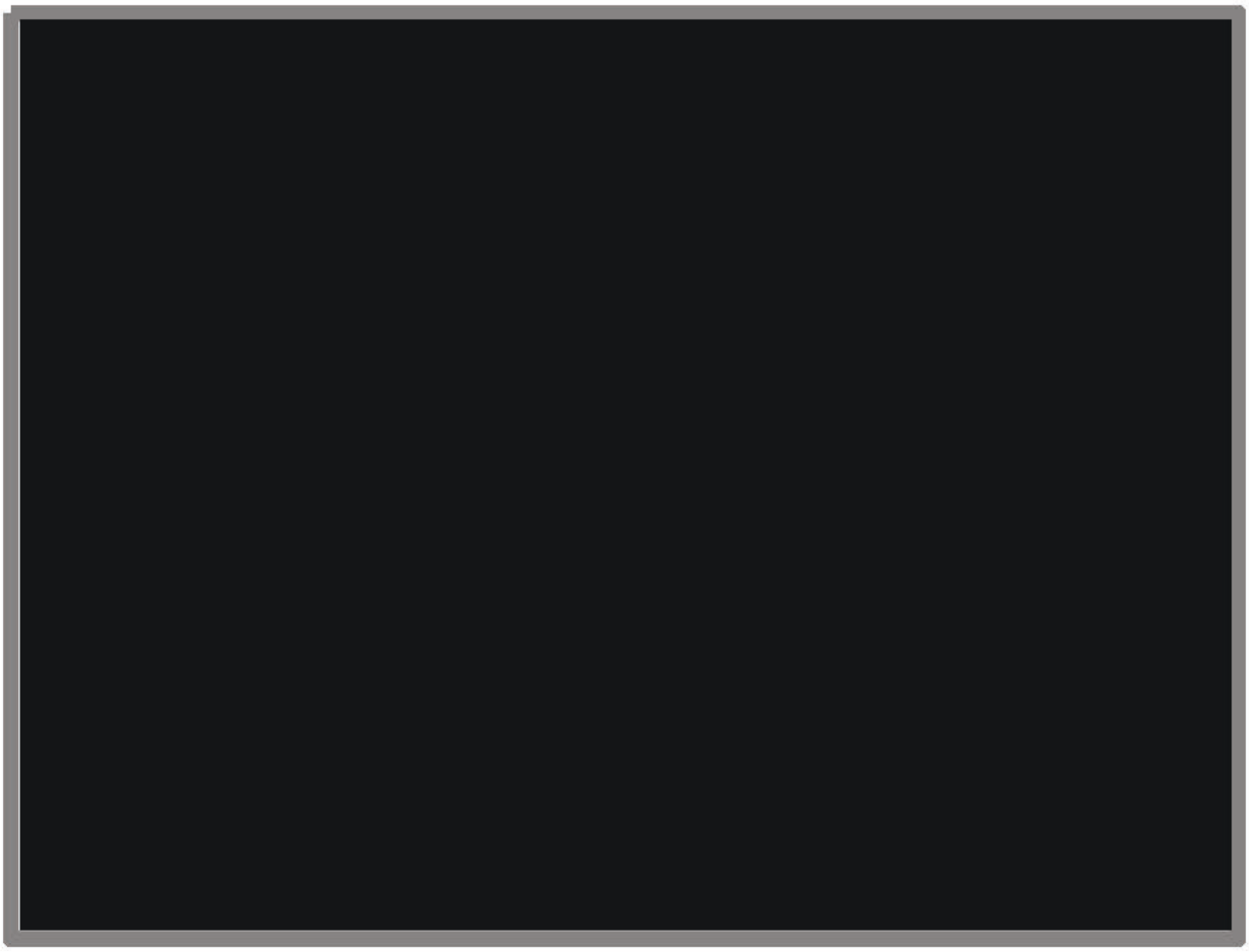


Figure 7: Lowering of Replaced Pipe into Trench – Post-Assessment

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.

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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	

SoCalGas

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

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]

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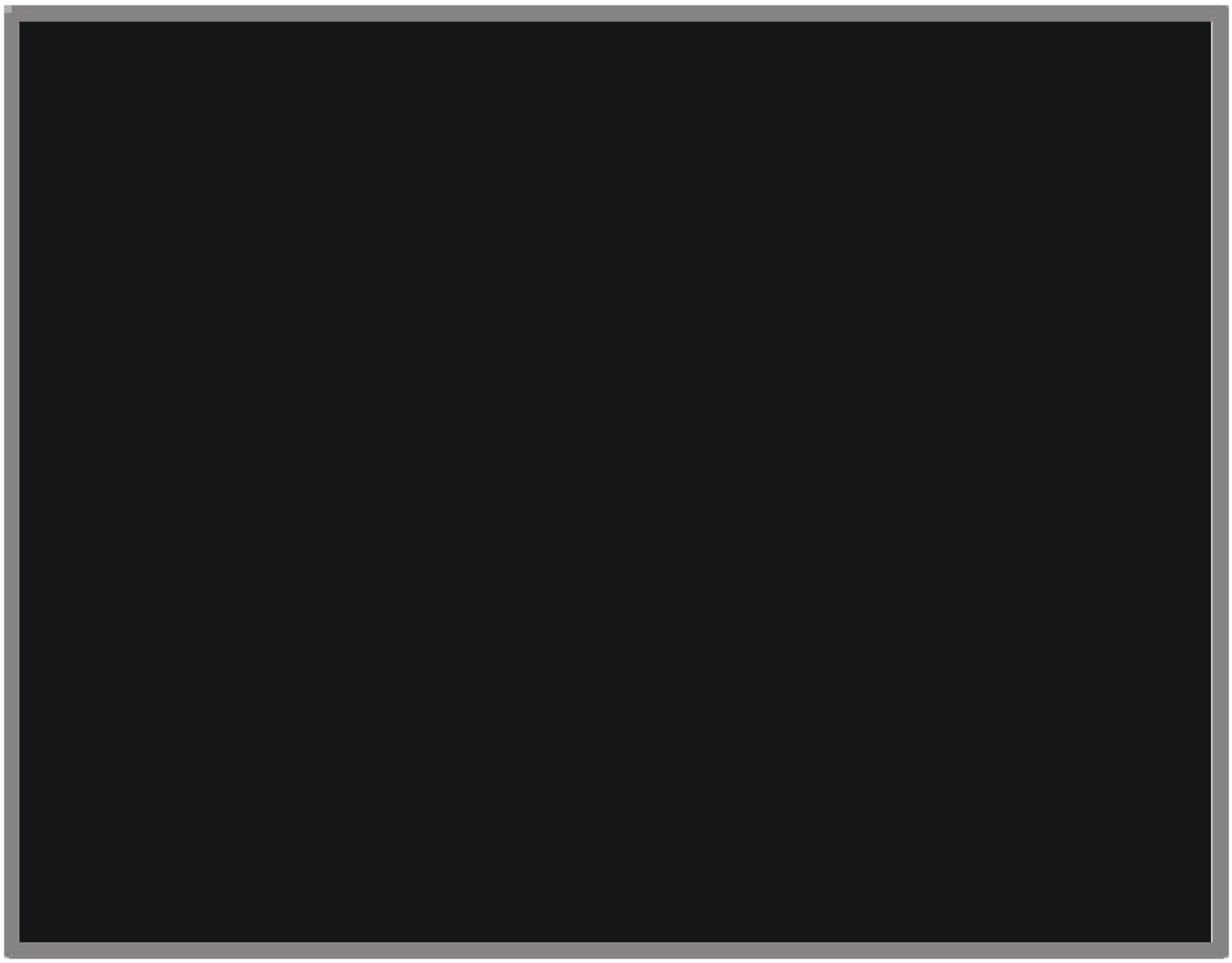
Final Workpaper for Line 4000 Phase 2 [redacted] TIMP Project

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			
SMYS			
Construction Start Date			
Construction Completion Date			
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			
SMYS			
Construction Start Date			
Construction Completion Date			
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:

SoCalGas

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]

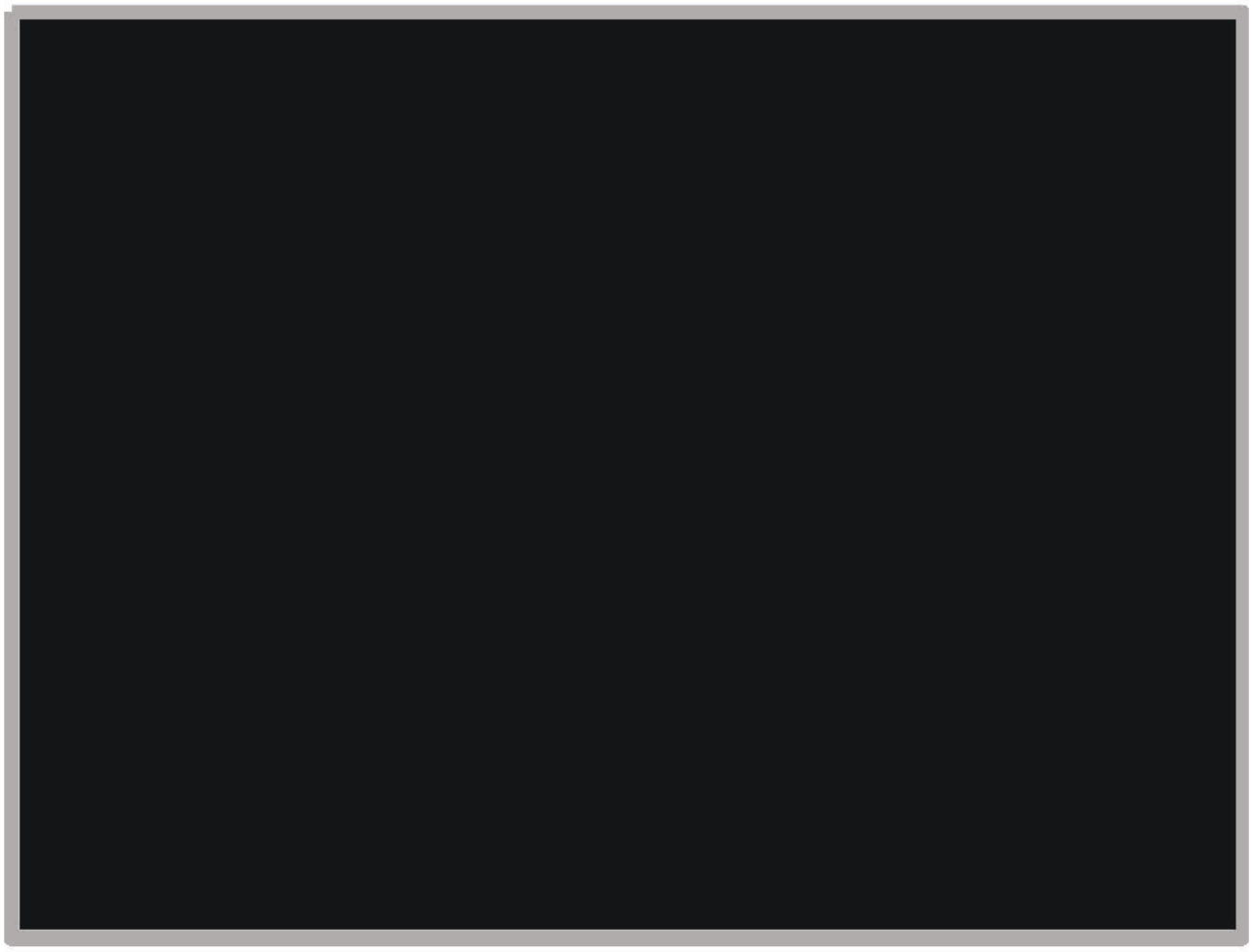


Figure 3: Permanent Receiver within [redacted]

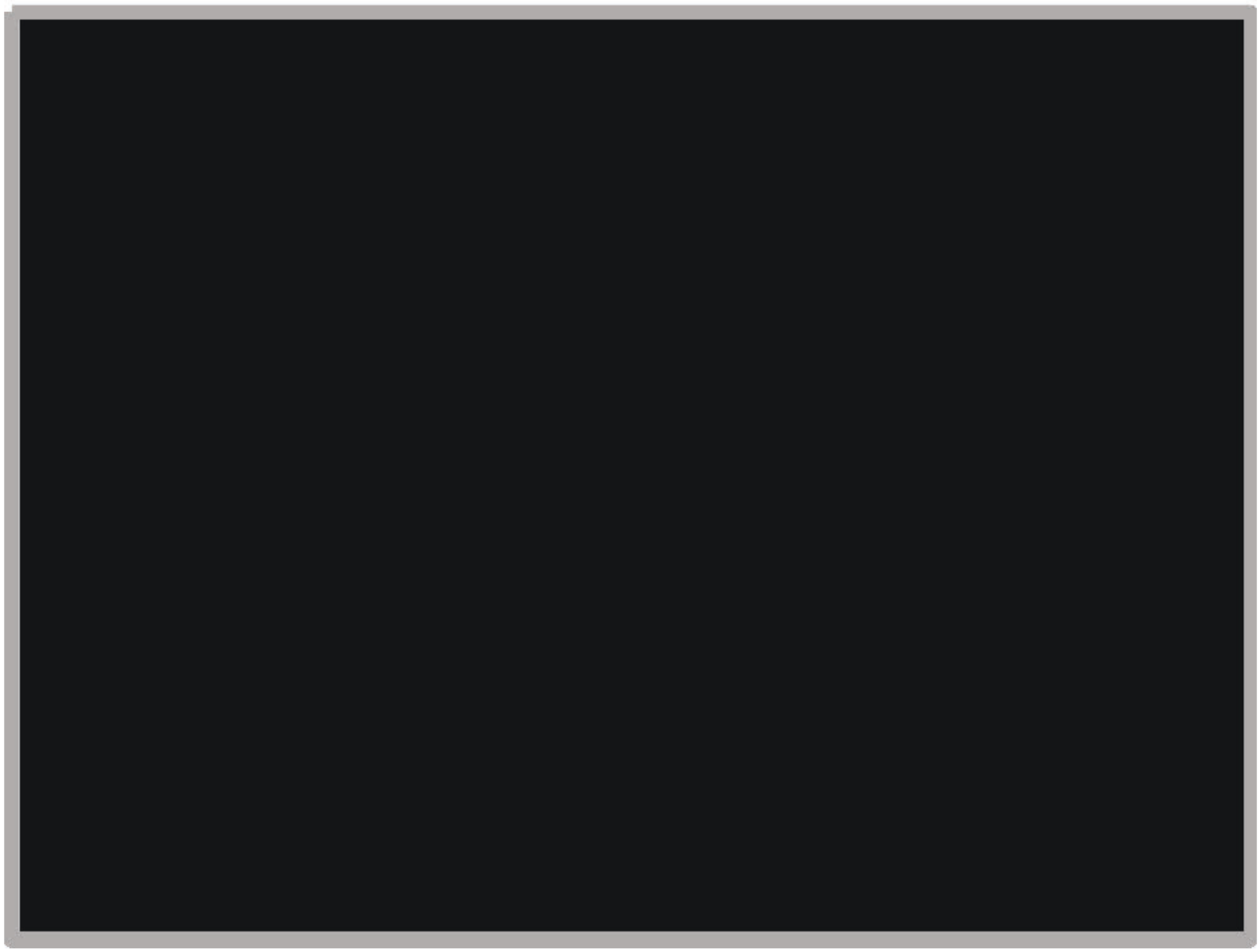


Figure 4: Fabrication of Temporary Associated Piping for Filter Separator

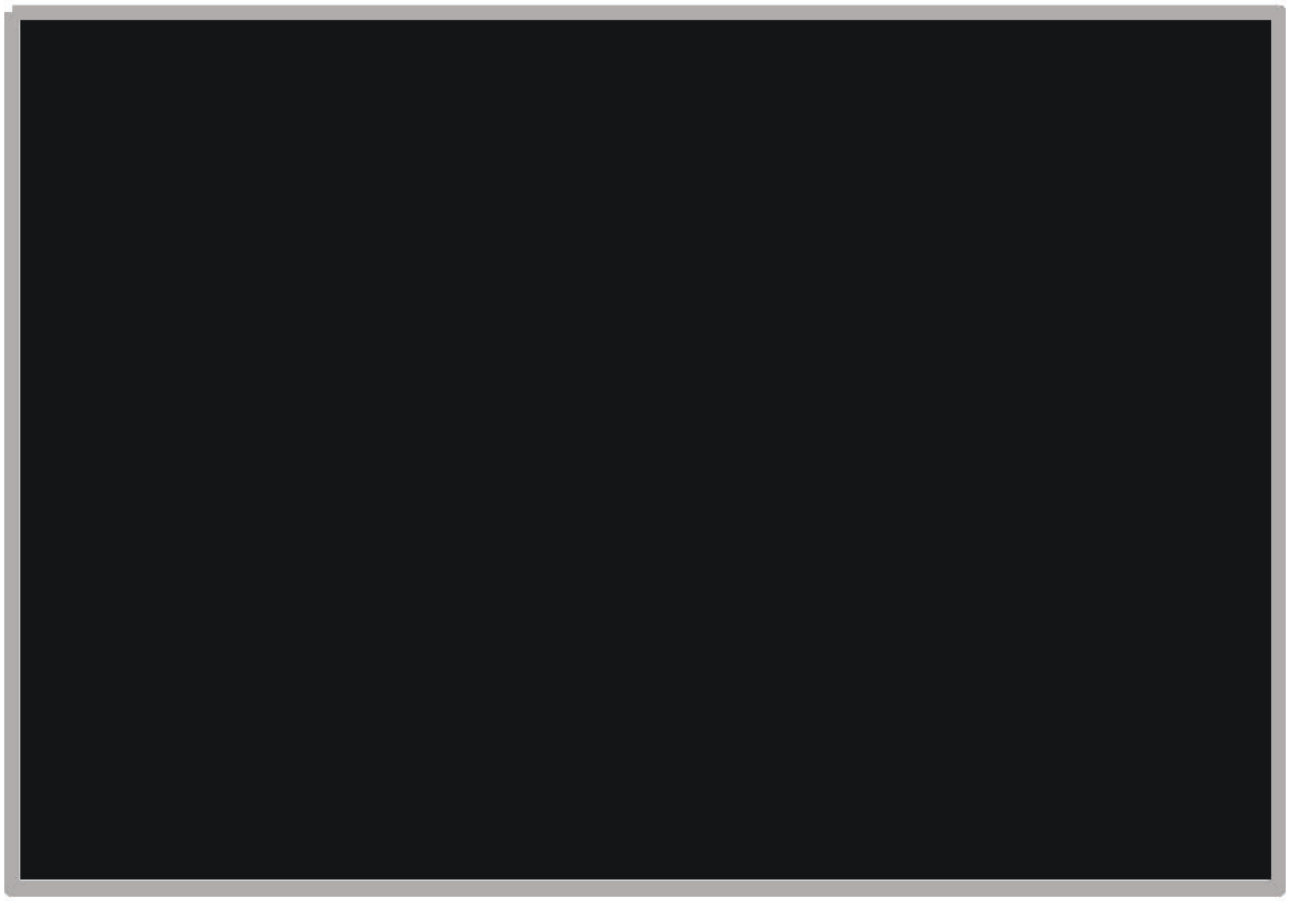


Figure 5: Direct Examination Site #7

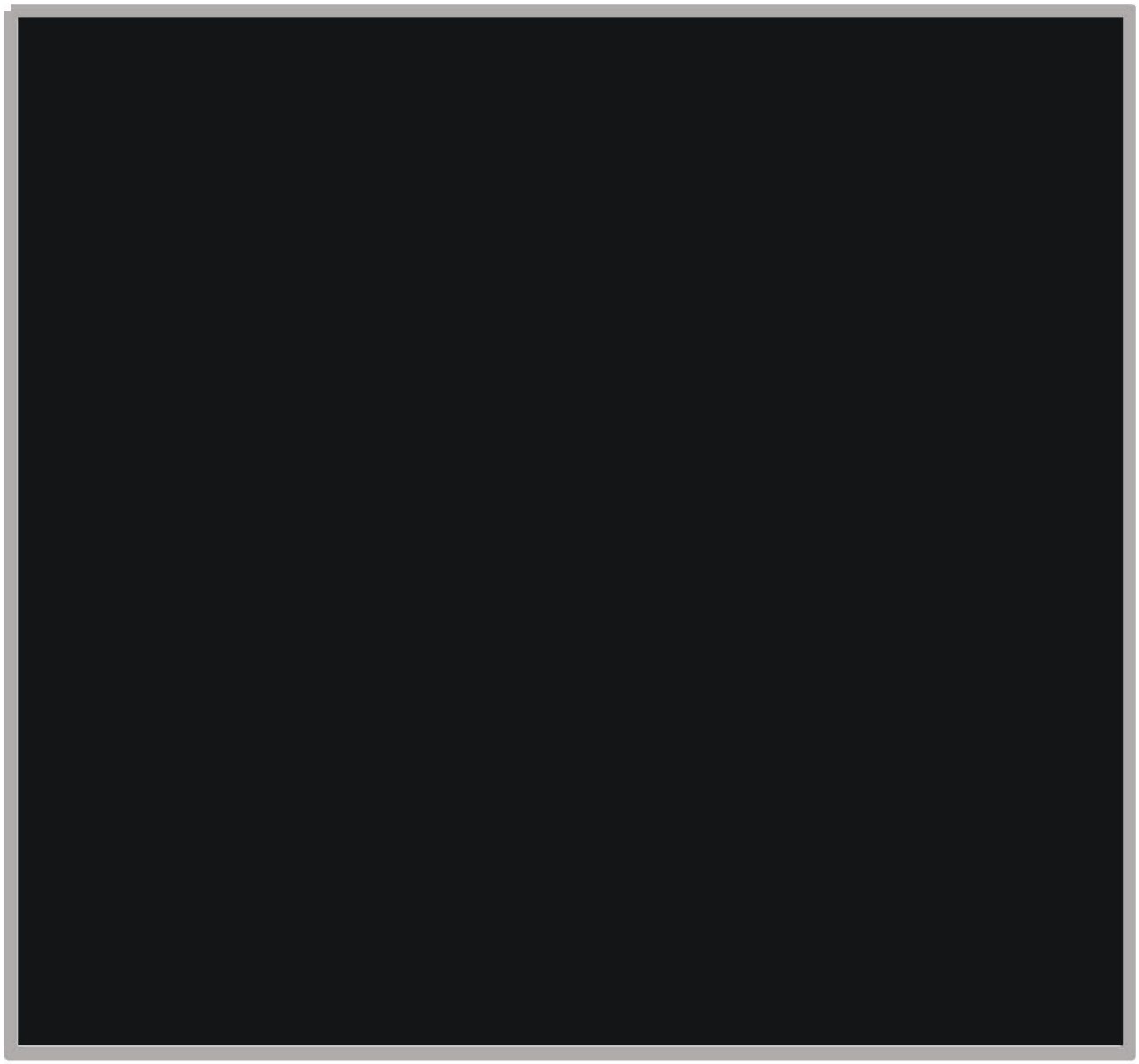
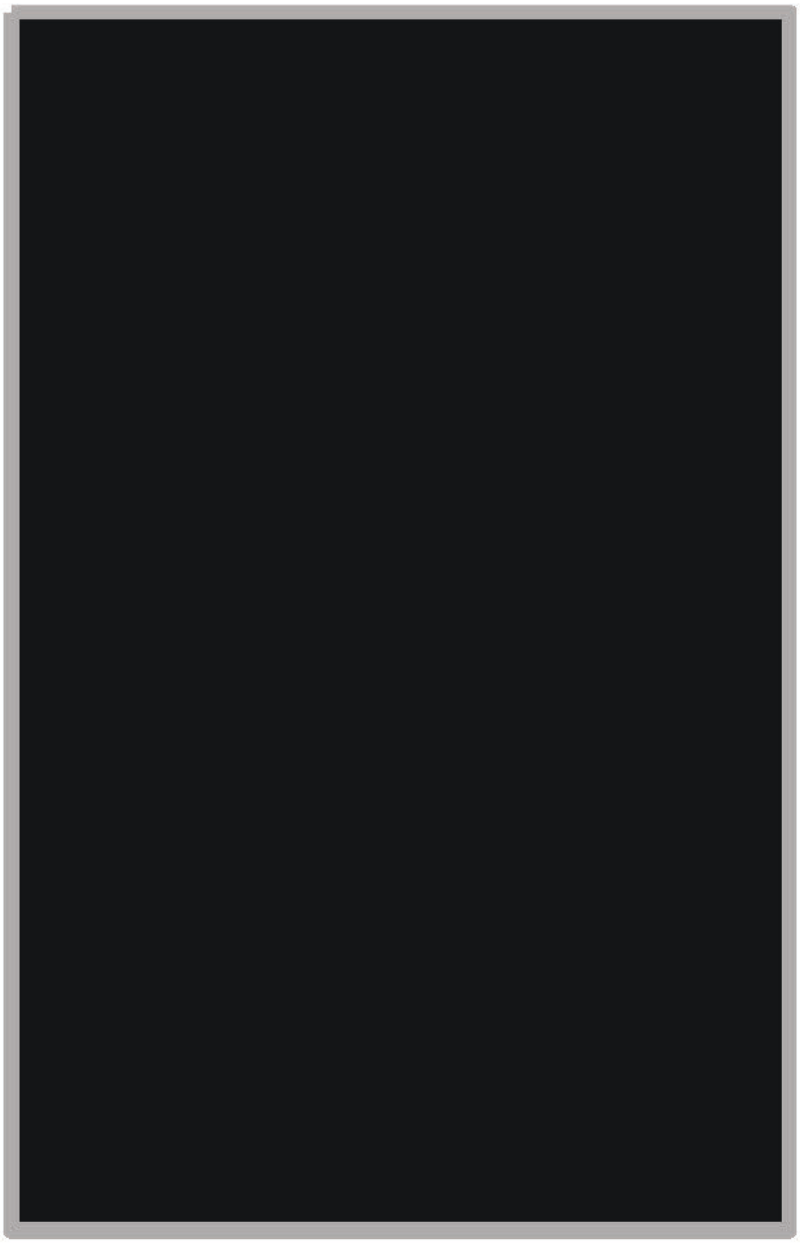


Figure 6: Direct Examination Site #9



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

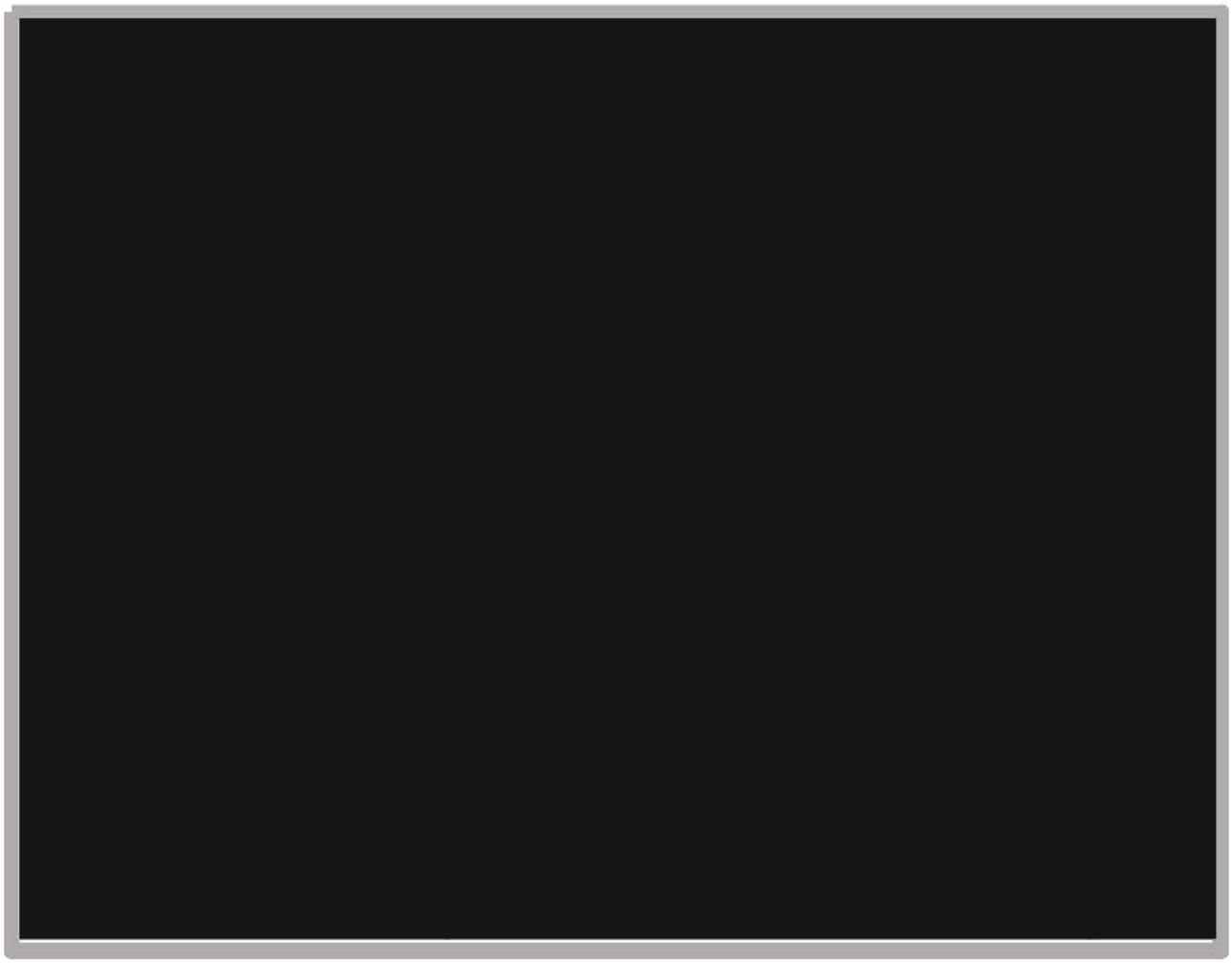
Table 1: General Project Information (continued)

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

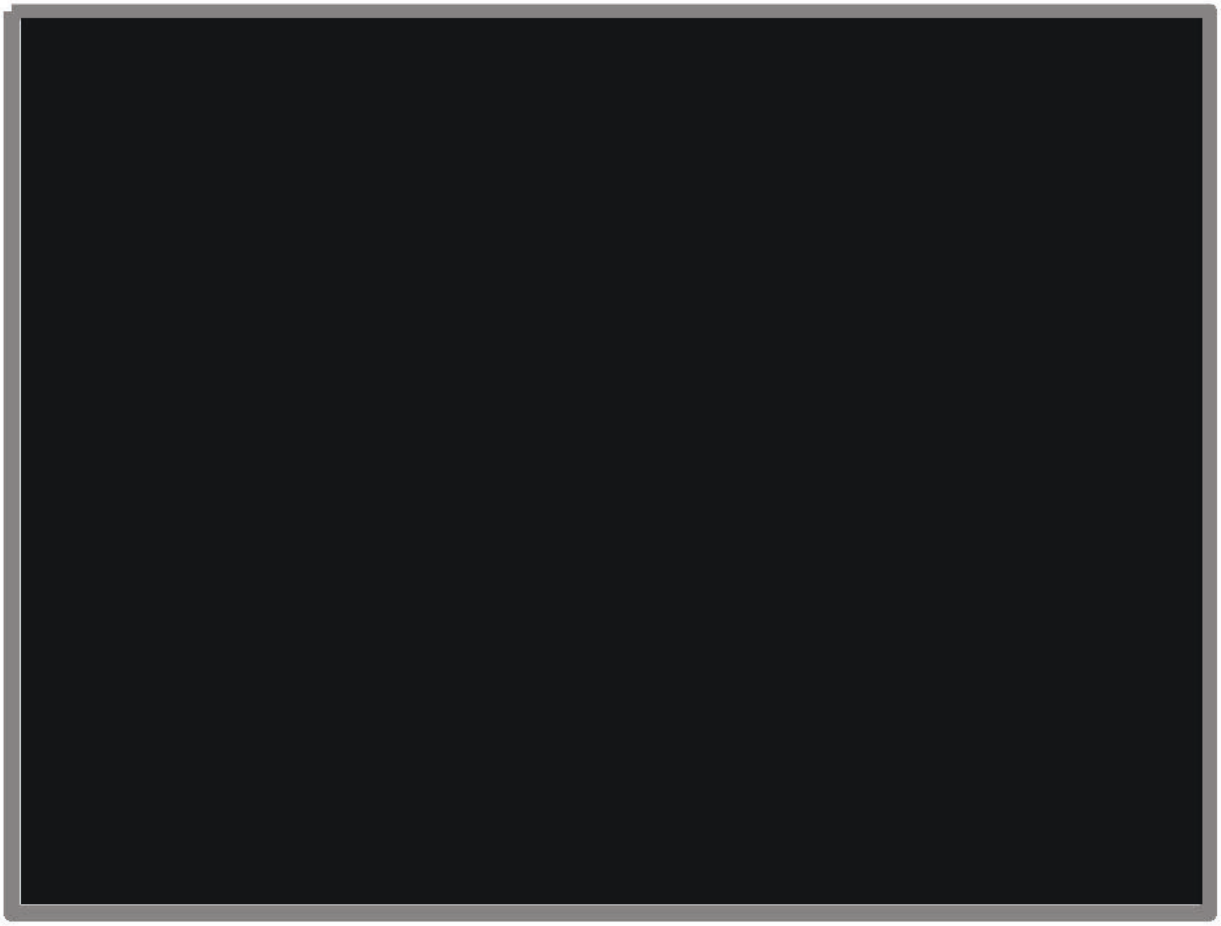


Figure 3: Direct Examination Site #1

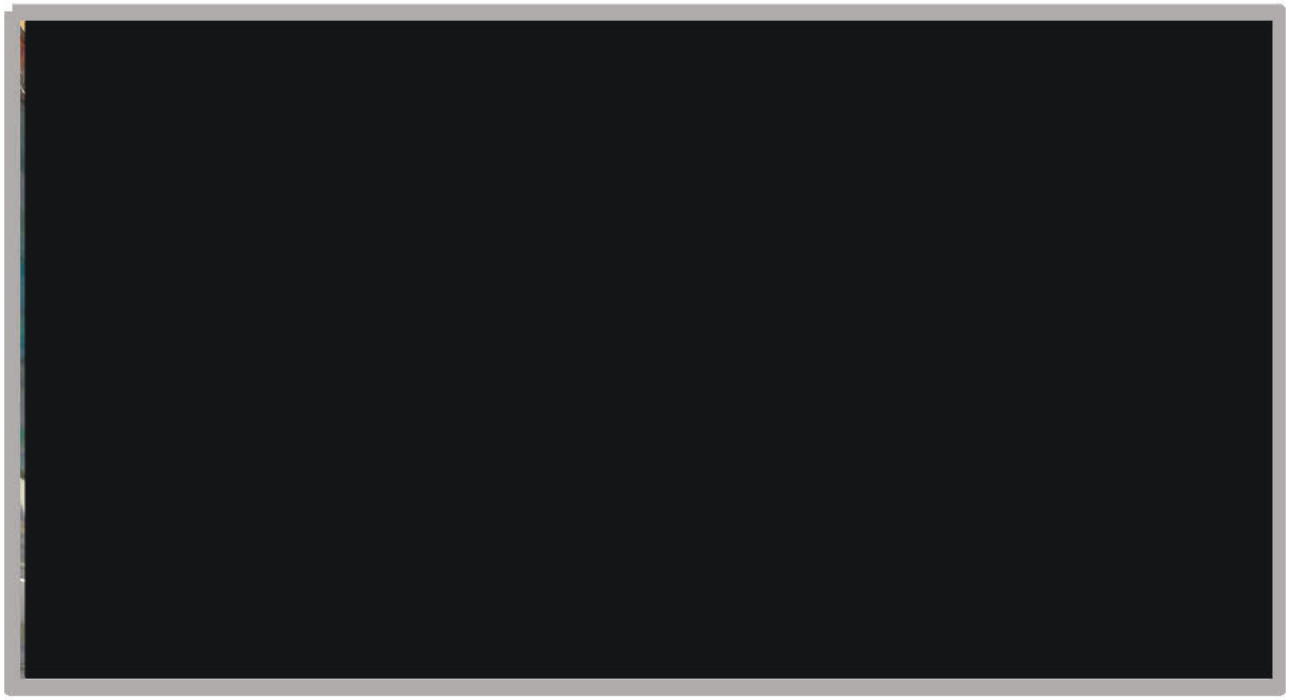


Figure 4: Direct Examination Site #2

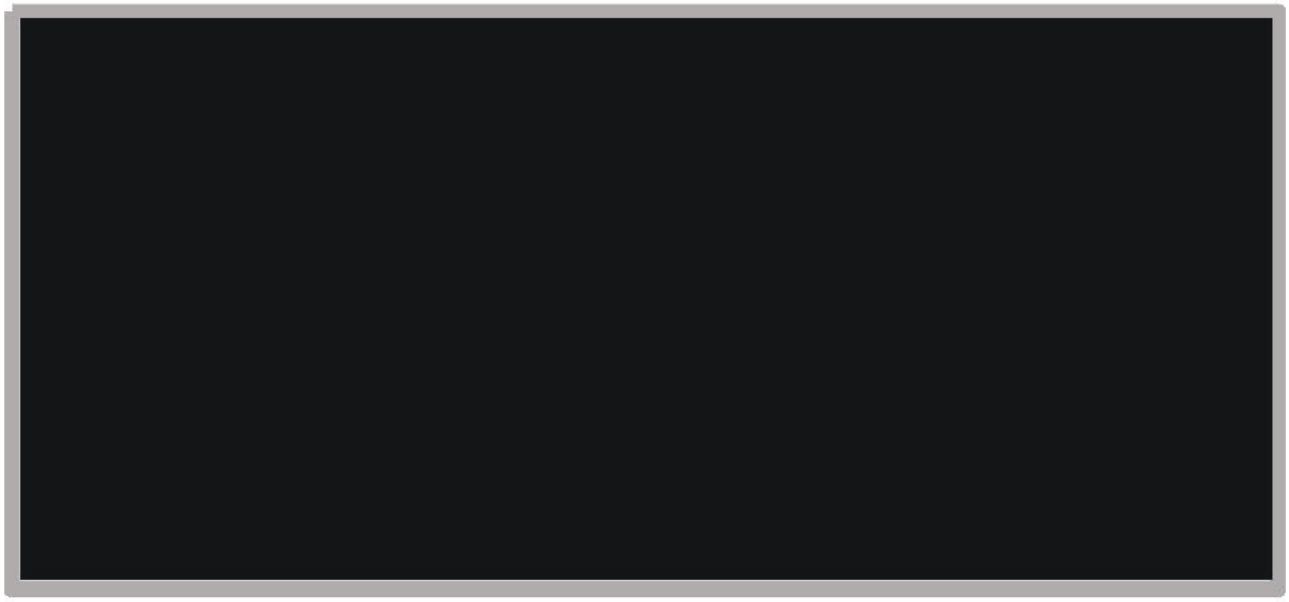


Figure 5: Direct Examination Site #3

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.

SoCalGas

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]

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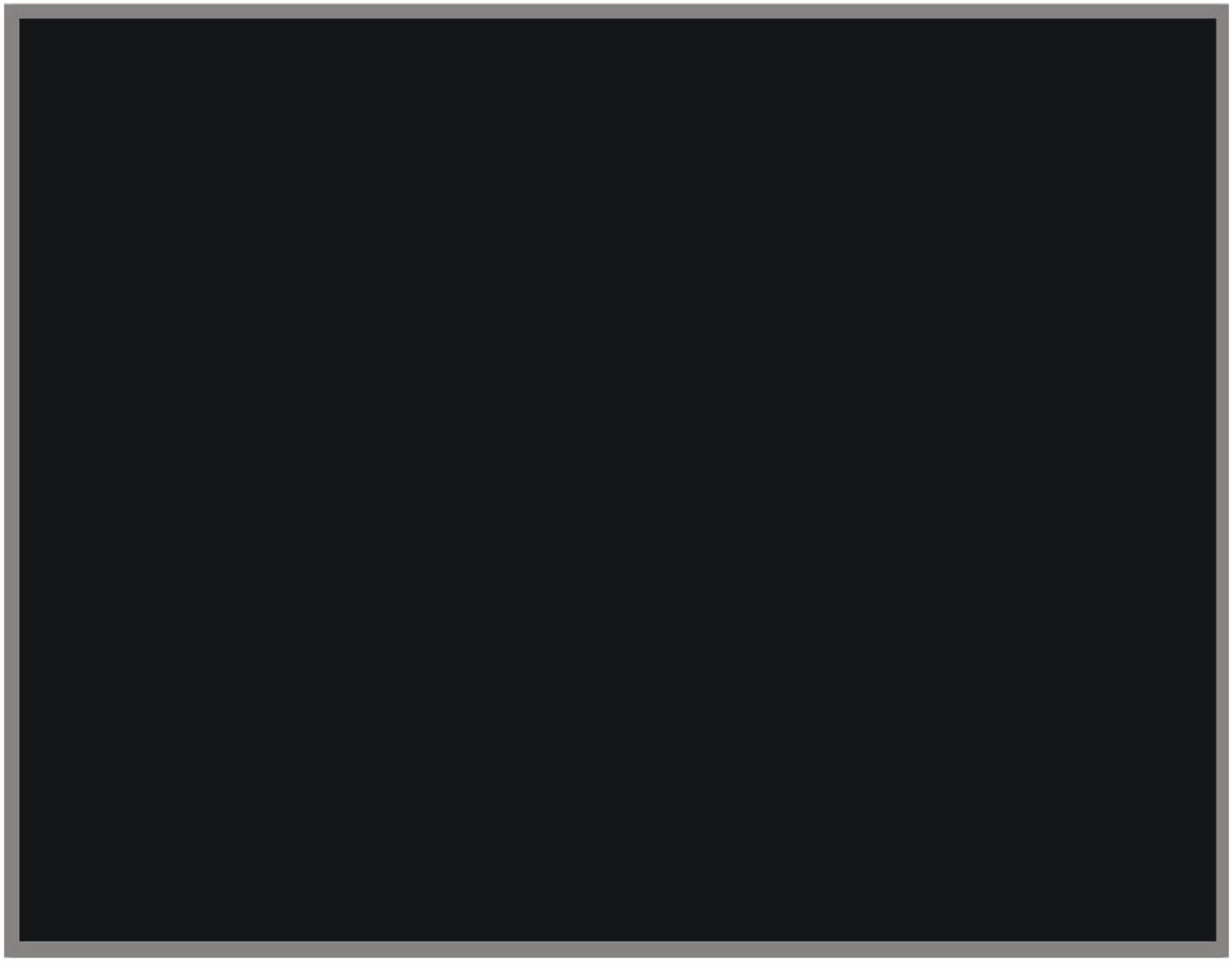
Final Workpaper for Line 4002 Phase 2 [redacted] TIMP Project

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]

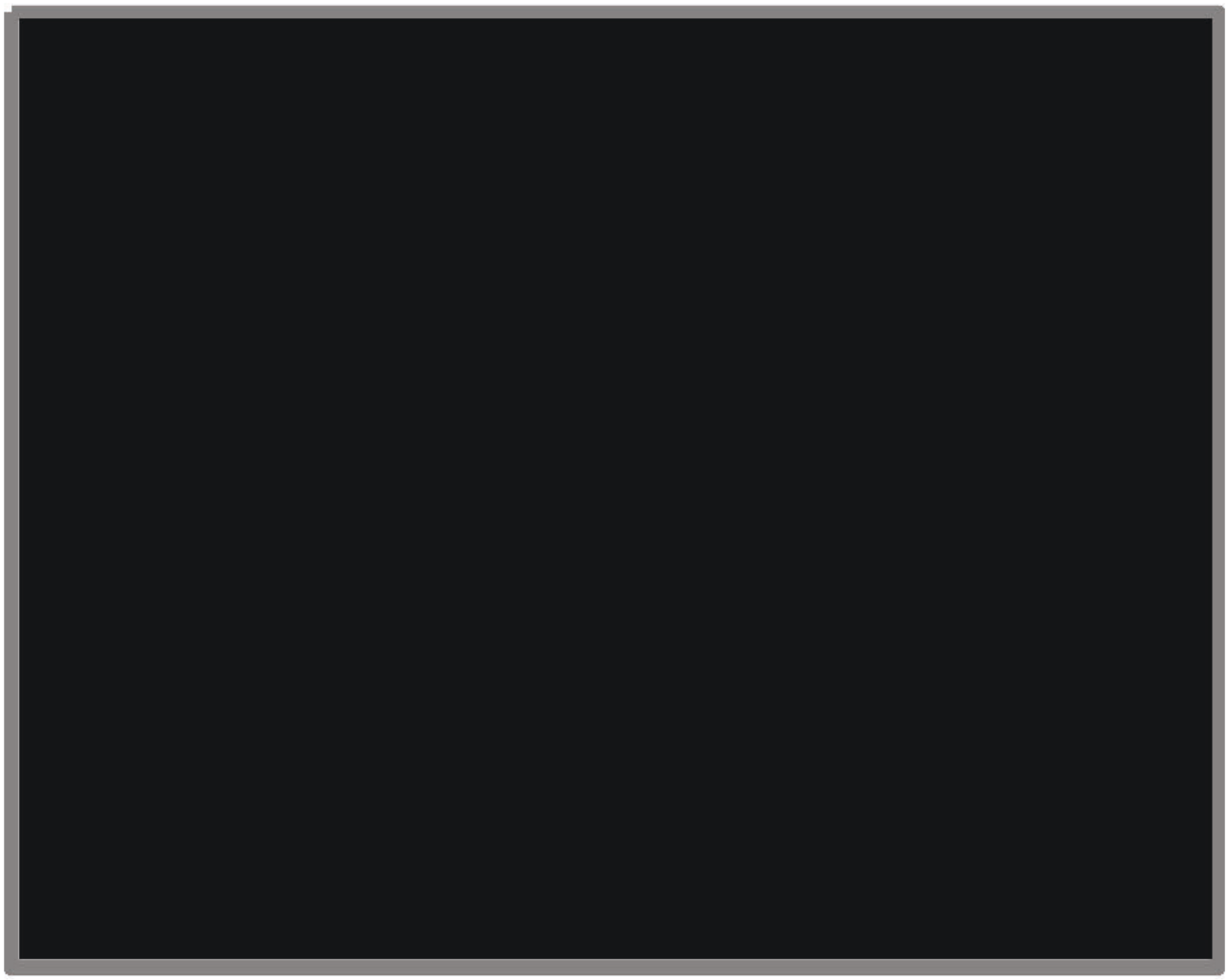
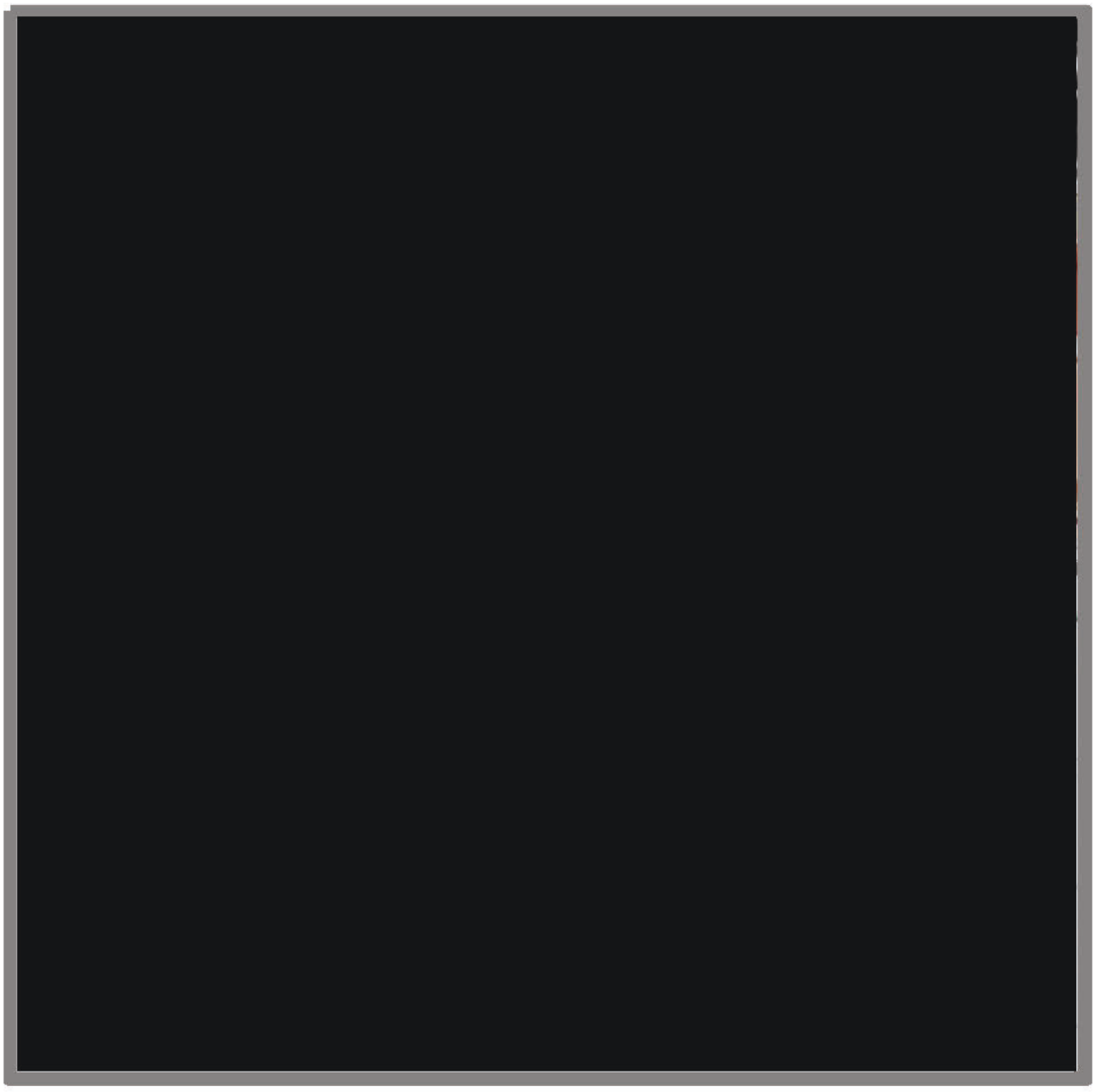


Figure 3: Direct Examination Site #1

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.

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

Table 1: General Project Information

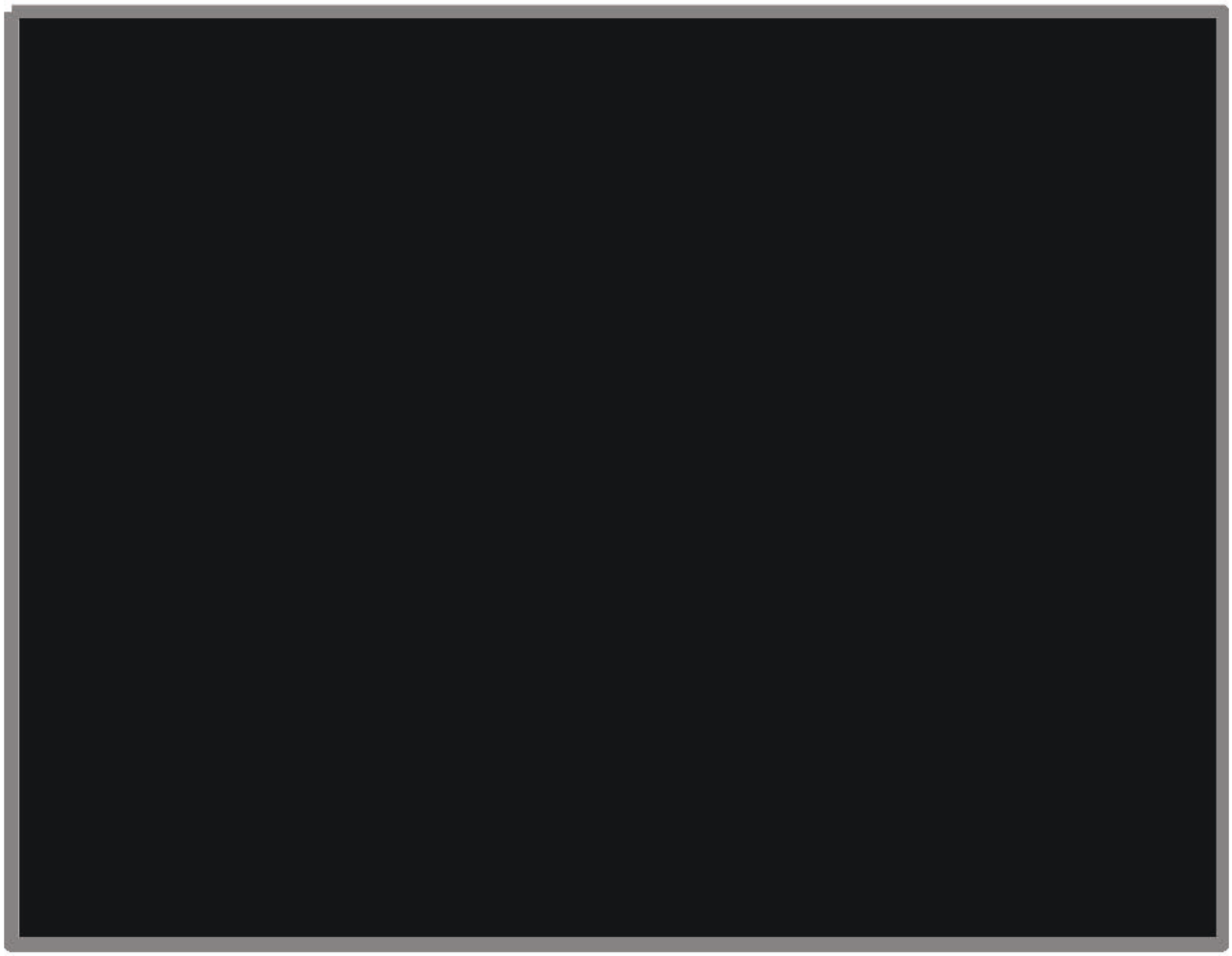
Inspection Details	
Pipeline	5000
Segment	[redacted]
InspectionType	[redacted] ILI Tools
Location	Ehrenberg, Blythe
Class	1, 2, 3
HCA Length	0.98 miles
Vintage	[redacted]
Pipe Diameter	[redacted]
MAOP	[redacted]
SMYS	Multiple SMYS values from [redacted]
Construction Start Date	[redacted]
Construction 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]

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

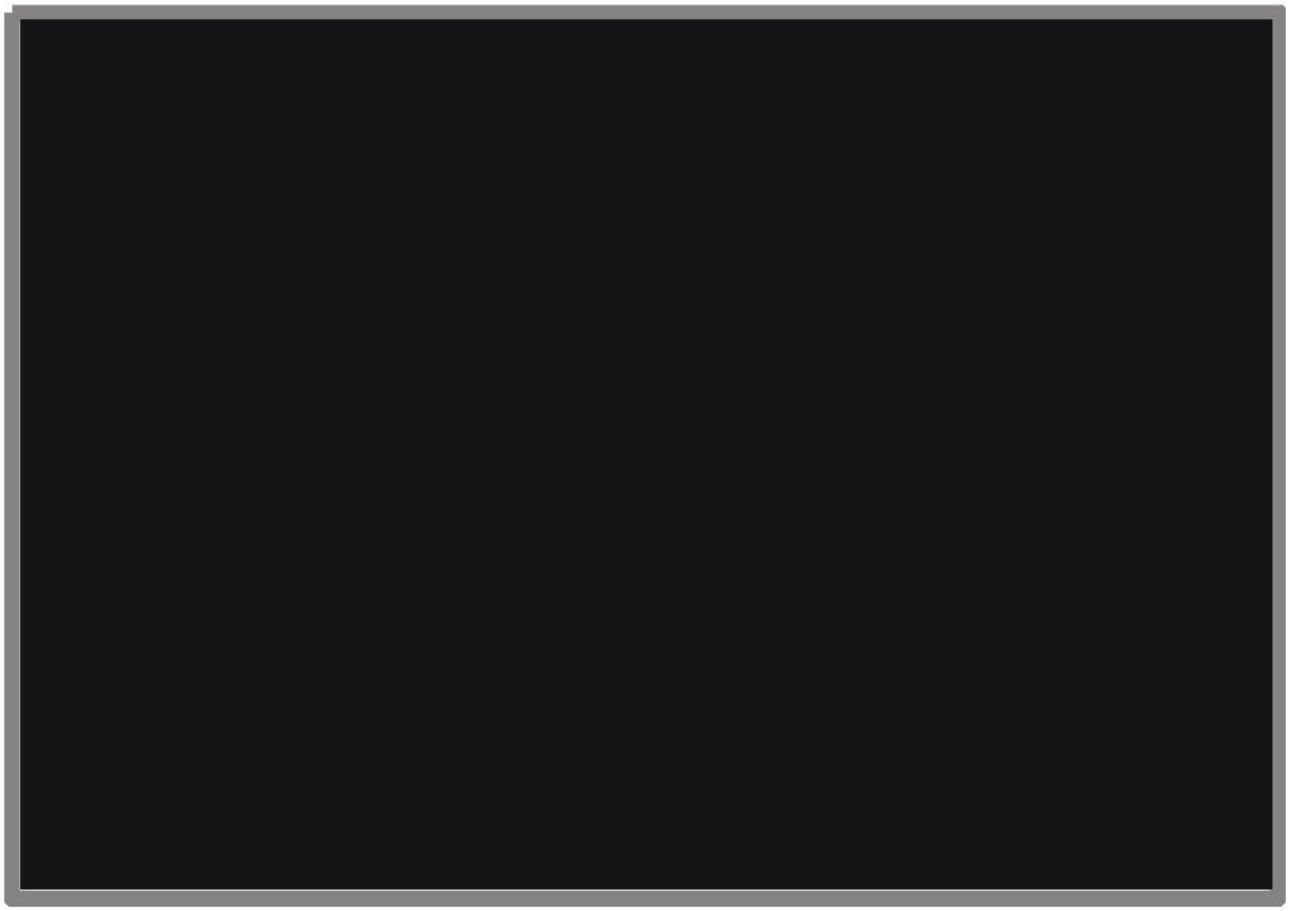


Figure 3: Target of Direct Examination #1 Repairs

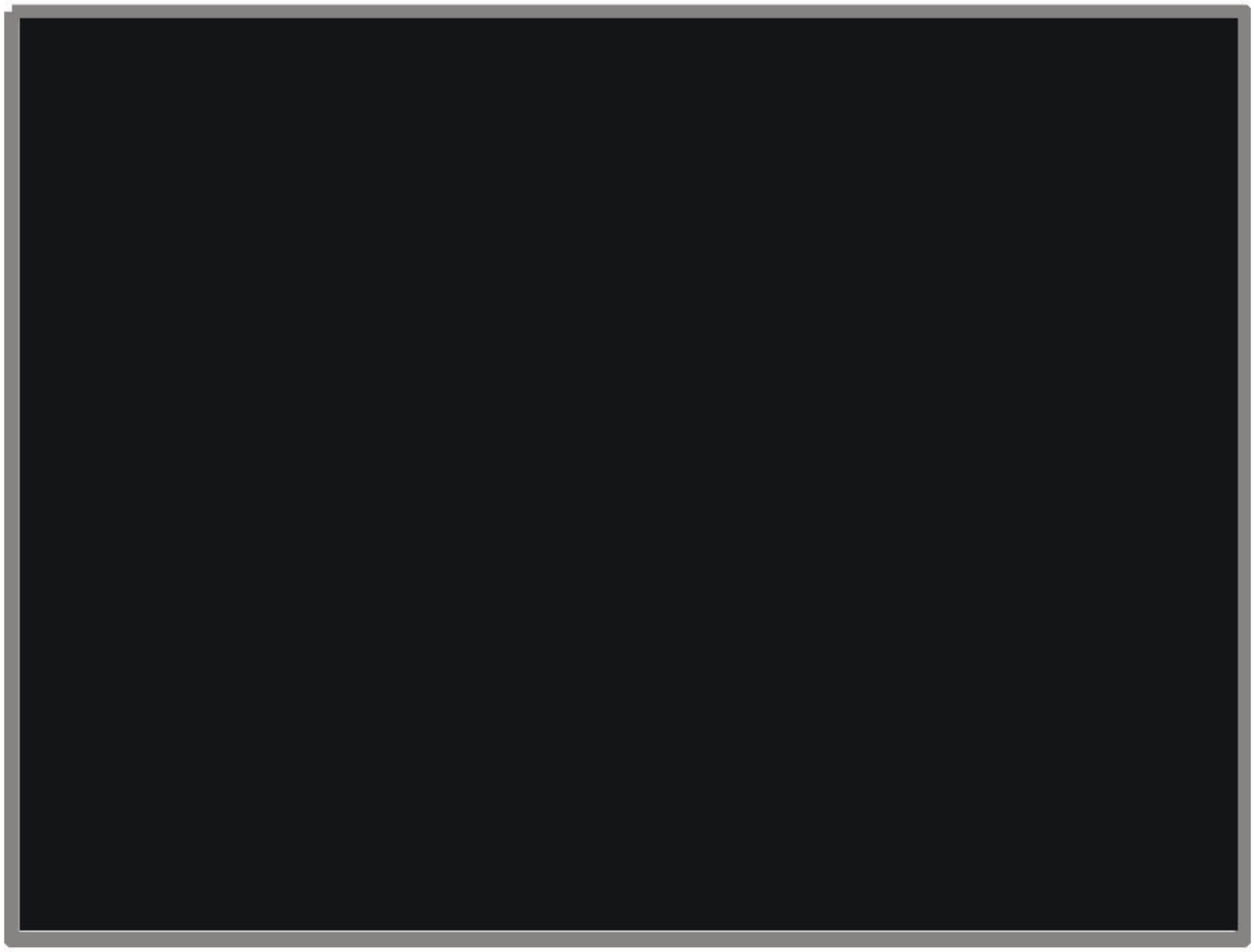
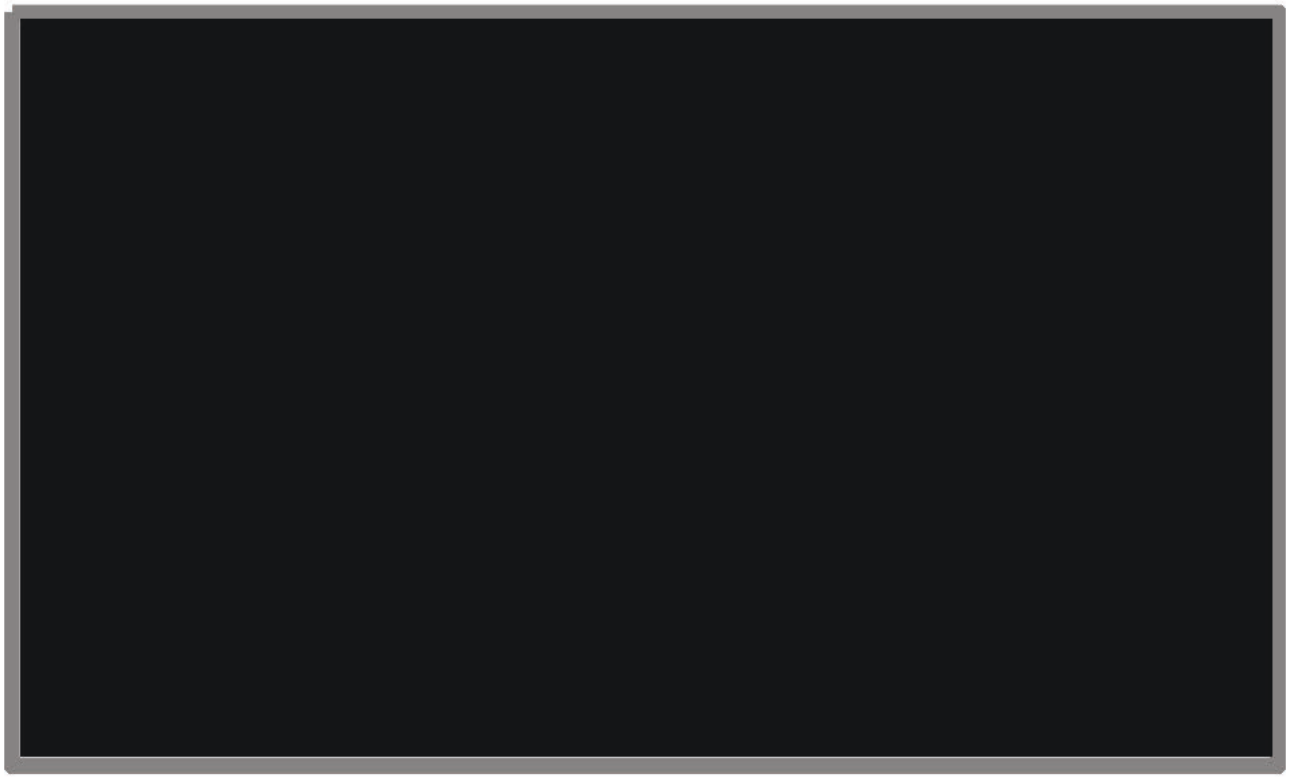


Figure 4: Target of Direct Examination #2 Repairs



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

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

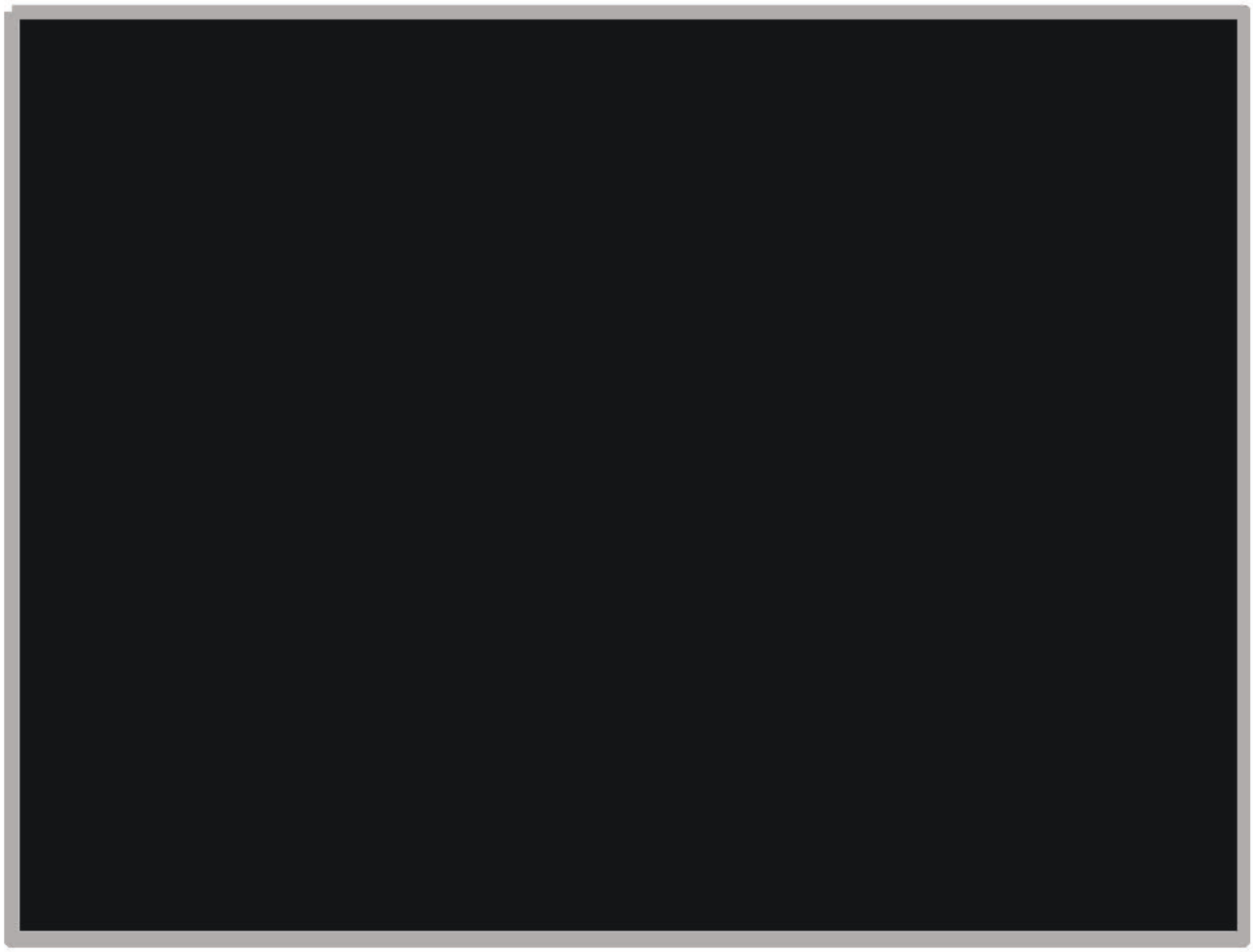


Figure 3: Soft Pad Repairs at Site #1

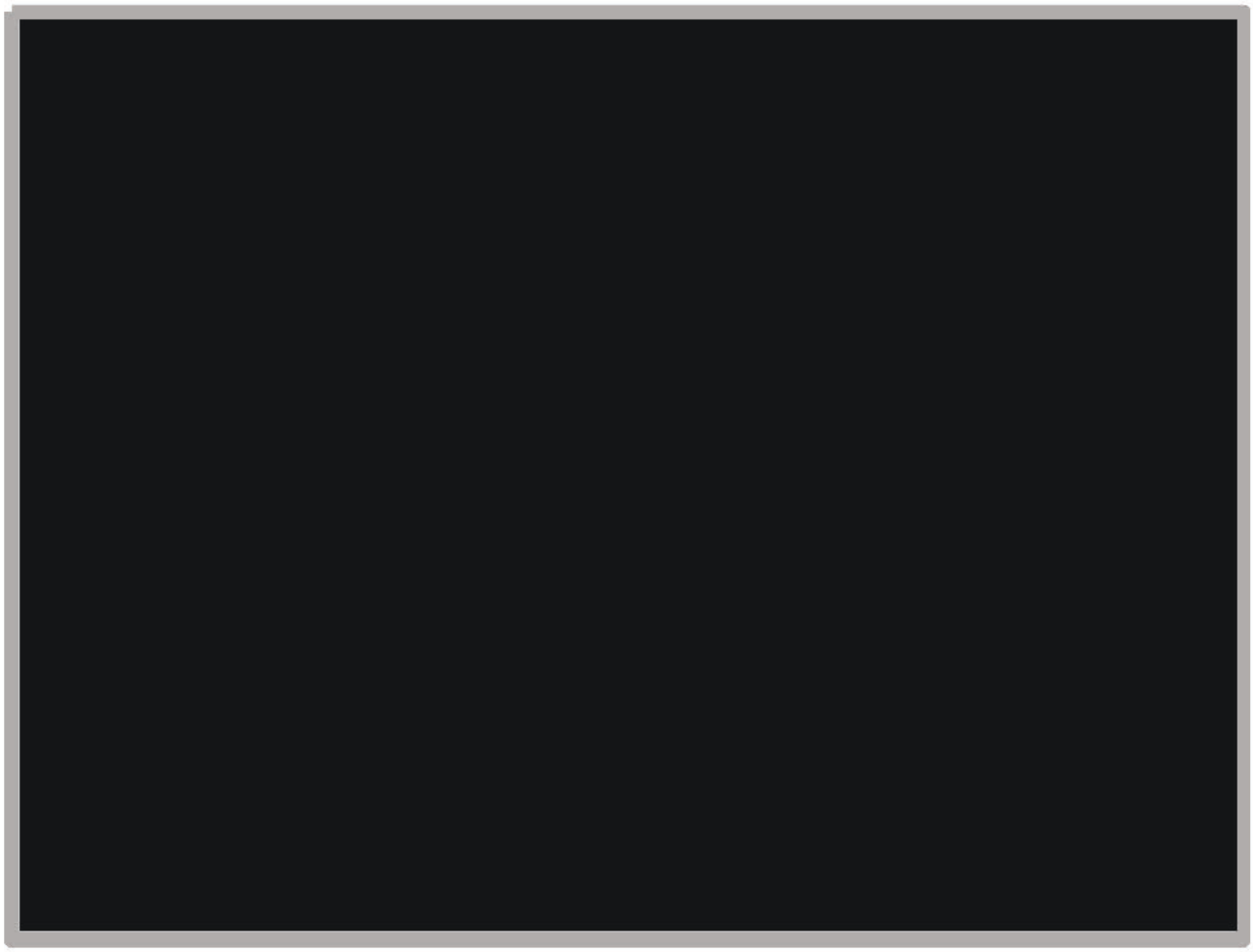
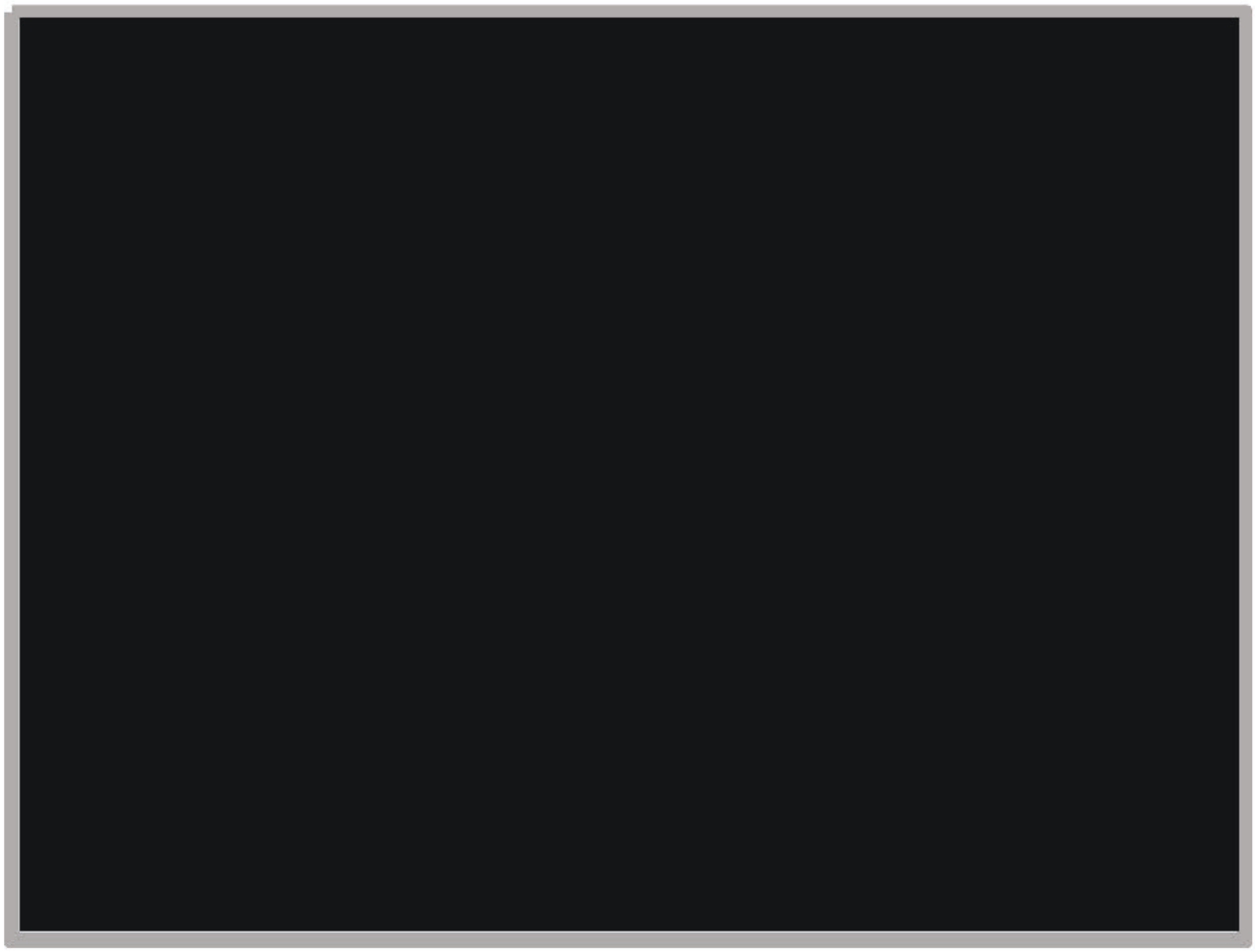


Figure 4: Soft Pad Repairs at Site #2



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

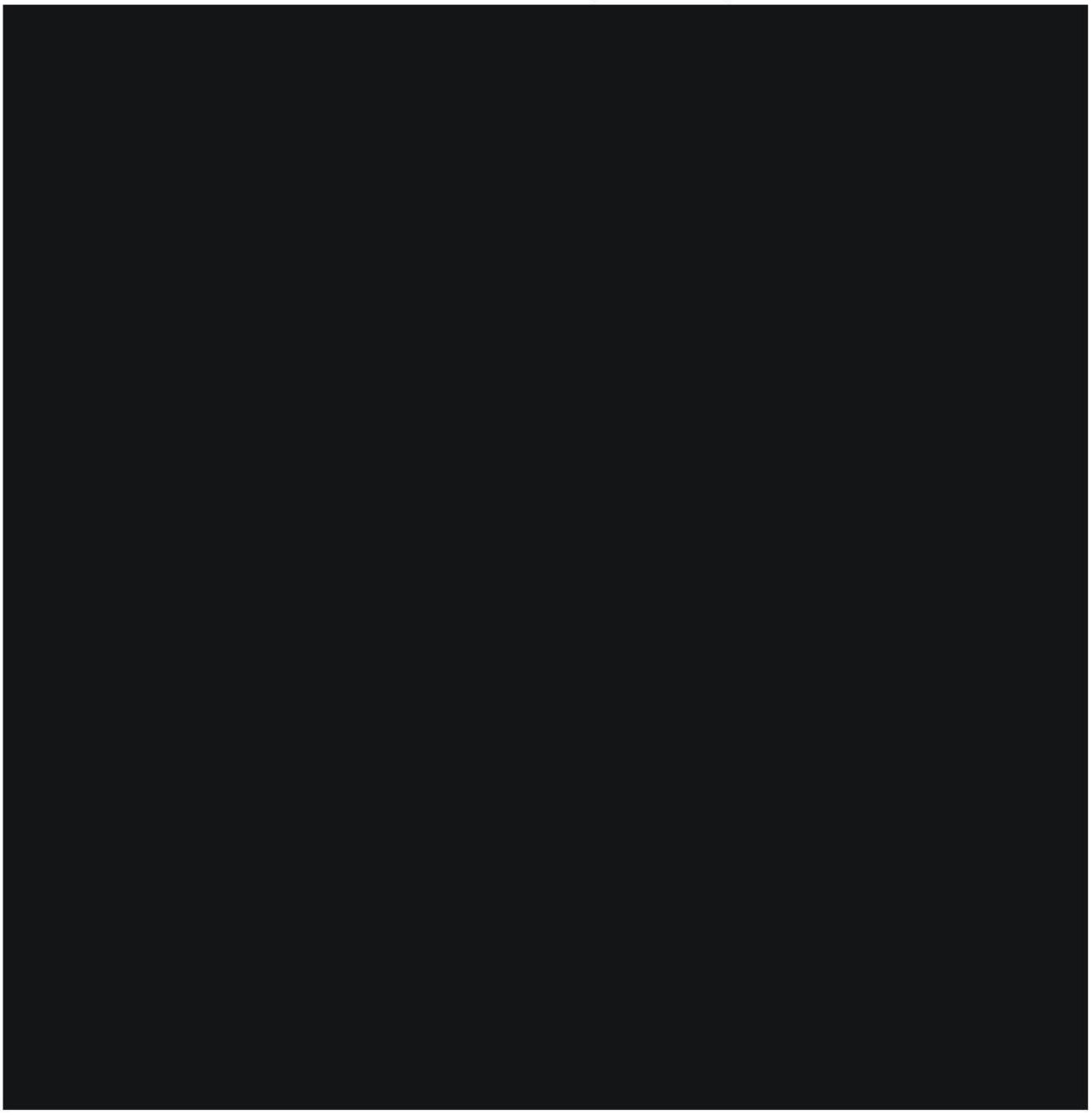
Table 3: Construction Timeline – Inspection

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.

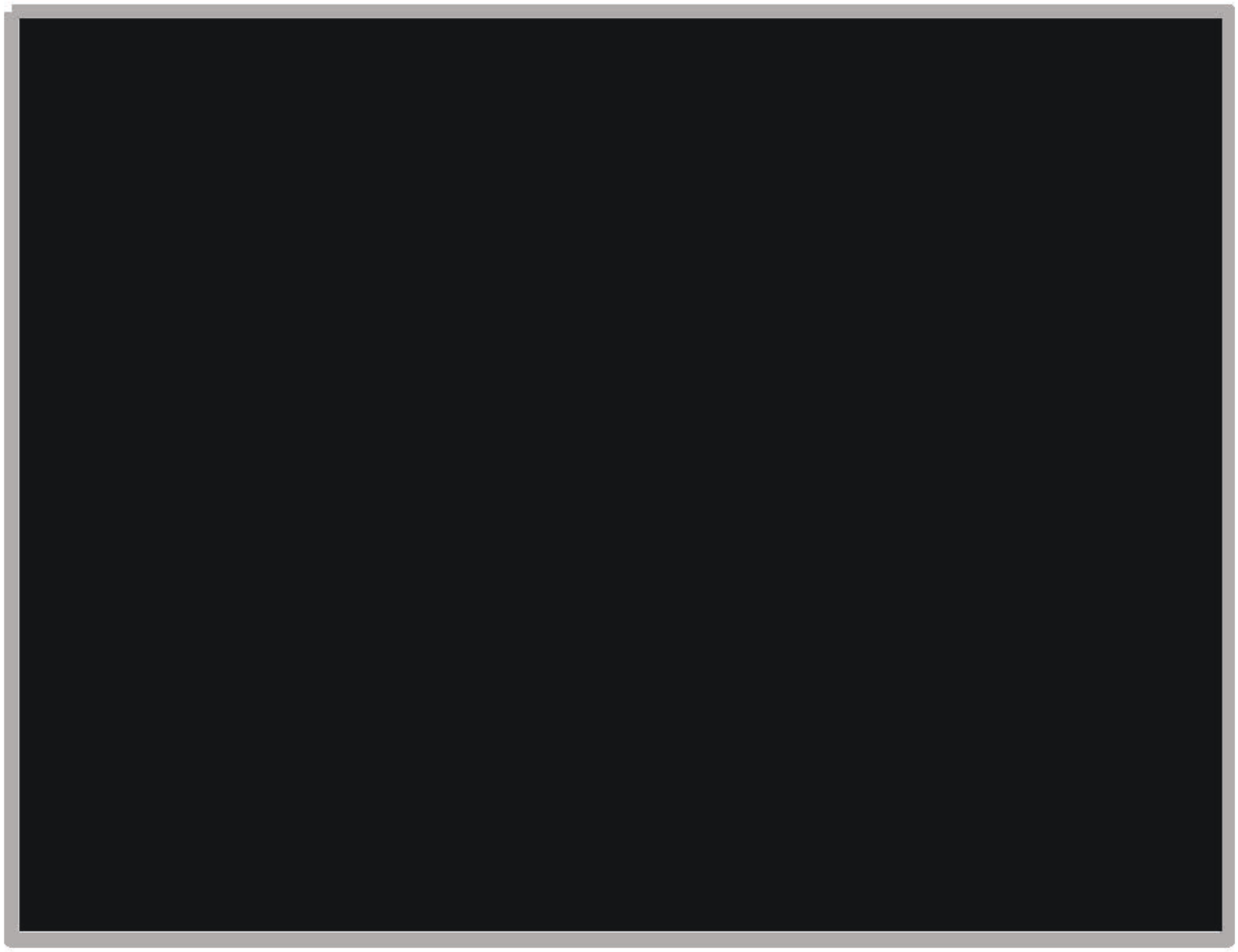
Final Workpaper for Line 5000 Phase 3 [redacted] TIMP Project

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

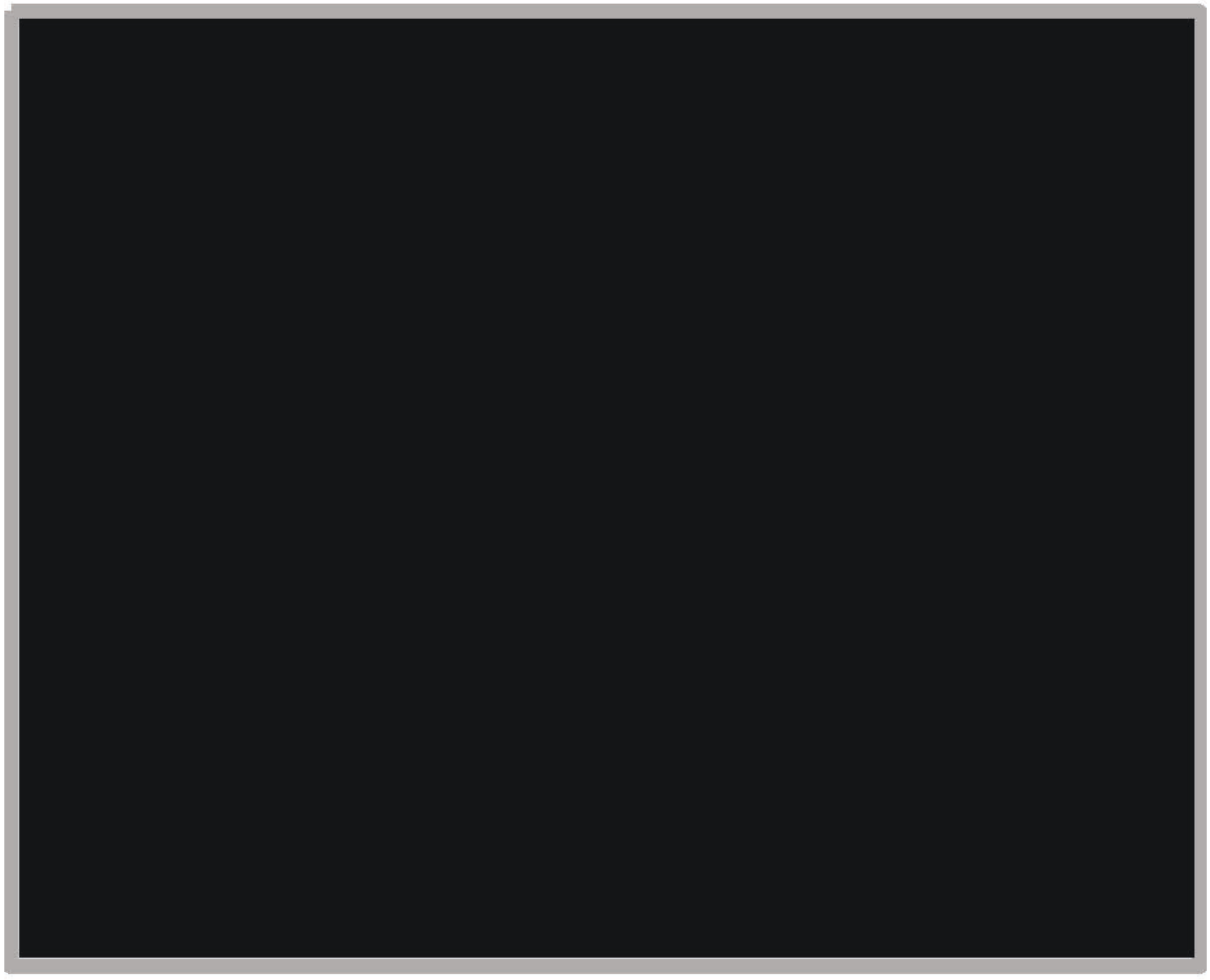
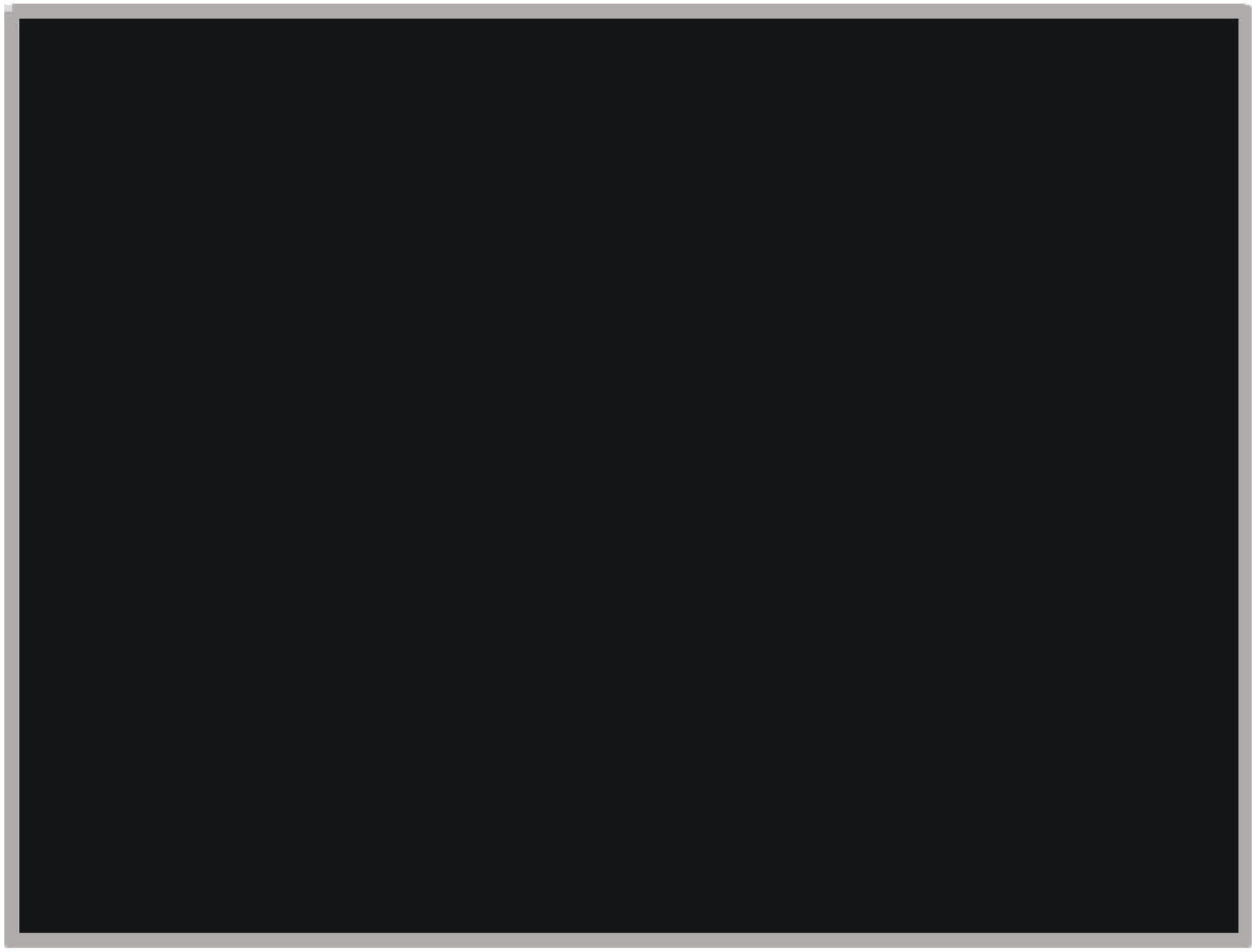


Figure 3: Receiver Location



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~~ $2,360,078.

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~~ 1,303,437	~~$1,057,683~~ 1,056,641	~~$1,402,728~~ 2,360,078

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

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~~ $2,360,078.

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~~

Direct Costs ($)	Capital Costs	O&M Costs	Total Actual Costs
Company Labor	127,274	118,618	245,892
Contract Costs	698,062	642,276	1,340,338
Material	44,309	-50,159	-5,850
Other Direct Charges	179,139	215,425	394,564
Total Direct Cost	1,048,784	926,161	1,974,945

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~~

[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.

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

Indirect Costs ($)	Capital Costs	O&M Costs	Total Actual Costs
Overheads	216,537	113,345	329,881
AFUDC	29,349	17,135	46,484
Property Taxes	8,768	0	8,768
Total Indirect Costs	254,653	130,480	385,133

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~~

Total Costs ($)	Capital Costs	O&M Costs	Total Actual Costs
Total Loaded Costs	1,303,437	1,056,641	2,360,078

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 ~~$1,402,728~~ $2,360,078.

[4] Ibid.

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

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.

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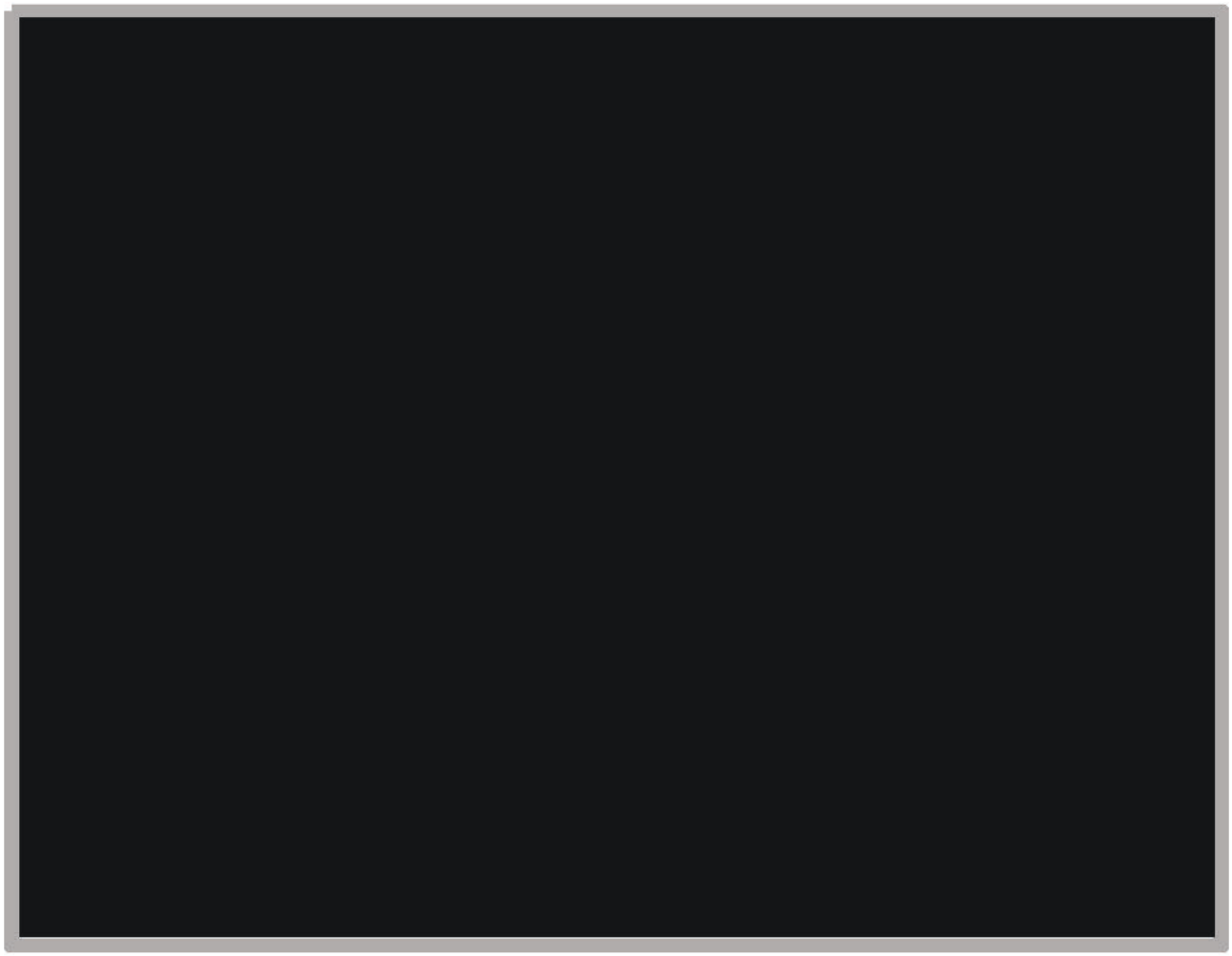
Final Workpaper for Line 5000 Phase 4 [redacted] TIMP Project

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]
   [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

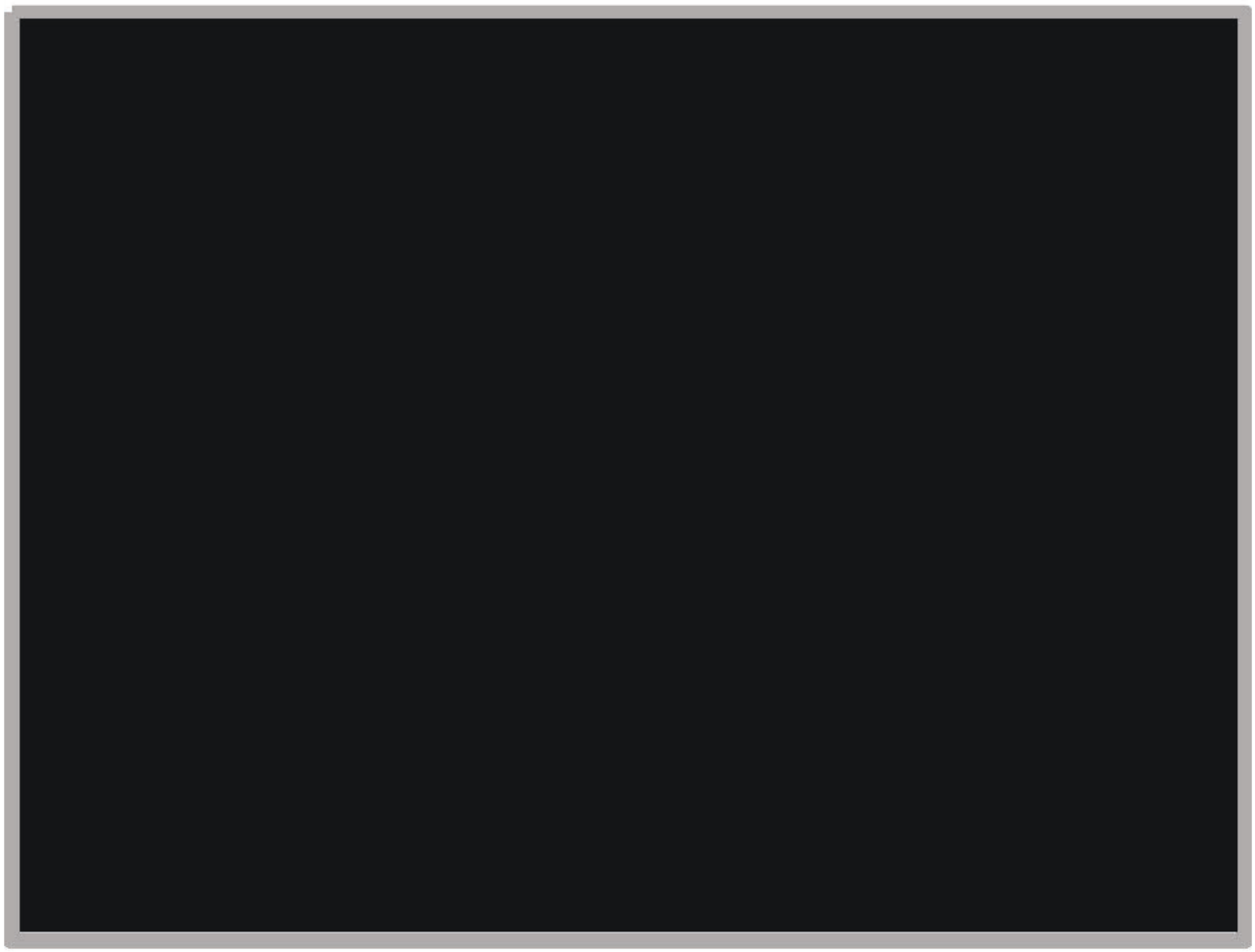


Figure 3: Direct Examination Site #1

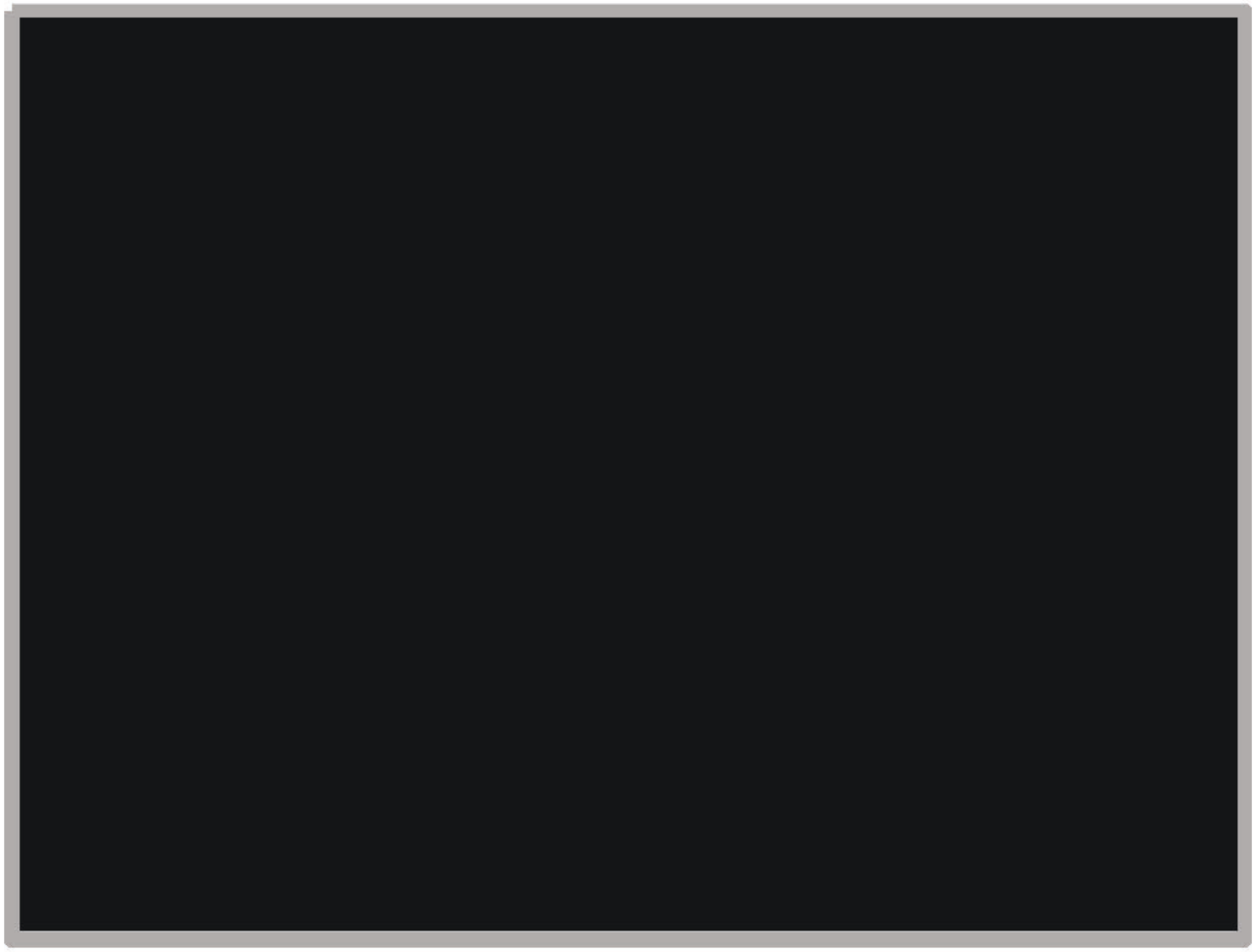
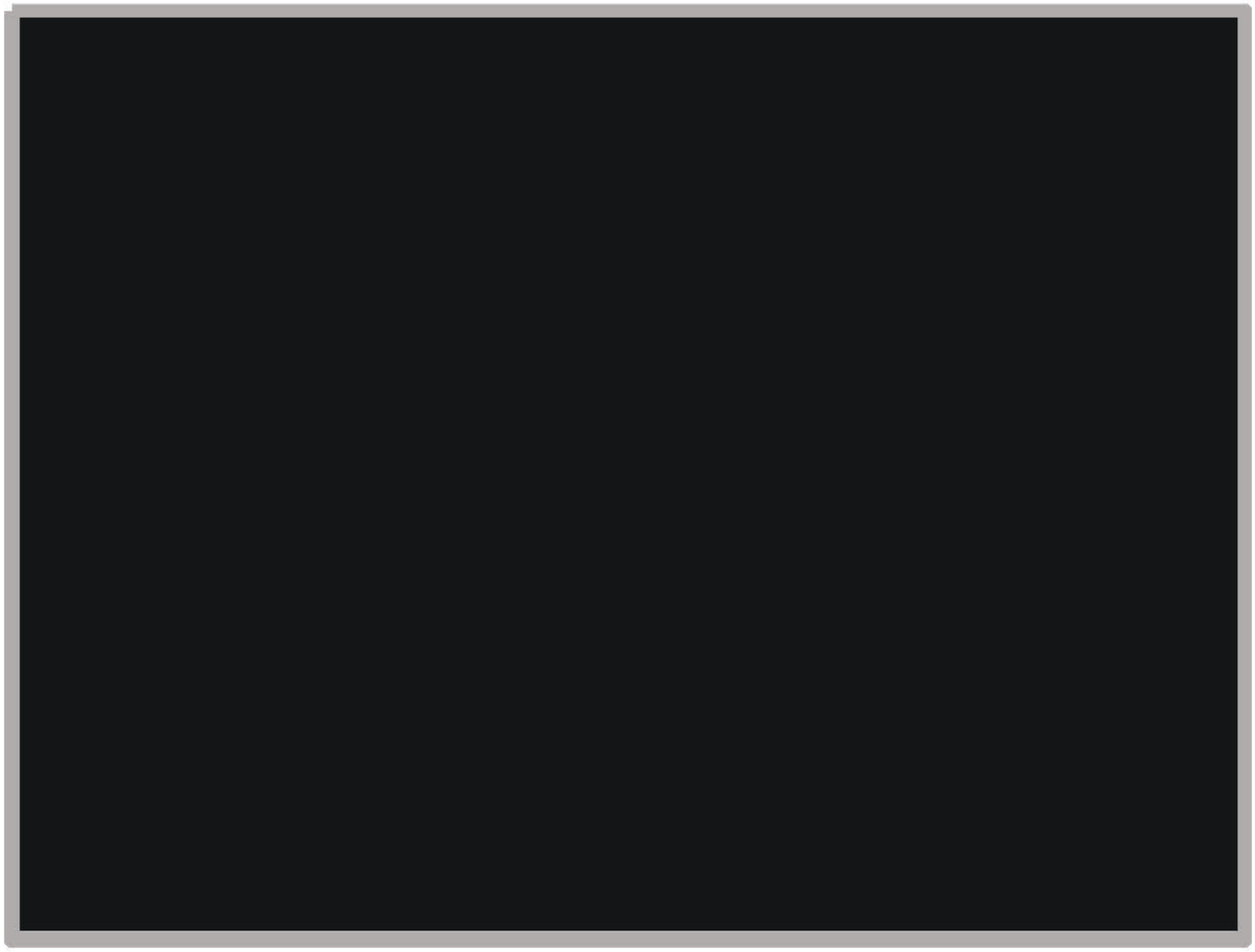


Figure 4: Direct Examination Site #1



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~~ $1,802,703.