

Company: Southern California Gas Company (U 904 G)  
Proceeding: 2028 General Rate Case  
Application: A.26-06-XXX  
Exhibit: SCG-06-WP-S

**REDACTED**

**SUPPLEMENTAL WORKPAPERS TO  
PREPARED DIRECT TESTIMONY  
OF DEVIN K. ZORNIZER  
(GAS MAJOR PROJECTS)**

**ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY**

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

**VOLUME 5 OF 6**

**JUNE 2026**



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# VOLUME V

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## **SCG PSEP Reasonableness Review Pipeline Project Workpapers**

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**SCG PSEP Reasonableness Review Pipeline  
Project Workpapers**

Final Report for Alhambra Station Piping Replacement Project

**I. ALHAMBRA STATION PIPING REPLACEMENT PROJECT**

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**A. Background and Summary**

Alhambra Station Piping is a Department of Transmission (DOT) defined transmission<sup>1</sup> line with [REDACTED], and [REDACTED] diameter transmission lines located in the city of Alhambra. The pipeline is primarily routed across a [REDACTED] location. This report describes the activities associated with Alhambra Station Piping Replacement Project which consists of the replacement of 34 feet of pipeline. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$2,463,048.

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<sup>1</sup> As defined in 49 C.F.R. § 192.3 (2024).

Final Report for Alhambra Station Piping Replacement Project

Table 1: General Project Information

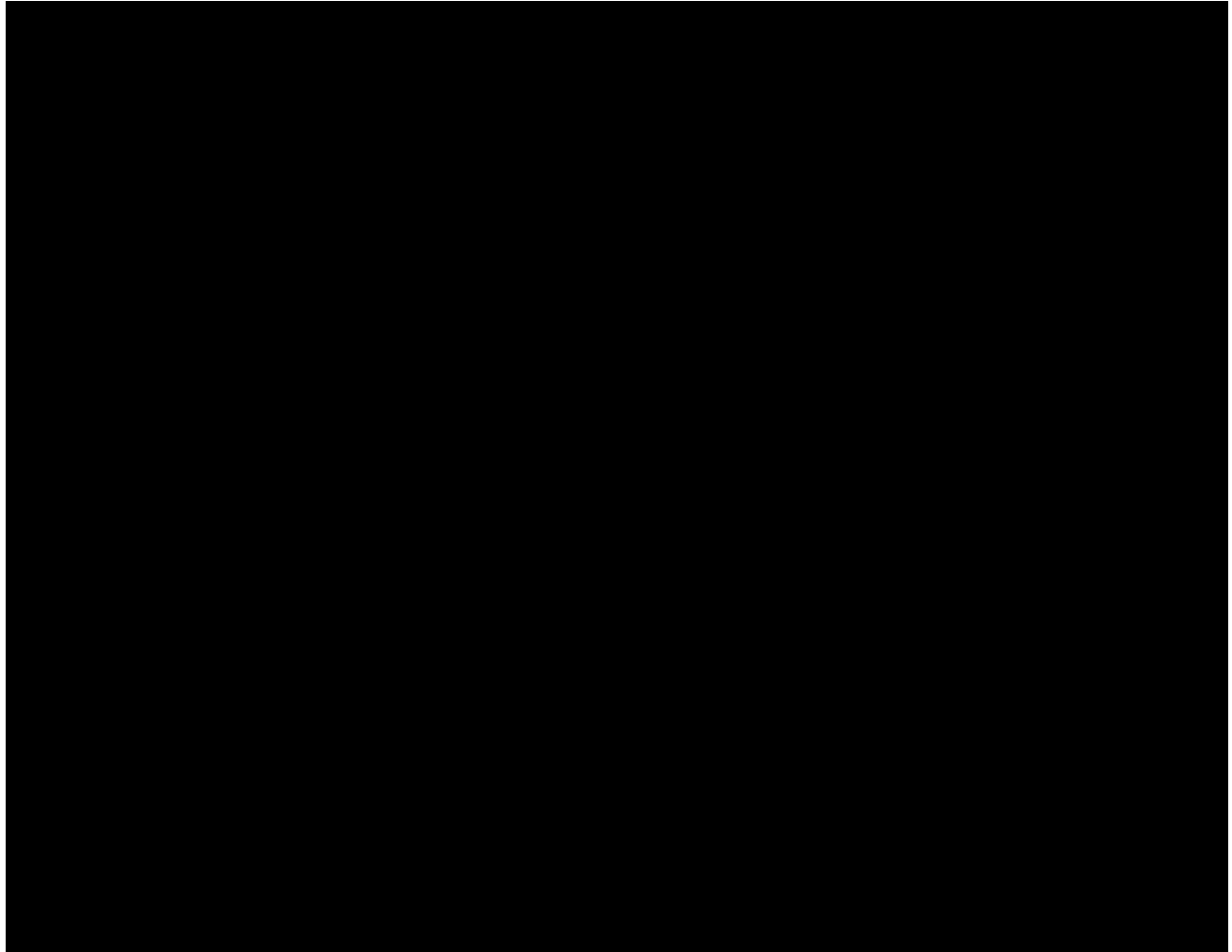
Project Name		Alhambra Station Replacement		
Project Type	Replacement			
PSEP Phase	1A			
Length	34 feet			
Location	City of Alhambra			
Class	█			
MAOP	██████			
Pipe Grade	██████			
Wall Thickness	██████			
Pipe Vintage	Multiple vintages from ████████			
Construction Start	04/17/2023			
Construction Finish	08/01/2023			
Original Pipe Diameter	██████████████████████████████			
Original Nominal Diameter	██████████			
New Diameter	██████████████████████████			
Original SMYS <sup>2</sup>	██████			
New SMYS	Multiple SMYS values from ████████			
Project Costs (\$)	Capital	O&M	Total	
Loaded Project Costs	2,463,048	-	2,463,048	
Disallowed Costs	-	-	-	

<sup>2</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

## Final Report for Alhambra Station Piping Replacement Project

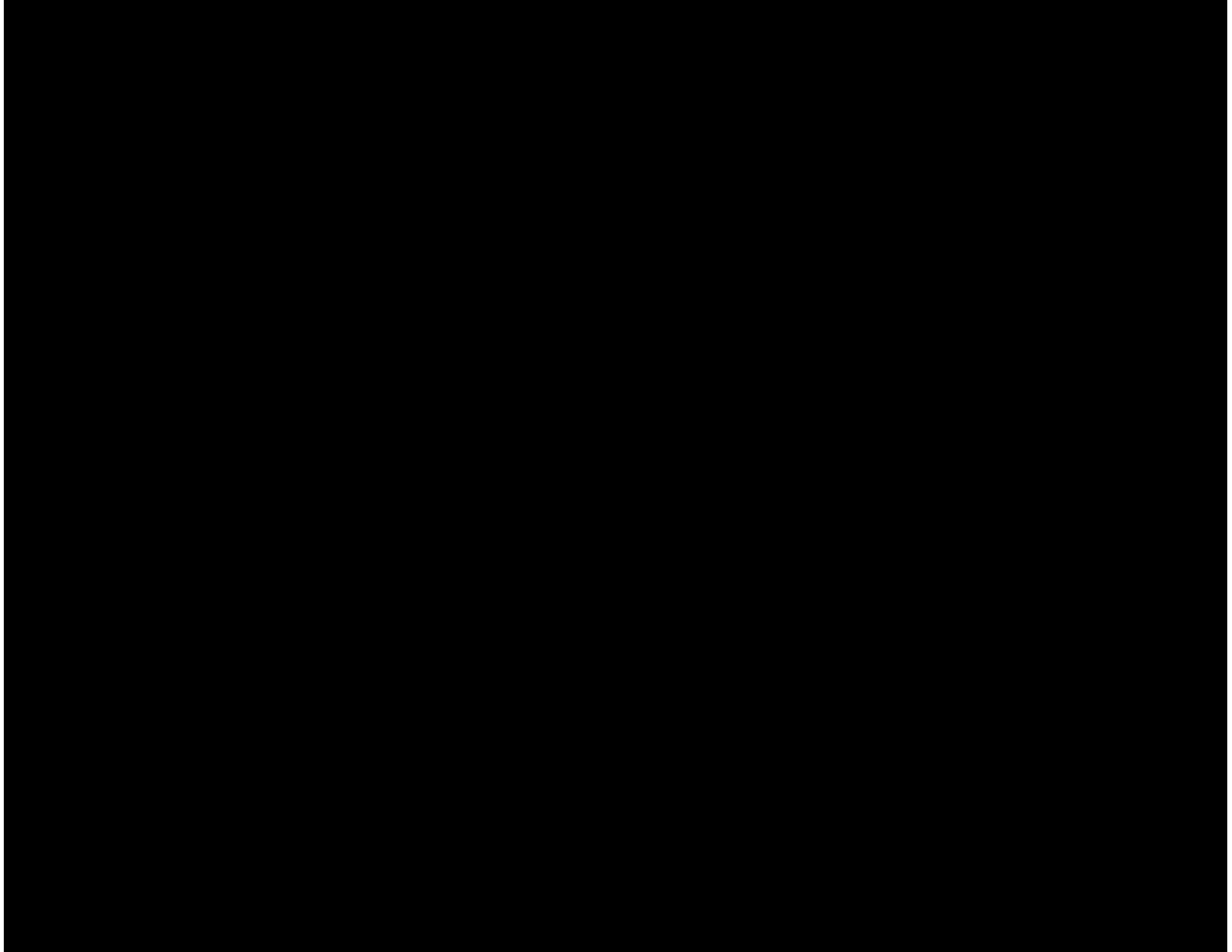
### Maps and Images

Figure 1: Satellite Image of Alhambra Station Piping Replacement Project



Final Report for Alhambra Station Piping Replacement Project

Figure 2: Overview Map of Alhambra Station Piping Replacement Project



Final Report for Alhambra Station Piping Replacement Project

**II. ENGINEERING, DESIGN, AND PLANNING**

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A. Project Scope

Table 2: Mileage Information

	Criteria	Abandoned	Replacement Offset	Total <sup>3</sup>
Final Mileage	0.016 mi.	0 mi.	-0.002 mi.	0.006 mi.
	85 ft.	0 ft.	-51 ft.	34 ft.

Prior to initiating execution of the Project in 2023, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SoCalGas did not identify the Alhambra Station Piping Project in the 2011 PSEP Filing.
2. Scope Validation: Through scope validation activities, during design before initiating execution of the Project, SoCalGas successfully reduced the scope of the Project by 28 feet of Category 4 Criteria pipe.
3. Final Project Scope: The final project scope consists of abandoning and removing 51 feet of pipeline and replacing 85 feet of pipeline.

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<sup>3</sup> Values may not add to total due to rounding.

## Final Report for Alhambra Station Piping Replacement Project

### B. Decision Tree Review

SoCalGas performed a review of the Alhambra Station and confirmed the project design should commence as a Replacement Project.

Segments of less than 1,000 feet are identified for replacement under the approved PSEP Decision Tree because, for short segments of pipe, the logistical costs associated with pressure testing (for example, permitting, construction, water handling, and service disruptions for a non-looped system) can approach or exceed the cost of replacement. In such circumstances, replacement affords a more cost-effective approach to achieving compliance with D.11-06-017 while providing equal safety enhancement benefits. Moreover, installation of the new segment can usually be performed while the existing service is maintained to customers, thereby avoiding service disruptions that may otherwise occur during pressure testing.

As a result of this review, SoCalGas identified replacement as the more prudent option. Key considerations that support SoCalGas's determination to replace this segment include:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could be shut-in during the non-heating season.
2. Customer Impacts: No identified issues.
3. Community Impacts: No identified issues.
4. Permit Conditions: No identified issues.
5. Piggability: This section of pipe is not inspected by ILI because it is located within a station.
6. Pipe Vintage: Multiple vintages from [REDACTED]
7. Existing Pipe Attributes: No identified issues.
8. Long seam Type:  
[REDACTED]

## Final Report for Alhambra Station Piping Replacement Project

[REDACTED]  
[REDACTED]

9. Long seam Repair History: No repair history.
10. Condition of Coating: The existing pipeline has a painted coating.
11. History of Leaks: No leak history.
12. Constructability: The Project Team completed construction through open trenching.

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. Shut-In Analysis: The Project Team completed reviews of the gas pipeline system to evaluate project feasibility and concluded the line could be shut-in during the non-heating season.
2. Customer Impact: Per the gas transmission and distribution system analyses, there were no identified issues.
3. Community Impact: No identified issues.
4. Diameter Changes: The original existing pipeline consisted of [REDACTED] diameters. SoCalGas analyzed typical load demands and future capacity planning and determined that the replacement diameters of [REDACTED] would be sufficient.
5. Known Substructures: No identified issues
6. Permit Conditions: No identified issues.
7. Land Use: The Project Team obtained a Temporary Right of Entry (TRE) from the local school district to use their parking lot for overflow parking.

## Final Report for Alhambra Station Piping Replacement Project

8. Environmental: No identified issues.

### D. Scope Changes

There were no notable scope changes during detailed design.

Final Report for Alhambra Station Piping Replacement Project

### III. CONSTRUCTION

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#### A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. As indicated above, there were no notable changes in scope between the time when the Project Team prepared the preliminary cost estimate and when the Performance Partner prepared and submitted its Target Price Estimate. SoCalGas awarded the construction contract to the Performance Partner.

1. SoCalGas’s Preliminary Construction Cost Estimate: SoCalGas’s preliminary cost estimate for construction was \$795,331.
2. Construction Contractor’s Target Price Estimate: The Construction Contractor’s cost estimate was [REDACTED], which was [REDACTED] than SoCalGas’s preliminary cost estimate for construction.

#### B. Construction Schedule

Table 3: Construction Timeline

Construction Start Date	04/17/2023
Construction Completion Date	08/01/2023
NOP Date	05/11/2023

## Final Report for Alhambra Station Piping Replacement Project

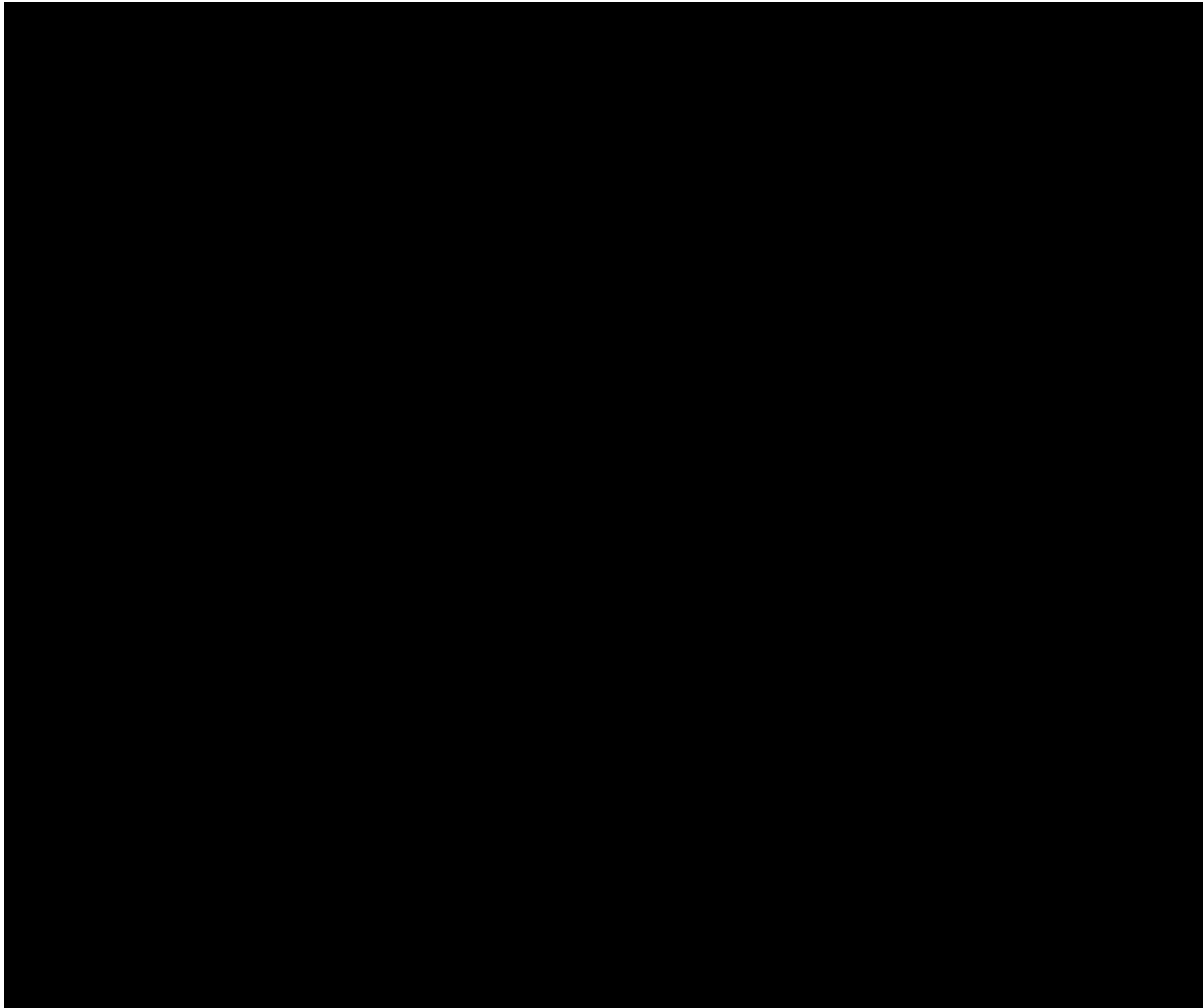
### C. Changes During Construction

The conditions summarized below were encountered during construction. Activities to address or mitigate these conditions resulted in approximately \$12,000 in change orders.

1. Constructability Issues: The Project Team determined a miter weld between the existing pipeline and valve during excavation. The Team determined that the weld would need to be cut out and the fabricated pipe would need to be adjusted to tie-in to the existing pipeline.

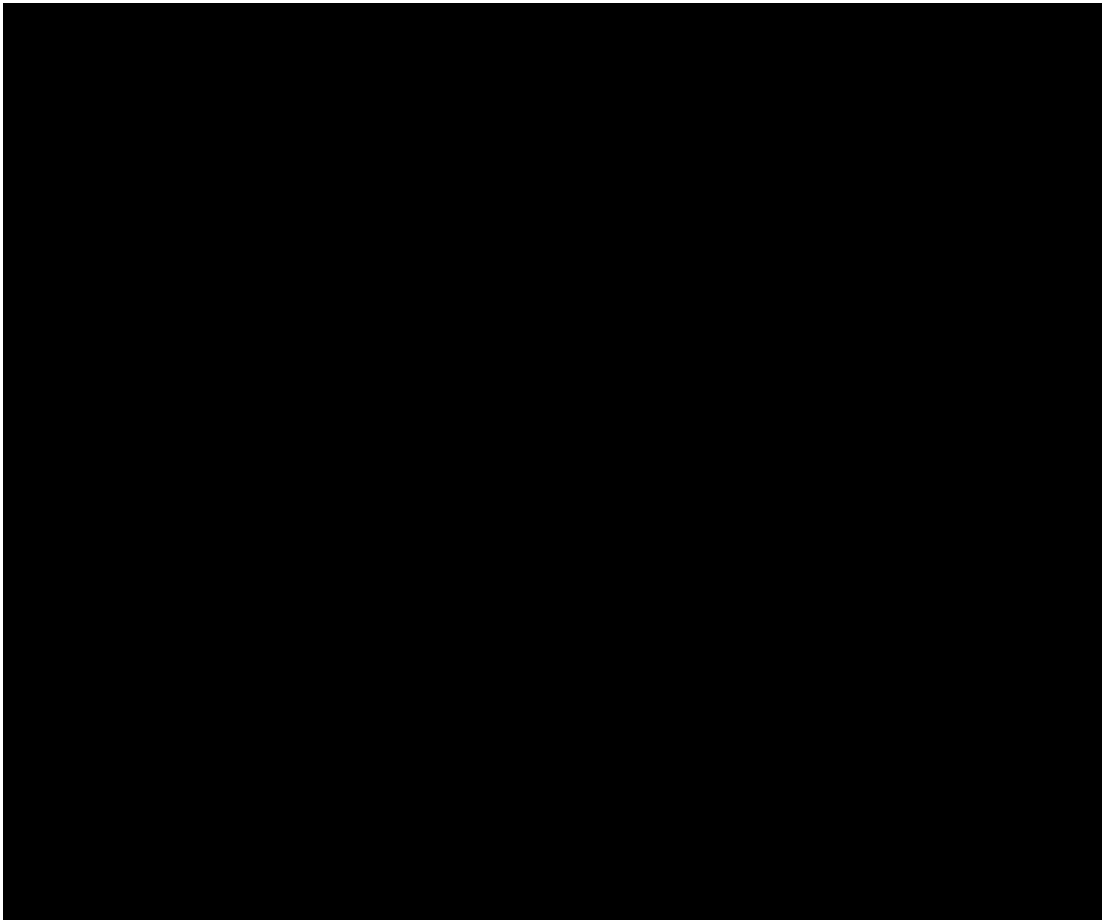
Final Report for Alhambra Station Piping Replacement Project

Figure 3: Prefabricated Pipe Ready for Installation



Final Report for Alhambra Station Piping Replacement Project

Figure 4: Vault Lid Installation



## Final Report for Alhambra Station Piping Replacement Project

### D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, transportation and disposal of hydrotested 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.

Final Report for Alhambra Station Piping Replacement Project

## IV. PROJECT COSTS

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### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project.

### B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$1,887,881. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

### C. Actual Direct and Indirect Costs

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$2,463,048.

Final Report for Alhambra Station Piping Replacement Project

Table 4: Estimated and Actual Direct Costs and Variances<sup>4</sup>

Direct Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Company Labor	216,078	328,559	112,481
Materials	114,664	24,760	(89,904)
Construction Contractor	795,331	790,011	(5,320)
Construction Management & Support	207,942	139,283	(68,659)
Environmental	95,593	64,801	(30,792)
Engineering & Design	276,439	343,733	67,294
Project Management & Services	129,412	230,179	100,767
ROW & Permits	52,422	24,300	(28,122)
GMA	-	-	-
<b>Total Direct Costs</b>	<b>1,887,879</b>	<b>1,945,625</b>	<b>57,744</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances<sup>5</sup>

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	421,968	483,021	61,052
AFUDC	270,502	28,671	(241,831)
Property Taxes	46,347	5,732	(40,615)
<b>Total Indirect Costs</b>	<b>738,817</b>	<b>517,424</b>	<b>(221,393)</b>
<b>Total Direct Costs</b>	<b>1,887,881</b>	<b>1,945,625</b>	<b>57,744</b>
<b>Total Loaded Costs</b>	<b>2,626,698</b>	<b>2,463,048</b>	<b>(163,649)</b>

The Actual Full-Time Equivalents<sup>6</sup> (FTEs) for this Project are 0.89.

<sup>4</sup> Values may not add to total due to rounding.

<sup>5</sup> Ibid.

<sup>6</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

## Final Report for Alhambra Station Piping Replacement Project

### D. Cost Impacts

Consistent with one of the overarching objectives of PSEP as stated in testimony to maximize the cost effectiveness of safety enhancement investments, SoCalGas effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities may lead to variances between the initial estimate and actuals. The Project Team successfully mitigated these variances whenever feasible through the implementation of effective project management practices, thorough planning, and continuous monitoring.

At the completion of the Alhambra Station Piping Replacement Project, Actual Direct Costs came within the AACE Class 3 Total Installed Cost (TIC) accuracy range, adhering to the standard industry practices defined by the Association for the Advancement of Cost Engineering (AACE) International. The Actual Direct Costs exceeded the preliminary estimate by \$57,744. This variance can be attributed to several factors including: the project experienced a delivery delay on a new vault lid design as the initial lid was the incorrect size; the project required extra support during the second mobilization to install the vault lid including additional inspectors and construction managers.

### E. Disallowance

There was no disallowance for the Alhambra Station Replacement Project as there were no post-1955 segments included in the Project without records that provide the minimum information to demonstrate compliance with then applicable industry standards or regulatory strength testing and recordkeeping requirements.

Final Report for Alhambra Station Piping Replacement Project

## **V. CONCLUSION**

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Alhambra Station Piping Replacement Project. Through this Replacement Project, SoCalGas successfully replaced 34 feet of pipeline in the city of Alhambra.

SoCalGas executed this project prudently through reducing the initial scope and executing construction within the company owned station.

SoCalGas engaged in prudent cost avoidance efforts by exercising due diligence in the planning, design, and construction activities for this project

## **End of Alhambra Station Piping Replacement Project Final Report**

Final Report for Line 1004 Section 1 and 3 Hydrotest Project

## I. LINE 1004 SECTION 1 AND 3 HYDROTEST PROJECT

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### A. Background and Summary

Line 1004 is a Department of Transportation (DOT) defined transmission<sup>1</sup> line with a predominantly [REDACTED] diameter that runs approximately 35 miles from the Goleta Storage Field to the Ventura Compressor Station through mountainous terrain in unincorporated areas of Santa Barbara County and Ventura County. The pipeline is primarily routed across a Class 3 location, and traverses some Class 1 locations. This report describes the activities associated with Line 1004 Section 1 and 3 Hydrotest Project which consists of two separate hydrotests that totaled 2.504 miles. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$5,239,001.

The Line 1004 Section 1 and 3 Hydrotest Project is a component of Line 1004, that was identified as a 12.718 mile hydrotest project. For project manageability purposes and due to the unique characteristics related to non-contiguous portions of the pipeline, SoCalGas separated the Line 1004 Project into two separate projects: Line 1004 Hydrotest and Replacement Project<sup>2</sup> and Line 1004 Section 1 and 3 Hydrotest.

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<sup>1</sup> As defined in 49 C.F.R. § 192.3 (2024).

<sup>2</sup> Line 1004 Hydrotest and Replacement Project was filed for reasonableness review in A.18-11-010 and authorized in D.20-08-034.

Final Report for Line 1004 Section 1 and 3 Hydrotest Project

Table 1: General Project Information

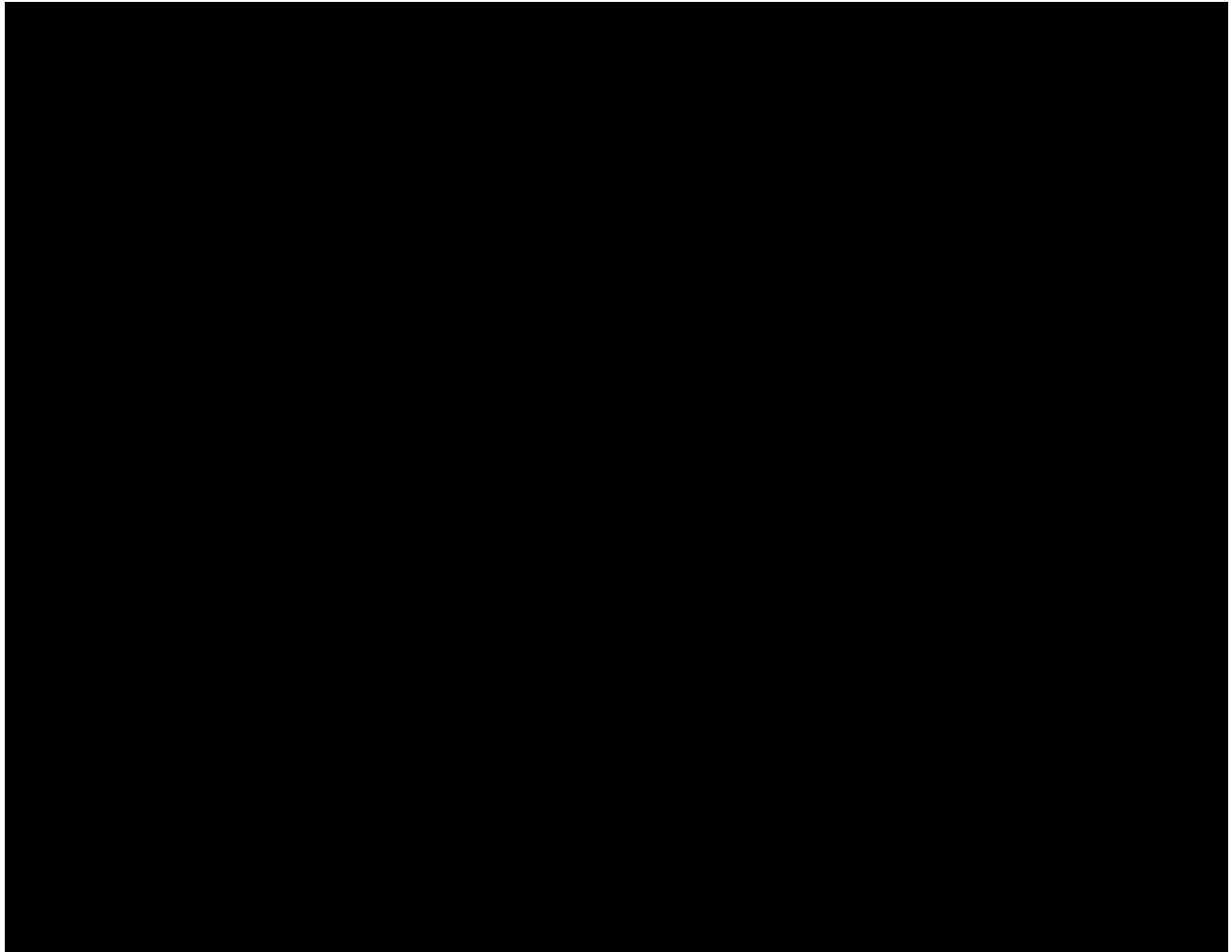
<b>Project Name</b>		<b>Line 1004 Section 1 and 3 Hydrotest</b>		
Project Type	Hydrotest			
PSEP Phase	1A			
Length	2.504 miles			
Location	Cities of Carpinteria and Ventura			
Class	1, 3			
MAOP	[REDACTED]			
Pipe Grade	[REDACTED]			
Wall Thickness	[REDACTED]			
Pipe Vintage	Multiple pipe vintages from [REDACTED]			
Construction Start	05/04/2020			
Construction Finish	07/09/2020			
Original Pipe Diameter	[REDACTED]			
Original Nominal Diameter	[REDACTED]			
New Diameter	N/A			
Original SMYS <sup>3</sup>	[REDACTED]			
New SMYS	N/A			
<b>Project Costs (\$)</b>	<b>Capital</b>	<b>O&amp;M</b>	<b>Total</b>	
Loaded Project Costs	526,586	4,712,415	5,239,001	
Disallowed Costs	-	358	358	

<sup>3</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

Final Report for Line 1004 Section 1 and 3 Hydrotest Project

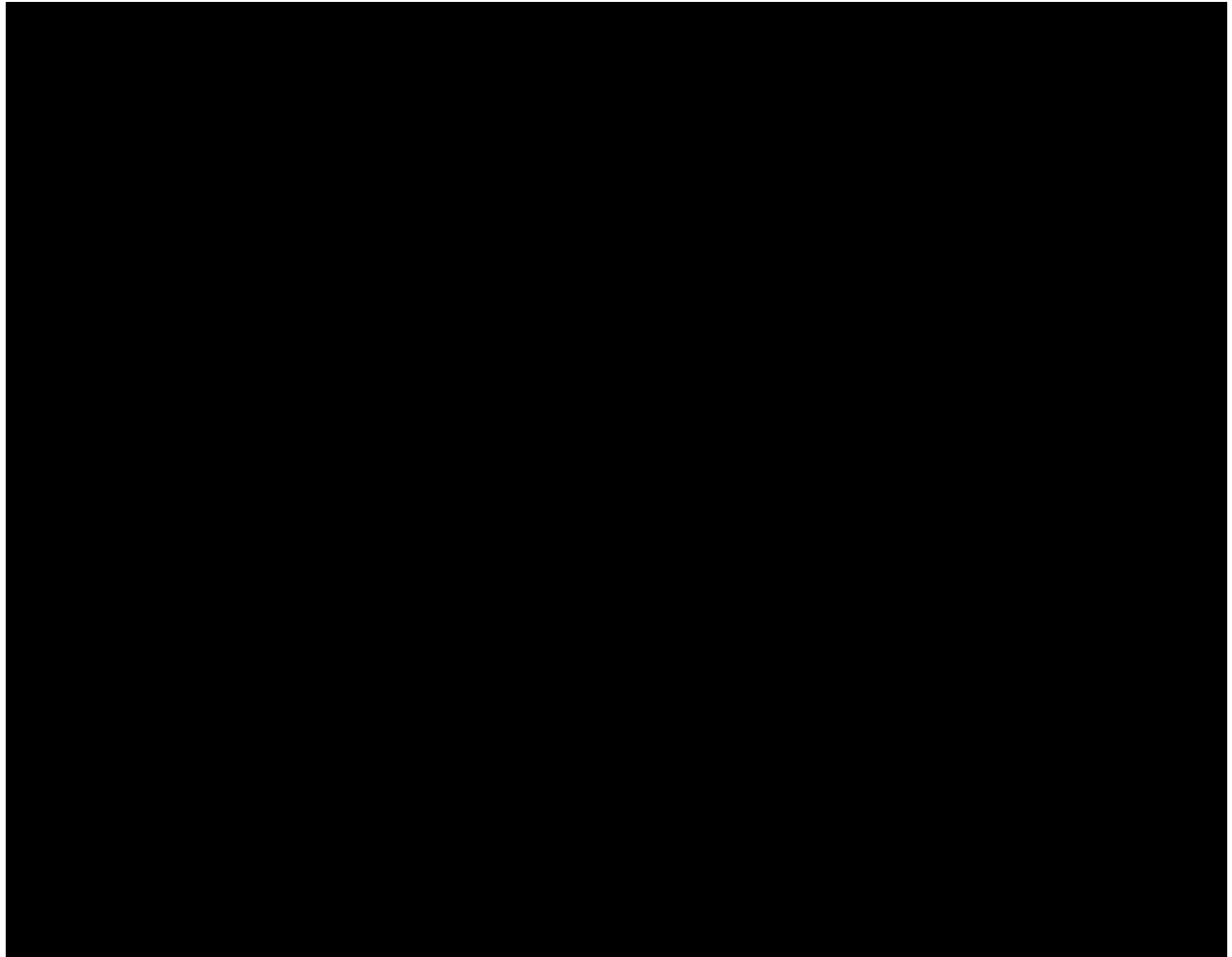
B. Maps and Images

Figure 1: Satellite Image of Line 1004 Section 1 and 3 Hydrotest Project



Final Report for Line 1004 Section 1 and 3 Hydrotest Project

Figure 2: Overview Map of Line 1004 Section 1 and 3 Hydrotest Project



Final Report for Line 1004 Section 1 and 3 Hydrotest Project

**II. ENGINEERING, DESIGN, AND PLANNING**

A. Project Scope

Table 2: Mileage Information

	Criteria	Accelerated <sup>4</sup>	Incidental	New	Total <sup>5</sup>
Final Mileage	0.092 mi. 486 ft.	2.409 mi. 12,720 ft.	0.002 mi. 11 ft.	0.001 mi. 5 ft.	2.504 mi. 13,222 ft.

SoCalGas and SDG&E presented a conceptual project scope in workpapers supporting the 2011 PSEP filing.<sup>6</sup> Prior to initiating execution of the Project in 2020, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SoCalGas identified Line 1004 as a Phase 1A Project comprised of 12.718 miles of Category 4 Criteria pipe and 6.983 miles of Accelerated pipe.
2. Scope Validation: Through scope validation activities, after the 2011 filing and before initiating execution of the Project, SoCalGas successfully reduced the scope of the Line 1004 Project by 12.628 miles of Category 4 Criteria pipe.
3. Engineering, Design, and Constructability:
  - a. The Project Team divided the project into three different sections due to seven catenary pipe spans running along Section 2, that were removed from this Project’s scope and planned for replacement in a separate Project.
  - b. The Project Team performed two non-contiguous hydrotests of Section 1 and Section 3.
  - c. The Project replaced one [REDACTED] tap valve and one [REDACTED] blowoff valve on the line.

<sup>4</sup> Accelerated mileage includes Phase 1B and Phase 2B pipe. The Accelerated mileage was included to realize efficiencies and to enhance project constructability.

<sup>5</sup> Values may not add to total due to rounding.

<sup>6</sup> See Amended PSEP of SoCalGas and SDG&E, submitted December 2, 2011, in R.11-02-019 and subsequently transferred to A.11-11-002.

## Final Report for Line 1004 Section 1 and 3 Hydrotest Project

- d. The Project Team removed a tap that connected to a previously abandoned pipeline and replaced it with straight pipe.
4. Final Project Scope: The final project scope consists of two separate hydrotests that total 2.504 miles, and the replacement of one valve. The Accelerated mileage consists of 0.338 miles of Phase 1B pipe, 0.074 miles of Phase 2A pipe, 1.998 miles of Phase 2B pipe, and 11 feet of Incidental pipe.

### B. Decision Tree Review

SoCalGas performed a review of the Line 1004 and confirmed the project design should commence as a Hydrotest Project.

For pipeline segments longer than 1,000 feet in length, under the approved PSEP Decision Tree, SoCalGas complete a preliminary review to determine whether SoCalGas can manage customer service impacts if the pipeline segment is taken out of service for a period of two to six weeks to complete pressure testing. Where mitigation of customer impacts to remove the line from service for pressure testing is feasible, SoCalGas compare the costs, constructability, risks, and benefits of pressure testing and replacement to determine whether pressure testing or replacement is the more prudent option.

As a result of this review, SoCalGas identified pressure testing as the more prudent option. Key considerations that support SoCalGas's determination to pressure test this segment include:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the adjacent Line 1005 must remain in service between Goleta and Ventura in order to shut-in Line 1004.
2. Customer Impacts: The Project Team identified multiple non-core customers that could be shut-in without CNG support, but would require coordination to minimize impacts.

## Final Report for Line 1004 Section 1 and 3 Hydrotest Project

3. Permit Conditions: The Project Team identified the need to obtain a long lead-time Coastal Development Permit.
4. Piggability: Piggable.
5. Pipe Vintage: Multiple pipe vintages from [REDACTED].
6. Existing Pipe Attributes: No identified issues.
7. Long Seam Type: [REDACTED].
8. Long Seam Repair History: No identified issues.
9. Condition of Coating: No identified issues.
10. History of Leaks: No identified issues.
11. Constructability: The Project Team determined that it was necessary to test the pipeline in two sections, Section 1 and 3. Section 2 contains several unsupported spans that prevent the line from being hydrotested and will be replaced in a separate project.

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. Shut-In Analysis: The Project Team completed an RER analysis and concluded that the adjacent Line 1005 must remain in service between Goleta and Ventura in order to shut-in Line 1004.
2. Customer Impact: The Project Team coordinated with one non-core customer to minimize outages and curtailment during the isolation.
3. Community Impact: No identified issues.

## Final Report for Line 1004 Section 1 and 3 Hydrotest Project

4. Schedule Coordination: The Project Team coordinated construction schedules with a nearby SoCalGas project to utilize existing traffic ingress and egress permits for the construction site.
5. Permit Conditions:
  - a. The Project Team obtained Traffic Control Permits (TCPs) from the County of Santa Barbara, County of Ventura, and Caltrans for work in public roads.
  - b. The Project Team obtained a Santa Barbara County Coastal Development Permit for work in close proximity to the coastline.
  - c. The Project Team obtained a Temporary Right of Entry (TRE) from multiple customers for work required during isolation.
6. Land Use: No identified issues.
7. Environmental:
  - a. The Project Team performed clearance of low hanging branches to allow site access for water tank trucks and hydro-vacuum trucks.
  - b. The Project Team removed the water used during the hydrotests to an off-site facility for treatment.
8. Valves: The Project Team replaced a [REDACTED] tap valve and a [REDACTED] blowoff valve.

### D. Scope Changes

SoCalGas did not make any notable scope changes during detailed design.

Final Report for Line 1004 Section 1 and 3 Hydrotest Project

### III. CONSTRUCTION

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#### A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. Following completion of the engineering, design, and planning activities described above, SoCalGas entered into a competitive bidding process to select a Construction Contractor, that included the updated design described in the discussion of notable Scope Changes above. SoCalGas awarded the construction contract to the bidder that best met the selection criteria for this project.

1. SoCalGas’s Preliminary Construction Cost Estimate: SoCalGas’s preliminary cost estimate for construction was \$2,183,062.
2. Construction Contractor’s Target Price Bid: The Construction Contractor’s cost estimate was [REDACTED], which was [REDACTED] than SoCalGas’s preliminary cost estimate for construction.

#### B. Construction Schedule

Table 3: Construction Timeline

Construction Start Date	05/04/2020
Construction Completion Date	07/09/2020
NOP Date	06/18/2020

## Final Report for Line 1004 Section 1 and 3 Hydrotest Project

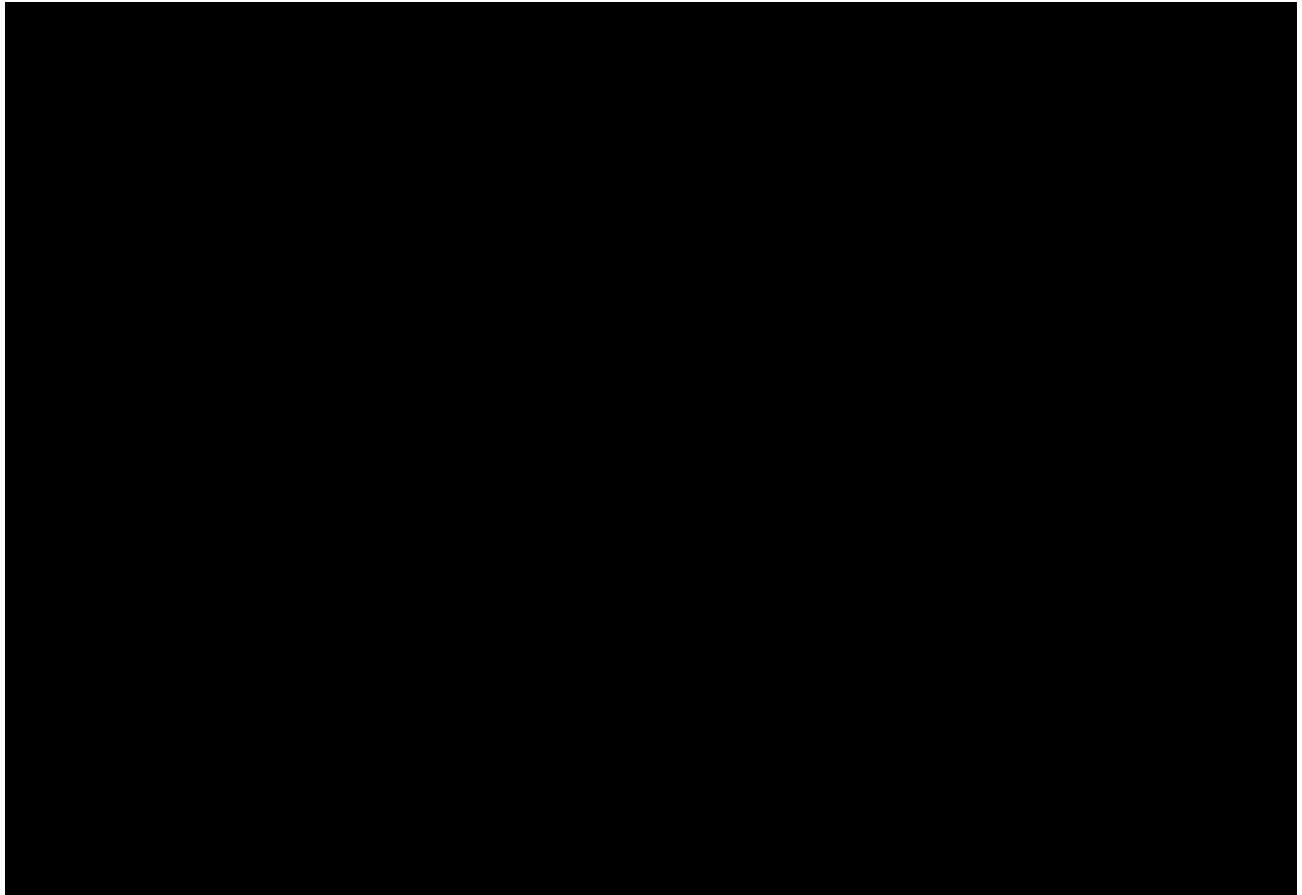
### C. Changes During Construction

The conditions summarized below were encountered during construction. Activities to address or mitigate these conditions resulted in approximately \$908,000 in change orders.

1. Constructability Issues: One of the excavation sites was located under a previously installed and backfilled culvert that was not reflected in the original design. As a result, the pipeline was found to be 10 to 15 feet deeper than anticipated during potholing. The depth of the pipeline required additional excavation and shoring during construction.
2. Site Restoration: The Project Team requested the Construction Contractor to perform regrading of roads on a landowner's property and perform asphalt work leading into the property. The heavier equipment required to reach the additional excavation depth caused damage to the private roadway, that required the Project Team to complete additional restoration work.
3. Other: The Construction Contractor was required to implement additional health and safety guidelines due to the COVID-19 pandemic, increasing costs to the Project.

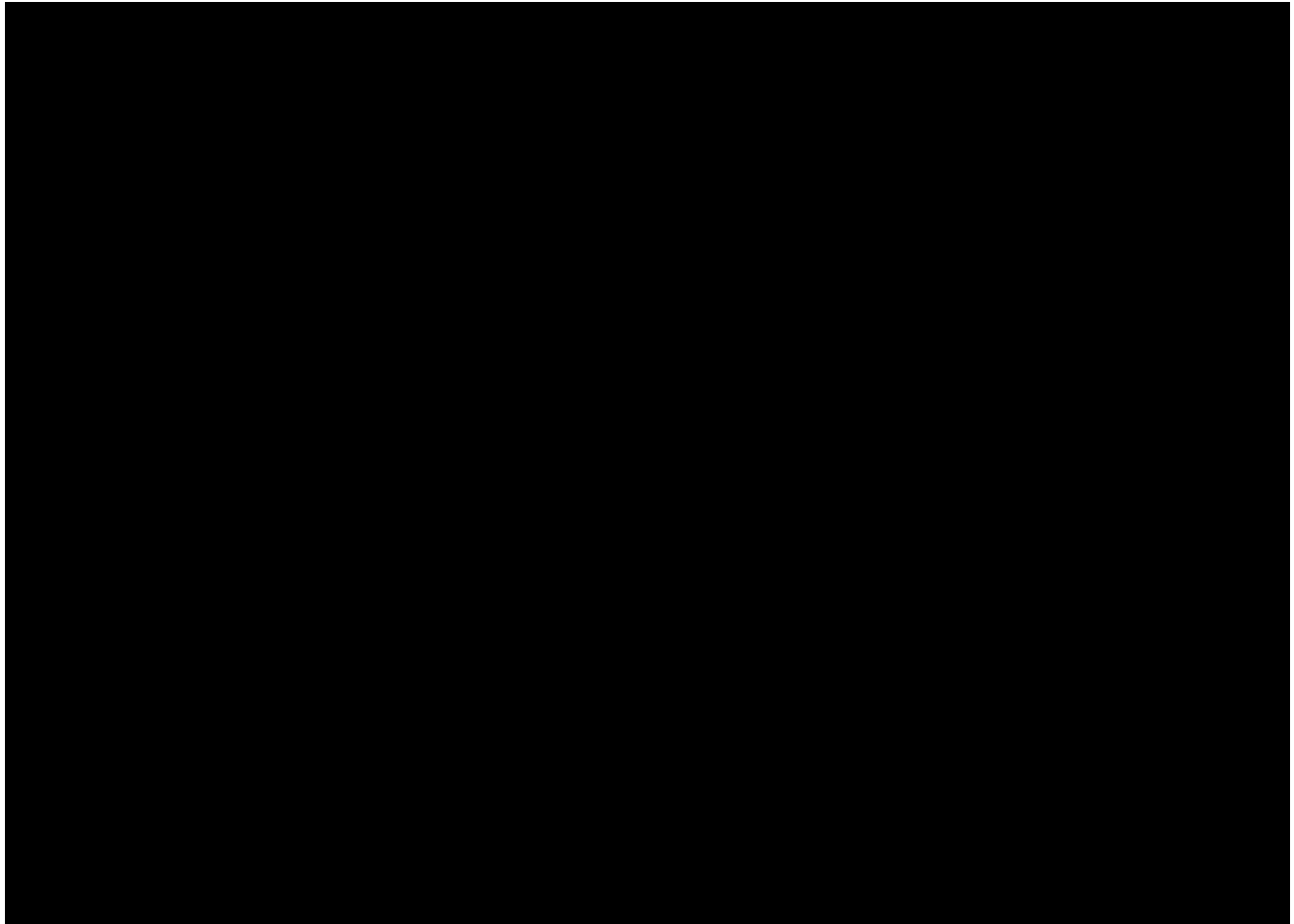
Final Report for Line 1004 Section 1 and 3 Hydrotest Project

Figure 3: Pipeline Excavated and Completed Abatement



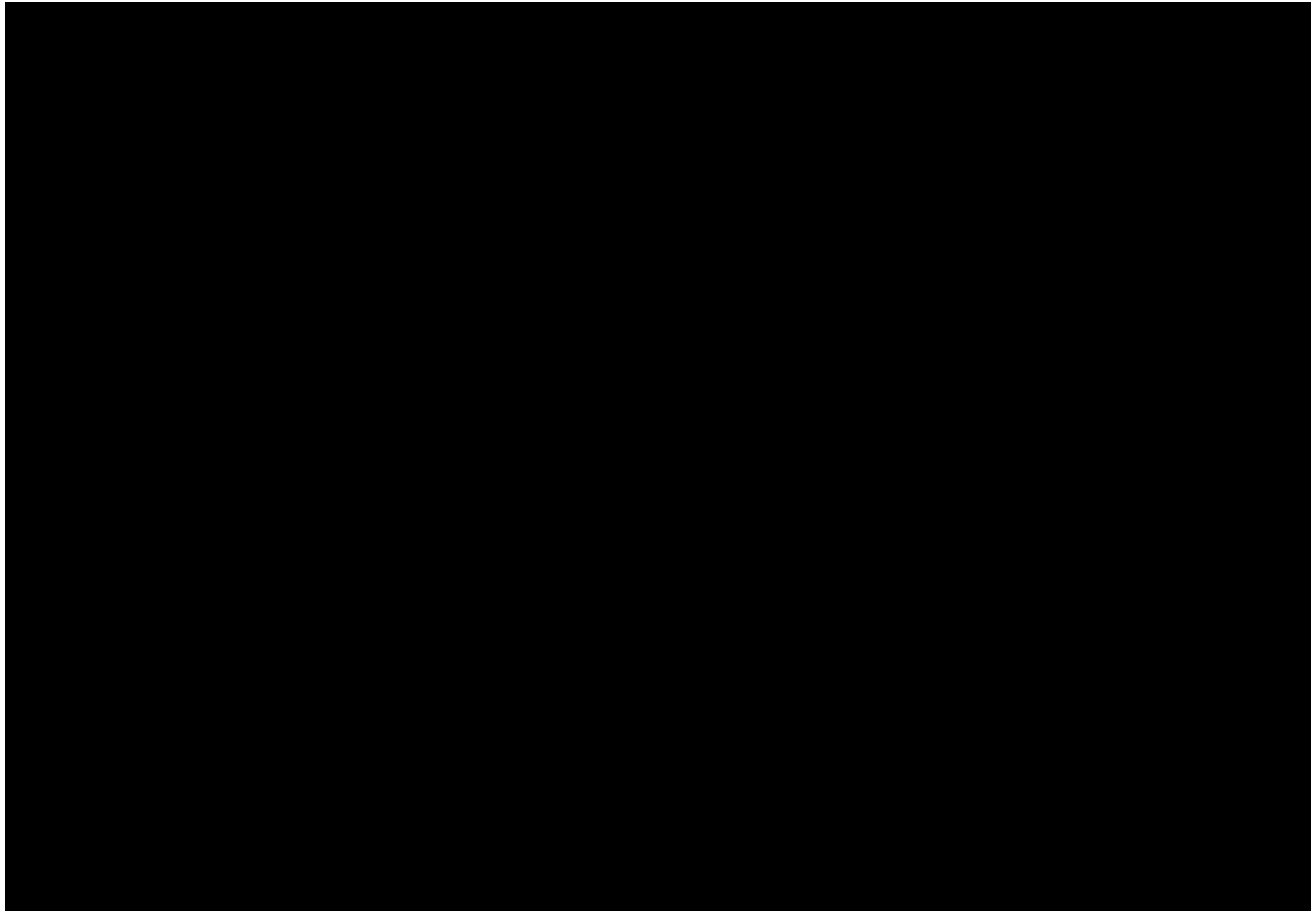
Final Report for Line 1004 Section 1 and 3 Hydrotest Project

Figure 4: Tie-in of Pipeline Using Crane for Materials



Final Report for Line 1004 Section 1 and 3 Hydrotest Project

Figure 5: Hydrotest Equipment Installation



## Final Report for Line 1004 Section 1 and 3 Hydrotest Project

### D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, transportation and disposal of hydrotested 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.

Final Report for Line 1004 Section 1 and 3 Hydrotest Project

## IV. PROJECT COSTS

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### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project. Specific examples of cost avoidance actions taken on this project are:

1. Permit Conditions: The Project Team extended an existing Caltrans permit from a previous SoCalGas project to save on the cost of obtaining a new permit and reduce any risk of delay.

### B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$6,760,216. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

### C. Actual Direct and Indirect Costs

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$5,239,001.

Final Report for Line 1004 Section 1 and 3 Hydrotest Project

Table 4: Estimated and Actual Direct Costs and Variances<sup>7</sup>

Direct Costs (\$)	Estimate	Actuals <sup>8</sup>	Delta Over/(Under)
Company Labor	664,323	307,438	(356,886)
Materials	92,368	40,831	(51,537)
Construction Contractor	2,183,062	2,620,960	437,898
Construction Management & Support	742,308	332,983	(409,326)
Environmental	429,226	426,385	(2,841)
Engineering & Design	1,216,274	590,208	(626,065)
Project Management & Services	742,522	258,263	(484,258)
ROW & Permits	116,613	242,677	126,064
GMA	573,520	1,961	(571,558)
<b>Total Direct Costs</b>	<b>6,760,216</b>	<b>4,821,706</b>	<b>(1,938,510)</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances<sup>9</sup>

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	960,695	391,180	(569,515)
AFUDC	88,323	24,916	(63,407)
Property Taxes	24,652	1,199	(23,453)
<b>Total Indirect Costs</b>	<b>1,073,670</b>	<b>417,295</b>	<b>(656,375)</b>
<b>Total Direct Costs</b>	<b>6,760,216</b>	<b>4,821,706</b>	<b>(1,938,510)</b>
<b>Total Loaded Costs</b>	<b>7,833,885</b>	<b>5,239,001</b>	<b>(2,594,885)</b>

The Actual Full-Time Equivalents<sup>10</sup> (FTEs) for this Project are 1.64.

<sup>7</sup> Values may not add to total due to rounding.

<sup>8</sup> Actual Material and Construction Contractor costs exclude the cost of upsizing the pipe.

<sup>9</sup> Values may not add to total due to rounding.

<sup>10</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

## Final Report for Line 1004 Section 1 and 3 Hydrotest Project

### D. Cost Impacts

Consistent with one of the overarching objectives of PSEP to maximize the cost effectiveness of safety enhancement investments, SoCalGas effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities can lead to variances between initial estimates and actual costs. Consistent with prudent management at the time, the Project Team successfully mitigated these variances whenever feasible through the implementation of effective project management practices, thorough planning, and continuous monitoring.

At the completion of Line 1004 Section 1 and 3 Hydrotest Project, Actual Direct Costs were less than the preliminary estimate by \$1,938,510. This variance can be attributed to a variety of factors including: the Project Team anticipated potential challenges such as construction delays and increased engineering costs due to the project being located in a difficult to access and environmentally sensitive environment, however, these impacts proved to be less significant than initially expected during execution; the primary Construction Contractor was utilized for performance of the hydrotest instead of hiring a separate hydrotest contractor as originally planned, allowing for increased efficiencies during construction; permit costs were lowered by utilizing an existing Caltrans permit from a previous SoCalGas project; material costs were lowered by fabricating pipe bands from existing on-site materials instead of purchasing new material.

## Final Report for Line 1004 Section 1 and 3 Hydrotest Project

### E. Disallowance

For this hydrotest project, SoCalGas identified a total of 1.1 feet of pipe as being installed post-1955 and lacking pressure test records that provide the minimum information to demonstrate compliance with industry standards or then-applicable strength testing and recordkeeping requirements. Of the 2.49 miles of pipeline that were pressure tested, 1.0 feet (0.01%) of test mileage pipe are disallowed. Therefore, \$358 of total project O&M costs are disallowed from recovery.

Final Report for Line 1004 Section 1 and 3 Hydrotest Project

## **V. CONCLUSION**

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Line 1004 Section 1 and 3 Hydrotest Project. Through this Hydrotest Project, SoCalGas successfully hydrotested 2.504 miles of pipeline in the Cities of Carpinteria and Ventura. The total loaded cost of the Project is \$5,239,001.

SoCalGas executed this project prudently through separating the Project into two hydrotests to avoid the existing unsupported spans such that all final pressure tests were completed successfully.

SoCalGas engaged in prudent cost avoidance efforts by coordinating with another SoCalGas Project to extend an existing permit.

## **End of Line 1004 Section 1 and 3 Hydrotest Project Final Report**

Final Report for Line 2001 West Santa Ana River Replacement Project

## I. LINE 2001 WEST SANTA ANA RIVER REPLACEMENT PROJECT

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### A. Background and Summary

Line 2001 West is a Department of Transportation (DOT) defined transmission<sup>1</sup> line with a predominantly [REDACTED] diameter that runs approximately 224 miles from Blythe to Los Angeles. The pipeline is primarily routed across a Class 1 location and traverses some Class 2 and 3 locations. This report describes the activities associated with Line 2001 West Santa Ana River Replacement Project, which consists of the replacement of 0.559 miles of pipeline, the replacement of an existing mainline valve (MLV), the relocation of a launcher and receiver station, and the demolition of the existing pipeline suspension bridge. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$40,359,875.

The Line 2001 West Santa Ana River Replacement Project is a component of Line 2001 West, which was identified through ongoing records research as a 0.41 mile replacement and a 51.29 mile hydrotest. For project manageability purposes, SoCalGas separated the Line 2001 West Phase 1A Project into five separate projects: Line 2001 West-A (Sections 15 and 16), Line 2001 West-B (Sections 10, 11, 14, 17, 18, and 19), Line 2001 West-C (Desert), Line 2001 West-D (Whitewater), and Line 2001 West Santa Ana River Replacement Project. This report summarizes the activities and costs related to Line 2001 West Santa Ana River Replacement Project.

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<sup>1</sup> As defined in 49 C.F.R. § 192.3 (2024).

Final Report for Line 2001 West Santa Ana River Replacement Project

Table 1: General Project Information

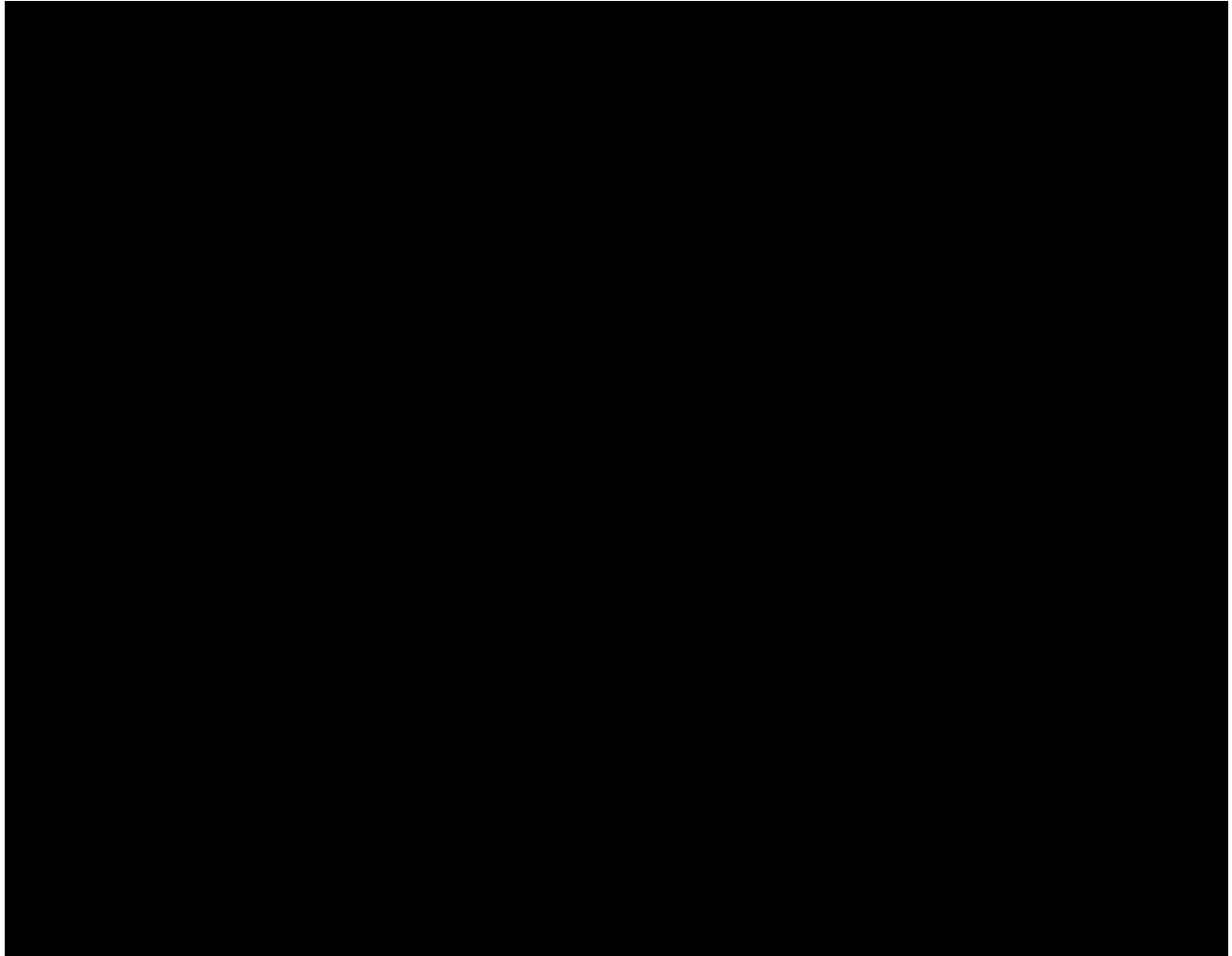
Project Name		Line 2001 West Santa Ana River Replacement		
Project Type	Replacement			
PSEP Phase	1A			
Length	0.559 miles			
Location	Jurupa Valley and Riverside			
Class	1, 3			
MAOP	[REDACTED]			
Pipe Grade	[REDACTED]			
Wall Thickness	[REDACTED]			
Pipe Vintage	Multiple vintages from [REDACTED]			
Construction Start	09/15/2021			
Construction Finish	05/02/2022			
Original Pipe Diameter	[REDACTED]			
Original Nominal Diameter	[REDACTED]			
New Diameter	[REDACTED]			
Original SMYS <sup>2</sup>	[REDACTED]			
New SMYS	[REDACTED]			
Project Costs (\$)	Capital	O&M	Total	
Loaded Project Costs	40,359,875	-	40,359,875	
Disallowed Costs	3,570	-	3,570	

<sup>2</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

Final Report for Line 2001 West Santa Ana River Replacement Project

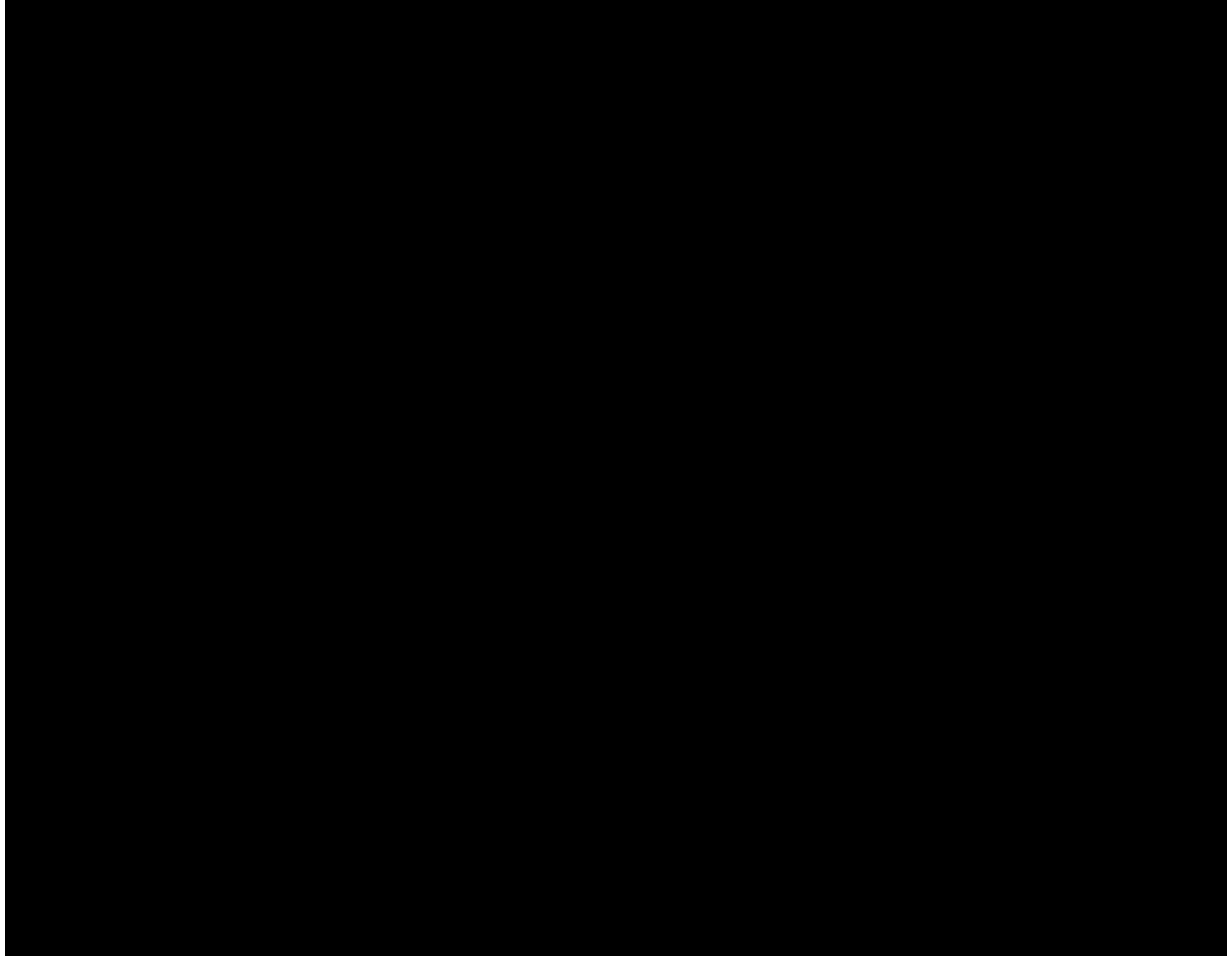
Maps and Images

Figure 1: Satellite Image of Line 2001 West Santa Ana River Replacement Project



Final Report for Line 2001 West Santa Ana River Replacement Project

Figure 2: Overview Map of Line 2001 West Santa Ana River Replacement Project



Final Report for Line 2001 West Santa Ana River Replacement Project

## II. ENGINEERING, DESIGN, AND PLANNING

### A. Project Scope

Table 2: Mileage Information

	Criteria	Accelerated <sup>3</sup>	Incidental	New	Total <sup>4</sup>
Final Mileage	0.154 mi. 814 ft.	0.307 mi. 1,623 ft.	0.068 mi. 358 ft.	0.030 mi. 156 ft.	0.559 mi. 2,951 ft.

SoCalGas and SDG&E presented a conceptual project scope in workpapers supporting the 2011 PSEP filing.<sup>5</sup> Prior to initiating execution of the Project in 2021, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SoCalGas and SDG&E identified Line 2001 West as a Phase 1A Hydrotest Project comprised of 15.809 miles of Category 4 Criteria pipe and 48.291 miles of Accelerated pipe.
2. Scope Validation: Through scope validation activities, after the 2011 filing and before initiating execution of the Project, SoCalGas and SDG&E successfully reduced the scope of the Project by 11.172 miles of Category 4 Criteria pipe for all Project sections.
3. Engineering, Design, and Constructability:
  - a. The Project classification changed from Phase 2A to Phase 1A based on a High Consequence Area (HCA) map adjustment.

<sup>3</sup> Accelerated mileage includes Phase 1B and Phase 2 pipe. The Accelerated mileage was included to realize efficiencies and to enhance project constructability.

<sup>4</sup> Values may not add to total due to rounding.

<sup>5</sup> See Amended PSEP of SoCalGas and SDG&E, submitted December 2, 2011, in R.11-02-019 and subsequently transferred to A.11-11-002.

## Final Report for Line 2001 West Santa Ana River Replacement Project

- b. For constructability and project management purposes, SoCalGas separated the Line 2001 West Phase 1A Project into five separate projects. This report describes the activities and costs related to Line 2001 West Santa Ana River Replacement Project.
  - c. The existing pipeline had a change in diameter on the suspension bridge. SoCalGas replaced the pipe on the bridge through Horizontal Directional Drilling (HDD) under the Santa Ana River. The existing bridge span was demolished.
  - d. The Project Team planned to relocate and existing launcher and receiver station.
4. Final Project Scope: The final project scope consists of a 0.559 mile Replacement and a MLV installation. The Accelerated mileage consists of 11 feet of Phase 2A pipe and 0.306 miles of Phase 2B pipe. The Incidental mileage consists of 358 feet.

### B. Decision Tree Review

SoCalGas performed a review of the Line 2001 West Santa Ana River and confirmed the project design should commence as a Replacement Project.

For pipeline segments longer than 1,000 feet in length, under the approved PSEP Decision Tree, SoCalGas completes a preliminary review to determine whether SoCalGas can manage customer service impacts if the pipeline segment is taken out of service for a period of two to six weeks to complete pressure testing. Where mitigation of customer impacts to remove the line from service for pressure testing is feasible, SoCalGas compare the costs, constructability, risks, and benefits of pressure testing and replacement to determine whether pressure testing or replacement is the more prudent option.

As a result of this review, SoCalGas identified replacement as the more prudent option. Key considerations that support SoCalGas's determination to replace this segment include:

## Final Report for Line 2001 West Santa Ana River Replacement Project

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could not be shut-in.
2. Customer Impacts: The Project Team identified one core customer that would be impacted by this project.
3. Community Impacts: The Project Team requested an additional easement Right-of-Way (ROW) from a private landowner.
4. Permit Conditions: The Project Team identified multiple jurisdictional agencies that would require permits.
5. Piggability: Non-piggable.
6. Pipe Vintage: Multiple vintages from [REDACTED]
7. Existing Pipe Attributes: The pipeline had a change in diameter from [REDACTED] pipe to [REDACTED] pipe that made this segment non-piggable.
8. Long Seam Type:  
[REDACTED]  
[REDACTED]
9. Long Seam Repair History: Unknown.
10. Condition of Coating: Unknown.
11. History of Leaks: No leak history.
12. Constructability: The Project was planned to be completed through a combination of Horizontal Directional Drilling (HDD) and open trenching.

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the

## Final Report for Line 2001 West Santa Ana River Replacement Project

engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. System Analysis: The Project Team completed reviews of the gas pipeline system to evaluate project feasibility and concluded the line could not be shut-in and that customer service would need to be maintained through alternative means.
2. Customer Impact: Per the gas transmission and distribution system analysis, the project required two temporary bypasses with Pressure Control Fittings (PCFs) to maintain feed for downstream customers.
3. Community Impact: Significant effort was devoted to the strategic and sensitive relocation of approximately 200 unhoused individuals across 65 encampments, in full compliance with city, county, state, and federal homeless eviction laws. Coordination was required with representatives from four jurisdictions, including law enforcement, homeless service agencies, charitable organizations, animal control, Riverside County supervisors, and city managers. For the safety of all parties involved, the unhoused population was relocated from the hazardous construction zone prior to the start of construction, allowing the project to proceed safely and successfully under highly constrained conditions. The Project Team also closed a bike path underneath the bridge span during construction. A detour route was coordinated with Riverside County Parks.
4. Diameter Changes: The Project Team replaced the existing [REDACTED] line with a [REDACTED] line to standardize the pipeline diameter for future pigging purposes.
5. Known Substructures: No identified issues.
6. Permit Conditions: The Project Team identified multiple jurisdictional agencies and permit requirements that included:
  - a. City of Jurupa Valley Encroachment Permit
  - b. City of Riverside Public Works Permit
  - c. City of Riverside Traffic Control Plan (TCP)
  - d. City of Riverside Grading Permit

Final Report for Line 2001 West Santa Ana River Replacement Project

- e. Army Corps of Engineers Clean Water Act Water Discharge, Natural Gas Pipeline Activity Permit
  - f. California Department of Fish and Wildlife Lake and Streambed Alteration
  - g. Los Angeles Regional Water Quality Control Board Storm Water Pollution Prevention Plan, Water Quality Certification
7. Land Use: The Project Team obtained a laydown yard from a private landowner.
8. Environmental:
- a. A full-time Environmental Monitor remained onsite to inspect for wildlife and bird nesting before and during construction. The Project Team coordinated construction activities outside of the bird nesting season to mitigate direct impacts on special-status birds in the area.
  - b. An Archaeological Monitor was onsite for initial ground disturbance activities.
  - c. Environmental permitting for this Project included:
    - i. Regional Water Quality Control Board Permit
    - ii. USACE Nationwide 12 Clean Water Act Section 404 Permit
    - iii. CA Department of Fish and Wildlife Permit
    - iv. CEQA Exemption Permit
  - d. Construction Plans prepared for this project, per permit conditions, included:
    - i. Nesting Bird Management Plan
    - ii. Habitat Mitigation and Monitoring Plan
    - iii. Inadvertent Mud Release Plan
    - iv. Vehicle Equipment Treatment Plan
    - v. Spill Prevention Control and Countermeasure Plan/Emergency Spill Response Plan
9. Reroute: The launcher and receiver locations were relocated within the MLV station due to property development in the area.
10. Valves: The Project Team replaced one [REDACTED] plug valve with a [REDACTED] ball valve to enhance the pigability of the pipeline.
11. Constructability: The project involved significant constructability complexity due to integrated pipeline replacement, structural demolition, specialty construction, and

## Final Report for Line 2001 West Santa Ana River Replacement Project

extensive environmental and outreach constraints. Scope included the replacement of 0.153 miles of [REDACTED] pipeline on a suspension bridge over the Santa Ana River, demolition of the existing steel bridge and a 100-ft span, and installation of a 1,900-ft HDD for a new [REDACTED] pipeline drilled through dense granite beneath the river. Additional work included reconfiguring the existing mainline valve station, which was expanded and regraded to accommodate the relocated pig launcher and receiver, enabling continuous in-line inspection of the pipeline, as well as the replacement of a cathodic protection rectifier with deep-well anodes, and the installation of Guardian fencing. Gas service was maintained through two [REDACTED] double stopple bypasses. The project was executed within a compressed schedule due to endangered burrowing owl nesting restrictions and challenging conditions, including rough terrain, large homeless encampments, a brushfire, rainstorms, and mudslides.

### D. Scope Changes

SoCalGas did not make any notable scope changes during detailed design.

Final Report for Line 2001 West Santa Ana River Replacement Project

### III. CONSTRUCTION

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#### A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. Following completion of the engineering, design, and planning activities described above, the Project Team directed the Performance Partner to prepare cost estimates based on a more detailed engineering design package. As indicated above, there were no notable changes in scope between the time when the Project Team prepared the preliminary cost estimate and when the Performance Partner prepared and submitted its Target Price Estimate. SoCalGas awarded the construction contract to the Performance Partner.

1. SoCalGas’s Preliminary Construction Cost Estimate: SoCalGas’s preliminary cost estimate for construction was \$14,334,684.
2. Construction Contractor’s Target Price Estimate: The Construction Contractor’s cost estimate was [REDACTED], which was [REDACTED] than SoCalGas’s preliminary cost estimate for construction.

#### B. Construction Schedule

Table 3: Construction Timeline

Construction Start Date	09/15/2021
Construction Completion Date	05/02/2022
NOP Date	01/22/2022

## Final Report for Line 2001 West Santa Ana River Replacement Project

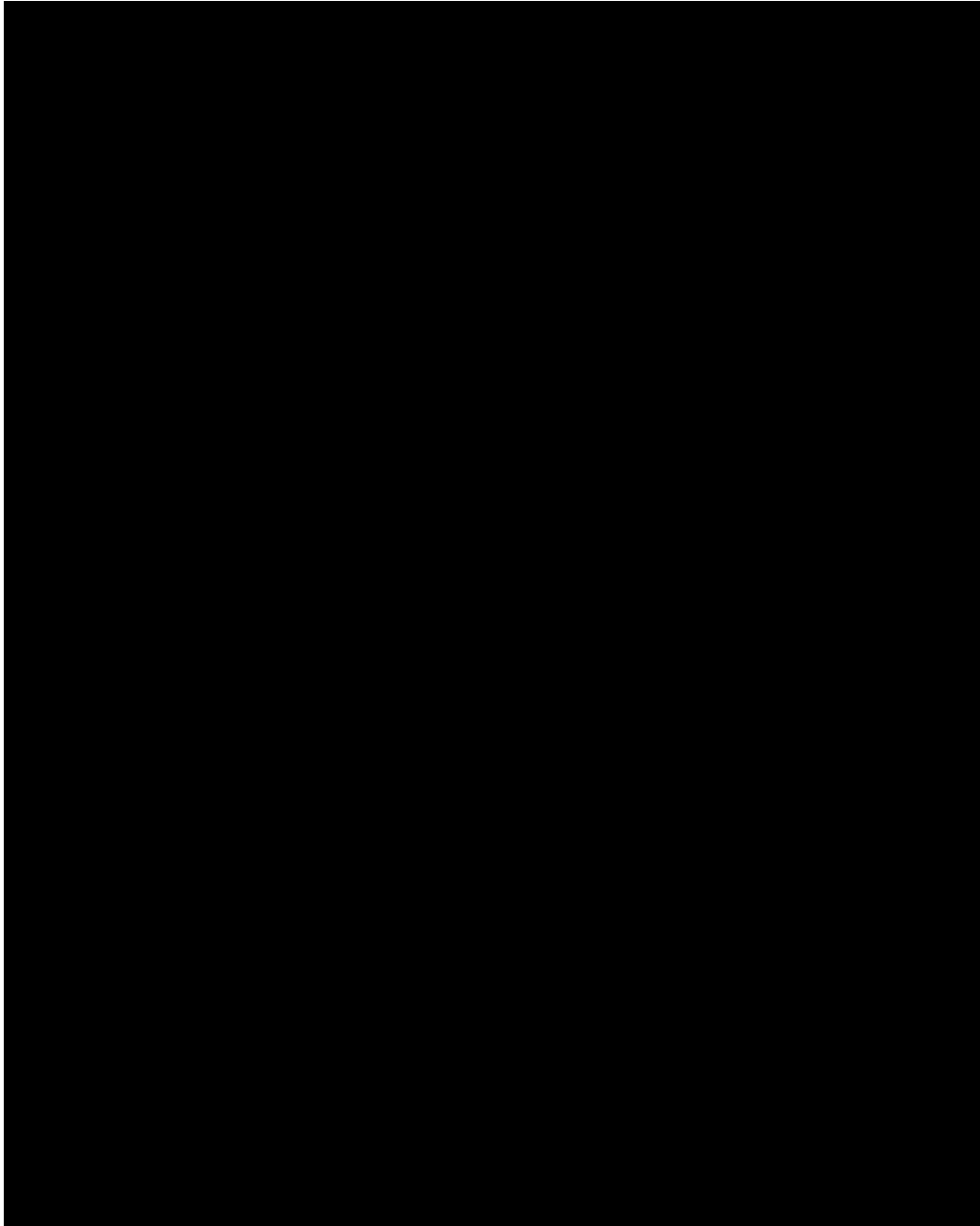
### C. Changes During Construction

The conditions summarized below were encountered during construction. Activities to address or mitigate these conditions resulted in approximately \$5,800,000 in change orders.

1. Site Conditions: Due to unanticipated granite conditions, there was inadvertent mud release during the HDD. The environmental risks associated with working near the river made it difficult to complete potholing prior to construction and obtain boring samples.
2. Field Design Changes:
  - a. The Project Team applied protective coating prior to pulling back the HDD pipe to prevent damage by any fragmented drill bit and reamer parts remaining in the borehole.
3. Schedule Delay:
  - a. Due to delays caused by unanticipated granite conditions encountered during the HDD, the project schedule was extended by two months.
4. Site Restoration: The car lot used as a laydown yard required additional seal coating on disturbed areas.

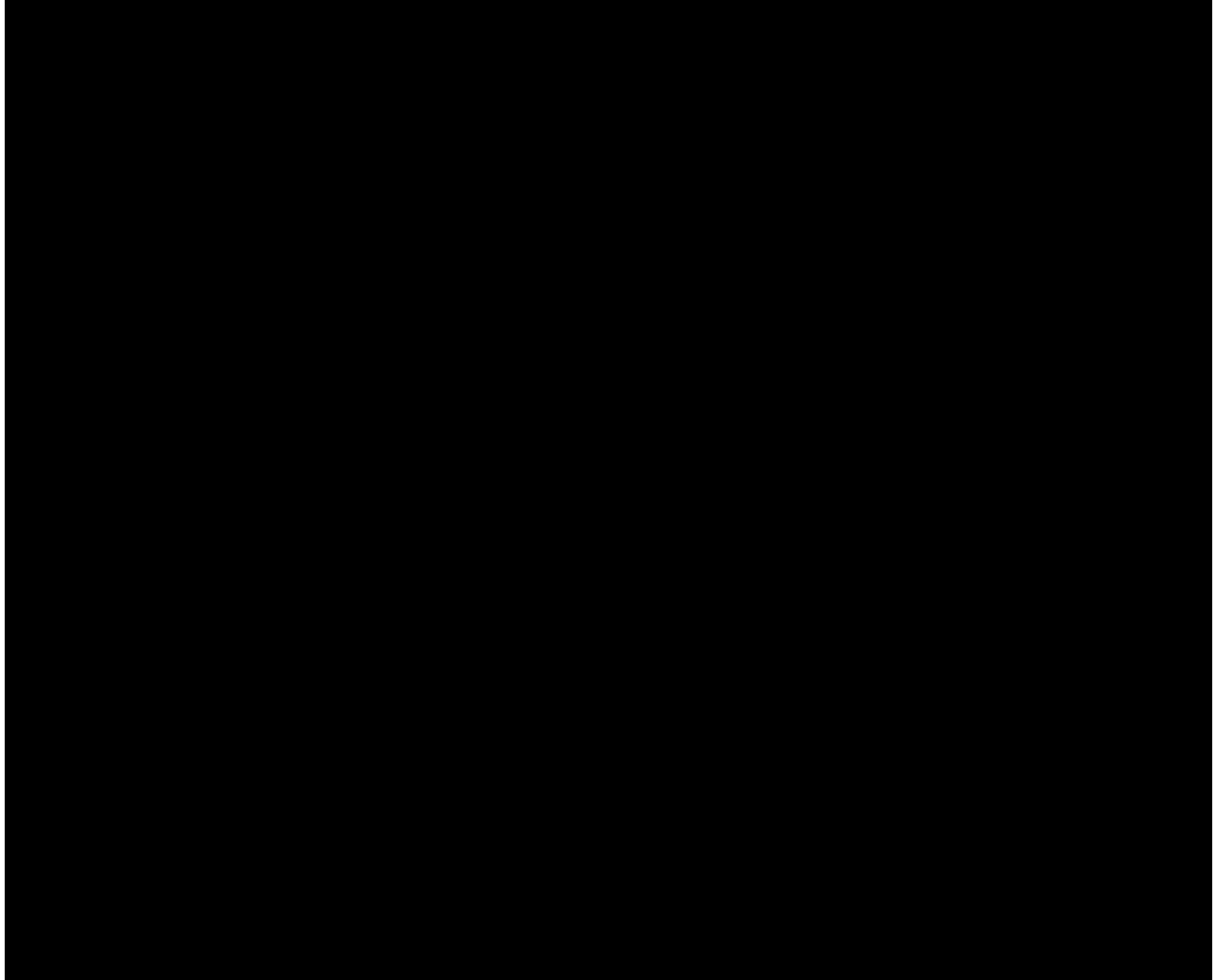
Final Report for Line 2001 West Santa Ana River Replacement Project

Figure 3: Existing Bridge Span



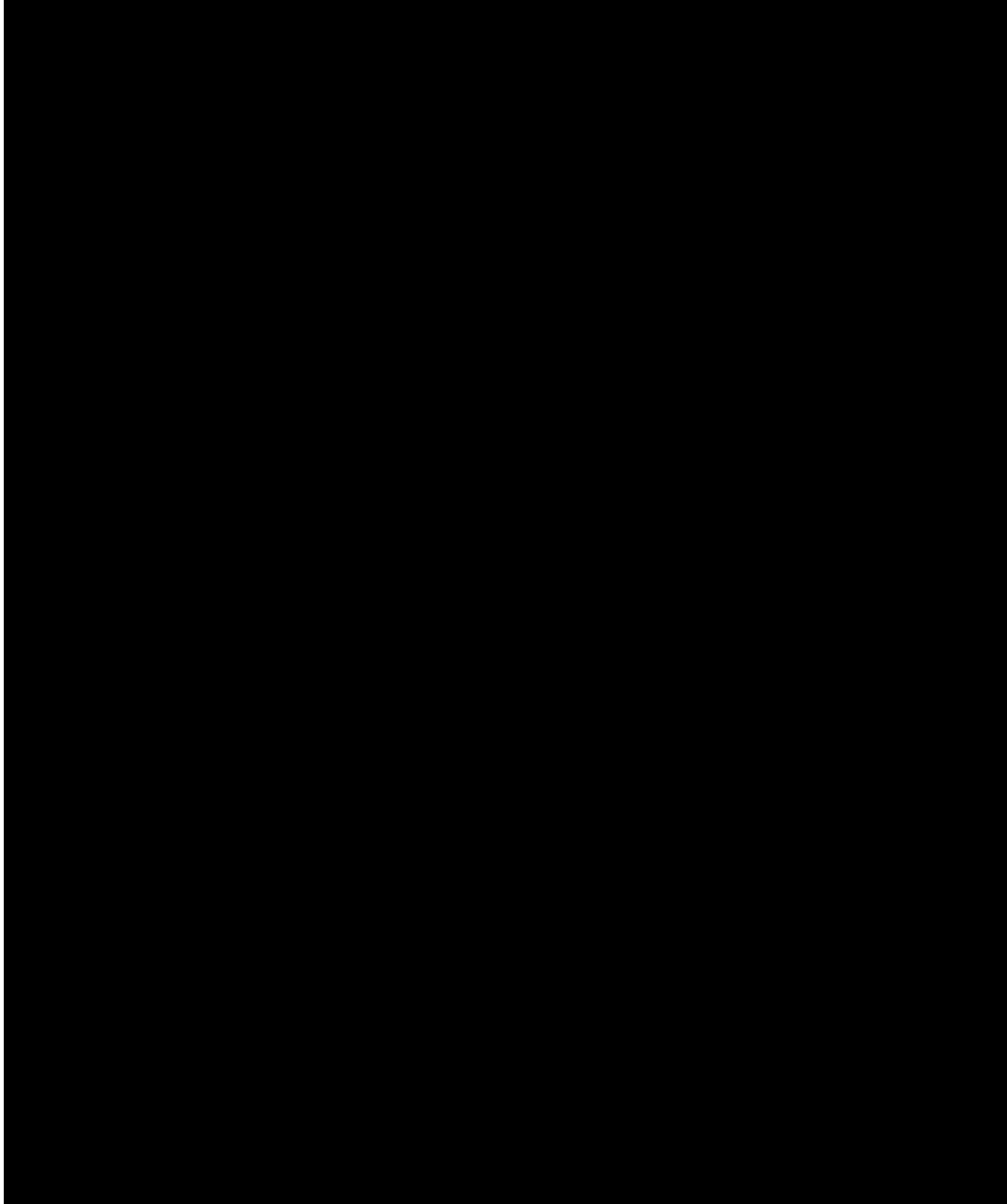
Final Report for Line 2001 West Santa Ana River Replacement Project

Figure 4: Bridge Span Demolition



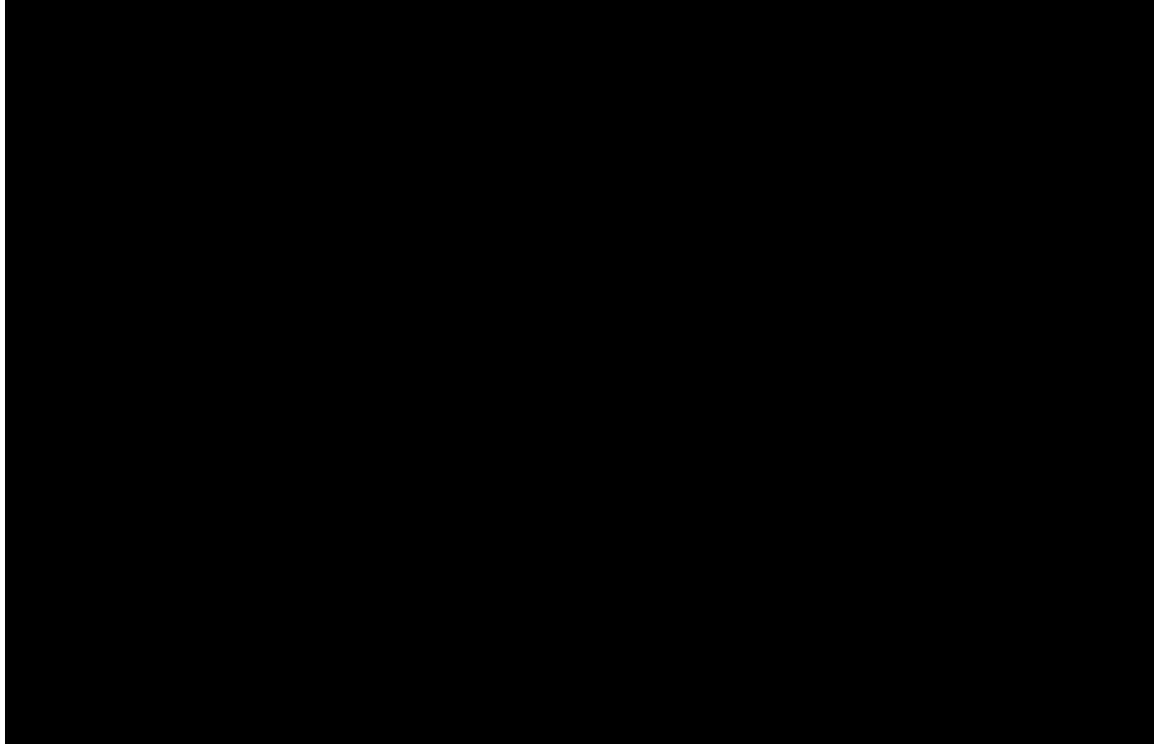
Final Report for Line 2001 West Santa Ana River Replacement Project

Figure 5: HDD Support during pullback



Final Report for Line 2001 West Santa Ana River Replacement Project

Figure 6: Completed MLV Station



## Final Report for Line 2001 West Santa Ana River Replacement Project

### D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, transportation and disposal of hydrotreated 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.

Final Report for Line 2001 West Santa Ana River Replacement Project

## IV. PROJECT COSTS

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### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. The delays incurred by the horizontal directional drill activities extended the construction schedule into bird nesting season, creating the potential need to demobilize and later remobilize to complete the remaining demolition and restoration work after the season concluded. A second mobilization would have resulted in significant additional costs and increased impacts to the surrounding community and local businesses. To avoid these outcomes, the Project Team worked extensively with the environmental stakeholders and agencies to secure an extension to the environmental permit, allowing continued work under modified construction activities and enhanced environmental mitigation measures to minimize impacts to nesting birds.

### B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$25,352,351. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

Final Report for Line 2001 West Santa Ana River Replacement Project

**C. Actual Direct and Indirect Costs**

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$40,359,875.

Table 4: Estimated and Actual Direct Costs and Variances<sup>6</sup>

Direct Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Company Labor	994,494	1,428,815	434,321
Materials	2,845,923	2,470,786	(375,137)
Construction Contractor	14,334,685	21,124,152	6,789,467
Construction Management & Support	801,533	3,435,425	2,633,892
Environmental	1,448,258	1,482,043	33,785
Engineering & Design	1,413,574	2,113,805	700,231
Project Management & Services	930,298	619,150	(311,148)
ROW & Permits	2,583,586	1,996,241	(587,345)
GMA	-	128,892	128,892
<b>Total Direct Costs</b>	<b>25,352,351</b>	<b>34,799,309</b>	<b>9,446,958</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances<sup>7</sup>

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	2,857,529	4,732,133	1,874,604
AFUDC	4,068,943	678,851	(3,390,091)
Property Taxes	599,720	149,581	(450,139)
<b>Total Indirect Costs</b>	<b>7,526,192</b>	<b>5,560,565</b>	<b>(1,965,626)</b>
<b>Total Direct Costs</b>	<b>25,352,351</b>	<b>34,799,309</b>	<b>9,446,958</b>
<b>Total Loaded Costs</b>	<b>32,878,543</b>	<b>40,359,875</b>	<b>7,481,332</b>

The Actual Full-Time Equivalents<sup>8</sup> (FTEs) for this Project are 2.33.

<sup>6</sup> Values may not add to total due to rounding.

<sup>7</sup> Ibid.

<sup>8</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period.

## Final Report for Line 2001 West Santa Ana River Replacement Project

### C. Cost Impacts

Consistent with one of the overarching objectives of PSEP as stated in testimony to maximize the cost effectiveness of safety enhancement investments, SoCalGas effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities may lead to variances between the initial estimate and actuals.

At the completion of the Line 2001 West Santa Ana River Replacement Project, Actual Direct Costs were more than the preliminary estimate by \$9,446,958. This variance can be attributed to several factors including:

1. Construction Contractor:

- a. During the HDD across the Santa Ana River, the Construction Contractor encountered granite resulting in an inadvertent release of drilling mud. This led to an overall cost increase of approximately \$2,700,000.
  - i. During the Pilot Run, the Project Team first ran into harder soil conditions which added five days of operating costs of approximately \$358,000.
  - ii. All drilling and work stopped for four days as required agencies responded to the notifications of the inadvertent mud release, adding approximately \$84,000.
  - iii. The Project Team had to deviate from the original drilling method and continued drilling with [REDACTED] reams. This process incurred additional work delays due to soil conditions and mechanical breakdowns, increasing costs by approximately \$1,008,000.

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For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

## Final Report for Line 2001 West Santa Ana River Replacement Project

- iv. Encountering granite during drilling operations required frequent replacement of drilling tools, which extended construction activities and increased construction equipment costs by approximately \$948,000.
    - v. The Project Team worked with the Construction Contractor to schedule work beyond the 12-hour shifts originally planned to meet project schedule constraints. This acceleration resulted in additional costs of approximately \$314,000.
  - b. Prior to pulling back the HDD pipe, the Project Team applied protective coating to prevent damage by any fragmented drill bit and reamer parts remaining in the borehole. This resulted in an increase cost of approximately \$882,000.
  - c. Due to the tight schedule required to demolish the extension bridge before bird nesting season, the Project Team mobilized during extended work hours with construction equipment increasing costs by approximately \$597,000.
  - d. The car lot that was utilized as a laydown yard required additional seal coating on disturbed areas resulting in an increase cost of approximately \$47,000.
  - e. Project delays caused by the granite encountered during the HDD extended the project schedule by approximately two months. This extension led to increased costs for Project Team oversight, construction facility operations, and on-site security of approximately \$478,000.
- 2. Construction Management & Support:
  - a. The construction schedule was adjusted to meet the tie-in deadline after delays due to the HDD. This expedited schedule included double, night, and weekend shifts, increasing Construction Management and Support Costs. The project also required the strategic and sensitive relocation of approximately 200 unhoused individuals from 65 encampments, in compliance with all city, county, state, and federal regulations. Coordination with law enforcement, homeless agencies, charities, animal control, Riverside County supervisors, and city managers across four jurisdictions was essential.

## Final Report for Line 2001 West Santa Ana River Replacement Project

### 3. Engineering & Design:

- a. The engineering and design work required to support the HDD installation and associated valve facility was more extensive than originally anticipated. The geotechnical conditions encountered were more complex than assumed during initial planning, which necessitated additional technical documentation, specialized analyses, and a higher level of coordination that were not included in the initial scope of work. These efforts included expanded technical reviews, supplementary engineering calculations and exhibits, additional construction planning documents, and increased coordination with multiple external agencies. To address these expanded requirements, the project required approximately nine additional months of engineering support.
- b. The project also required additional construction and closeout support due to design complexities, including engineering assistance during construction activities, preparation of comprehensive completion drawing packages, and coordination of closeout documentation and deliverables. These activities were outside the original project scope. Collectively, the additional engineering and design requirements resulted in an approximate total cost impact of \$334,000.

### 4. Company Labor:

- a. Due to delays associated with the HDD, the construction schedule was extended and modified to meet required tie-in deadlines. The revised, expedited schedule necessitated double shifts, nighttime operations, and weekend work, increasing company labor costs.
- b. The Project Team had more extensive permitting requirements than anticipated leading to an extended planning phase.

## D. Disallowance

For this replacement project, SoCalGas identified 15.01 feet of pipe as being installed after 1955 and lacking records that provide the minimum information necessary to demonstrate compliance with then-applicable industry standards or regulatory strength

## Final Report for Line 2001 West Santa Ana River Replacement Project

testing and recordkeeping requirements. Of the pipeline that was replaced, 15.01 feet of Phase 1A pipe is disallowed. Therefore, a \$3,570 reduction to ratebase was calculated by multiplying 0.0028 miles of pipe by \$1.28 million, which was SoCalGas and SDG&E's system average cost of pressure testing at the time the pipeline was returned to service.

Final Report for Line 2001 West Santa Ana River Replacement Project

## **V. CONCLUSION**

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Line 2001 West Santa Ana River Replacement Project. Through this Replacement Project, SoCalGas successfully replaced 0.559 miles of pipeline, installed one automated MLV, relocated a launcher and receiver, and demolished a bridge in the city of Jurupa Valley.

SoCalGas executed this project prudently by removing an exposed pipeline span and installing the pipeline underground using HDD.

## **End of Line 2001 West Santa Ana River Replacement Project Final Report**

## Final Report for Storage Line 128 Project

### I. STORAGE LINE 128 PROJECT

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#### A. Background and Summary

Storage Line 128 is a Department of Transportation (DOT) defined transmission<sup>1</sup> [REDACTED] diameter pipeline that runs approximately one mile through the Goleta Storage Field. The pipeline is routed through an HCA in [REDACTED] and Class 2 locations. This report outlines the project activities for the Storage Line 128 Project, which include hydrotesting 0.273 miles of pipeline, replacing 0.193 miles of pipeline, and replacing an existing vault, spool, and valve, along with installing new pipe supports in an environmentally sensitive area. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$19,756,570.

For project manageability purposes, SoCalGas Project Team arranged the work to be performed on Line 128 as three separate phases: Phase 1 – Hydrotest and Replacement of pipeline and vault; Phase 2 – Replacement of valve and spool piece; Phase 3 – Installation of pipe supports. The Project Team coordinated construction activities to take place during an overlapping window of time that aligned with bird nesting season to mitigate impacts to the environmentally sensitive area surrounding the Goleta Storage Field, and planned maintenance shut-ins, minimizing impacts on system reliability and storage facility operations. The project schedule was impacted by these constraints and was also extended due to material procurement delays and environmental challenges encountered during construction.

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<sup>1</sup> As defined in 49 C.F.R. § 192.3 (2024).

Final Report for Storage Line 128 Project

Table 1: General Project Information

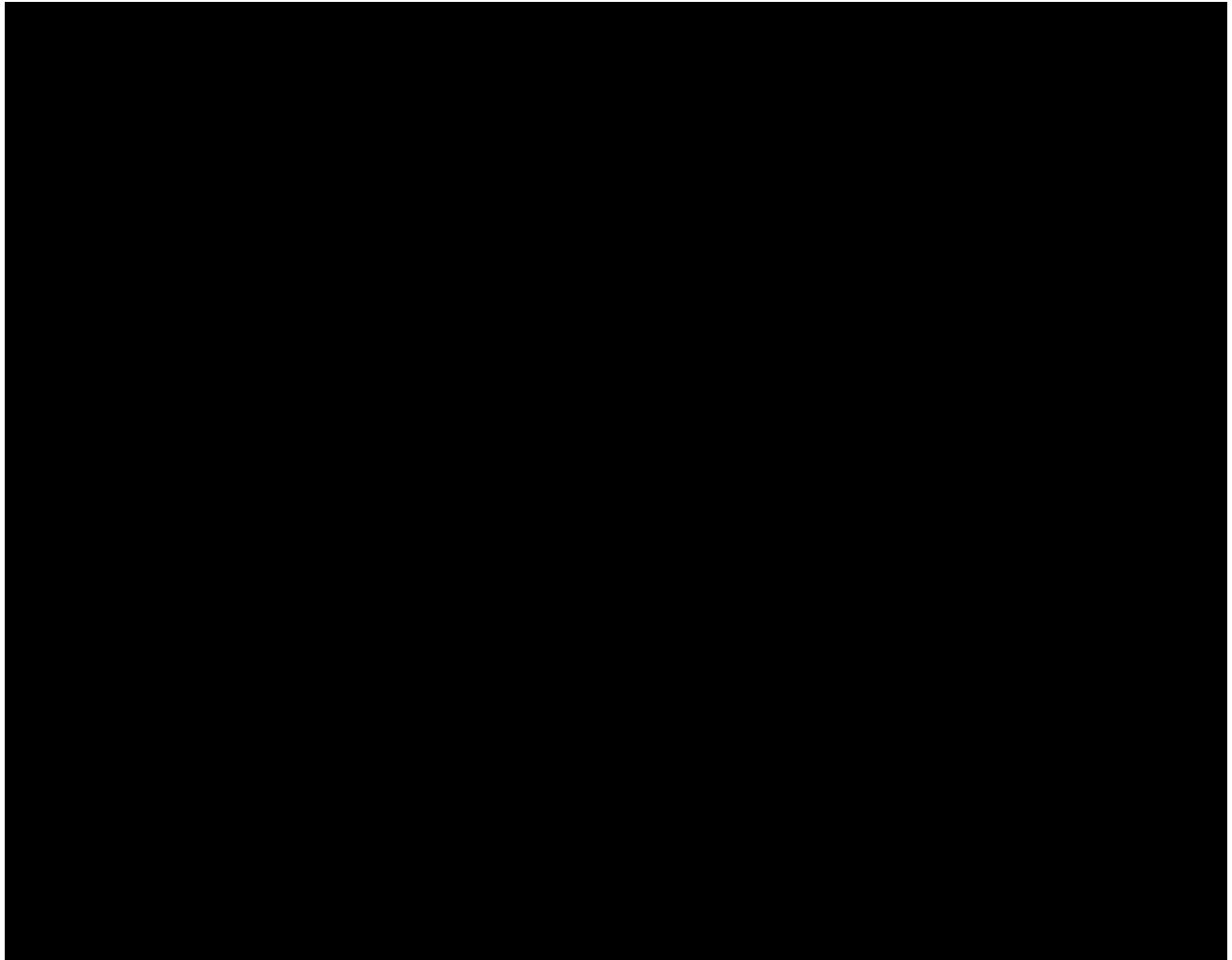
Project Name		Line 128 Project		
Project Type	Hydrotest and Replacement			
PSEP Phase	1B			
Length	0.466 miles			
Location	Goleta			
Class	[REDACTED]			
MAOP	[REDACTED]			
Pipe Grade	[REDACTED]			
Wall Thickness	[REDACTED]			
Pipe Vintage	Multiple vintages from [REDACTED]			
Construction Start	12/01/2020			
Construction Finish	Phase 1: 02/12/2021 (hydrotest & vault) Phase 2: 10/28/2022 (valve & spool) Phase 3: 02/28/2025 (pipe supports)			
Original Pipe Diameter	[REDACTED]			
Original Nominal Diameter	[REDACTED]			
New Diameter	[REDACTED]			
Original SMYS <sup>2</sup>	[REDACTED]			
New SMYS	[REDACTED]			
Project Costs (\$)	Capital	O&M	Total	
Loaded Project Costs	18,618,713	1,137,857	19,756,570	
Disallowed Costs	-	836,901	836,901	

<sup>2</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

## Final Report for Storage Line 128 Project

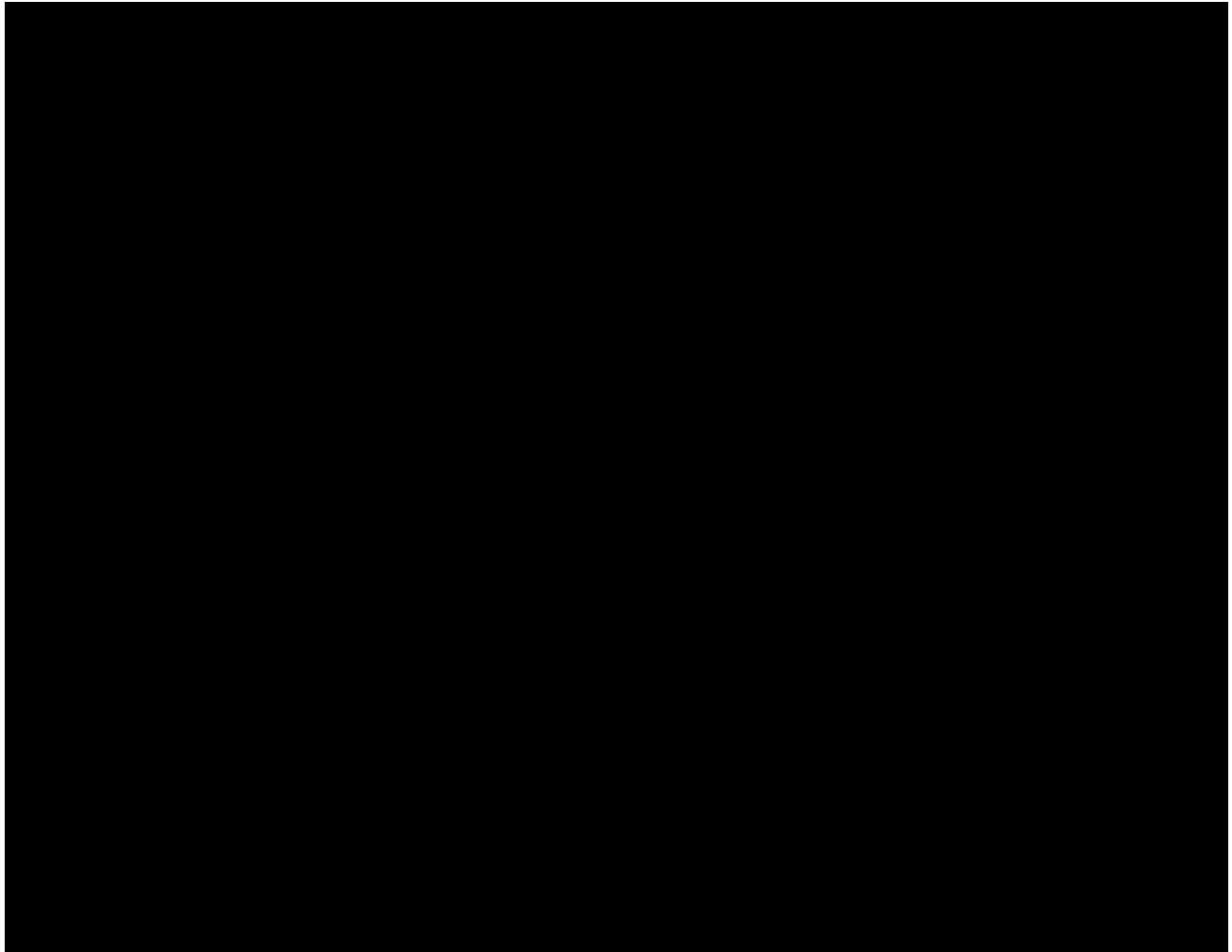
### Maps and Images

Figure 1: Satellite Image of Line 128 Hydrotest Project



## Final Report for Storage Line 128 Project

Figure 2: Overview Map of Line 128 Hydrotest Project



Final Report for Storage Line 128 Project

**II. ENGINEERING, DESIGN, AND PLANNING**

A. Project Scope

Table 2: Mileage Information

	Criteria	Accelerated <sup>3</sup>	Incidental	New	Total <sup>4</sup>
Final Mileage	0 mi.	0.390 mi.	0.070 mi.	0.006 mi.	0.466 mi.
	0 ft.	2057 ft.	371 ft.	32 ft.	2460 ft.

Prior to initiating execution of the Project in 2020, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SoCalGas and SDG&E did not identify the Line 128 Project in the 2011 PSEP filing.
2. Scope Validation: Through scope validation activities, before initiating execution of the Project, SoCalGas established the scope of the Project as 776 feet of Phase 1B Pipe.
3. Engineering, Design, and Constructability:
  - a. The Project was originally identified as a hydrotest and replacement. During the design phase, it was determined that the existing pipe supports associated with Line 128 would need to be replaced to meet current structural design standards related to potential seismic activity. The Project Team planned to install 36 pipe supports.
  - b. As the Project Team executed the replacement and hydrotest of Line 128, the new pipe supports were being designed, and the team worked on securing the necessary permits for that scope of work.

<sup>3</sup> Accelerated mileage includes Phase 1B and Phase 2 pipe. The Accelerated mileage was included to realize efficiencies and to enhance project constructability.

<sup>4</sup> Values may not add to total due to rounding.

## Final Report for Storage Line 128 Project

- c. The pre-1946 non-piggable segments of Line 128 were replaced.
  - d. Incidental mileage was included to allow for a single hydrotest.
4. Final Project Scope: The final project scope consists of a 0.273 mile hydrotest, a 0.193 replacement, the installation of pipe supports and the replacement of a vault, valve, and removable spool piece for maintenance purposes at a station. The Accelerated mileage consists of 0.147 miles of Phase 1B, 0.218 miles of Phase 2A pipe, 0.024 miles of Phase 2B, and 0.070 miles of Incidental pipe.

### B. Decision Tree Review

SoCalGas performed a review of the Storage Line 128 and confirmed the project design should commence as a Hydrotest and Replacement Project.

For pipeline segments longer than 1,000 feet in length, under the approved PSEP Decision Tree, SoCalGas completed a preliminary review to determine whether SoCalGas can manage customer service impacts if the pipeline segment is taken out of service for a period of two to six weeks to complete pressure testing. Where mitigation of customer impacts to remove the line from service for pressure testing is feasible, SoCalGas compare the costs, constructability, risks, and benefits of pressure testing and replacement to determine whether pressure testing or replacement is the more prudent option.

Pipeline segments installed prior to 1946 that are not capable of being assessed using in-line inspection technology are identified for replacement under the approved PSEP Decision Tree. As explained in the testimony supporting the approved PSEP, as part of the work previously completed during implementation federal gas transmission pipeline integrity management regulations (49 CFR 192, Subpart O), SoCalGas have already identified, retrofitted and in-line inspected pre-1946 transmission pipelines that were constructed using acceptable welding techniques and are operationally suited to in-line

## Final Report for Storage Line 128 Project

inspection. The remaining pre-1946 segments in the SoCalGas/SDG&E system are not suited for in-line inspection, likely have non-state-of-the-art welds, and would require significant investment for retrofitting to accommodate in-line inspection tools. Accordingly, consistent with the Commission's directive in D.11-06-017 to "address retrofitting pipeline to allow for inline inspection tools," the requirement in California Public Utilities Code section 958 that upon completion of the PSEP, where warranted, pipelines are to be capable of accommodating in-line inspection devices, and the overarching objectives of PSEP to enhance the safety of the pipeline system in a proactive, cost effective manner, the approved PSEP Decision Tree identifies pre-1946 non-piggable pipeline segments for abandonment and/or replacement.

As a result of this review, SoCalGas identified a combination of replacement and pressure testing as the more prudent option. Key considerations that support SoCalGas's determination to pressure test this segment include:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could be shut-in during the non-heating season. Due to the location of the of the Project, the Project Team coordinated with other SoCalGas departments to complete the Project during other planned maintenance outages.
2. Customer Impacts: No identified issues.
3. Community Impacts: No identified issues.
4. Permit Conditions:
  - a. The Project Team obtained a permit from the California Coastal Commission.
    - i. A biologist was required to conduct a biological survey before and during construction. This involved identifying sensitive biological resources to avoid and ensuring proper mitigation measures to minimize adverse impacts to the surrounding natural environment.

## Final Report for Storage Line 128 Project

- ii. A biologist was required to conduct a nesting survey prior to construction. If signs of breeding or nesting behavior were observed or if active nests were located, no project activities could occur in those areas until nests were abandoned.
  - b. The Project Team obtained an encroachment permit from the County of Santa Barbara Department of Public Works Transportation Division. This required SoCalGas to set up a detour for a nearby bike lane.
5. Piggability: Non-piggable.
6. Pipe Vintage: Multiple vintages from [REDACTED].
7. Long Seam Type: Seamless.
8. Long Seam Repair History: Unknown.
9. Condition of Coating: Unknown.
10. History of Leaks: Unknown.

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records and potholing of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could be shut-in during the non-heating season. Due to the location of the Project, the Project Team coordinated with other SoCalGas departments to complete the Project during other planned maintenance outages.
2. Customer Impact: No identified issues.

## Final Report for Storage Line 128 Project

3. Community Impact: The Project Team determined that a bike lane that runs parallel to the pipeline will need to be closed during the hydrotest.
4. Known Substructures: No identified issues.
5. Permit Conditions:
  - a. The Project Team leveraged an existing development permit from the California Coastal Commission (CCC) that required biologists to monitor the site. Additional details related to permit requirements are provided in the Environmental section below.
  - b. The Project Team obtained an encroachment permit from the County of Santa Barbara Department of Public Works Transportation Division. This included the requirement of setting up a detour for the nearby bike lane.
6. Land Use: No identified issues.
7. Environmental: The Project is located within an environmentally sensitive area. The Project Team identified multiple environmental requirements.
  - a. Based on permit conditions, a biologist was required to conduct a biological survey before and during the duration of construction.
  - b. Based on permit conditions, a biologist was required to conduct a nesting survey prior to construction.
  - c. The Project Team planned construction activities to take place outside of bird nesting season between September 1 and February 1.
8. Valves: The Project Team replaced an [REDACTED] valve within a SoCalGas station.

### D. Scope Changes

Through engineering, design, and planning activities, SoCalGas determined that changes in scope were appropriate to enhance the design of the Project and address engineering factors. As a result, the preliminary cost estimate does not fully reflect the final scope. Summarized below are notable changes in scope made after the preliminary cost estimate was developed and approved.

## Final Report for Storage Line 128 Project

The replacement of the vault, valve, and spool piece was not part of the original scope of work. The Project Team determined that the vault was too small to access the valve necessary to perform the post-construction hydrotest. This vault expansion and valve replacement required a new spool piece to be tied in that would facilitate future maintenance. This caused a six-month delay that was necessary to avoid nesting bird season, minimize operational impacts, and maintain system reliability. The delay also led to the implementation of the project in three phases, rather than the two phases that were initially planned. During the planning of pipe support installation along the pipeline, the Project Team encountered environmental permitting challenges that resulted in further schedule delays and necessitated revisions to the design drawings. The Project Team worked with the CCC to have all changes to construction plans approved as well as create a detailed Coastal Development Plan.

Final Report for Storage Line 128 Project

### III. CONSTRUCTION

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#### A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. Following completion of the engineering, design, and planning activities described above, the Project Team directed the Performance Partner to prepare cost estimates based on a more detailed engineering design package, that included the updated design described in the discussion of notable Scope Changes above.

1. SoCalGas’s Preliminary Construction Cost Estimate: SoCalGas’s preliminary cost estimate for construction was \$8,482,429.
2. Construction Contractor’s Target Price Estimate: The Construction Contractor’s cost estimate was [REDACTED], which was [REDACTED] than SoCalGas’s preliminary cost estimate for construction.

#### B. Construction Schedule

Table 3: Construction Timeline

Construction Start Date	12/07/2020
Construction Completion Date	02/28/2025
NOP Date	02/10/2021 Hydrotest 09/24/2021 Valve & Spool 02/28/2025 Pipe Supports

## Final Report for Storage Line 128 Project

### C. Changes During Construction

The conditions summarized below were encountered during construction.

#### Phase 1

1. Tie-In: The tie-in location changed due to the unanticipated pipe removal during Line 128 blowdown and isolation. A flange upstream from the western tie-in point had to be cut out to remove a flanged isolation valve. The tie-in point was moved upstream to include a new replacement pipe spool piece.
2. Field Design Changes: During construction, the Project Team determined that the existing vault limited access for the Construction Contractor to complete pressure testing. The existing vault had to be demolished and replaced with a larger vault to complete pressure testing and conduct future maintenance activities.

#### Phase 2

1. Constructability Issues: Complications with the valve replacement and spool piece were encountered during the tie-in resulting in delays.

#### Phase 3

1. Environmental: Due to bird nesting activity identified during construction, the Project temporarily shut down until the nesting birds left the Project site in conformance with permit conditions.
2. Weather: The Project Team experienced delays due to inclement weather. Low temperatures caused moisture to accumulate on the pipe joints, delaying the coating application process.

Final Report for Storage Line 128 Project

Figure 3: Existing Above-Grade [REDACTED] Line 128

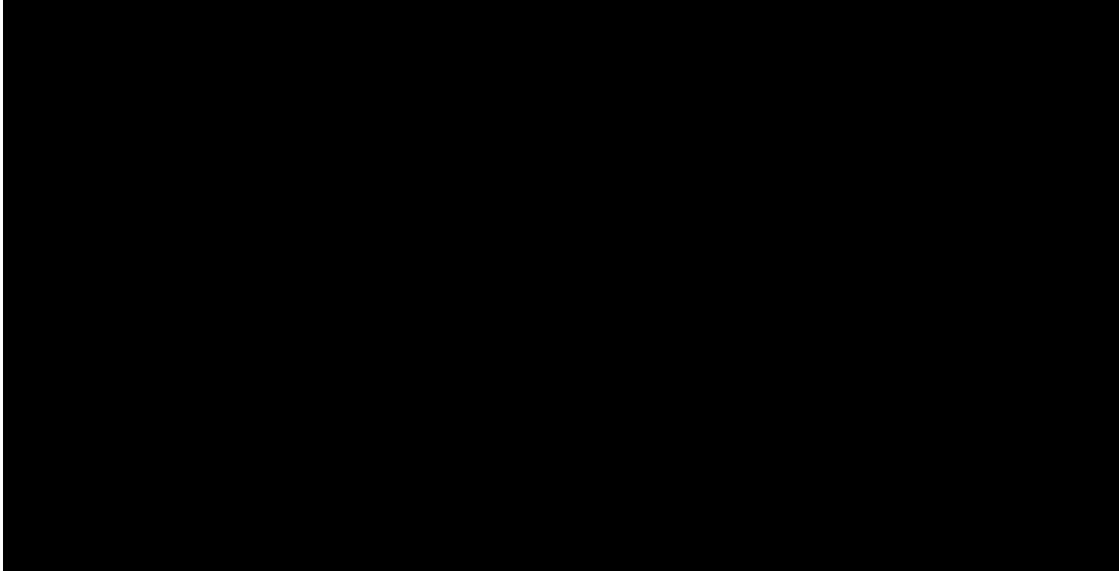
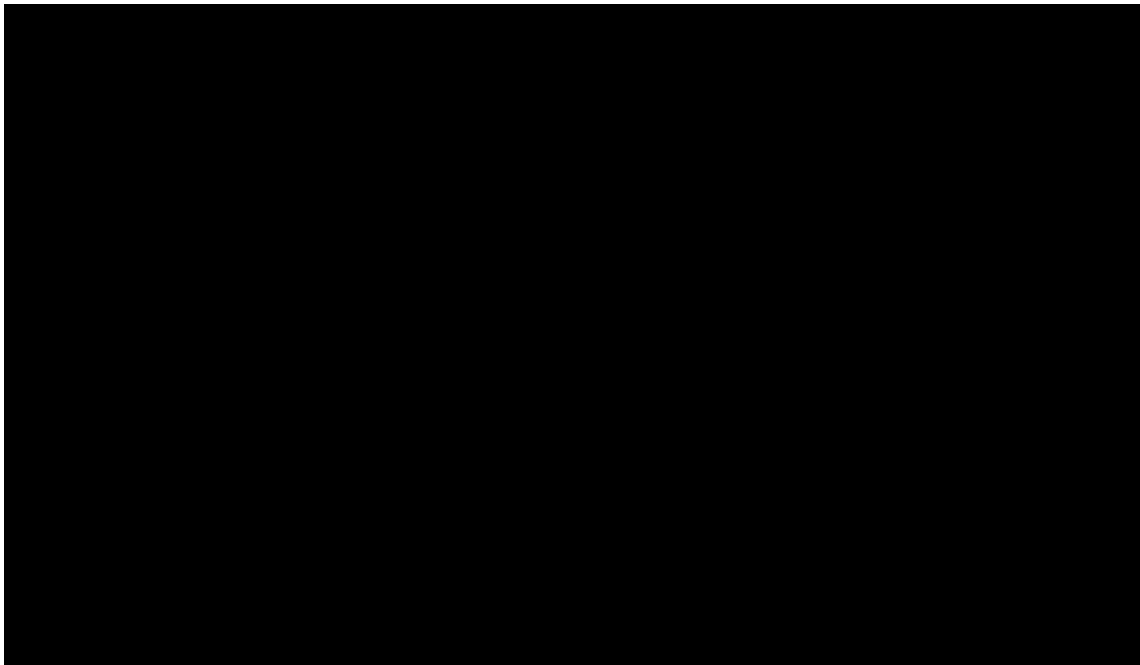
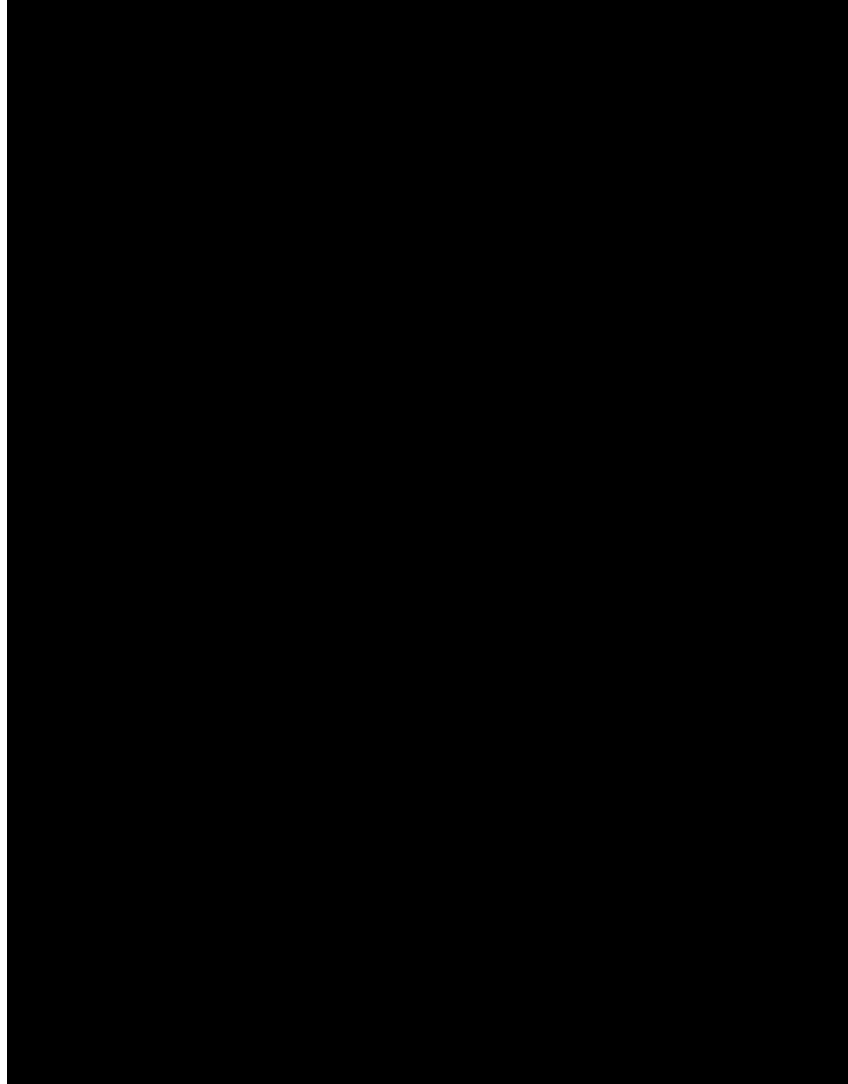


Figure 4: Existing Miller Station Vault and Valve



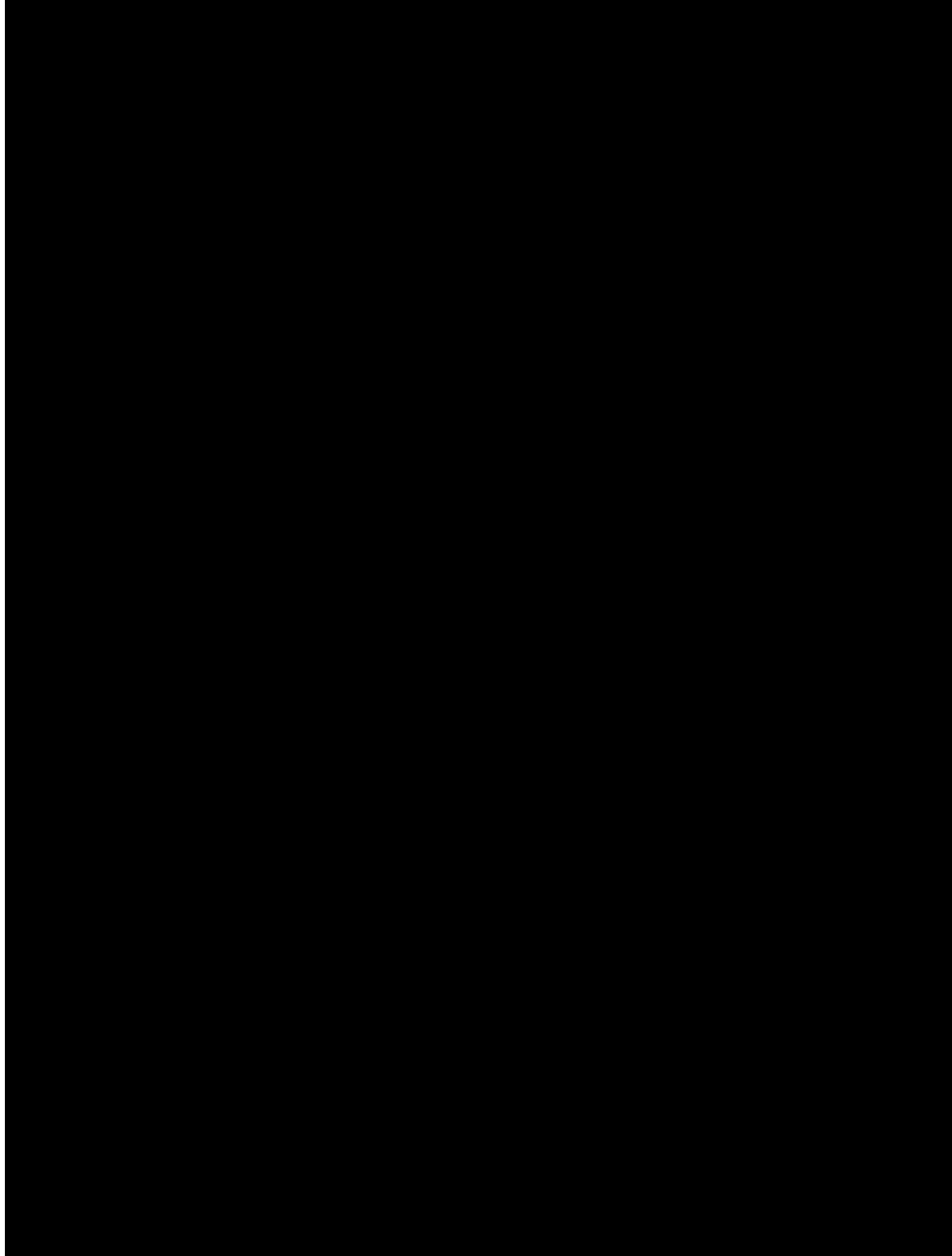
Final Report for Storage Line 128 Project

Figure 5: Completed Vault, Valve, and Spool installation



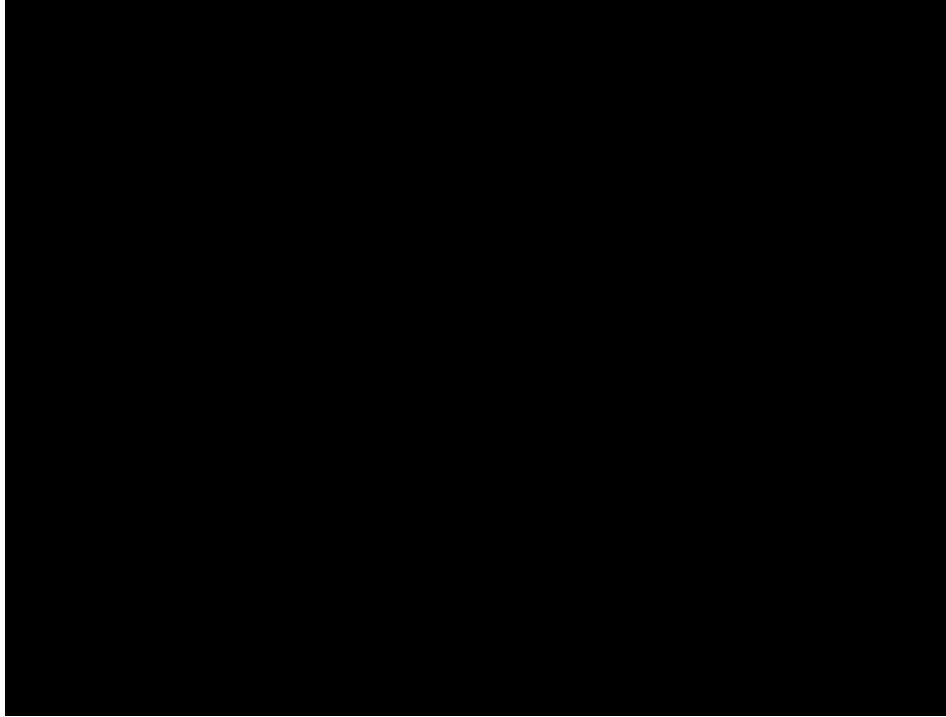
## Final Report for Storage Line 128 Project

Figure 6: Pipe Support Installation



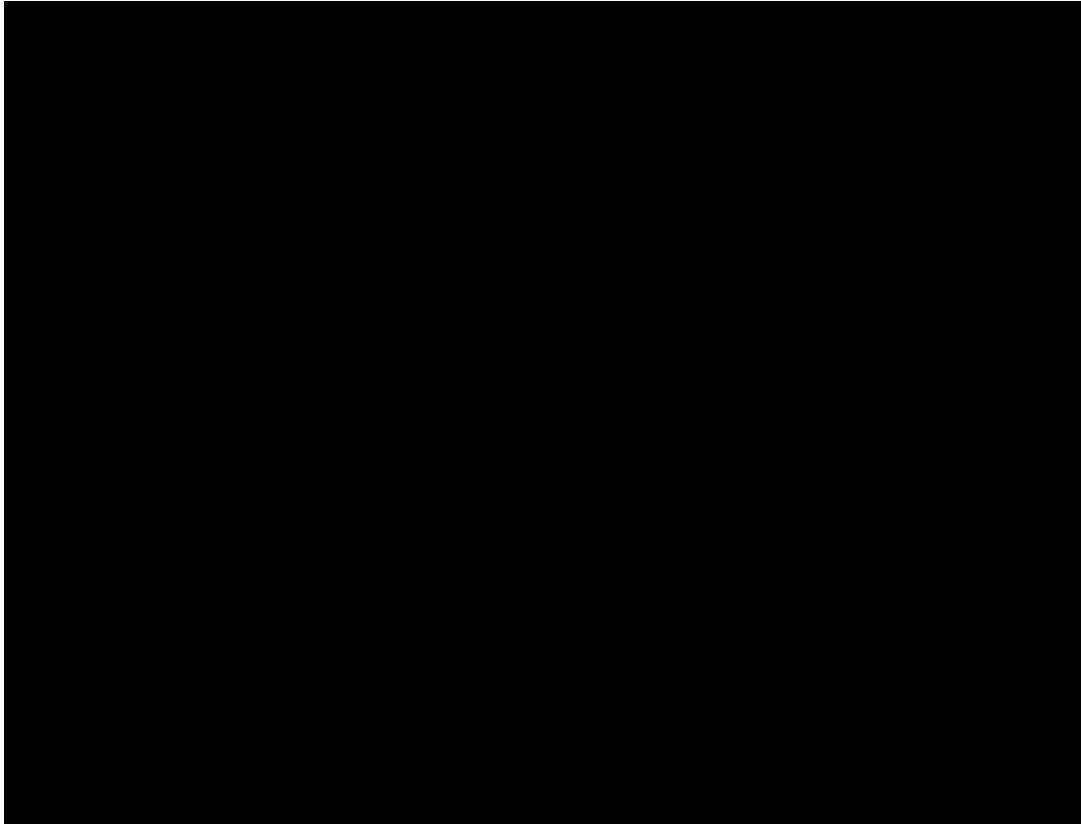
## Final Report for Storage Line 128 Project

Figure 7: Pipe Support Installation



## Final Report for Storage Line 128 Project

Figure 8: Pipe Support Installation



## Final Report for Storage Line 128 Project

### D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, transportation and disposal of hydrotreated 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.

## Final Report for Storage Line 128 Project

### IV. PROJECT COSTS

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#### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project.

#### B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$11,435,932. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

#### C. Actual Direct and Indirect Costs

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$19,756,570.

Final Report for Storage Line 128 Project

Table 4: Estimated and Actual Direct Costs and Variances

Direct Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Company Labor	705,371	871,473	166,102
Materials	164,342	334,373	170,031
Construction Contractor	8,482,429	10,172,456	1,690,027
Construction Management & Support	445,801	1,596,980	1,151,179
Environmental	714,233	2,045,656	1,331,423
Engineering & Design	697,301	1,260,307	563,006
Project Management & Services	216,575	328,083	111,508
ROW & Permits	9,880	99,731	89,851
GMA	-	143,413	143,413
<b>Total Direct Costs</b>	<b>11,435,932</b>	<b>16,852,473</b>	<b>5,416,541</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	603,698	2,326,635	1,722,937
AFUDC	72,078	575,445	503,367
Property Taxes	176,210	2,017	(174,193)
<b>Total Indirect Costs</b>	<b>851,986</b>	<b>2,904,097</b>	<b>2,052,111</b>
<b>Total Direct Costs</b>	<b>11,435,932</b>	<b>16,852,473</b>	<b>5,416,541</b>
<b>Total Loaded Costs</b>	<b>12,287,918</b>	<b>19,756,570</b>	<b>7,468,652</b>

The Actual Full-Time Equivalents<sup>5</sup> (FTEs) for this Project are 0.87.

<sup>5</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

## Final Report for Storage Line 128 Project

### D. Cost Impacts

Consistent with one of the overarching objectives of PSEP as stated in testimony to maximize the cost effectiveness of safety enhancement investments, SoCalGas effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities may lead to variances between the initial estimate and actuals. The Project Team successfully mitigated these variances whenever feasible through the implementation of effective project management practices, thorough planning, and continuous monitoring.

At the completion of the Storage Line 128 Project, Actual Direct Costs exceeded the preliminary estimate by \$5,416,541. This variance is attributable to a variety of factors including:

1. Company Labor: Company labor costs were higher than estimated due to the extended duration and additional coordination required as project conditions evolved over multiple phases. Construction activities were affected by the need to address fabrication corrections, equipment replacement, and alignment with limited maintenance outage windows and seasonal environmental requirements. Environmental permitting considerations also required added coordination with regulatory agencies, design refinements, and updated construction planning. These challenges required sustained project management to maintain compliance, safety, and orderly execution, contributing to increased company labor hours.

## Final Report for Storage Line 128 Project

### 2. Construction Contractor:

- a. The project experienced a temporary shutdown during the pipe support installation phase due to environmental restrictions related to nesting birds near the construction area, resulting in an increase in project costs of approximately \$827,000.
  - i. The Project Team encountered In February 2024, nesting birds were identified within the buffer zone of the active construction area, which required a temporary shutdown of construction activities. During this period, the Construction Contractor's equipment remained within the buffer zone in accordance with environmental restrictions. The contractor was able to retrieve the equipment in May 2024, once nesting activity had concluded and access was permitted.
  - ii. All crane mats were left in place during the shutdown because they were located within the protected buffer zone. Prolonged exposure to wet weather conditions during this period resulted in damage to the mats, rendering them unsuitable for reuse during remobilization. As a result, all crane mats were replaced.
- b. Naturally occurring hydrogen sulfide gas was identified along the pipeline during construction, resulting in an incremental cost increase of approximately \$508,000. These costs were driven by additional safety and regulatory requirements, including:
  - i. Enhanced safety measures such as continuous gas monitoring, specialized safety equipment, expanded workforce training, and deployment of a standby medical team.
  - ii. Additional California Coastal Commission requirements, which necessitated the excavation of 48 additional potholes to support cultural and archaeological inspections.

## Final Report for Storage Line 128 Project

- c. In support of schedule acceleration to stay within environmental permit compliance, the Project Team worked overtime hours to complete the hydrotest. This resulted in additional Construction Contractor labor and equipment costs of approximately \$102,000.
  - d. To facilitate safe installation of pipe supports, the Project Team performed additional brush clearing in order to install the pipe supports, increasing costs by approximately \$52,000.
  - e. The Project Team repaired coating on the entire length of Line 128. Due to weather conditions, the Project Team also had to recoat the pipeline and place tents over the line at the encirclement sleeves to complete coating. The additional coating effort increased costs by approximately \$64,000.
3. Construction Management & Support: Additional Construction Management and Support was required for due to the additional phasing of the project which extended the overall construction duration. Project shutdowns and expedited project schedules to meet environmental permitting and Goleta storage outage window requirements were also a factor in the increased costs.
4. Environmental:
- a. Due to the extended construction duration and phased execution, combined with the identification of nesting birds in the area, additional days of biological and cultural monitoring were required.
  - b. Due to a larger-than-anticipated volume of coating abatement, three abatement contractors were engaged to complete the work, resulting in final costs exceeding initial forecasts.

## Final Report for Storage Line 128 Project

### 5. Engineering & Design:

a. Geotechnical report findings identified enhancement requirements to properly support the new pipeline installation. The additional scope required the Project Team to conduct demolition and replacement of the existing foundation pipe supports and new pipe supports to be installed at a deeper depth. The additional project scope resulted in a redesign that involved additional design drawings, engineering review, grading and inspections that resulted in an increased cost of approximately \$362,000.

6. ROW & Permitting: The Project Team requested to extend the existing CCC permit to complete Phase 3, which resulted in additional permitting restrictions due to the environmentally sensitive area of the project location and the potential impacts associated with installing the pipe supports at a deeper depth.

### E. Disallowance

For this hydrotest project, SoCalGas identified a total of 1061 feet of pipe as being installed post-1955 and lacking pressure test records that provide the minimum information to demonstrate compliance with industry standards or then-applicable strength testing and recordkeeping requirements. Of the 0.273 miles of pipeline that were pressure tested, 1061 feet (74%) of test mileage pipe are disallowed. Therefore, \$836,901 of total project O&M costs are disallowed from recovery.

## Final Report for Storage Line 128 Project

### **V. CONCLUSION**

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Line 128 Project. Through this Project, SoCalGas successfully hydrotested 0.273 miles of pipeline, replaced 0.193 miles of pipeline, replaced a vault, spool, valve, and installed pipe supports in the City of Goleta.

## **End of Storage Line 128 Project Final Report**

Final Report for Supply Line 31-08 Section 1 Replacement Project

**I. SUPPLY LINE 31-08 SECTION 1 REPLACEMENT PROJECT**

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**A. Background and Summary**

Supply Line 31-08 is a Department of Transportation (DOT) defined transmission<sup>1</sup> line with a predominantly [REDACTED] diameter that runs approximately 12 miles from Azusa to West Covina, through residential neighborhoods and commercial areas. The pipeline is routed across a [REDACTED] location. This report describes the activities associated with Supply Line 31-08 Section 1 Replacement Project which consists of the replacement of 42 feet of pipeline and the replacement of one existing mainline valve (MLV). The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$1,683,116.

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<sup>1</sup> As defined in 49 C.F.R. § 192.3 (2024).

Final Report for Supply Line 31-08 Section 1 Replacement Project

Table 1: General Project Information

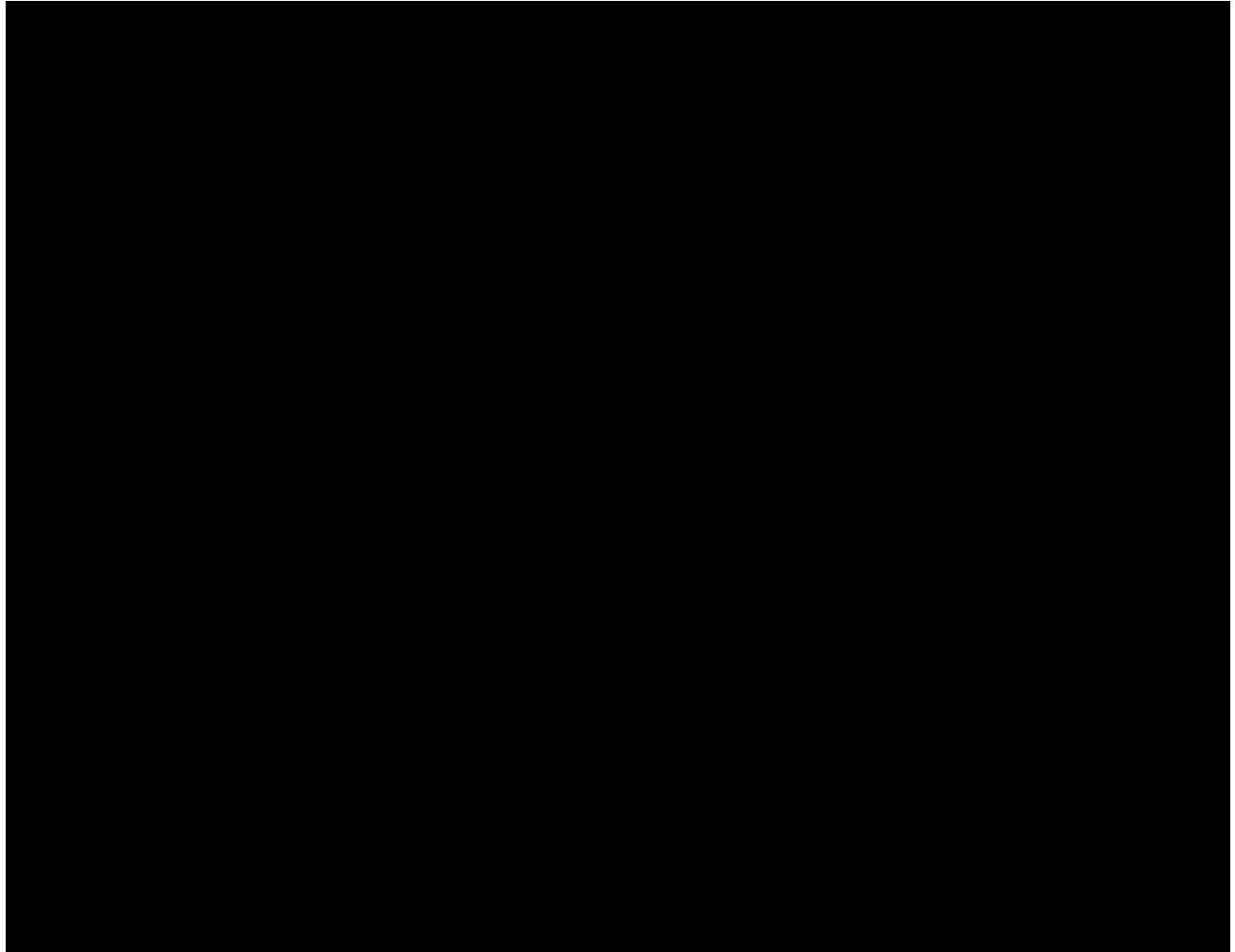
Project Name	Supply Line 31-08 Section 1		
Project Type	Replacement		
PSEP Phase	1A		
Length	42 feet		
Location	Cities of Azusa and West Covina		
Class	[REDACTED]		
MAOP	[REDACTED]		
Pipe Grade	[REDACTED]		
Wall Thickness	[REDACTED]		
Pipe Vintage	Multiple vintages from [REDACTED]		
Construction Start	07/06/2020		
Construction Finish	07/31/2020		
Original Pipe Diameter	[REDACTED]		
Original Nominal Diameter	[REDACTED]		
New Diameter	[REDACTED]		
Original SMYS <sup>2</sup>	[REDACTED]		
New SMYS	[REDACTED]		
Project Costs (\$)	Capital	O&M	Total
Loaded Project Costs	1,340,495	342,621	1,683,116
Disallowed Costs	-	-	-

<sup>2</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

Final Report for Supply Line 31-08 Section 1 Replacement Project

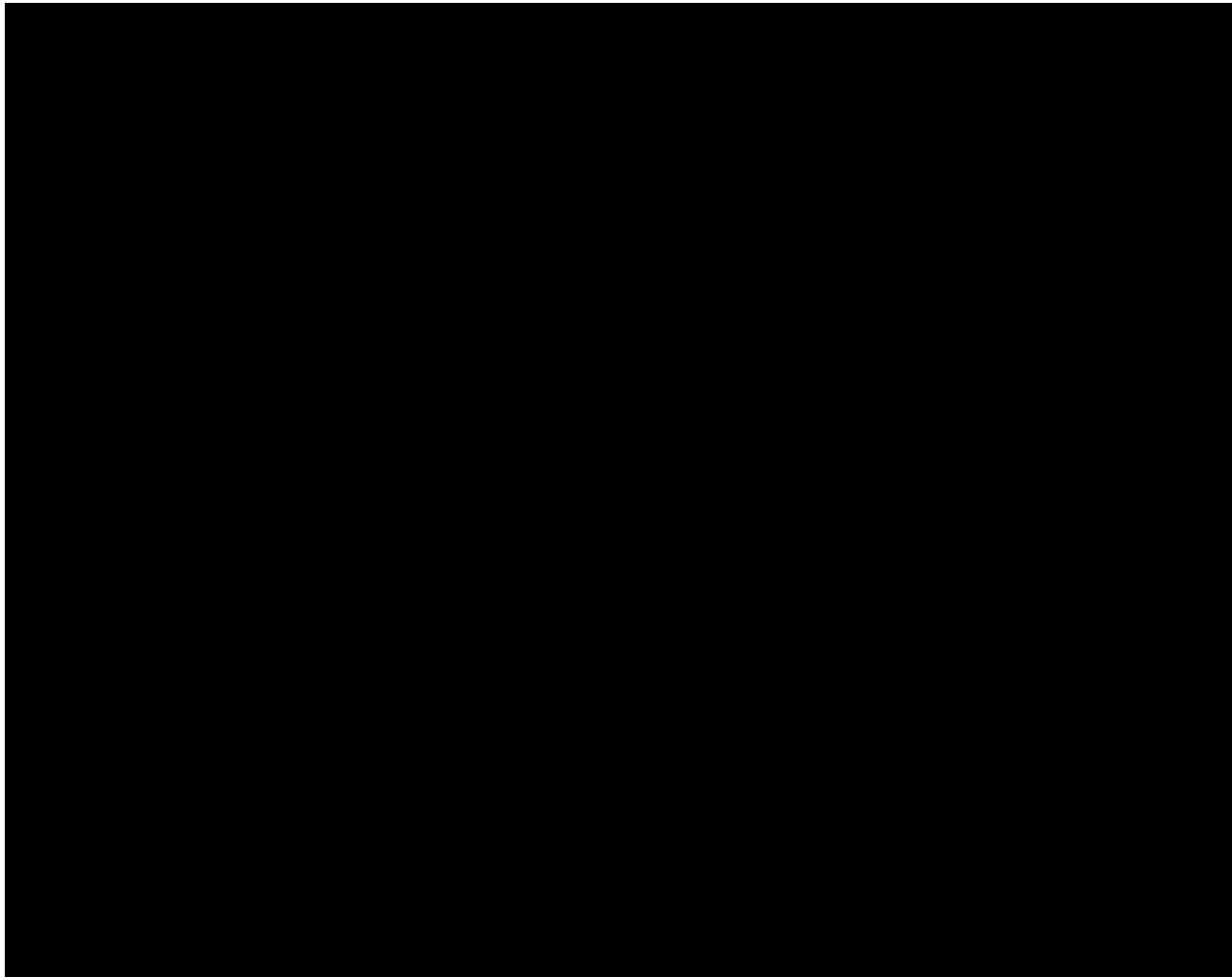
Maps and Images

Figure 1: Satellite Image of Supply Line 31-08 Section 1 Replacement Project



Final Report for Supply Line 31-08 Section 1 Replacement Project

Figure 2: Overview Map of Supply Line 31-08 Section 1 Replacement Project



Final Report for Supply Line 31-08 Section 1 Replacement Project

**II. ENGINEERING, DESIGN, AND PLANNING**

A. Project Scope

Table 2: Mileage Information

	Criteria	Accelerated	Incidental	New	Total <sup>3</sup>
Final Mileage	0.0004 mi.	0 mi.	0.004 mi.	0.003 mi.	0.008 mi.
	2 ft.	0 ft.	23 ft.	16 ft.	42 ft.

Prior to initiating execution of the Project in 2020, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SoCalGas and SDG&E did not identify Supply Line 31-08 Section 1 Replacement Project in the 2011 PSEP filing.
2. Scope Validation: Through scope validation activities, before initiating execution of the Project, SoCalGas successfully reduced the scope of the Project by approximately 3.077 miles of Category 4 Criteria pipe.
3. Engineering, Design, and Constructability:
  - a. The Project Team planned to upsize from [REDACTED] to [REDACTED] pipe.
  - b. The Project Team planned to replace an existing [REDACTED] plug valve with a [REDACTED] ball valve.
  - c. The offset installation of [REDACTED] pipe added an additional 23.6 feet.
4. Final Project Scope: The final project scope consists of a pipeline replacement of 42 feet and the replacement of one [REDACTED] MLV.

<sup>3</sup> Values may not add to total due to rounding.

## Final Report for Supply Line 31-08 Section 1 Replacement Project

### B. Decision Tree Review

SoCalGas performed a review of the Supply Line 31-08 and confirmed the project design should commence as a Replacement.

Segments of less than 1,000 feet are identified for replacement under the approved PSEP Decision Tree because, for short segments of pipe, the logistical costs associated with pressure testing (for example, permitting, construction, water handling, and service disruptions for a non-looped system) can approach or exceed the cost of replacement. In such circumstances, replacement affords a more cost-effective approach to achieving compliance with D.11-06-017 while providing equal safety enhancement benefits. Moreover, installation of the new segment can usually be performed while the existing service is maintained to customers, thereby avoiding service disruptions that may otherwise occur during pressure testing.

As a result of this review, SoCalGas identified replacement as the more prudent option. Key considerations that support SoCalGas's determination to replace this segment include:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could be shut-in during the non-heating season.
2. Customer Impacts: No identified issues.
3. Community Impacts: No identified issues.
4. Permit Conditions: No identified issues.
5. Piggability: Non-piggable.
6. Pipe Vintage: Multiple pipe vintages from [REDACTED].
7. Existing Pipe Attributes: The Project Team identified existing non-piggable features including a mainline plug valve and a change in diameter from [REDACTED] to [REDACTED].
8. Long Seam Type: Unknown.
9. Long Seam Repair History: No identified issues.

## Final Report for Supply Line 31-08 Section 1 Replacement Project

10. Condition of Coating: No identified issues.

11. History of Leaks: No leak history.

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. Shut-In Analysis: As discussed above, the Project Team completed a Request for Engineering Review (RER) analysis that concluded the pipeline could be shut-in.
2. Customer Impact: No identified issues.
3. Community Impact: No identified issues.
4. Diameter Changes: The Project Team replaced the existing [REDACTED] line with a [REDACTED] line to standardize the pipeline for future piggability.
5. Schedule Coordination: The Project Team coordinated schedules with another SoCalGas Project to share a laydown yard and trailer office space.
6. Known Substructures: No identified issues.
7. Permit Conditions:
  - a. LA County Public Works Permit
  - b. City of West Covina Encroachment Permit
8. Land Use: No identified issues.
9. Environmental: The Project Team anticipated typical abatement activities for Asbestos Containing Materials (ACMs) for removed pipe.
10. Reroute: The Project Team relocated the pipeline to maintain pipeline system reliability during construction.

Final Report for Supply Line 31-08 Section 1 Replacement Project

11. Valves: The Project Team replaced an existing [REDACTED] plug valve with a [REDACTED] ball valve to improve pipeline piggability.

#### D. Scope Changes

SoCalGas did not make any notable scope changes during detailed design.

Final Report for Supply Line 31-08 Section 1 Replacement Project

### III. CONSTRUCTION

---

#### A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. Following completion of the engineering, design, and planning activities described above, the Project Team directed the Performance Partner to prepare cost estimates based on a more detailed engineering design package. As indicated above, there were no notable changes in scope between the time when the Project Team prepared the preliminary cost estimate and when the Performance Partner prepared and submitted its Target Price Estimate. SoCalGas awarded the construction contract to the Performance Partner.

1. SoCalGas’s Preliminary Construction Cost Estimate: SoCalGas’s preliminary cost estimate for construction was \$500,572.
2. Construction Contractor’s Target Price Estimate: The Construction Contractor’s cost estimate was [REDACTED], which was [REDACTED] than SoCalGas’s preliminary cost estimate for construction.

#### B. Construction Schedule

Table 3: Construction Timeline

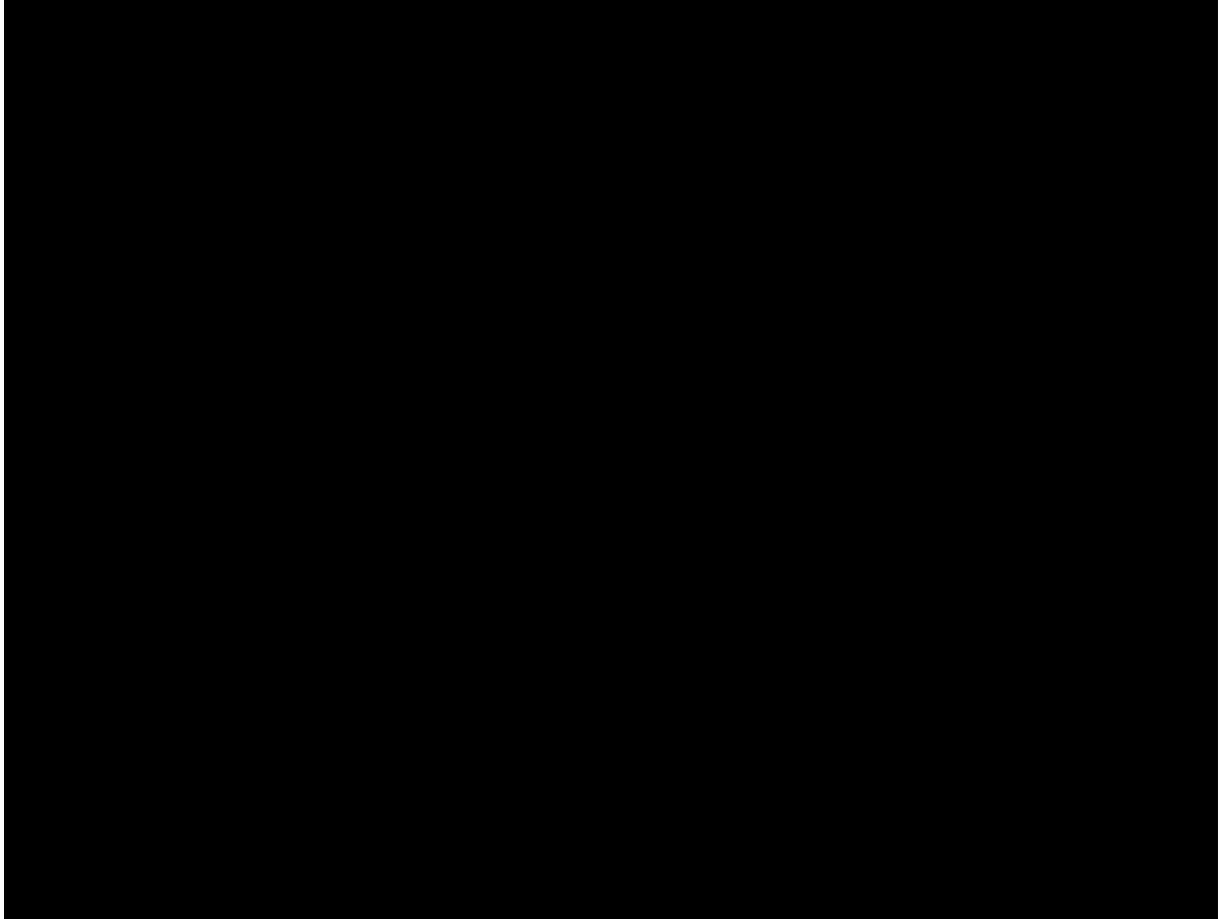
Construction Start Date	07/06/2020
Construction Completion Date	07/31/2020
NOP Date	07/22/2020

#### C. Changes During Construction

SoCalGas successfully mitigated conditions during construction in a manner that minimized potential impacts on project scope, cost, and schedule. As a result, these conditions did not result in any notable change orders.

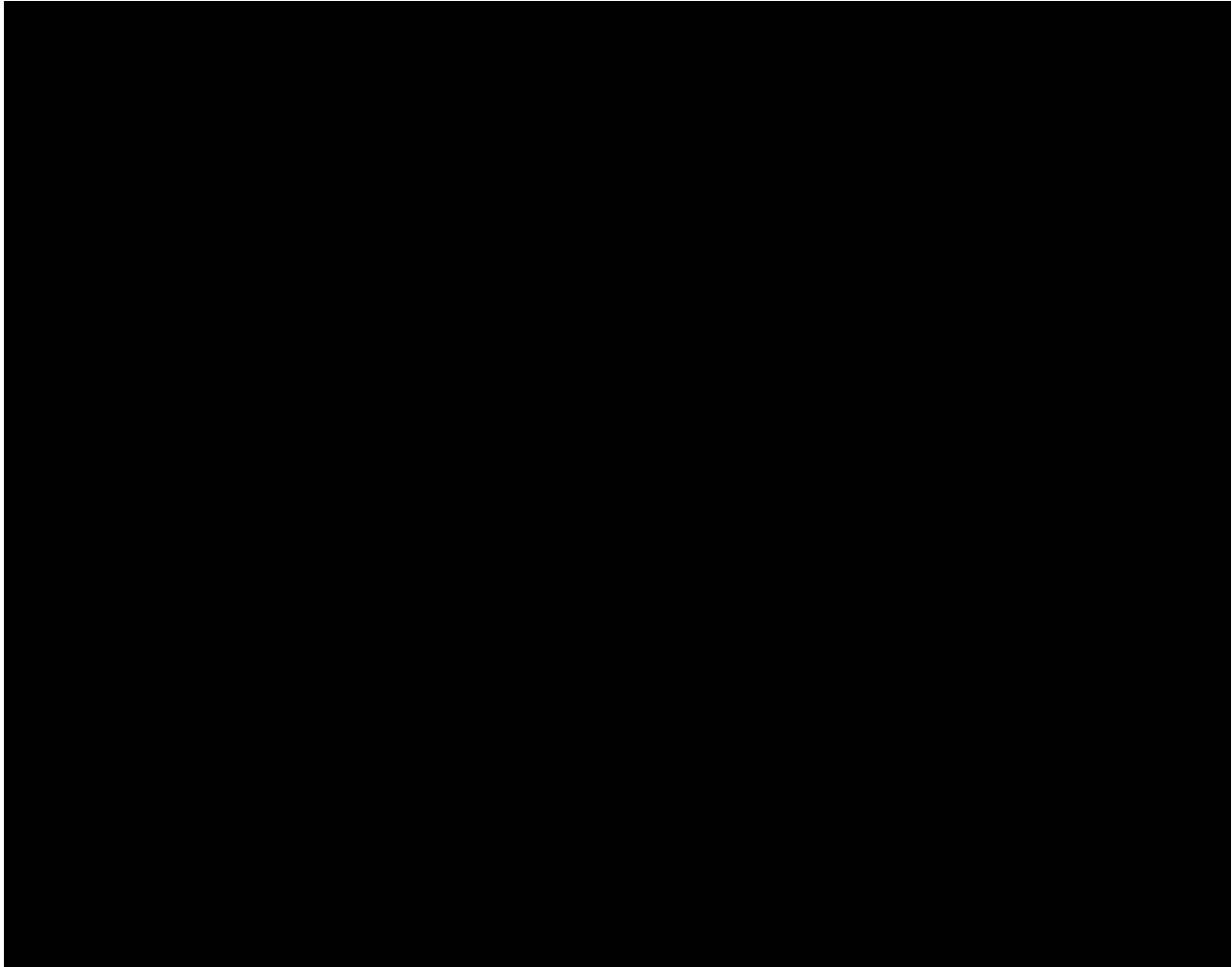
Final Report for Supply Line 31-08 Section 1 Replacement Project

Figure 3: Location of the 31-08 Section 1 Replacement before Construction Activity



Final Report for Supply Line 31-08 Section 1 Replacement Project

Figure 4: Installation of Pre-Fabricated Pipe



## Final Report for Supply Line 31-08 Section 1 Replacement Project

### D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, 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.

Final Report for Supply Line 31-08 Section 1 Replacement Project

## IV. PROJECT COSTS

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### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project. Specific examples of cost avoidance actions taken on this project are:

1. Schedule Coordination: The Project Team coordinated schedules with another SoCalGas Project.
2. Land Use: The Project Team shared a laydown yard and office trailer space with another SoCalGas Project.

### B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$1,121,934. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

### C. Actual Direct and Indirect Costs

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in

Final Report for Supply Line 31-08 Section 1 Replacement Project

accordance with Company overhead allocation policies. The total loaded cost of the Project is \$1,683,116.

Table 4: Estimated and Actual Direct Costs and Variances<sup>4</sup>

Direct Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Company Labor	231,797	150,572	(81,225)
Materials	69,357	62,867	(6,490)
Construction Contractor	500,572	623,341	122,769
Construction Management & Support	59,537	90,991	31,455
Environmental	16,756	22,609	5,852
Engineering & Design	154,010	235,975	81,965
Project Management & Services	81,238	73,668	(7,569)
ROW & Permits	8,299	18,368	10,069
GMA	368	9,636	9,268
<b>Total Direct Costs</b>	<b>1,121,934</b>	<b>1,288,027</b>	<b>166,093</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances<sup>5</sup>

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	576,355	388,469	(187,886)
AFUDC	83,094	5,485	(77,609)
Property Taxes	21,243	1,135	(20,108)
<b>Total Indirect Costs</b>	<b>680,692</b>	<b>395,089</b>	<b>(285,603)</b>
<b>Total Direct Costs</b>	<b>1,121,934</b>	<b>1,288,027</b>	<b>166,093</b>
<b>Total Loaded Costs</b>	<b>1,802,626</b>	<b>1,683,116</b>	<b>(119,510)</b>

The Actual Full-Time Equivalents<sup>6</sup> (FTEs) for this Project are 0.83.

<sup>4</sup> Values may not add to total due to rounding.

<sup>5</sup> Ibid.

<sup>6</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

## Final Report for Supply Line 31-08 Section 1 Replacement Project

### D. Cost Impacts

Consistent with one of the overarching objectives of PSEP as stated in testimony to maximize the cost effectiveness of safety enhancement investments, SoCalGas effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities may lead to variances between the initial estimate and actuals. The Project Team successfully mitigated these variances whenever feasible through the implementation of effective project management practices, thorough planning, and continuous monitoring.

At the completion of the Supply Line 31-08 Section 1 Replacement Project, Actual Direct Costs came within the AACE Class 3 Total Installed Cost (TIC) accuracy range, adhering to the standard industry practices defined by the Association for the Advancement of Cost Engineering (AACE) International. The Actual Direct Costs exceeded the preliminary estimate by \$166,093. This variance can be attributed to several factors including: the Project required additional drawing updates and redesigns for the installation of protective concrete pads over the PCFs due to the final installation depth being shallower than the required minimum depth; the Construction Contractor required three additional days to complete the scope of work; the Project Team procured an additional laydown yard due to spatial constraints; the additional laydown yard required security during non-working hours.

### E. Disallowance

There was no disallowance for Supply Line 31-08 Section 1 as there were no post-1955 segments included in the Project without records that provide the minimum information to demonstrate compliance with then applicable industry standards or regulatory strength testing and recordkeeping requirements.

Final Report for Supply Line 31-08 Section 1 Replacement Project

## **V. CONCLUSION**

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Supply Line 31-08 Section 1 Replacement Project. Through this Replacement Project, SoCalGas successfully replaced 42 feet of pipeline and one existing MLV in the City of West Covina.

SoCalGas executed this project prudently through an open trench replacement and modifying the pressure control plan to reduce customer impact.

SoCalGas engaged in prudent cost avoidance efforts by coordinating schedules and land use with another SoCalGas project.

## **End of Supply Line 31-08 Section 1 Replacement Project Final Report**

Final Report for Supply Line 31-09-C Hydrotest Project

**I. SUPPLY LINE 31-09-C HYDROTEST PROJECT**

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**A. Background and Summary**

Supply Line 31-09-C is a Department of Transportation (DOT) defined transmission<sup>1</sup> line with a [REDACTED] diameter that runs approximately four miles from the city of Covina to the city of Glendora. The pipeline is primarily routed across a [REDACTED] location. This report describes the activities associated with Supply Line 31-09-C Hydrotest Project which consists of a 1.347 miles hydrotest of [REDACTED] pipeline through residential neighborhoods in the city of Glendora. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$3,758,266.

Final Report for Supply Line 31-09-C Hydrotest Project

Table 1: General Project Information

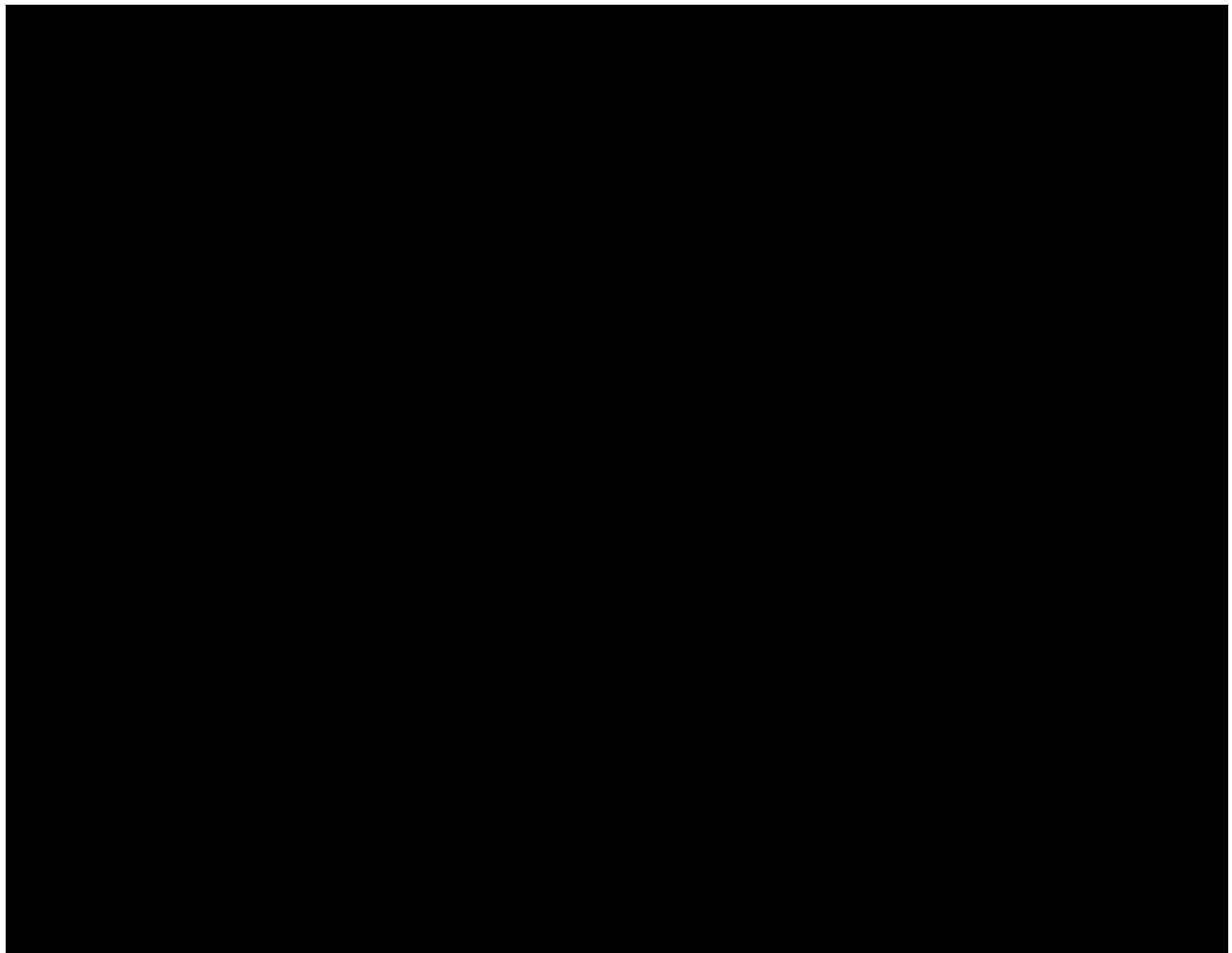
<b>Project Name</b>		<b>Supply Line 31-09-C Hydrotest Project</b>		
Project Type	Hydrotest			
PSEP Phase	1A			
Length	1.347 miles			
Location	Cities of Glendora and Covina			
Class	[REDACTED]			
MAOP	[REDACTED]			
Pipe Grade	[REDACTED]			
Wall Thickness	[REDACTED]			
Pipe Vintage	Multiple vintages from [REDACTED]			
Construction Start	05/04/2020			
Construction Finish	07/16/2020			
Original Pipe Diameter	[REDACTED]			
Original Nominal Pipe Diameter	[REDACTED]			
New Diameter	[REDACTED]			
Original SMYS <sup>2</sup>	[REDACTED]			
<b>Project Costs (\$)</b>	<b>Capital</b>	<b>O&amp;M</b>	<b>Total</b>	
Loaded Project Costs	811,909	2,946,357	3,758,266	
Disallowed Costs	7,140	2,234,930	2,242,070	

<sup>2</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

## Final Report for Supply Line 31-09-C Hydrotest Project

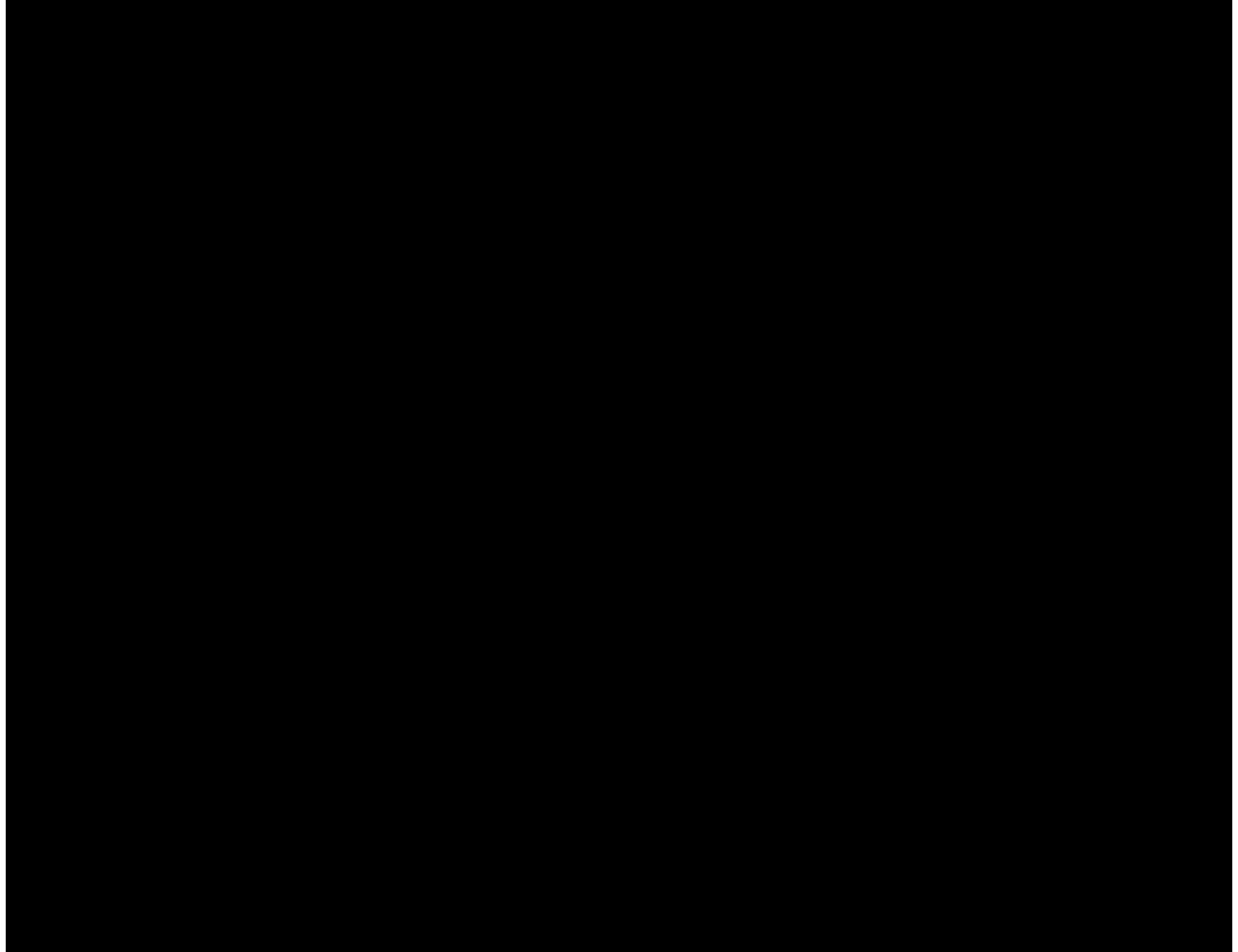
### B. Maps and Images

Figure 1: Satellite Image of Supply Line 31-09-C Hydrotest Project



Final Report for Supply Line 31-09-C Hydrotest Project

Figure 2: Overview Map of Supply Line 31-09-C Hydrotest Project



Final Report for Supply Line 31-09-C Hydrotest Project

## II. ENGINEERING, DESIGN, AND PLANNING

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### A. Project Scope

Table 2: Mileage Information

	Criteria	Accelerated <sup>3</sup>	Incidental	Total <sup>4</sup>
Final Mileage	1.014 mi.	0.326 mi.	0.007 mi.	1.347 mi.
	5,351 ft.	1,720 ft.	35 ft.	7,111 ft.

Prior to initiating execution of the Project in 2020, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SoCalGas and SDG&E did not identify Supply Line 31-09-C Hydrotest Project in the 2011 PSEP filing.
2. Scope Validation: Through scope validation activities, before initiating execution of the Project, SoCalGas identified 1.013 miles of Category 4 Criteria pipe.
3. Engineering, Design, and Constructability:
  - a. The Project Team installed one [REDACTED] ball valve on Supply Line 31-09-C, one [REDACTED] ball valve on Supply Line 31-09-C, one [REDACTED] ball valve on Supply Line 31-08-U, and one [REDACTED] Pressure Control Fitting (PCF) on Supply Line 31-08.
  - b. The Project Team installed [REDACTED] pipe at the reg station location on [REDACTED] for tie-in purposes.
  - c. Accelerated mileage was included following the identification of existing test records, updating the Incidental mileage to Phase 2B Accelerated mileage.
  - d. Incidental mileage was included for constructability of the hydrotest.

<sup>3</sup> Accelerated mileage includes Phase 1B and Phase 2 pipe. The Accelerated mileage was included to realize efficiencies and to enhance project constructability.

<sup>4</sup> Values may not add to total due to rounding.

## Final Report for Supply Line 31-09-C Hydrotest Project

4. Final Project Scope: The final project scope consists of a 1.347 mile hydrotest. The project also consists of an Accelerated mileage of 0.326 miles or 1,720 feet of Phase 2B pipe, and 35 feet of Incidental pipe.

### B. Decision Tree Review

SoCalGas performed a review of the Supply Line 31-09-C and confirmed the project design should commence as a Hydrotest Project.

For pipeline segments longer than 1,000 feet in length, under the approved PSEP Decision Tree, SoCalGas completes a preliminary review to determine whether SoCalGas can manage customer service impacts if the pipeline segment is taken out of service for a period of two to six weeks to complete pressure testing. Where mitigation of customer impacts to remove the line from service for pressure testing is feasible, SoCalGas compare the costs, constructability, risks, and benefits of pressure testing and replacement to determine whether pressure testing or replacement is the more prudent option.

As a result of this review, SoCalGas identified pressure testing as the more prudent option. Key considerations that support SoCalGas's determination to pressure test this segment include:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could be shut-in during the non-heating season.
2. Customer Impacts: No identified issues.
3. Permit Conditions:
  - a. City of Glendora Encroachment Permit
  - b. Caltrans Encroachment Permit.
4. Piggability: Non-piggable.

## Final Report for Supply Line 31-09-C Hydrotest Project

5. Pipe Vintage: Multiple vintages from [REDACTED].
6. Existing Pipe Attributes: The Project Team identified existing non-piggable features including a PCF, a non-piggable elbow, and a change in diameter from [REDACTED] to [REDACTED].
7. Long Seam Type: Unknown.
8. Long Seam Repair History: No identified issues.
9. Condition of Coating: No identified issues.
10. History of Leaks: No identified issues.

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. Shut-In Analysis: As discussed above, the Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could be shut-in.
2. Customer Impact: No identified issues.
3. Community Impact: No identified issues.
4. Schedule Coordination: The Project Team coordinated construction schedules and shared a laydown yard with another SoCalGas project.
5. Permit Conditions:
  - a. City of Glendora Encroachment Permit
  - b. Caltrans Encroachment Permit.

## Final Report for Supply Line 31-09-C Hydrotest Project

### 6. Valves:

- a. The Project Team replaced and relocated one existing [REDACTED] mainline valve (MLV) for future maintenance.
- b. The Project Team replaced and relocated one existing [REDACTED] tap valve to a regulator station.

### D. Scope Changes

Through engineering, design, and planning activities, SoCalGas determined that changes in scope were appropriate to enhance the design of the Project and address engineering factors. As a result, the preliminary cost estimate does not fully reflect the final scope. Summarized below is the notable change in scope made after the preliminary cost estimate was developed and approved.

The Project Team included an additional field verification to determine if an existing fitting could be utilized to complete the hydrotest. After field verification, the Project Team planned to excavate and abandon the fitting. Prior to construction mobilization, the Project Team needed to move the original test location due to a moratorium on [REDACTED] that resulted in an increase in project mileage.

Final Report for Supply Line 31-09-C Hydrotest Project

### III. CONSTRUCTION

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#### A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. Following completion of the engineering, design, and planning activities described above, the Project Team directed the Performance Partner to prepare cost estimates based on a more detailed engineering design package, that included the updated design described in the discussion of the notable Scope Change above. SoCalGas awarded the construction contract to the Performance Partner.

1. SoCalGas’s Preliminary Construction Cost Estimate: SoCalGas’s preliminary cost estimate for construction was \$2,050,352.
2. Construction Contractor’s Target Price Estimate: The Construction Contractor’s cost estimate was [REDACTED], which was [REDACTED] than SoCalGas’s preliminary cost estimate for construction.

#### B. Construction Schedule

Table 3: Construction Timeline

Construction Start Date	05/04/2020
Construction Completion Date	07/16/2020
NOP Date	07/01/2020

## Final Report for Supply Line 31-09-C Hydrotest Project

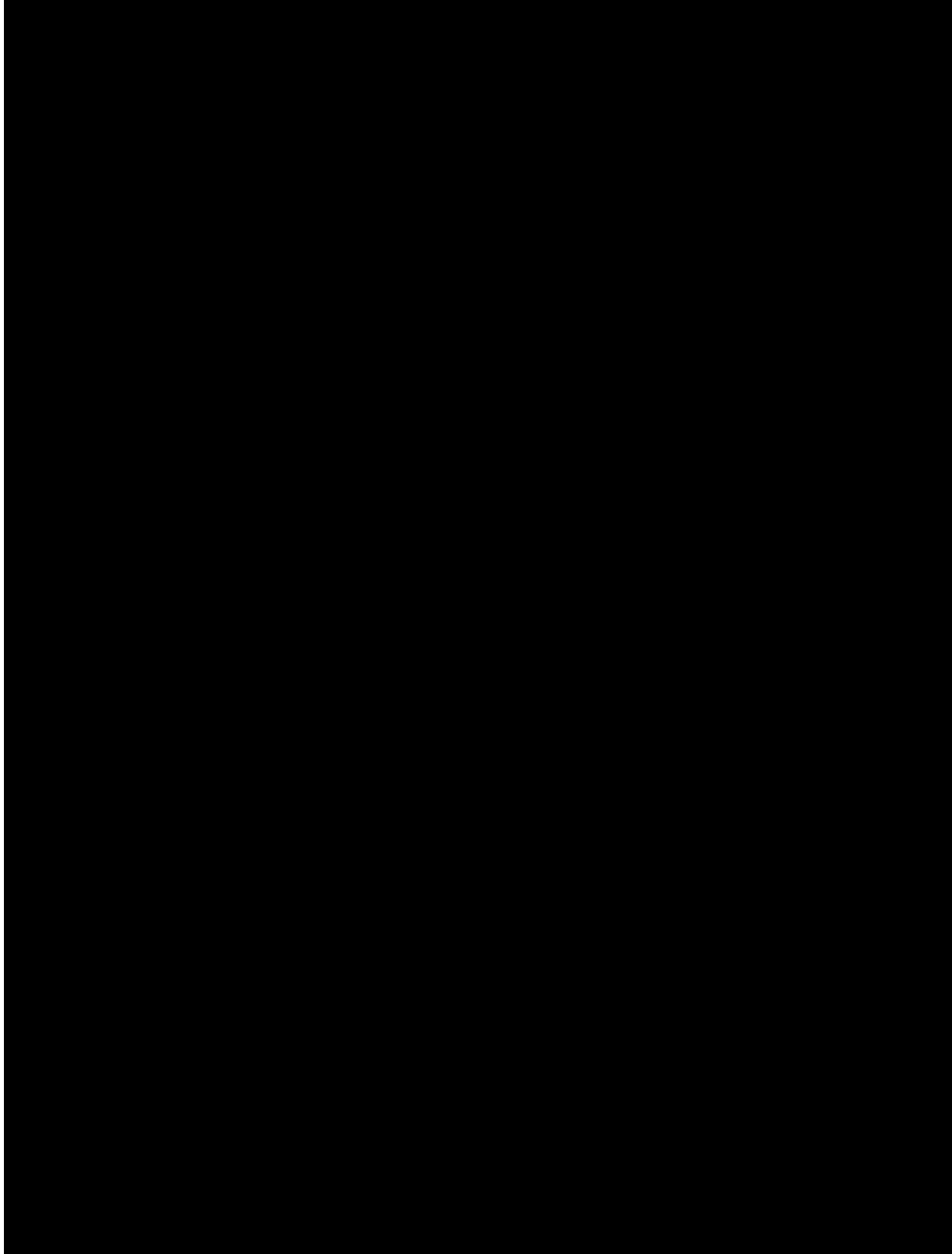
### C. Changes During Construction

The conditions summarized below were encountered during construction. Activities to address or mitigate these conditions resulted in approximately \$228,000 in change orders.

1. Constructability Issues: The Project Team removed an existing [REDACTED] tap valve at [REDACTED] and [REDACTED] to complete the hydrotest.
2. Site Restoration: The city of Glendora required additional paving due to a moratorium on [REDACTED].

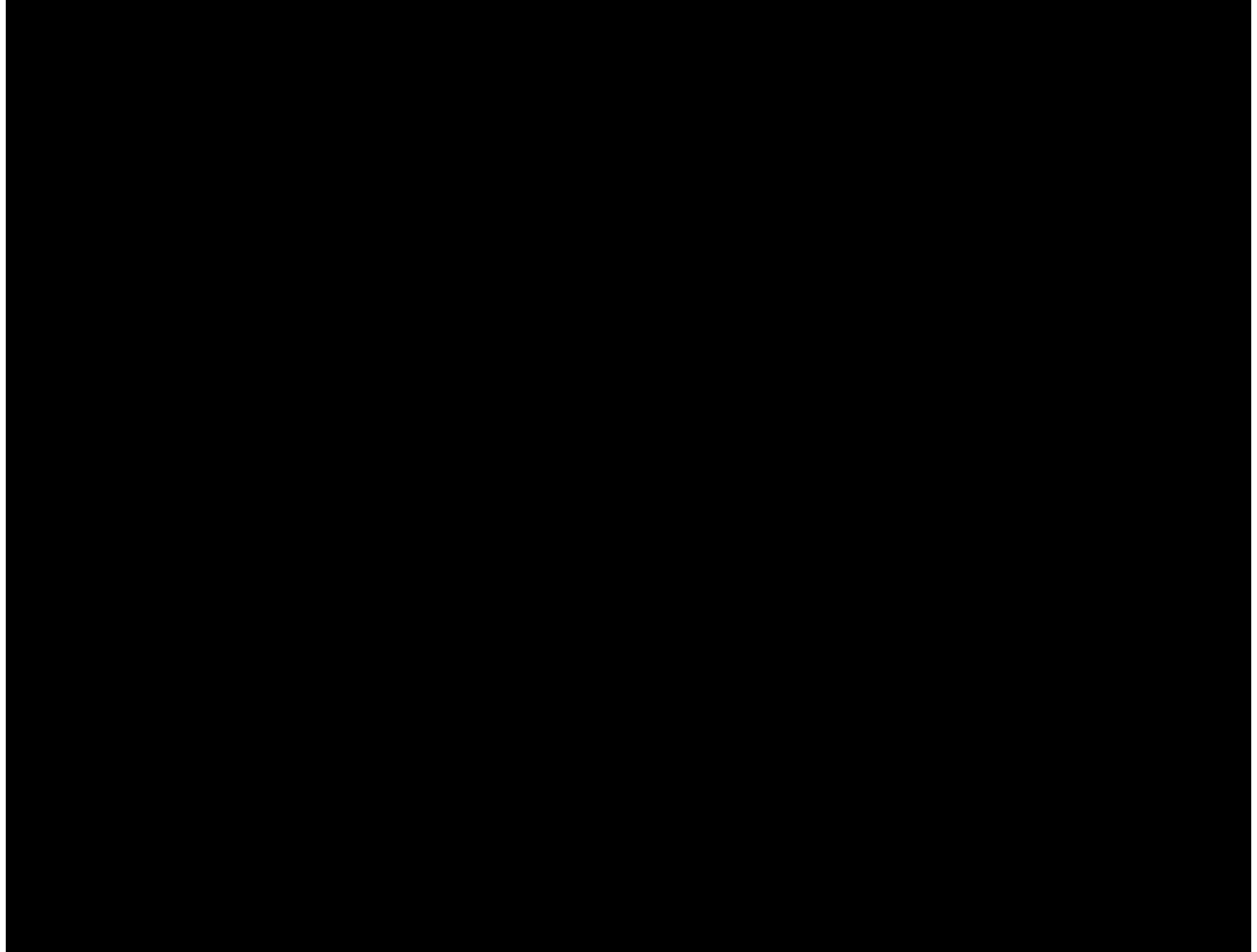
Final Report for Supply Line 31-09-C Hydrotest Project

Figure 3: Bell Hole Access to Prepare Tie-in Work



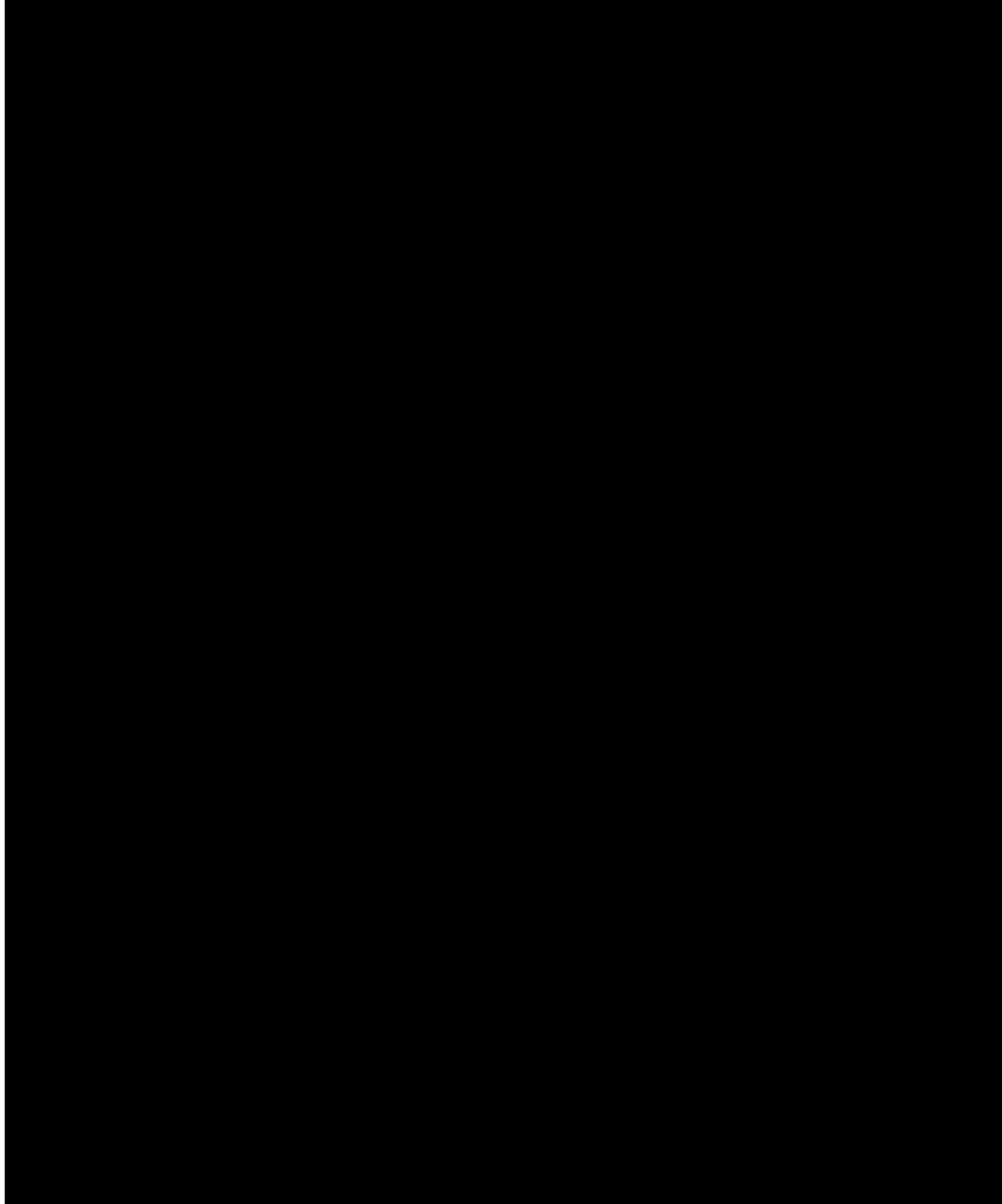
Final Report for Supply Line 31-09-C Hydrotest Project

Figure 4: Buried Pipeline Caution Tape During Backfill



Final Report for Supply Line 31-09-C Hydrotest Project

Figure 5: Restoration of [REDACTED] and [REDACTED] Intersection



## Final Report for Supply Line 31-09-C Hydrotest Project

### D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection, and placement of the pipeline back into service, transportation, and disposal of hydrotested 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.

## Final Report for Supply Line 31-09-C Hydrotest Project

### IV. PROJECT COSTS

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#### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project. Specific examples of cost avoidance actions taken on this project are:

1. Schedule Coordination: The Project Team coordinated construction schedules and shared a laydown area, trailer space, and office space with another SoCalGas project.

#### B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$4,457,676. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

#### C. Actual Direct and Indirect Costs

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$3,758,266.

Final Report for Supply Line 31-09-C Hydrotest Project

Table 4: Estimated and Actual Direct Costs and Variances<sup>5</sup>

Direct Costs (\$)	Estimate	Actuals <sup>6</sup>	Delta Over/(Under)
Company Labor	547,173	293,220	(253,953)
Materials	102,733	71,052	(31,681)
Construction Contractor	2,050,352	1,595,614	(454,738)
Construction Management & Support	310,039	340,799	30,760
Environmental	124,536	109,277	(15,259)
Engineering & Design	334,975	401,268	66,293
Project Management & Services	301,014	276,889	(24,125)
ROW & Permits	121,802	50,561	(71,241)
GMA	565,052	116,744	(448,308)
<b>Total Direct Costs</b>	<b>4,457,676</b>	<b>3,255,423</b>	<b>(1,202,253)</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances<sup>7</sup>

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	926,458	493,409	(433,049)
AFUDC	115,449	8,236	(107,212)
Property Taxes	31,295	1,197	(30,098)
<b>Total Indirect Costs</b>	<b>1,073,202</b>	<b>502,842</b>	<b>(570,359)</b>
<b>Total Direct Costs</b>	<b>4,457,676</b>	<b>3,255,423</b>	<b>(1,202,253)</b>
<b>Total Loaded Costs</b>	<b>5,530,878</b>	<b>3,758,266</b>	<b>(1,772,612)</b>

The Actual Full-Time Equivalents<sup>8</sup> (FTEs) for this Project are 0.91.

<sup>5</sup> Values may not add to total due to rounding.

<sup>6</sup> Actual Material and Construction Contractor costs exclude the cost of upsizing the pipe.

<sup>7</sup> Values may not add to total due to rounding.

<sup>8</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

## Final Report for Supply Line 31-09-C Hydrotest Project

### D. Cost Impacts

Consistent with one of the overarching objectives of PSEP as stated in testimony to maximize the cost effectiveness of safety enhancement investments, SoCalGas effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities may lead to variances between the initial estimate and actuals. The Project Team successfully mitigated these variances whenever feasible through the implementation of effective project management practices, thorough planning, and continuous monitoring.

At the completion of the Supply Line 31-09-C Hydrotest Project, Actual Direct Costs were less than the preliminary estimate by \$1,202,253. This variance can be attributed to a variety of factors including: the initial project estimate anticipated a 10-hour workday, however only 8-hour workdays were necessary; utilizing one Construction Contractor for multiple SoCalGas Projects within the same area allowed for enhanced efficiency as well as through site facility usage of a shared laydown yard that reduced overall field overhead costs.

### E. Disallowance

For this hydrotest project, SoCalGas identified a total of 5,321.6 feet of pipe as being installed post-1955 and lacking pressure test records that provide the minimum information to demonstrate compliance with industry standards or then-applicable strength testing and recordkeeping requirements. Of the 1.329 miles of pipeline that were pressure tested, 5,321.6 feet (75.85%) of test mileage pipe are disallowed. Therefore \$2,234,930 of total project O&M costs are disallowed from recovery. In addition, of the

## Final Report for Supply Line 31-09-C Hydrotest Project

portion of pipeline that was replaced as part of this hydrotest project, 29.4 feet of Incidental pipe were disallowed. Therefore, a \$7,140 reduction to ratebase was calculated by determining the replacement mileage and multiplying the amount by \$1.28 million per mile, that was SoCalGas and SDG&E's system average cost of pressure testing at the time the pipeline was returned to service.

## Final Report for Supply Line 31-09-C Hydrotest Project

### **V. CONCLUSION**

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Supply Line 31-09-C Hydrotest Project. Through this Hydrotest Project, SoCalGas successfully hydrotested 1.347 miles of pipeline in the Cities of Covina and Glendora. The total loaded cost of the Project is \$3,758,266.

SoCalGas executed this project prudently through inspecting and remediating pipeline features in the Project area through one continuous hydrotest.

SoCalGas engaged in prudent cost avoidance efforts by utilizing the same laydown area, trailer space, and office space lease with another SoCalGas Project.

## **End of Supply Line 31-09-C Hydrotest Project Final Report**

Final Report for Supply Line 31-25 Replacement Project

**I. SUPPLY LINE 31-25 REPLACEMENT PROJECT**

---

**A. Background and Summary**

Supply Line 31-25 is a Department of Transportation (DOT) defined transmission<sup>1</sup> line with a predominantly [REDACTED] diameter that runs approximately 3.96 miles in the City of Pomona, within a commercial area. The pipeline is primarily routed across a Class 4 location. This report describes the activities associated with Supply Line 31-25 Replacement Project which consists of the replacement of 828 feet of a [REDACTED] pipeline. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$7,139,570.

Final Report for Supply Line 31-25 Replacement Project

Table 1: General Project Information

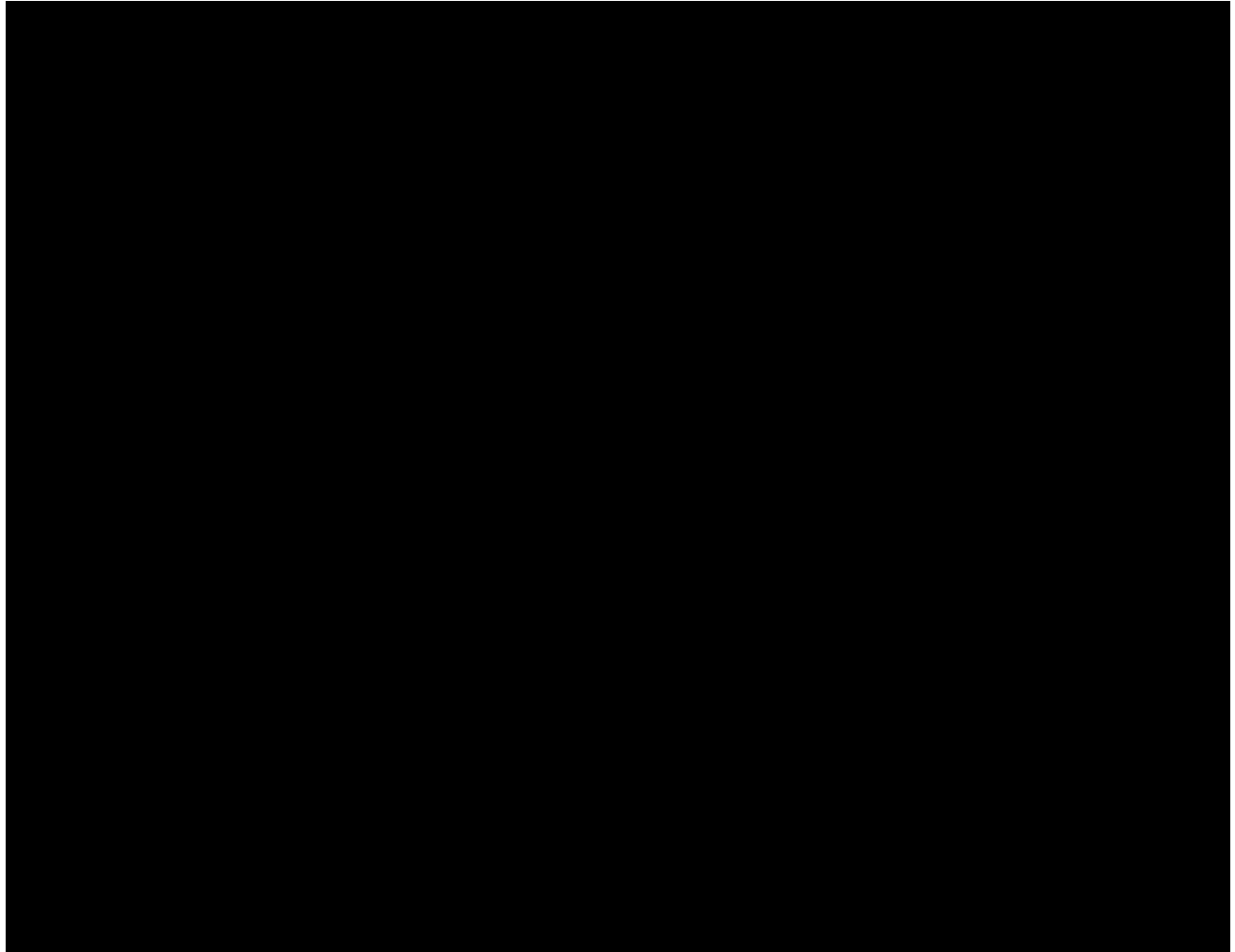
Project Name	Supply Line 31-25		
Project Type	Replacement		
Length	828 feet		
Location	Pomona		
Class	[REDACTED]		
MAOP	[REDACTED]		
Pipe Grade	[REDACTED]		
Wall Thickness	[REDACTED]		
Pipe Vintage	[REDACTED]		
Construction Start	05/20/2024		
Construction Finish	08/02/2024		
Original Pipe Diameter	[REDACTED]		
Original Nominal Diameter	[REDACTED]		
New Diameter	[REDACTED]		
Original SMYS <sup>2</sup>	[REDACTED]		
New SMYS	[REDACTED]		
Project Costs (\$)	Capital	O&M	Total
Loaded Project Costs	7,139,570	-	7,139,570

<sup>2</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

## Final Report for Supply Line 31-25 Replacement Project

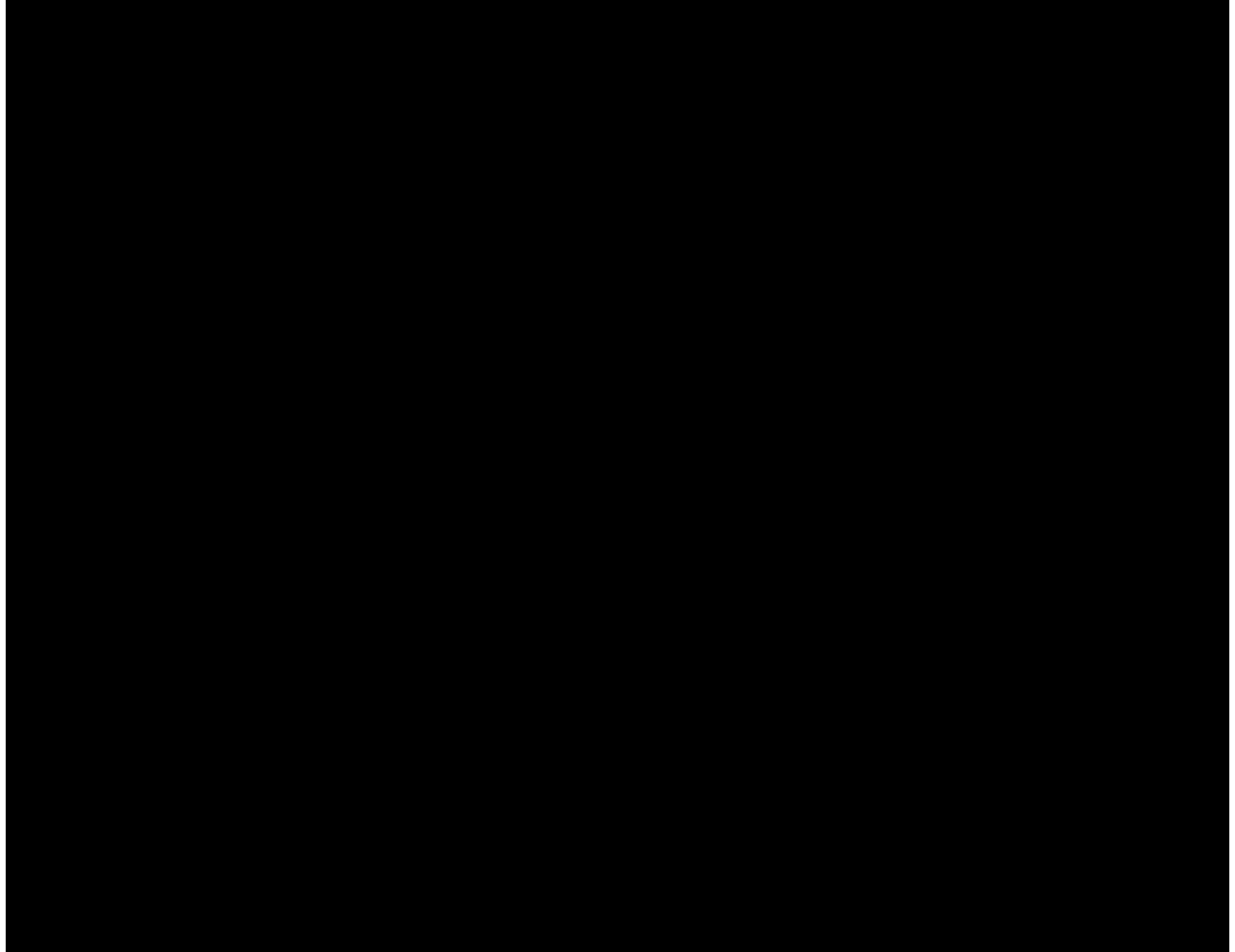
### B. Maps and Images

Figure 1: Satellite Image of Supply Line 31-25 Replacement Project



Final Report for Supply Line 31-25 Replacement Project

Figure 2: Overview Map of Supply Line 31-25 Replacement Project



Final Report for Supply Line 31-25 Replacement Project

**II. ENGINEERING, DESIGN, AND PLANNING**

**A. Project Scope**

Table 2: Mileage Information

	Criteria	Accelerated <sup>3</sup>	Incidental	Replacement Offset	Total <sup>4</sup>
Final Mileage	0.156 mi.	0 mi.	0.003 mi.	-0.002 mi.	0.157 mi.
	825 ft.	0 ft.	14 ft.	-11 ft.	828 ft.

SoCalGas and SDG&E presented a conceptual project scope in workpapers supporting the 2011 PSEP filing.<sup>5</sup> Prior to initiating execution of the Project in 2022, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SoCalGas and SDG&E did not identify Supply Line 31-25 in the 2011 PSEP filing.
2. Scope Validation: Through scope validation activities, SoCalGas identified Supply Line 31-25 as a Phase 1A Replacement Project comprised of 825 feet of Category 4 Criteria.
3. Engineering, Design, and Constructability:
  - a. The Project Team replaced a [REDACTED] pipe in the same trench.
  - b. The Project Team utilized two Pressure Control fittings (PCFs) to avoid any impact on the distribution taps and to isolate the replacement segment during construction.

<sup>3</sup> Accelerated mileage includes Phase 1B and Phase 2 pipe. The Accelerated mileage was included to realize efficiencies and to enhance project constructability.

<sup>4</sup> Values may not add to total due to rounding.

<sup>5</sup> See Amended PSEP of SoCalGas and SDG&E, submitted December 2, 2011, in R.11-02-019 and subsequently transferred to A.11-11-002.

## Final Report for Supply Line 31-25 Replacement Project

- c. Incidental mileage was included for constructability purposes, ensuring remediation of stationing issues along the pipeline, removing three back to back elbows and placing the tie-ins in an advantageous location.
4. Final Project Scope: The final project scope consists of an 828 feet pipeline replacement.

### B. Decision Tree Review

SoCalGas performed a review of the Supply Line 31-25 and confirmed the project design should commence as a Replacement Project.

Segments of less than 1,000 feet are identified for replacement under the approved PSEP Decision Tree because, for short segments of pipe, the logistical costs associated with pressure testing (for example, permitting, construction, water handling, and service disruptions for a non-looped system) can approach or exceed the cost of replacement. In such circumstances, replacement affords a more cost-effective approach to achieving compliance with D.11-06-017 while providing equal safety enhancement benefits. Moreover, installation of the new segment can usually be performed while the existing service is maintained to customers, thereby avoiding service disruptions that may otherwise occur during pressure testing.

As a result of this review, SoCalGas identified replacement as the more prudent option. Key considerations that support SoCalGas's determination to replace this segment include:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could be shut-in utilizing two PCFs to avoid impact on the distribution taps along the pipeline, as the line was capable of dual-direction feed.
2. Customer Impacts: No identified issues.
3. Community Impacts: No identified issues.

## Final Report for Supply Line 31-25 Replacement Project

4. Permit Conditions: The Project Team identified one permit agency and requirement.
5. Piggability: Non-piggable.
6. Pipe Vintage: [REDACTED]
7. Existing Pipe Attributes: No identified issues.
8. Long Seam Type: Unknown.
9. Long Seam Repair History: No identified issues.
10. Condition of Coating: Unknown.
11. History of Leaks: No leak history.
12. Other Identified Risks: No identified issues.

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records and potholing of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. Shut-In Analysis: As discussed above, the Project Team completed a Request for Engineering Review (RER) analysis and concluded the line could be shut-in.
2. Customer Impact: No identified issues.
3. Community Impact: No identified issues.
4. Known Substructures: No identified issues.
5. Permit Conditions: The Project Team obtained an encroachment permit from the City of Pomona.
6. Land Use: The Project Team worked with a private landowner to secure a laydown yard on Palomares Street for office set up, material storage, and fabrication.
7. Environmental: No identified issues.
8. Tie-In: The Project Team utilized two PCFs to allow for an advantageous tie-in.

## Final Report for Supply Line 31-25 Replacement Project

9. Other Identified Risks: No identified issues.

10. Constructability:

- a. The planned construction method used for the Project is open trenching.
- b. Existing pipe would be replaced and not abandoned in place due to easement constraints at the Project site.
- c. The Project Team removed back to back elbows on the east side of the Project site, allowing a dry pig run for the post construction hydrotest.

### D. Scope Changes

SoCalGas did not make any notable scope changes during detailed design.

Final Report for Supply Line 31-25 Replacement Project

### III. CONSTRUCTION

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#### A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. Following completion of the engineering, design, and planning activities described above, the Project Team directed the Performance Partner to prepare cost estimates based on a more detailed engineering design package, which included the updated design described in the discussion of notable Scope Changes above. SoCalGas awarded the construction contract to the Performance Partner.

1. SoCalGas’s Preliminary Construction Cost Estimate: SoCalGas’s preliminary cost estimate for construction was \$2,664,862.
2. Construction Contractor’s Target Price Estimate: The Construction Contractor’s cost estimate was [REDACTED], which was [REDACTED] than SoCalGas’s preliminary cost estimate for construction.

#### B. Construction Schedule

Table 3: Construction Timeline

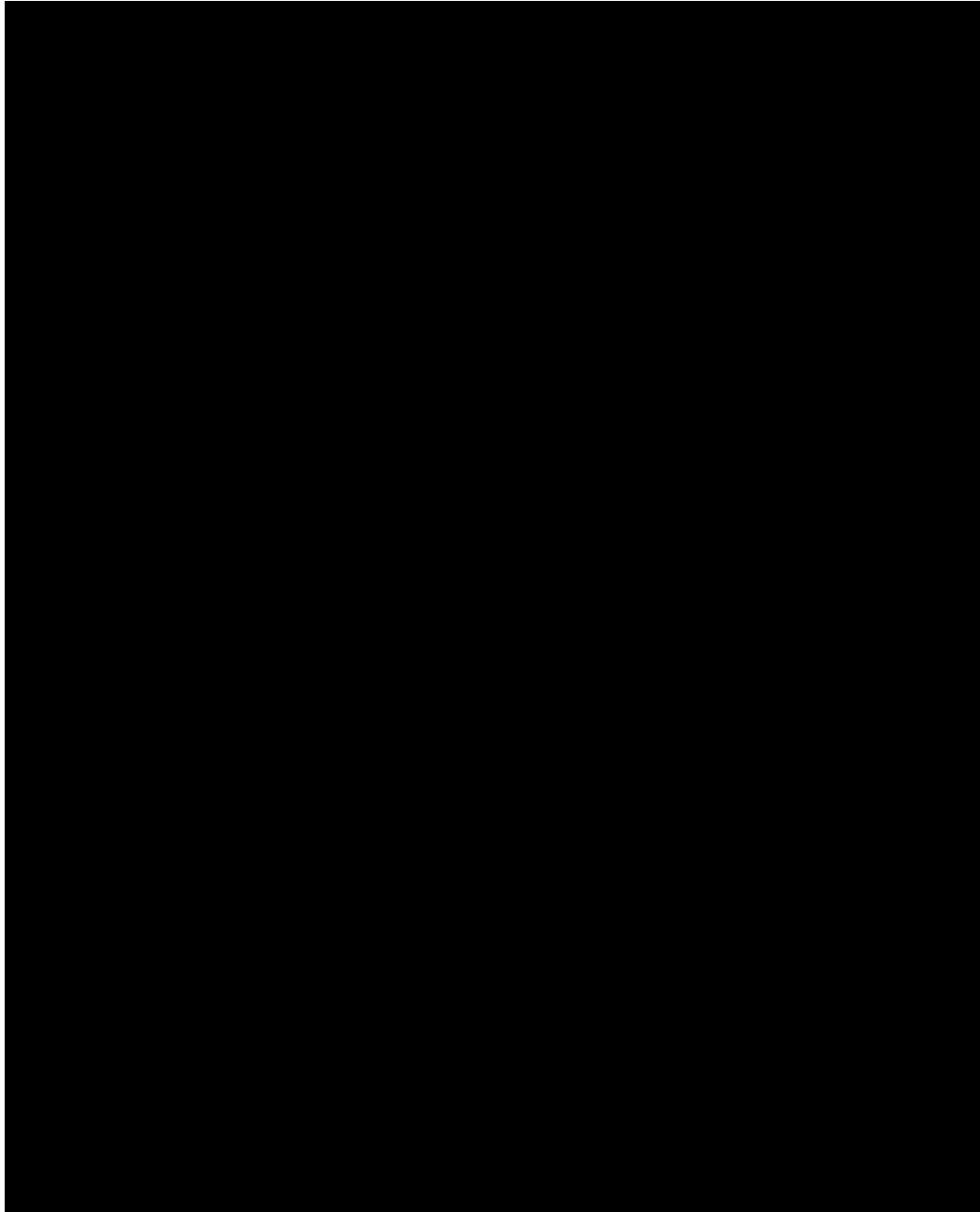
Construction Start Date	05/20/2024
Construction Completion Date	08/02/2024
NOP Date	07/17/2024

#### C. Changes During Construction

SoCalGas successfully mitigated conditions during construction in a manner that minimized potential impacts on project scope, cost, and schedule. As a result, these conditions did not result in any notable change orders.

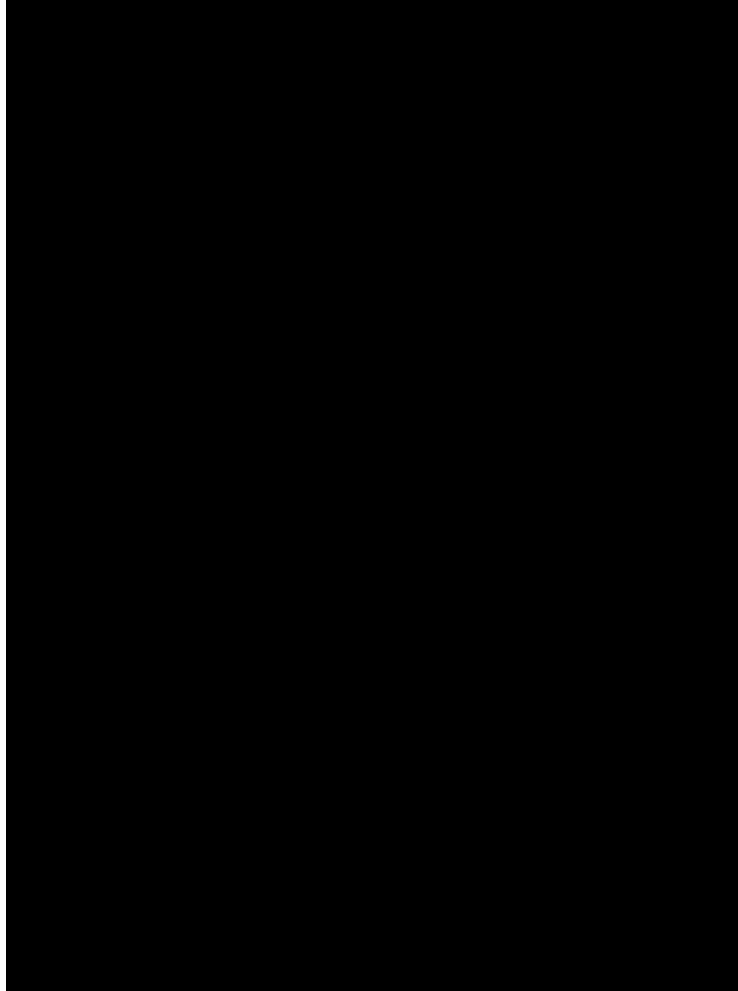
Final Report for Supply Line 31-25 Replacement Project

Figure 3: Excavation to expose and replace existing [REDACTED] high pressure line



Final Report for Supply Line 31-25 Replacement Project

Figure 4: Pressure Control Fitting (PCF) that will be used to isolate Supply Line 31-25



## Final Report for Supply Line 31-25 Replacement Project

### D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, transportation and disposal of hydrotreated 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.

Final Report for Supply Line 31-25 Replacement Project

## IV. PROJECT COSTS

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### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project.

### B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$4,255,902. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

### C. Actual Direct and Indirect Costs

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$7,139,570.

Final Report for Supply Line 31-25 Replacement Project

Table 4: Estimated and Actual Direct Costs and Variances<sup>6</sup>

Direct Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Company Labor	401,555	457,140	55,585
Materials	191,306	148,836	(42,470)
Construction Contractor	2,664,862	2,919,593	254,731
Construction Management & Support	269,301	269,777	476
Environmental	121,704	111,418	(10,286)
Engineering & Design	399,308	489,247	89,939
Project Management & Services	107,110	284,109	176,999
ROW & Permits	100,756	135,463	34,707
<b>Total Direct Costs</b>	<b>4,255,902</b>	<b>4,815,583</b>	<b>559,681</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances<sup>7</sup>

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	1,678,726	2,235,582	556,855
AFUDC	227,083	73,179	(153,904)
Property Taxes	193,165	15,226	(177,939)
<b>Total Indirect Costs</b>	<b>2,098,975</b>	<b>2,323,987</b>	<b>225,012</b>
<b>Total Direct Costs</b>	<b>4,255,902</b>	<b>4,815,583</b>	<b>559,681</b>
<b>Total Loaded Costs</b>	<b>6,354,877</b>	<b>7,139,570</b>	<b>784,693</b>

The Actual Full-Time Equivalents<sup>8</sup> (FTEs) for this Project are 1.19.

<sup>6</sup> Values may not add to total due to rounding.

<sup>7</sup> Ibid.

<sup>8</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

## Final Report for Supply Line 31-25 Replacement Project

### D. Cost Impacts

Consistent with one of the overarching objectives of PSEP to maximize the cost effectiveness of safety enhancement investments, SoCalGas effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities can lead to variances between initial estimates and actual costs. Consistent with prudent management at the time, the Project Team successfully mitigated these variances whenever feasible through the implementation of effective project management practices, thorough planning, and continuous monitoring.

At the completion of the Supply Line 31-25 Replacement Project, Actual Direct Costs came within the AACE Class 3 Total Installed Cost (TIC) accuracy range, adhering to the standard industry practices defined by the Association for the Advancement of Cost Engineering (AACE) International. The Actual Direct Costs were less than the preliminary estimate by \$559,681. This variance can be attributed to several factors including: the Project Team increased work hours to restore the parking lot before Fall sessions began at a local University, extending the schedule from 46 to 53 days; Due to prior traffic incidents in the area, daily setup and removal of additional K-rail barriers were required throughout construction. This resulted in the Project Team allocating multiple hours each day to implement enhanced traffic control measures, contributing to increased construction management costs and schedule impacts.

## Final Report for Supply Line 31-25 Replacement Project

### E. Disallowance

There was no disallowance for Supply Line 31-25 Replacement Project as there were no post-1955 segments included in the Project without records that provide the minimum information to demonstrate compliance with then-applicable industry standards or regulatory strength testing and recordkeeping requirements.

Final Report for Supply Line 31-25 Replacement Project

**V. CONCLUSION**

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Supply Line 31-25 Replacement Project. Through this Replacement Project, SoCalGas successfully replaced 828 feet of pipeline in the City of Pomona. The total loaded cost of the Project is \$7,139,570.

SoCalGas executed this project prudently through open trench replacement.

**End of Supply Line 31-25 Replacement Project Final Report**

Final Report for Supply Line 31-6349 Replacement Project

## **I. SUPPLY LINE 31-6349 REPLACEMENT PROJECT**

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### **A. Background and Summary**

Supply Line 31-6349 is a Department of Transportation (DOT) defined transmission<sup>1</sup> line with a predominantly [REDACTED] diameter that runs approximately 20 feet inside a regulator station in the City of Industry. The pipeline is routed across a Class 3 location. This report describes the PSEP activities associated with Supply Line 31-6349 Replacement Project which consists of the replacement of three feet of pipeline and associated fittings. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of this project allocated to PSEP is \$161,335.

The Project Team initiated communications with internal stakeholders early on and determined another SoCalGas project was in the initial planning stages and adjacent to the PSEP scope. This enabled the Project Team to take advantage of a common construction window and reduce overall costs by minimizing duplicate mobilization efforts and utilizing the same Construction Contractor.

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<sup>1</sup> As defined in 49 C.F.R. § 192.3 (2024).

Final Report for Supply Line 31-6349 Replacement Project

Table 1: General Project Information

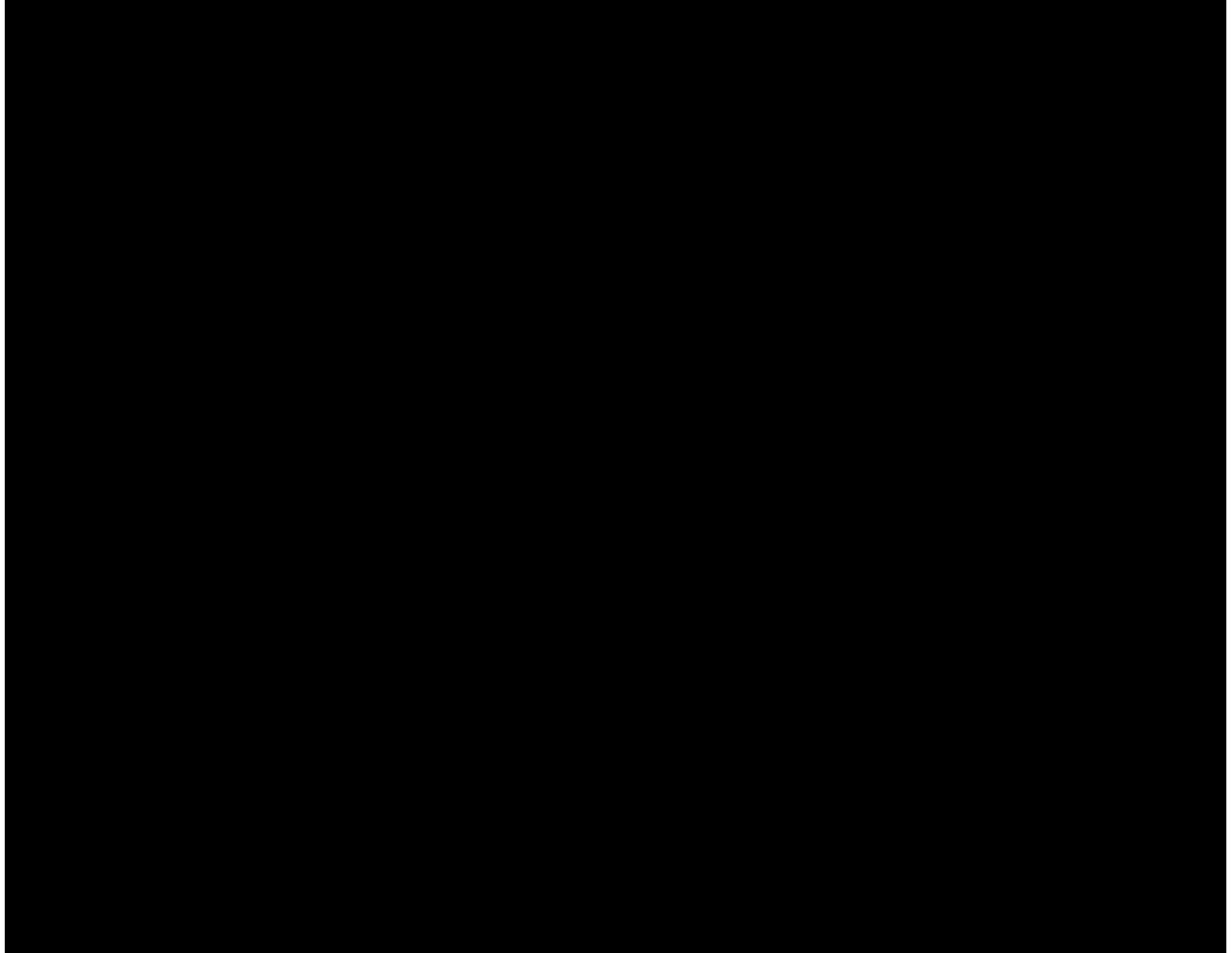
Project Name	Supply Line 31-6349		
Project Type	Replacement		
PSEP Phase	1A		
Length	3 feet		
Location	City of Industry		
Class	[REDACTED]		
MAOP	[REDACTED]		
Pipe Grade	[REDACTED]		
Wall Thickness	[REDACTED]		
Pipe Vintage	[REDACTED]		
Construction Start	04/20/2021		
Construction Finish	06/04/2021		
Original Pipe Diameter	[REDACTED]		
Original Nominal Diameter	[REDACTED]		
New Diameter	[REDACTED]		
Original SMYS <sup>2</sup>	[REDACTED]		
New SMYS	[REDACTED]		
<b>Project Costs (\$)</b>	<b>Capital</b>	<b>O&amp;M</b>	<b>Total</b>
Loaded Project Costs	105,838	55,497	161,335

<sup>2</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

## Final Report for Supply Line 31-6349 Replacement Project

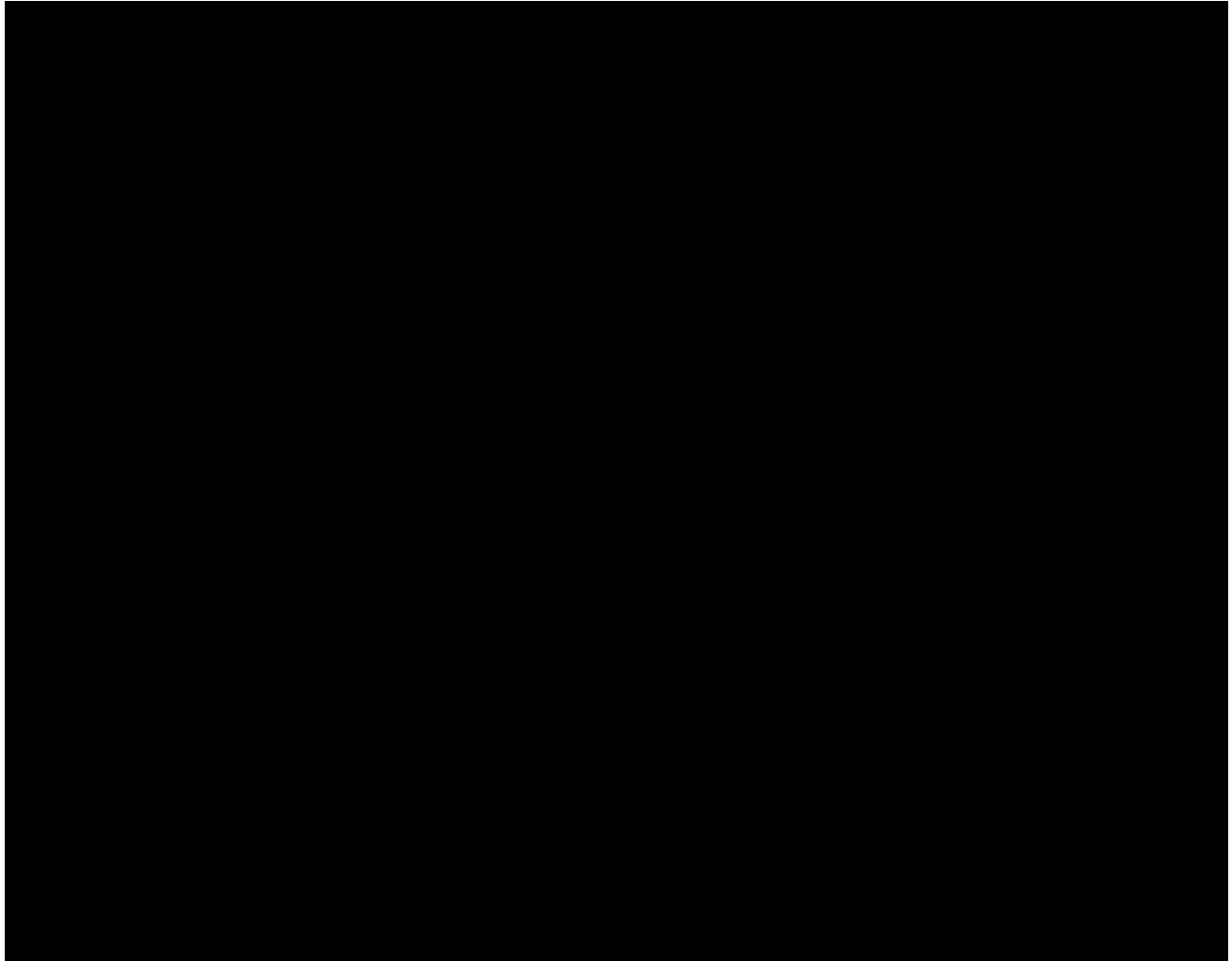
### Maps and Images

Figure 1: Satellite Image of Supply Line 31-6349 Replacement Project



Final Report for Supply Line 31-6349 Replacement Project

Figure 2: Overview Map of Supply Line 31-6349 Replacement Project



Final Report for Supply Line 31-6349 Replacement Project

**II. ENGINEERING, DESIGN, AND PLANNING**

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A. Project Scope

Table 2: Mileage Information

	Criteria	Accelerated <sup>3</sup>	Incidental	Total <sup>4</sup>
Final Mileage	0.0006 mi.	0 mi.	0 mi.	0.0006 mi.
	3 ft.	0 ft.	0 ft.	3 ft.

Prior to initiating execution of the Project in 2021, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SoCalGas and SDG&E did not identify Supply Line 31-6349 Replacement Project in the 2011 PSEP filing.
2. Scope Validation: Through scope validation activities, during design before initiating execution of the Project, SoCalGas verified the scope of the Project by three feet of Category 4 Criteria pipe.
3. Engineering, Design, and Constructability:
  - a. The Project Team initiated communications with internal stakeholders early on and determined another SoCalGas project was in the initial planning stages and adjacent to the PSEP scope.
4. Final Project Scope: The final project scope consists of a three foot replacement.

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<sup>3</sup> Accelerated mileage includes Phase 1B and Phase 2 pipe. The Accelerated mileage was included to realize efficiencies and to enhance project constructability.

<sup>4</sup> Values may not add to total due to rounding.

## Final Report for Supply Line 31-6349 Replacement Project

### B. Decision Tree Review

SoCalGas performed a review of the Supply Line 31-6349 and confirmed the project design should commence as a Replacement Project.

Segments of less than 1,000 feet are identified for replacement under the approved PSEP Decision Tree because, for short segments of pipe, the logistical costs associated with pressure testing (for example, permitting, construction, water handling, and service disruptions for a non-looped system) can approach or exceed the cost of replacement. In such circumstances, replacement affords a more cost-effective approach to achieving compliance with D.11-06-017 while providing equal safety enhancement benefits. Moreover, installation of the new segment can usually be performed while the existing service is maintained to customers, thereby avoiding service disruptions that may otherwise occur during pressure testing.

As a result of this review, SoCalGas identified replacement as the more prudent option. Key considerations that support SoCalGas's determination to replace this segment include:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could be shut-in.
2. Customer Impacts: No identified impacts.
3. Community Impacts: No identified impacts.
4. Piggability: Non-piggable.
5. Pipe Vintage: [REDACTED]
6. Long Seam Type: Unknown.
7. Long Seam Repair History: No identified issues.
8. Condition of Coating: No identified issues.
9. History of Leaks: No identified issues.
10. Constructability: No identified issues.

## Final Report for Supply Line 31-6349 Replacement Project

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. Shut-In Analysis: As discussed above, the Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could be shut-in.
2. Customer Impact: No identified impacts.
3. Community Impact: No identified impacts.
4. Schedule Coordination: The Project Team coordinated construction execution with another SoCalGas project.
5. Known Substructures: No identified issues.
6. Permit Conditions: The Project Team was able to utilize an existing Temporary Right of Entry (TRE) from a private landowner.
7. Land Use: No identified issues.
8. Environmental: No identified issues.

### D. Scope Changes

There were no notable scope changes during detailed design.

Final Report for Supply Line 31-6349 Replacement Project

### III. CONSTRUCTION

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#### A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. Following completion of the engineering, design, and planning activities described above, the Project Team directed the Performance Partner to prepare cost estimates based on a more detailed engineering design package. As indicated above, there were no notable changes in scope between the time when the Project Team prepared the preliminary cost estimate and when the Performance Partner prepared and submitted its Target Price Estimate. SoCalGas awarded the construction contract to the Performance Partner.

#### B. Construction Schedule

Table 3: Construction Timeline

Construction Start Date	04/20/2021
Construction Completion Date	06/04/2021
NOP Date	05/21/2021

#### C. Changes During Construction

SoCalGas successfully mitigated conditions during construction in a manner that minimized potential impacts on project scope, cost, and schedule. As a result, these conditions did not result in any notable change orders.

## Final Report for Supply Line 31-6349 Replacement Project

### D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, transportation and disposal of hydrotreated 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.

Final Report for Supply Line 31-6349 Replacement Project

## IV. PROJECT COSTS

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### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project. Specific examples of cost avoidance actions taken on this project are:

1. Schedule Coordination: The Project Team coordinated construction execution with another SoCalGas Project.

### B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$263,900. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

Final Report for Supply Line 31-6349 Replacement Project

C. Actual Direct and Indirect Costs

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$161,335.

Table 4: Estimated and Actual Direct Costs and Variances<sup>5</sup>

Direct Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Company Labor	24,700	14,519	(10,181)
Materials	6,500	2,537	(3,963)
Non-Labor	174,200	44,108	(130,092)
Engineering & Design	58,500	69,134	10,634
<b>Total Direct Costs</b>	<b>263,900</b>	<b>130,297</b>	<b>(133,603)</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances<sup>6</sup>

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	29,828	30,778	950
AFUDC	-	259	259
Property Taxes	-	-	-
<b>Total Indirect Costs</b>	<b>29,828</b>	<b>31,037</b>	<b>1,209</b>
<b>Total Direct Costs</b>	<b>263,900</b>	<b>130,297</b>	<b>(133,603)</b>
<b>Total Loaded Costs</b>	<b>293,728</b>	<b>161,335</b>	<b>(132,394)</b>

The Actual Full-Time Equivalents<sup>7</sup> (FTEs) for this Project are 0.22.

<sup>5</sup> Values may not add to total due to rounding.

<sup>6</sup> Values may not add to total due to rounding.

<sup>7</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

## Final Report for Supply Line 31-6349 Replacement Project

### D. Cost Impacts

Consistent with one of the overarching objectives of PSEP to maximize the cost effectiveness of safety enhancement investments, SoCalGas effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities can lead to variances between initial estimates and actual costs. Consistent with prudent management at the time, the Project Team successfully mitigated these variances whenever feasible through the implementation of effective project management practices, thorough planning, and continuous monitoring.

At the completion of the Supply Line 31-6349 Replacement Project, Actual Direct Costs were less than the preliminary estimate by \$133,603. This variance can be attributed to the ability to complete construction at the same time as another SoCalGas project.

### E. Disallowance

There was no disallowance for Supply Line 31-6349 Replacement Project as there were no post-1955 segments included in the Project without records that provide the minimum information to demonstrate compliance with then-applicable industry standards or regulatory strength testing and recordkeeping requirements.

Final Report for Supply Line 31-6349 Replacement Project

## **V. CONCLUSION**

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Supply Line 31-6349 Replacement Project. Through this Replacement Project, SoCalGas successfully replaced three feet of pipeline and associated fittings in the City of Industry. The total loaded cost of the Project is \$161,335.

SoCalGas executed this project prudently through coordination with a Gas Transmission project that was planned for construction.

## **End of Supply Line 31-6329 Replacement Project Final Report**

Final Report for Supply Line 32-09 [REDACTED] Replacement Project

## **I. SUPPLY LINE 32-09 [REDACTED] REPLACEMENT PROJECT**

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### **A. Background and Summary**

Supply Line 32-09 is a Department of Transmission (DOT) defined transmission<sup>1</sup> line with a predominantly [REDACTED] diameter line that runs approximately 0.249 miles in the City of Los Angeles. The pipeline is routed across a Class 3 location. This report describes the activities associated with Supply Line 32-09 [REDACTED] Replacement Project which consists of the replacement of 29 feet of pipeline and the rebuilding of an ADA (Americans with Disabilities Act) ramp. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$2,369,953.

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<sup>1</sup> As defined in 49 C.F.R. § 192.3 (2024).

Final Report for Supply Line 32-09 [REDACTED] Replacement Project

Table 1: General Project Information

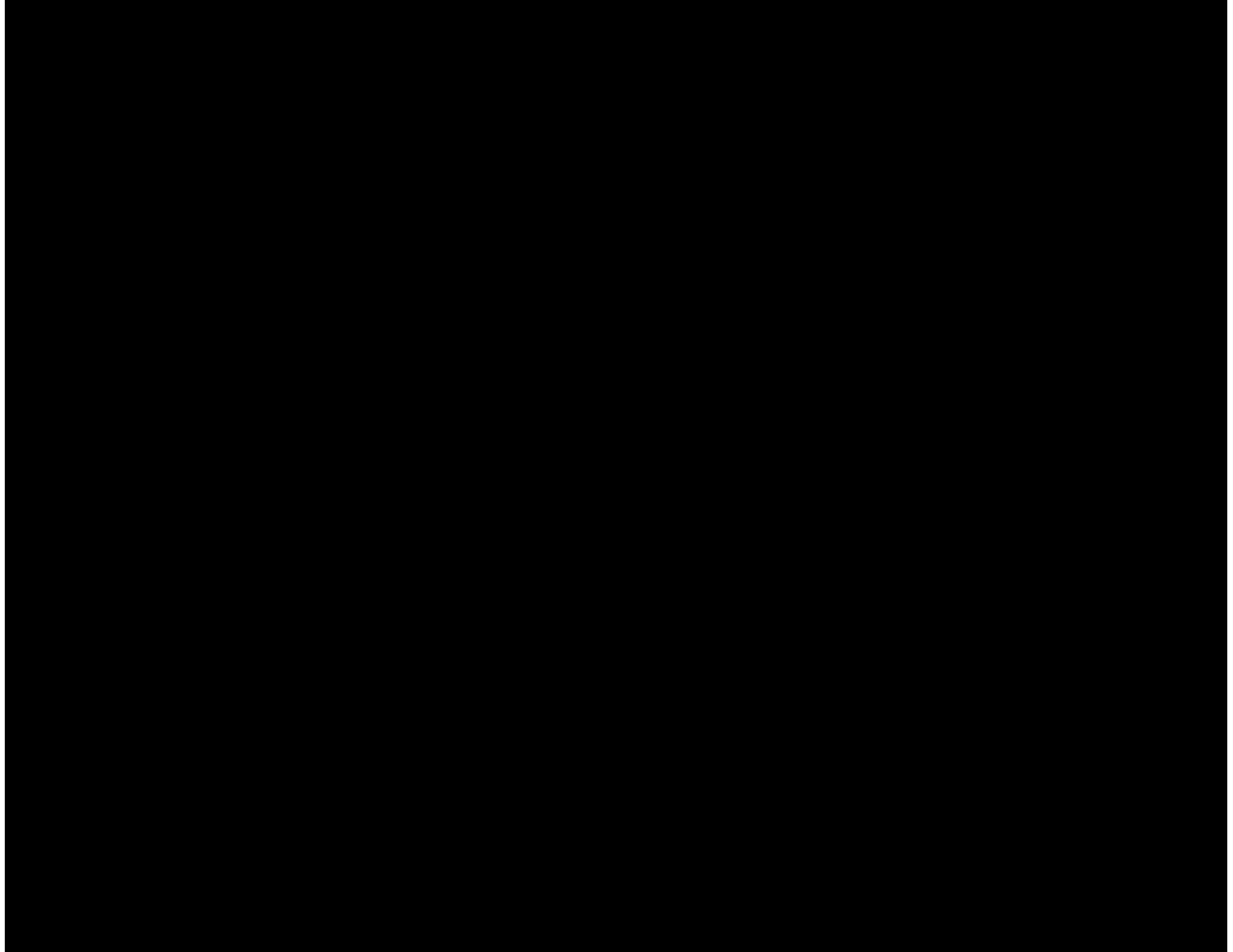
Project Name	Supply Line 32-09 [REDACTED]	Replacement	
Project Type	Replacement		
PSEP Phase	1A		
Length	29 feet		
Location	City of Los Angeles		
Class	[REDACTED]		
MAOP	[REDACTED]		
Pipe Grade	[REDACTED]		
Wall Thickness	[REDACTED]		
Pipe Vintage	[REDACTED]		
Construction Start	07/08/2024		
Construction Finish	08/09/2024		
Original Pipe Diameter	[REDACTED]		
Original Nominal Diameter	[REDACTED]		
New Diameter	[REDACTED]		
Original SMYS <sup>2</sup>	[REDACTED]		
New SMYS	[REDACTED]		
Project Costs (\$)	Capital	O&M	Total
Loaded Project Costs	2,369,953	-	2,369,953
Disallowed Costs	-	-	-

<sup>2</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

Final Report for Supply Line 32-09 [REDACTED] Replacement Project

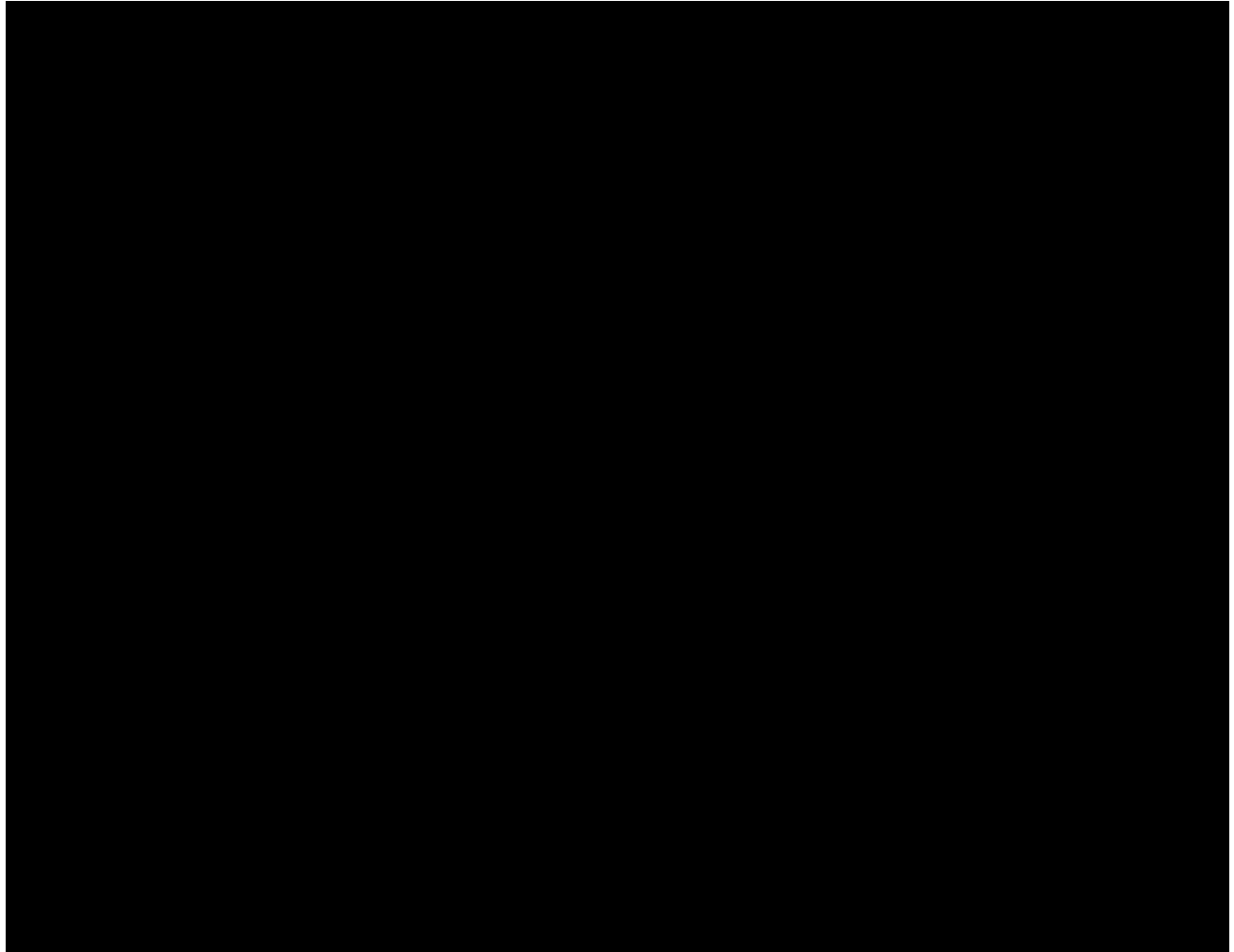
Maps and Images

Figure 1: Satellite Image of Supply Line 32-09 Replacement Project



Final Report for Supply Line 32-09 [REDACTED] Replacement Project

Figure 2: Overview Map of Supply Line 32-09 Replacement Project



## II. ENGINEERING, DESIGN, AND PLANNING

### A. Project Scope

Table 2: Mileage Information

	Criteria	Accelerated	Incidental	Total <sup>3</sup>
Final Mileage	0.005 mi.	0 mi.	0.001 mi.	0.005 mi.
	24 ft.	0 ft.	4 ft.	29 ft.

SoCalGas and SDG&E presented a conceptual project scope in workpapers supporting the 2011 PSEP filing.<sup>4</sup> Prior to initiating execution of the Project in 2021, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SoCalGas and SDG&E did not identify Line 32-09 in the 2011 PSEP filing.
2. Scope Validation: Through scope validation activities, after the 2011 filing and before initiating execution of the Project, SoCalGas successfully verified the scope of the Project as 24 feet of Category 4 Criteria pipe.
3. Engineering, Design, and Constructability:
  - a. Due to the location of the replacement, the Project Team had to design and rebuild an ADA ramp.
  - b. The Project Team needed a qualified civil engineer that was experienced with construction and permitting for ADA ramps within the City of Los Angeles.
  - c. The Project Team needed to remove a pressure control fitting, adding incidental mileage to the project.

<sup>3</sup> Values may not add to total due to rounding.

<sup>4</sup> See Amended PSEP of SoCalGas and SDG&E, submitted December 2, 2011, in R.11-02-019 and subsequently transferred to A.11-11-002.

Final Report for Supply Line 32-09 [REDACTED] Replacement Project

4. Final Project Scope: The final project scope consists of a 24 feet Replacement, the rebuilding of an ADA ramp and 4 feet of Incidental pipe.

## B. Decision Tree Review

SoCalGas performed a review of the Supply Line 32-09 [REDACTED] Project and confirmed the project design should commence as a Replacement Project.

Segments of less than 1,000 feet are identified for replacement under the approved PSEP Decision Tree because, for short segments of pipe, the logistical costs associated with pressure testing (for example, permitting, construction, water handling, and service disruptions for a non-looped system) can approach or exceed the cost of replacement. In such circumstances, replacement affords a more cost-effective approach to achieving compliance with D.11-06-017 while providing equal safety enhancement benefits. Moreover, installation of the new segment can usually be performed while the existing service is maintained to customers, thereby avoiding service disruptions that may otherwise occur during pressure testing.

As a result of this review, SoCalGas identified replacement as the more prudent option. Key considerations that support SoCalGas's determination to replace this segment include:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could be shut-in during the non-heating season.
2. Customer Impacts: No identified impacts.
3. Community Impacts: No identified impacts.
4. Piggability: Non-piggable.
5. Pipe Vintage: [REDACTED].
6. Existing Pipe Attributes: The line has an existing pressure control fitting (PCF).

Final Report for Supply Line 32-09 [REDACTED] Replacement Project

- 7. Long Seam Type:  
[REDACTED]  
[REDACTED]
- 8. Long Seam Repair History: No identified issues.
- 9. Condition of Coating: No identified issues.
- 10. History of Leaks: No identified issues.

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records and potholing of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

- 1. Shut-In Analysis: As discussed above, the Project Team completed an RER analysis and concluded that the line could be shut-in during the non-heating season.
- 2. Customer Impact: No identified impacts.
- 3. Community Impact: No identified impacts.
- 4. Known Substructures: The Project Team identified multiple utilities prior to construction and included them in the Project design.
- 5. Permit Conditions:
  - a. The Project Team obtained a U-Permit from the City of Los Angeles.
  - b. The Project Team obtained a B-Permit from the City of Los Angeles. The permit required the ADA sidewalk curb ramp design to be stamped and approved by a Professional Engineer.
  - c. The Project Team obtained traffic control plans from the City of Los Angeles.
- 6. Land Use: No identified impacts.
- 7. Environmental: No identified impacts.

Final Report for Supply Line 32-09 [REDACTED] Replacement Project

8. Other Identified Risks: Installation of a flanged insulation kit and a cathodic protection test station to ensure electrical isolation and prevent corrosion in the pipeline system, thereby enhancing long-term structural integrity and operational safety.

#### D. Scope Changes

SoCalGas did not make any notable scope changes during detailed design.

### III. CONSTRUCTION

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#### A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. As indicated above, there were no notable changes in scope between the time when the Project Team prepared the preliminary cost estimate and when the Performance Partner prepared and submitted its Target Price Estimate. SoCalGas awarded the construction contract to the Performance Partner.

1. SoCalGas’s Preliminary Construction Cost Estimate: SoCalGas’s preliminary cost estimate for construction was \$542,784.
2. Construction Contractor’s Target Price Estimate: The Construction Contractor’s cost estimate was [REDACTED], which was [REDACTED] than SoCalGas’s preliminary cost estimate for construction.

#### B. Construction Schedule

Table 3: Construction Timeline

Construction Start Date	07/08/2024
Construction Completion Date	08/09/2024
NOP Date	07/31/2024

Final Report for Supply Line 32-09 [REDACTED] Replacement Project

### C. Changes During Construction

The conditions summarized below were encountered during construction. Activities to address or mitigate these conditions resulted in approximately \$28,000 in change orders.

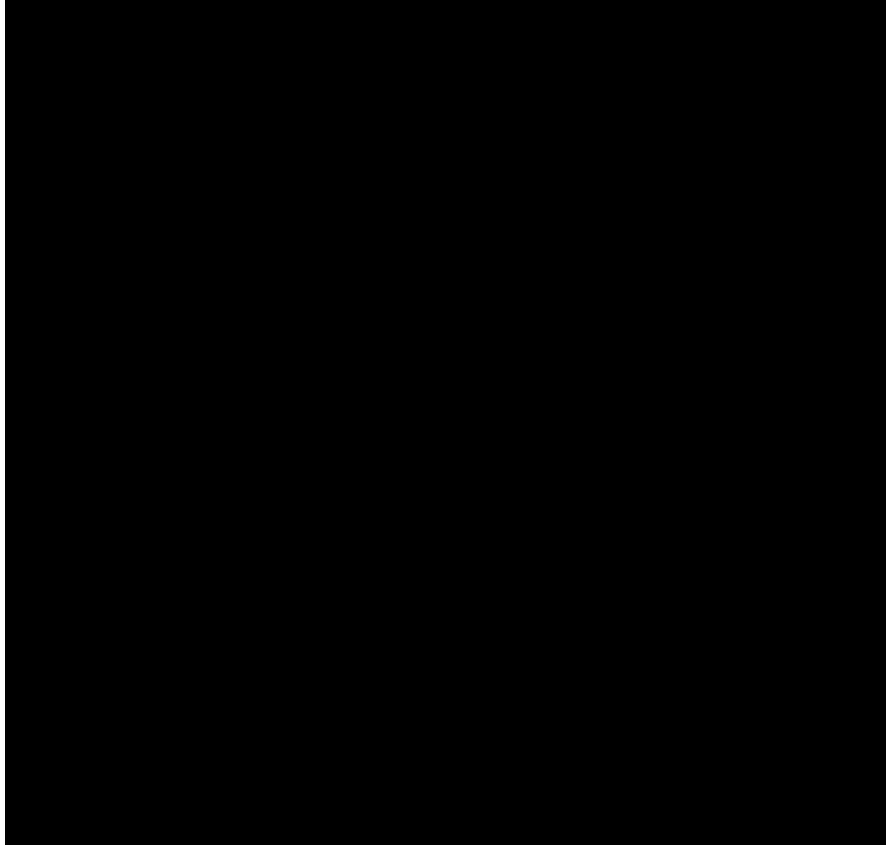
1. Field Design Changes:

- a. An updated land exhibit was required to accompany an updated TRE agreement as the area of the initial TRE was changed. The Project Team was able to use a recently demolished building site as their laydown yard.
- b. The Project Team planned to remove a [REDACTED] abandonment nipple on the line near the tap and install a flanged insulation kit. This required the design drawings to be updated.

2. Permits Conditions: A detailed permit exhibit was required by the City of Los Angeles for the ADA ramp. The Project experienced delays due to inconsistent inspections and building requirements. Additional personnel were needed to take measurements and create updated design drawings.

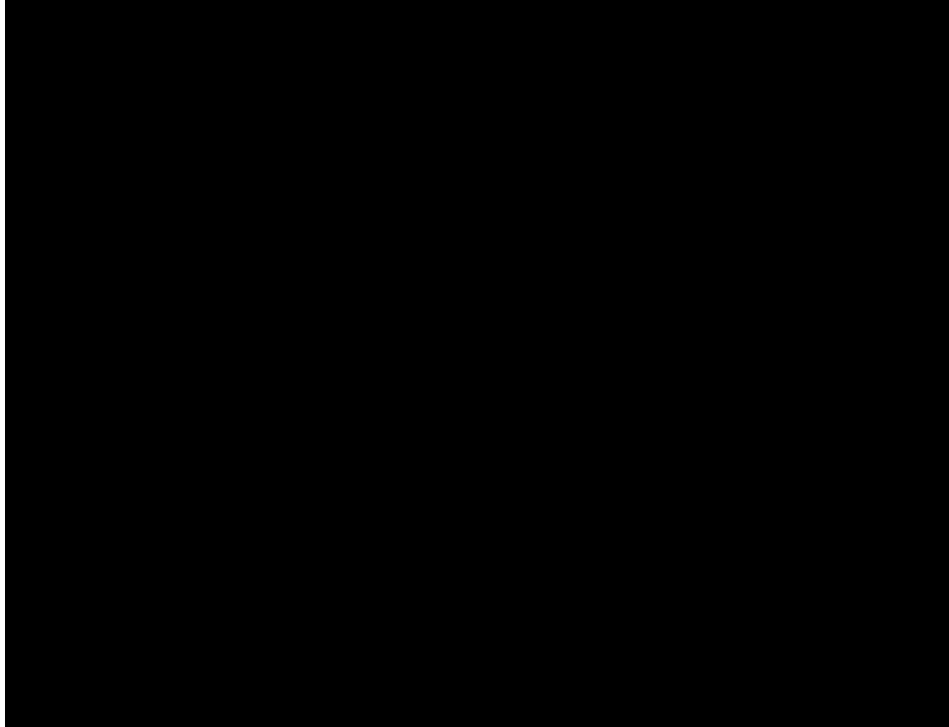
Final Report for Supply Line 32-09 [REDACTED] Replacement Project

Figure 3: Installation of Flanged Insulation Kit and Cathodic Protection



Final Report for Supply Line 32-09 [REDACTED] Replacement Project

Figure 4: Construction of ADA ramp



## D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, transportation and disposal of hydrotreated 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

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### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project. Specific examples of cost avoidance actions taken on this project are:

1. Land Use: The initial design assumed that the laydown yard was not adjacent to the worksite. The Project Team acquired a recently demolished building site as the new laydown yard. The Project Team also optimized the final Traffic Control Plan that allowed for the complete closure of Lincoln Avenue at the worksite intersection, saving transportation time of materials to the workspace.

### B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$1,302,295. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

Final Report for Supply Line 32-09 [REDACTED] Replacement Project

### C. Actual Direct and Indirect Costs

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$2,369,953.

Table 4: Estimated and Actual Direct Costs and Variances

Direct Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Company Labor	273,513	154,384	(119,129)
Materials	6,394	10,776	4,383
Construction Contractor	542,784	600,332	57,548
Construction Management & Support	76,325	90,513	14,188
Environmental	77,643	61,759	(15,884)
Engineering & Design	188,153	429,976	241,823
Project Management & Services	76,662	187,291	110,628
ROW & Permits	60,821	42,611	(18,210)
GMA	-	-	-
<b>Total Direct Costs</b>	<b>1,302,295</b>	<b>1,577,642</b>	<b>275,347</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	600,714	756,713	140,110
AFUDC	31,523	30,290	(1,234)
Property Taxes	19,965	5,309	(14,657)
<b>Total Indirect Costs</b>	<b>652,202</b>	<b>792,311</b>	<b>280,227</b>
<b>Total Direct Costs</b>	<b>1,302,295</b>	<b>1,577,642</b>	<b>275,347</b>
<b>Total Loaded Costs</b>	<b>1,954,497</b>	<b>2,369,953</b>	<b>415,456</b>

The Actual Full-Time Equivalents<sup>4</sup> (FTEs) for this Project are 0.7.

<sup>4</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period.

Final Report for Supply Line 32-09 [REDACTED] Replacement Project

## D. Cost Impacts

Consistent with one of the overarching objectives of PSEP as stated in testimony to maximize the cost effectiveness of safety enhancement investments, SoCalGas effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities may lead to variances between the initial estimate and actuals. The Project Team successfully mitigated these variances whenever feasible through the implementation of effective project management practices, thorough planning, and continuous monitoring.

At the completion of the Supply Line 32-09 Replacement Project, Actual Direct Costs came within the AACE Class 3 Total Installed Cost (TIC) accuracy range, adhering to the standard industry practices defined by the Association for the Advancement of Cost Engineering (AACE) International. The Actual Direct Costs exceeded the preliminary estimate by \$275,347. This variance is attributable to several factors: the initial estimate assumed certain tasks would be completed by internal staff; however, to expedite the project, the Project Management Team was primarily composed of contractors, resulting in increased Project Management and Services costs and reduced Company Labor. Additionally, the Project Team experienced schedule delays due to detailed permitting requirements from the City of Los Angeles. Further, design modifications related to the ADA ramp and cathodic protection installation required additional time during both pre-construction and construction phases, contributing to higher Engineering and Design and Construction costs.

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For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

Final Report for Supply Line 32-09 [REDACTED] Replacement Project

## E. Disallowance

There was no disallowance for Supply Line 32-09 as there were no post-1955 segments included in the Project without records that provide the minimum information to demonstrate compliance with then applicable industry standards or regulatory strength testing and recordkeeping requirements.

## V. CONCLUSION

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Supply Line 32-09 Replacement Project. Through this Replacement Project, SoCalGas successfully replaced 29 feet of pipeline and an ADA ramp in the City of Los Angeles.

SoCalGas executed this project prudently through maintaining scope and actively working with the city to provide detailed permitting requirements.

SoCalGas engaged in prudent cost avoidance efforts by utilizing the TCP workspace developed and a nearby laydown yard.

**End of Supply Line 32-09 [REDACTED] Replacement Project Final  
Report**

Final Report for Supply Line 33-750 Haskell Station Replacement Project

## I. SUPPLY LINE 33-750 HASKELL STATION REPLACEMENT PROJECT

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### A. Background and Summary

Supply Line 33-750 is a Department of Transmission (DOT) defined transmission<sup>1</sup> line with a predominantly [REDACTED] diameter line that runs approximately 7.718 miles from Encino and Studio City. This report describes the activities associated with Supply Line 33-750 Haskell Station Replacement Project which consists of the replacement of 111 feet of Phase 1A pipeline, removal of 290 feet of distribution and station pipeline, redesign of a regulator station and demolition of three buildings. The pipeline is in a Class 4 location. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$18,054,662.

The Supply Line 33-750 Haskell Station Replacement Project is a component of Supply Line 33-750, that was identified through ongoing records research as a 0.82 mile replacement and hydrotest project. The pipeline is located in the cities of Encino and Studio City. For project manageability purposes and due to unique characteristics related to non-contiguous portions of the pipeline, SoCalGas divided Supply Line 33-750 into two project sections to be managed individually (see Figure 1). Two key reasons drove the decision to manage the work on Supply Line 33-750 in this manner; the sections were in different locations and physically separated from each other by non-PSEP segments of pipeline, and the project scopes (hydrotesting and replacement) differed among the sections and had differing permit acquisition timelines.

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<sup>1</sup> As defined in 49 C.F.R. § 192.3 (2024).

Final Report for Supply Line 33-750 Haskell Station Replacement Project

Table 1: General Project Information

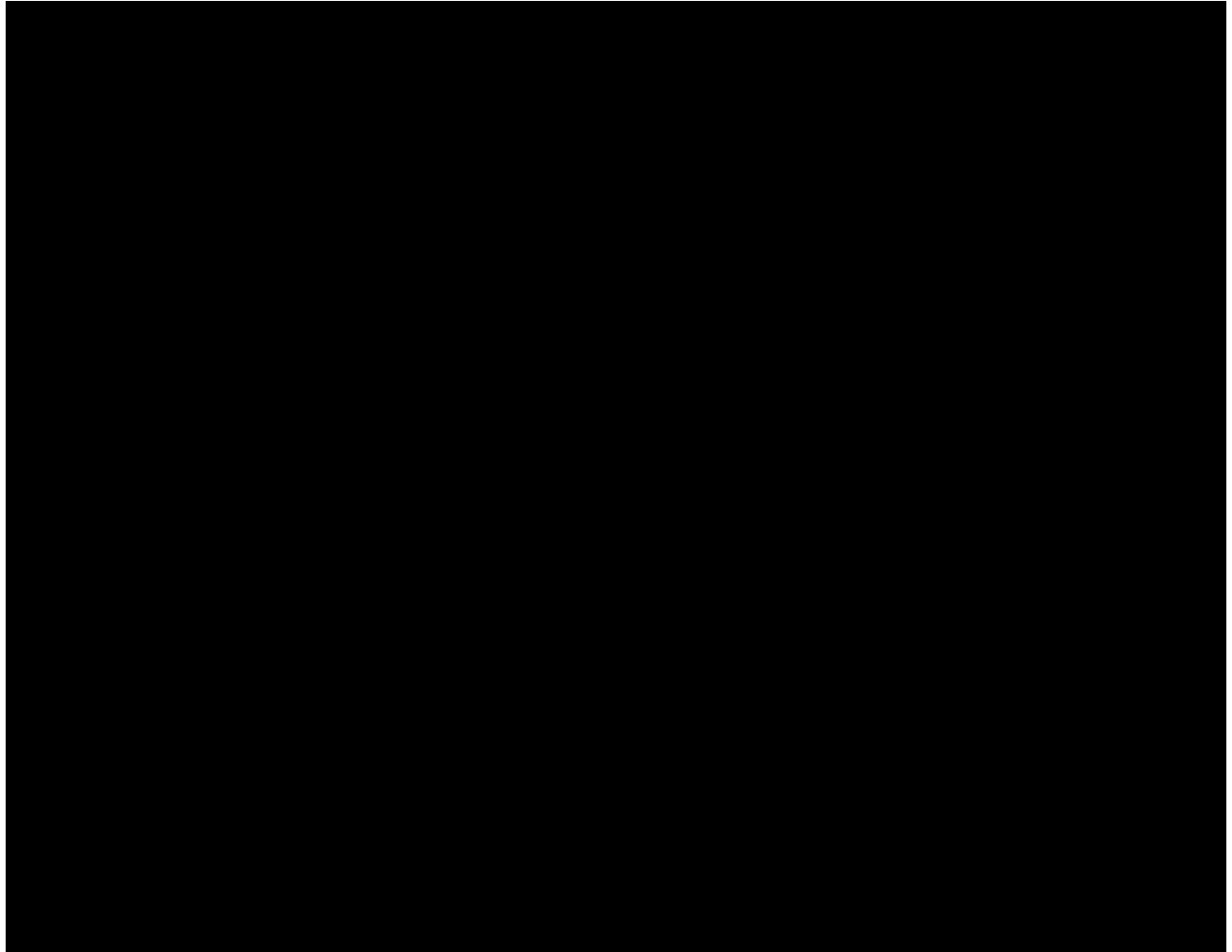
Project Name	Supply Line 33-750 Haskell Station		
Project Type	Replacement		
PSEP Phase	1A		
Length	111 feet		
Location	Encino		
Class	[REDACTED]		
MAOP	[REDACTED]		
Pipe Grade	[REDACTED]		
Wall Thickness	[REDACTED]		
Pipe Vintage	Multiple vintages from [REDACTED]		
Construction Start	07/05/2022		
Construction Finish	03/27/2023		
Original Pipe Diameter	[REDACTED]		
Original Nominal Diameter	[REDACTED]		
New Diameter	[REDACTED]		
Original SMYS <sup>2</sup>	[REDACTED]		
New SMYS	[REDACTED]		
Project Costs (\$)	Capital	O&M	Total
Loaded Project Costs	18,054,662	-	18,054,662
Disallowed Costs	-	-	-

<sup>2</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

Final Report for Supply Line 33-750 Haskell Station Replacement Project

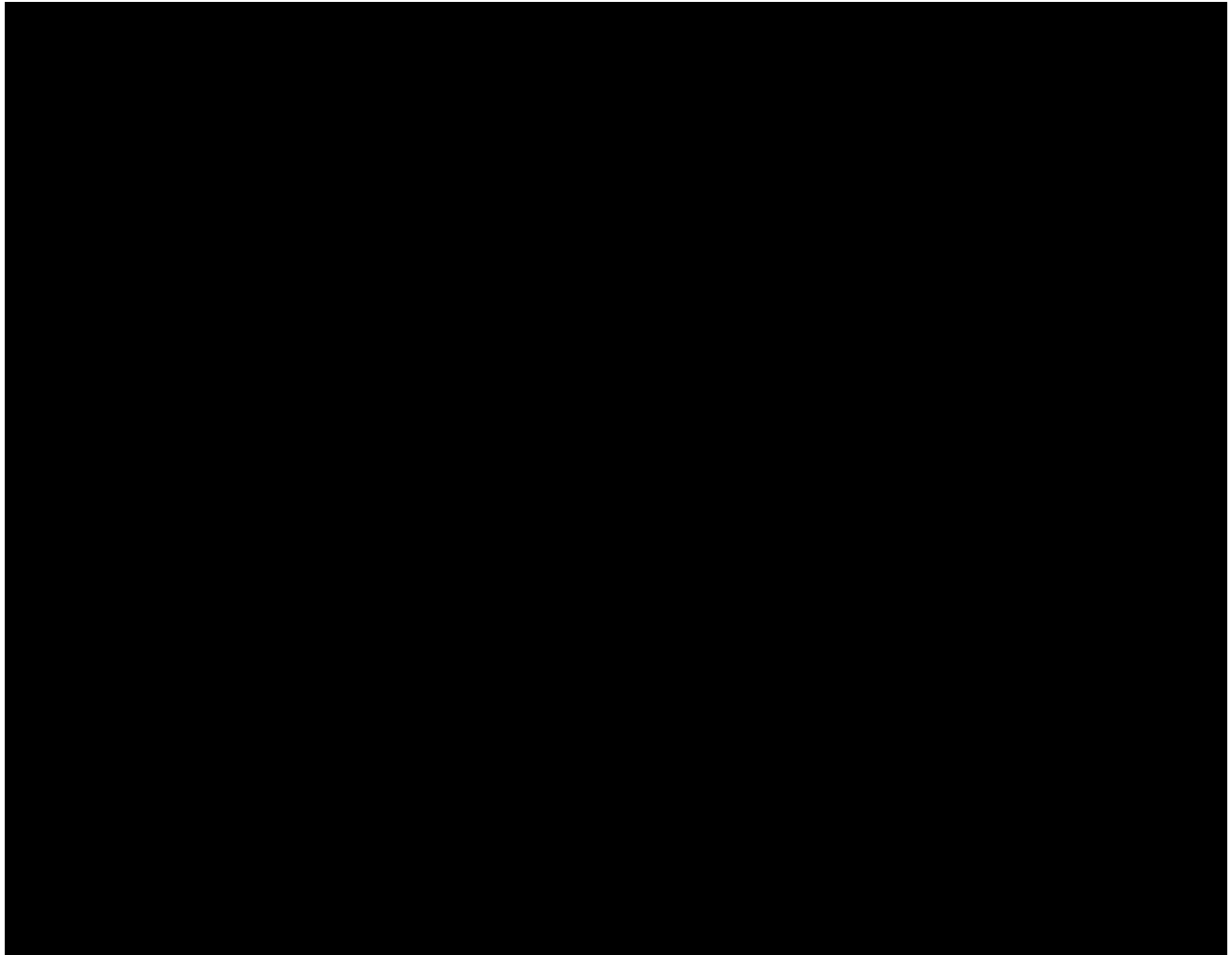
B. Maps and Images

Figure 1: Overview Map of Supply Line 33-750 Replacement and Hydrotest Project



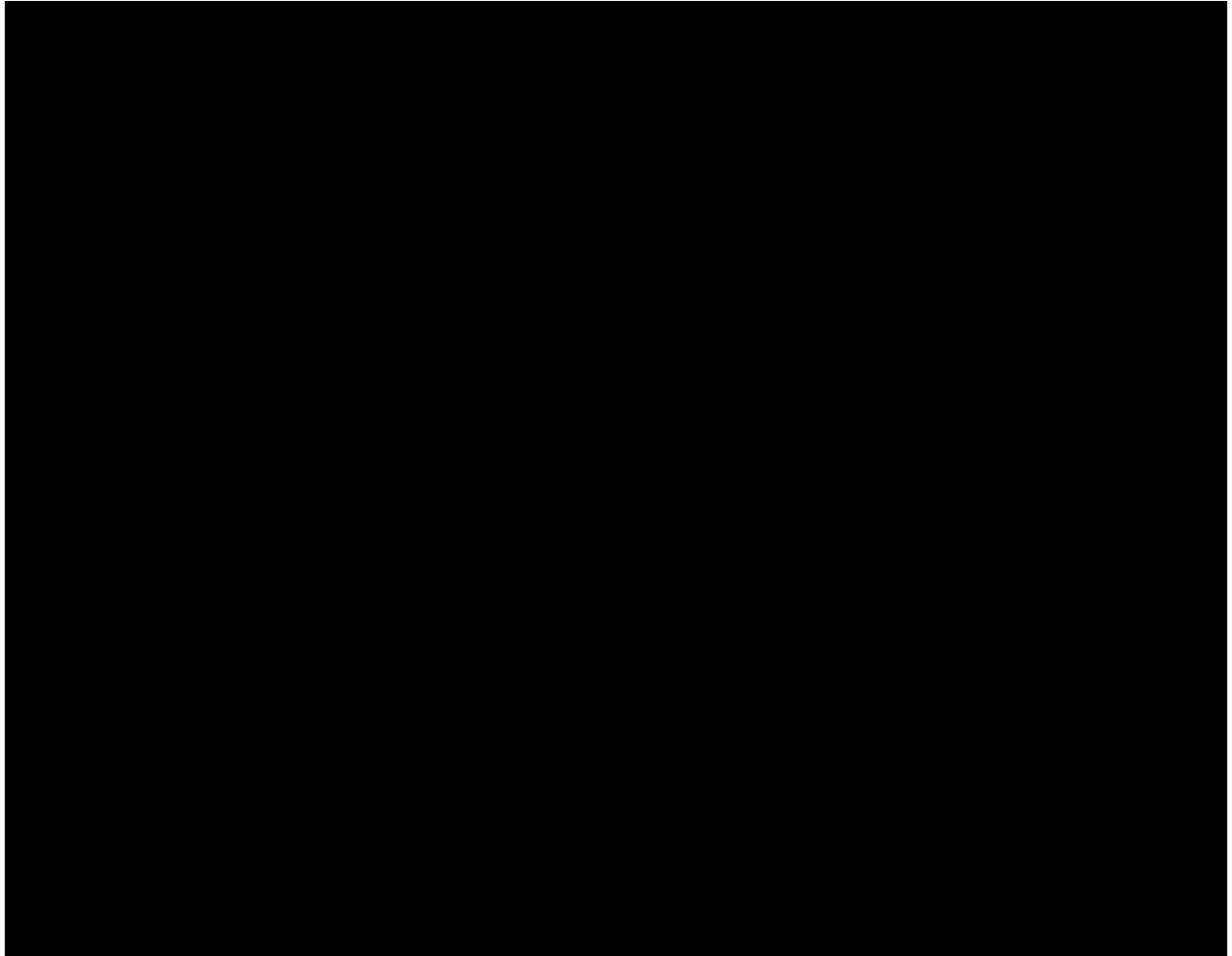
Final Report for Supply Line 33-750 Haskell Station Replacement Project

Figure 2: Satellite Image of Supply Line 33-750 Haskell Station Replacement Project



Final Report for Supply Line 33-750 Haskell Station Replacement Project

Figure 3: Overview Map of Supply Line 33-750 Haskell Station Replacement Project



Final Report for Supply Line 33-750 Haskell Station Replacement Project

**II. ENGINEERING, DESIGN, AND PLANNING**

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A. Project Scope

Table 2: Mileage Information

	Criteria	Incidental	Total <sup>3</sup>
Final Mileage	0.047 mi.	0.069 mi.	0.116 mi.
	248 ft.	364 ft.	612 ft.

SoCalGas and SDG&E presented a conceptual project scope in workpapers supporting the 2011 PSEP filing.<sup>4</sup> Prior to initiating execution of the Project in 2022, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SoCalGas and SDG&E did not identify Supply Line 33-750 Haskell Station Replacement Project in the 2011 PSEP filing.
2. Scope Validation: Through scope validation activities, before initiating execution of the Project, SoCalGas identified the scope of the Project to include 0.57 miles of Category 4 Criteria pipe. This full scope of work associated with Supply Line 33-750 was divided into two projects: the Supply Line 33-750 Hydrotest Project and the Supply Line 33-750 Haskell Station Replacement Project. The focus of this report is to describe the activities associated with the Supply Line 33-750 Haskell Station Replacement Project, consisting of the pipeline mileage described in Table 2 above.

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<sup>3</sup> Values may not add to total due to rounding.

<sup>4</sup> See Amended PSEP of SoCalGas and SDG&E, submitted December 2, 2011, in R.11-02-019 and subsequently transferred to A.11-11-002.

## Final Report for Supply Line 33-750 Haskell Station Replacement Project

3. Engineering, Design, and Constructability:
  - a. The Project Team determined that to minimize system capacity impacts and prevent service disruptions to customers, Supply Line 33-750 Project should be split into two Projects: Supply Line 33-750 Hydrotest and Supply Line 33-750 Haskell Station Replacement. Unless noted otherwise, information contained in this report is associated with the Supply Line 33-750 Haskell Station Project.
  - b. Demolition of multiple buildings was required due to environmental concerns and the proximity they had to the pipeline replacement project.
  - c. The Project Team determined it was necessary to redesign the high to medium pressure regulator station located within Haskell Station. The existing regulator station location impeded the demolition of the buildings needed to access other replacement locations.
4. Final Project Scope: The final project scope consists of a 111 feet Replacement, 290 feet removed, a regulator station replacement, and the demolition of three buildings located in the Project work area.

### B. Decision Tree Review

SoCalGas performed a review of the Supply Line 33-750 Haskell Station and confirmed the project design should commence as a Replacement Project.

Segments of less than 1,000 feet are identified for replacement under the approved PSEP Decision Tree because, for short segments of pipe, the logistical costs associated with pressure testing (for example, permitting, construction, water handling, and service disruptions for a non-looped system) can approach or exceed the cost of replacement. In such circumstances, replacement affords a more cost-effective approach to achieving compliance with D.11-06-017 while providing equal safety enhancement benefits. Moreover, installation of the new segment can usually be performed while the existing service is maintained to customers, thereby avoiding service disruptions that may otherwise occur during pressure testing.

## Final Report for Supply Line 33-750 Haskell Station Replacement Project

Pipeline segments installed prior to 1946 that are not capable of being assessed using in-line inspection technology are identified for replacement under the approved PSEP Decision Tree. As explained in the testimony supporting the approved PSEP, as part of the work previously completed during implementation federal gas transmission pipeline integrity management regulations (49 CFR 192, Subpart O), SoCalGas have already identified, retrofitted and in-line inspected pre-1946 transmission pipelines that were constructed using acceptable welding techniques and are operationally suited to in-line inspection. The remaining pre-1946 segments in the SoCalGas system are not suited for in-line inspection, likely have non-state-of-the-art welds, and would require significant investment for retrofitting to accommodate in-line inspection tools.

Accordingly, consistent with the Commission's directive in D.11-06-017 to "address retrofitting pipeline to allow for inline inspection tools," the requirement in California Public Utilities Code section 958 that upon completion of the PSEP, where warranted, pipelines are to be capable of accommodating in-line inspection devices, and the overarching objectives of PSEP to enhance the safety of the pipeline system in a proactive, cost effective manner, the approved PSEP Decision Tree identifies pre-1946 non-piggable pipeline segments for abandonment and replacement.

As a result of this review, SoCalGas identified replacement as the more prudent option. Key considerations that support SoCalGas determination to replace this segment include:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line the pipeline could be isolated and the work could be performed during the non-heating season.
2. Customer Impacts: No identified impacts.
3. Community Impacts: No identified impacts.

## Final Report for Supply Line 33-750 Haskell Station Replacement Project

4. Permit Conditions: The Project required demolition permits from the City of Los Angeles.
5. Piggability: Non-piggable.
6. Pipe Vintage: Multiple pipeline vintages from [REDACTED].
7. Existing Pipe Attributes: The Project Team identified a [REDACTED] main line (MLV) valve on the existing [REDACTED] pipeline.
8. Long seam Type: Unknown.
9. Long seam Repair History: No identified issues.
10. Condition of Coating: No identified issues.
11. History of Leaks: No identified issues.

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records and potholing of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. Shut-In Analysis: As discussed above, the Project Team completed an RER analysis and concluded that the line could be isolated as long as work was performed during the non-heating season.
2. Customer Impact: Per the RER, there were three non-core customers being served by this line. Service could be maintained through an alternative source of feed during the non-heating season.
3. Community Impact: No identified impacts.
4. Schedule Coordination: The Project Team coordinated with another SoCalGas department that had additional work in the same area.

## Final Report for Supply Line 33-750 Haskell Station Replacement Project

5. Permit Conditions:
  - a. The Project Team acquired demolition permits from the City of Los Angeles for the demolition of the buildings within Haskell Station.
  - b. The Project Team obtained traffic control from Los Angeles Department of Transportation (LADOT) and an excavation permit for additional work outside the station.
6. Land Use: The Project Team obtained permission from the municipal water district to use nearby property as a laydown yard due to limited space within Haskell Station.
7. Environmental: Asbestos abatement was required due to demolition of old buildings. An abatement contractor performed the demolition of the buildings.
8. Reroute: No identified impacts.
9. Valves: The Project Team replaced one [REDACTED] mainline valve with a [REDACTED] valve in order to match the pipeline diameter.
10. Tie-In: No identified impacts.
11. Constructability: The Project Team completed the replacement using open trenching and required separate tests for the pipeline and regulator station. The Project Team selected a complete demolition plan for the Haskell Station buildings. Demolition was required because pipeline set for replacement or removal was underneath those buildings.

## Final Report for Supply Line 33-750 Haskell Station Replacement Project

### D. Scope Changes

Through engineering, design, and planning activities, SoCalGas determined that changes in scope were appropriate to enhance the design of the Project and address engineering factors. As a result, the preliminary cost estimate does not fully reflect the final scope. Summarized below are notable changes in scope made after the preliminary cost estimate was developed and approved. The Project Team determined it was necessary to redesign the high to medium pressure regulator station located within Haskell Station. The existing regulator station location impeded the demolition of the buildings needed to access the primary replacement locations.

Final Report for Supply Line 33-750 Haskell Station Replacement Project

### III. CONSTRUCTION

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#### A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. Following completion of the engineering, design, and planning activities described above, the Project Team directed the Performance Partner to prepare cost estimates based on a more detailed engineering design package, that included the updated design described in the discussion of notable Scope Changes above.

1. SoCalGas Preliminary Construction Cost Estimate: SoCalGas preliminary cost estimate for construction was \$2,317,845.
2. Construction Contractor’s Target Price Estimate: The Construction Contractor’s cost estimate was [REDACTED] which was [REDACTED] than SoCalGas preliminary cost estimate for construction.

#### B. Construction Schedule

Table 3: Construction Timeline

Construction Start Date	07/05/2022
Construction Completion Date	03/27/2023
NOP Date	09/14/2023

## Final Report for Supply Line 33-750 Haskell Station Replacement Project

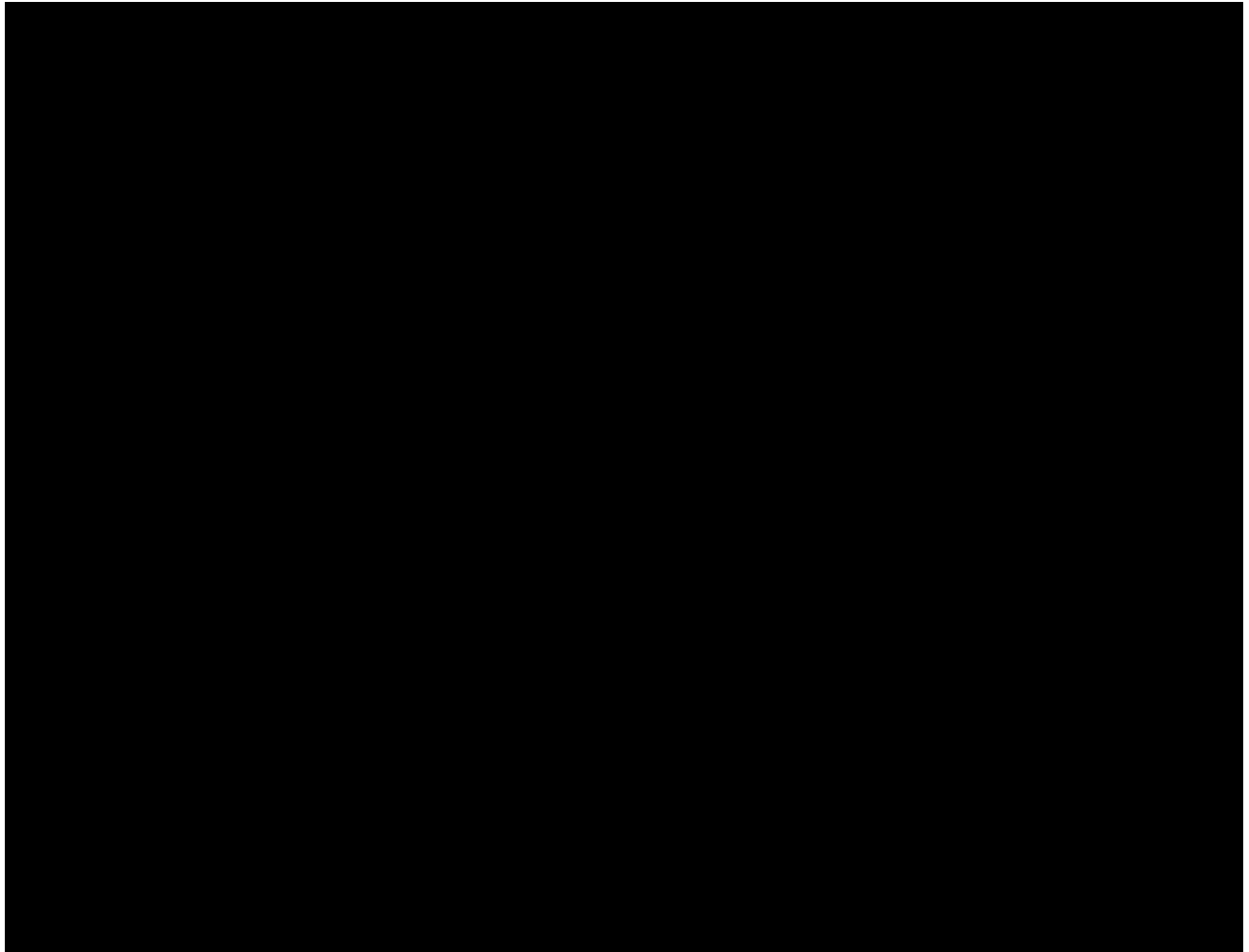
### C. Changes During Construction

The conditions summarized below were encountered during construction. Activities to address or mitigate these conditions resulted in approximately \$2,000,000 in change orders.

1. Work Hours: The Project Team was requested to work a more aggressive schedule than what was originally planned in order to meet the tie-in date before the start of heating season and not impact other projects in the area. The schedule shifted from five 10-hour days to five 12-hour days and one additional 10-hour Saturday.
2. Tie-In: When inspecting the planned tie-in location on the Northwest corner of the [REDACTED] pipe, the Project Team determined that the pipeline had significant wall loss that made it unsuitable for tie-in. Further excavation and pipeline installation was needed outside of the station walls to find an acceptable tie-in location.
3. Substructures: The Project Team performed concrete scanning on the existing wall foundation to understand the rebar spacing and layout. After the layout was determined, the Project Team took core samples in order to test the compressive strength and investigate the existing rebar conditions.

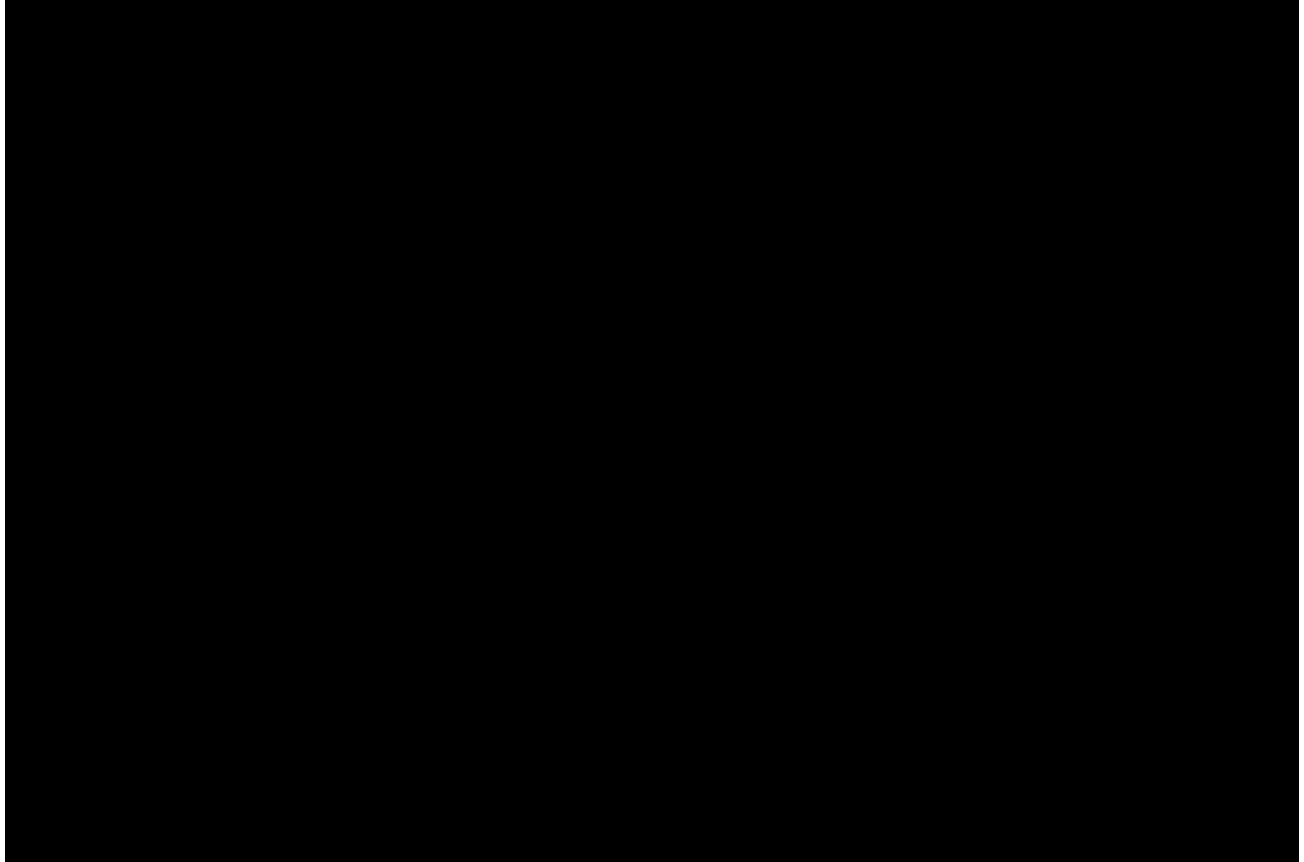
Final Report for Supply Line 33-750 Haskell Station Replacement Project

Figure 4: Installation of a [REDACTED] Valve to Replace Existing [REDACTED] Valve



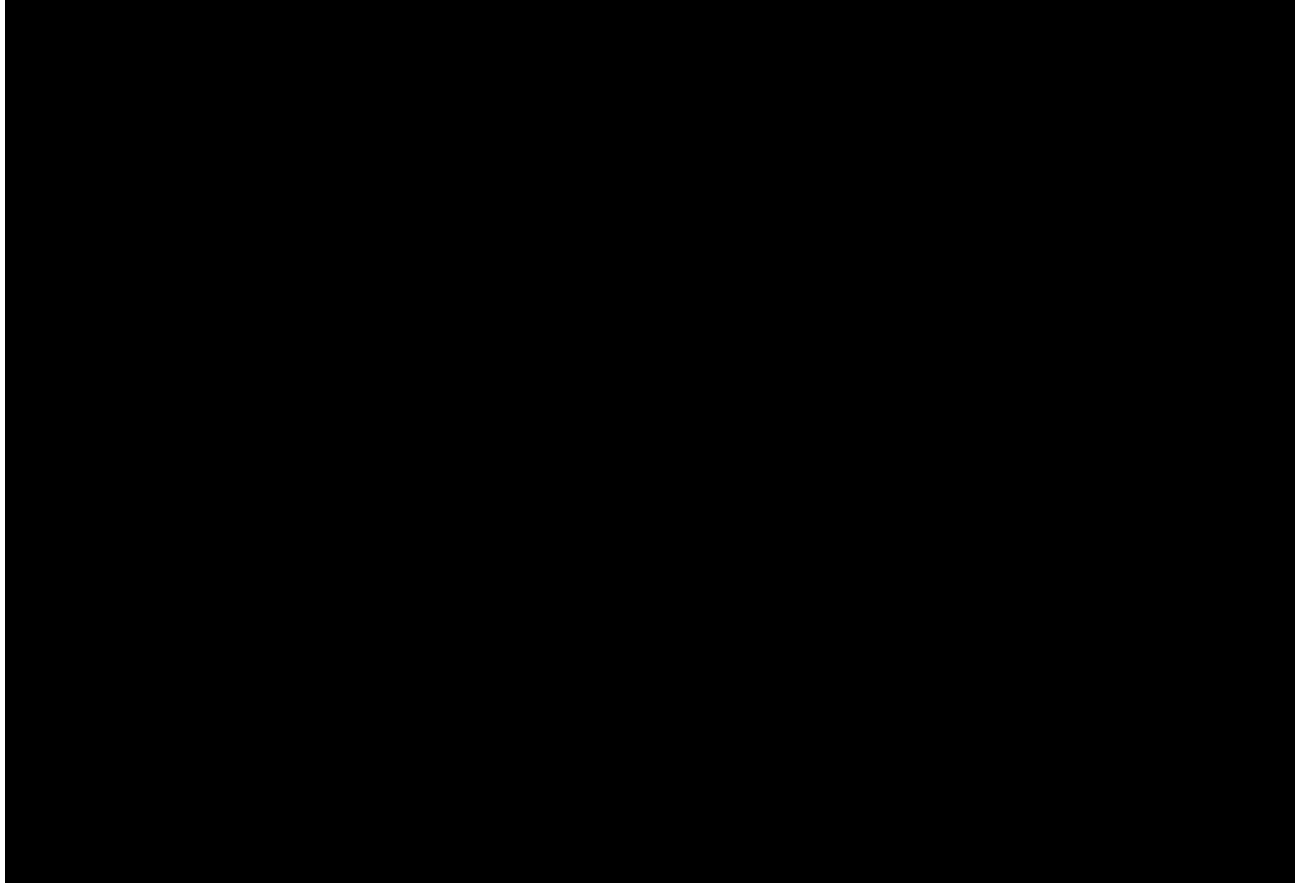
Final Report for Supply Line 33-750 Haskell Station Replacement Project

Figure 5: Staging Fabrication for Tie-in



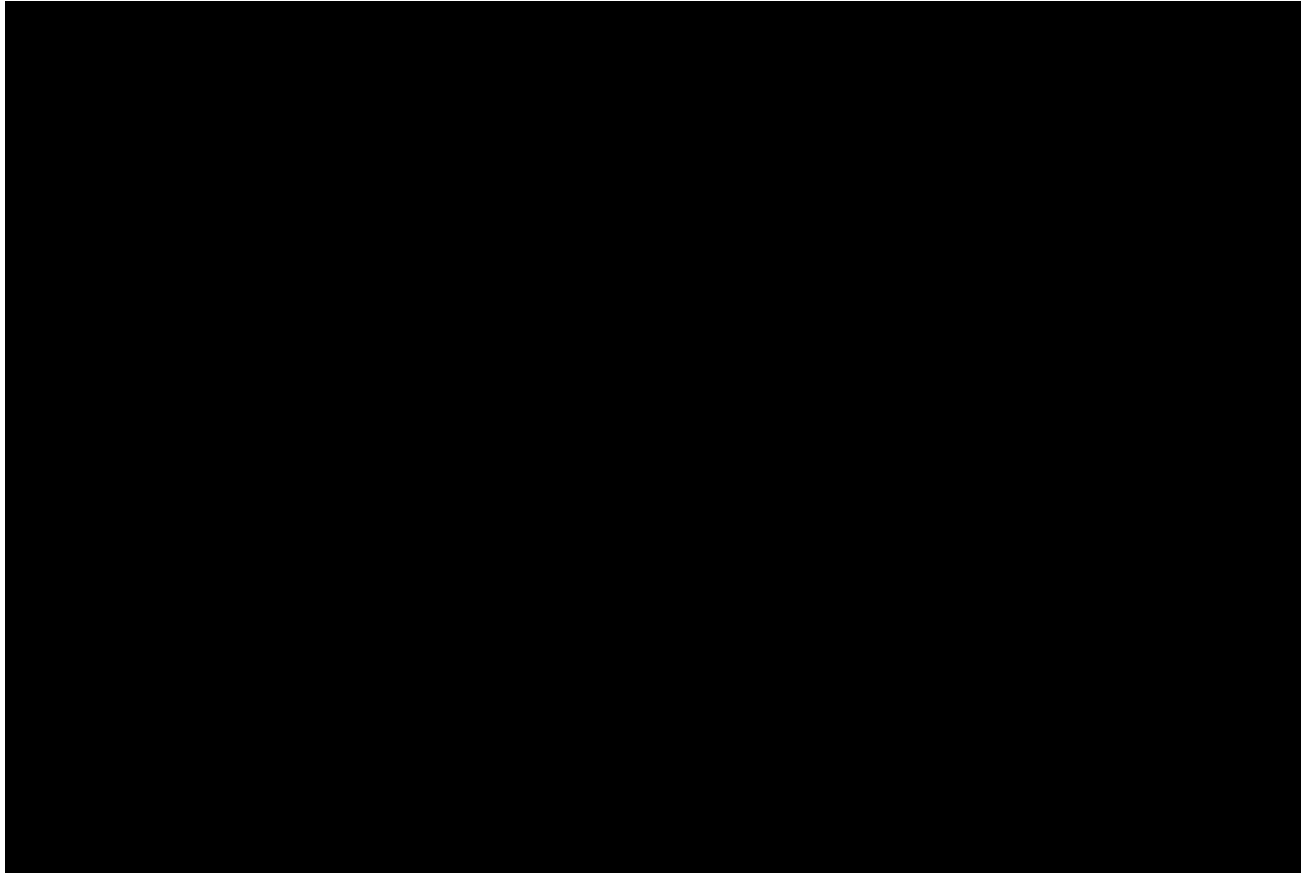
Final Report for Supply Line 33-750 Haskell Station Replacement Project

Figure 6: Pipeline Vault



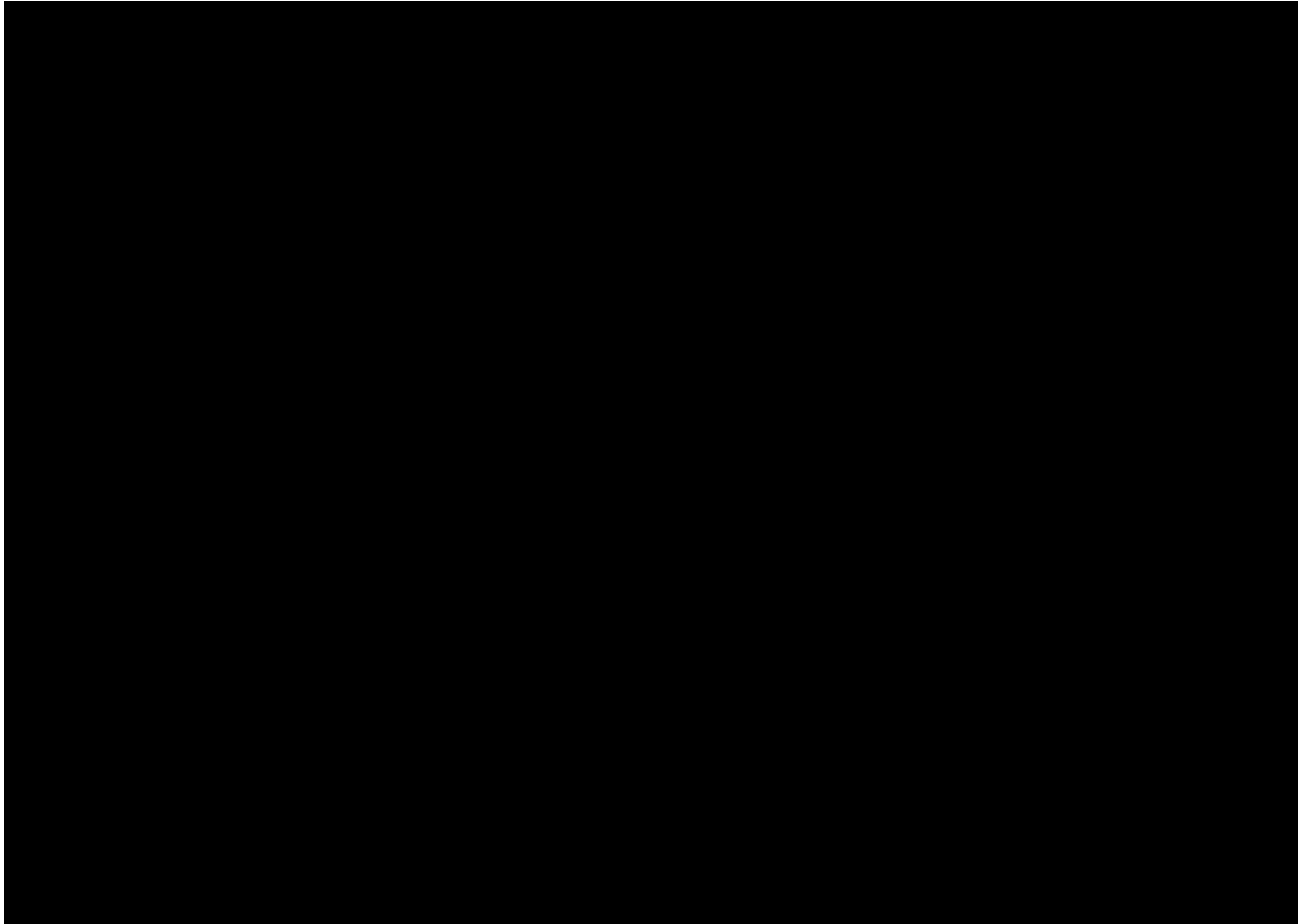
Final Report for Supply Line 33-750 Haskell Station Replacement Project

Figure 7: Removing Shoring and Scaffolding from Pipeline Vault



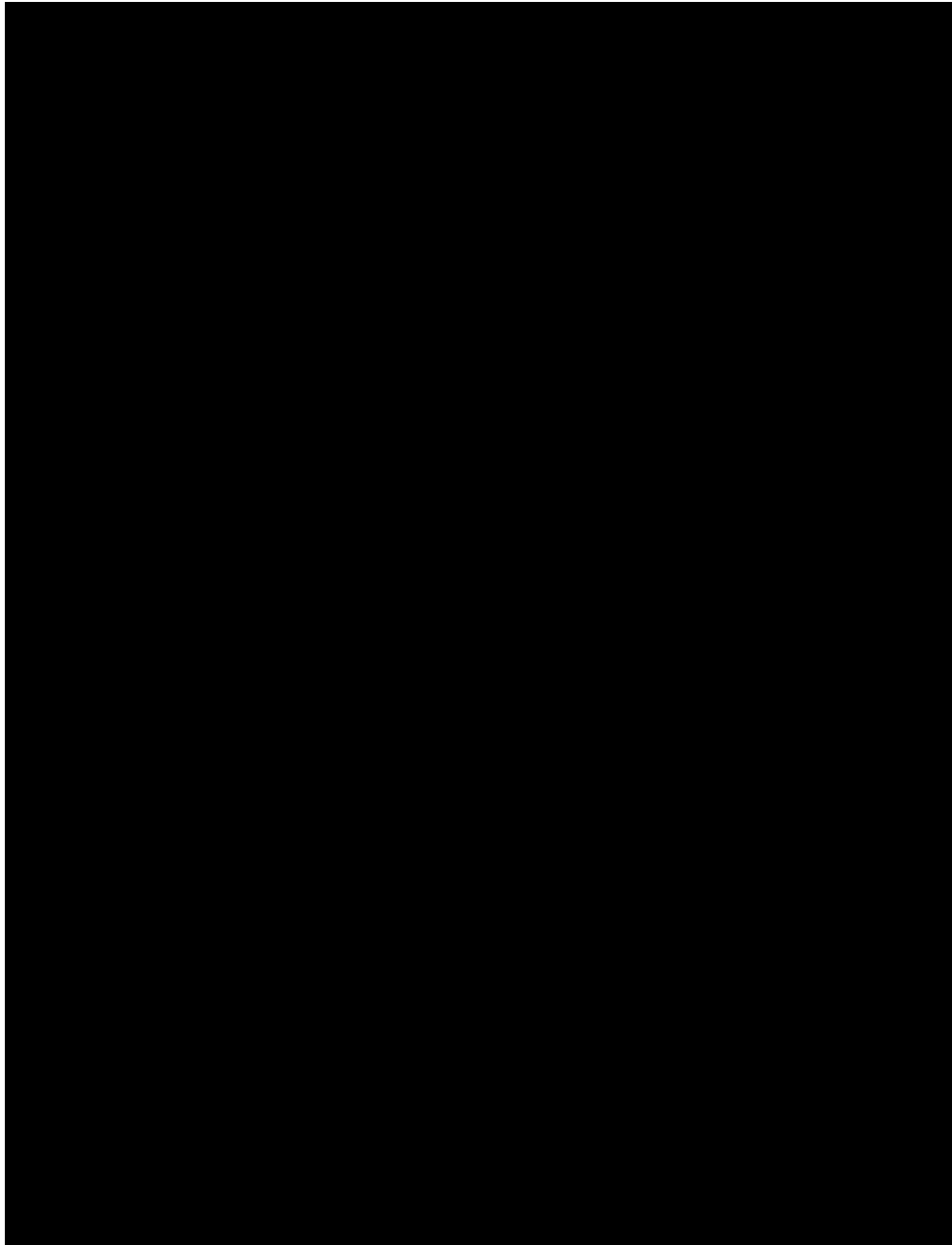
Final Report for Supply Line 33-750 Haskell Station Replacement Project

Figure 8: Removing Debris from Building Demolition



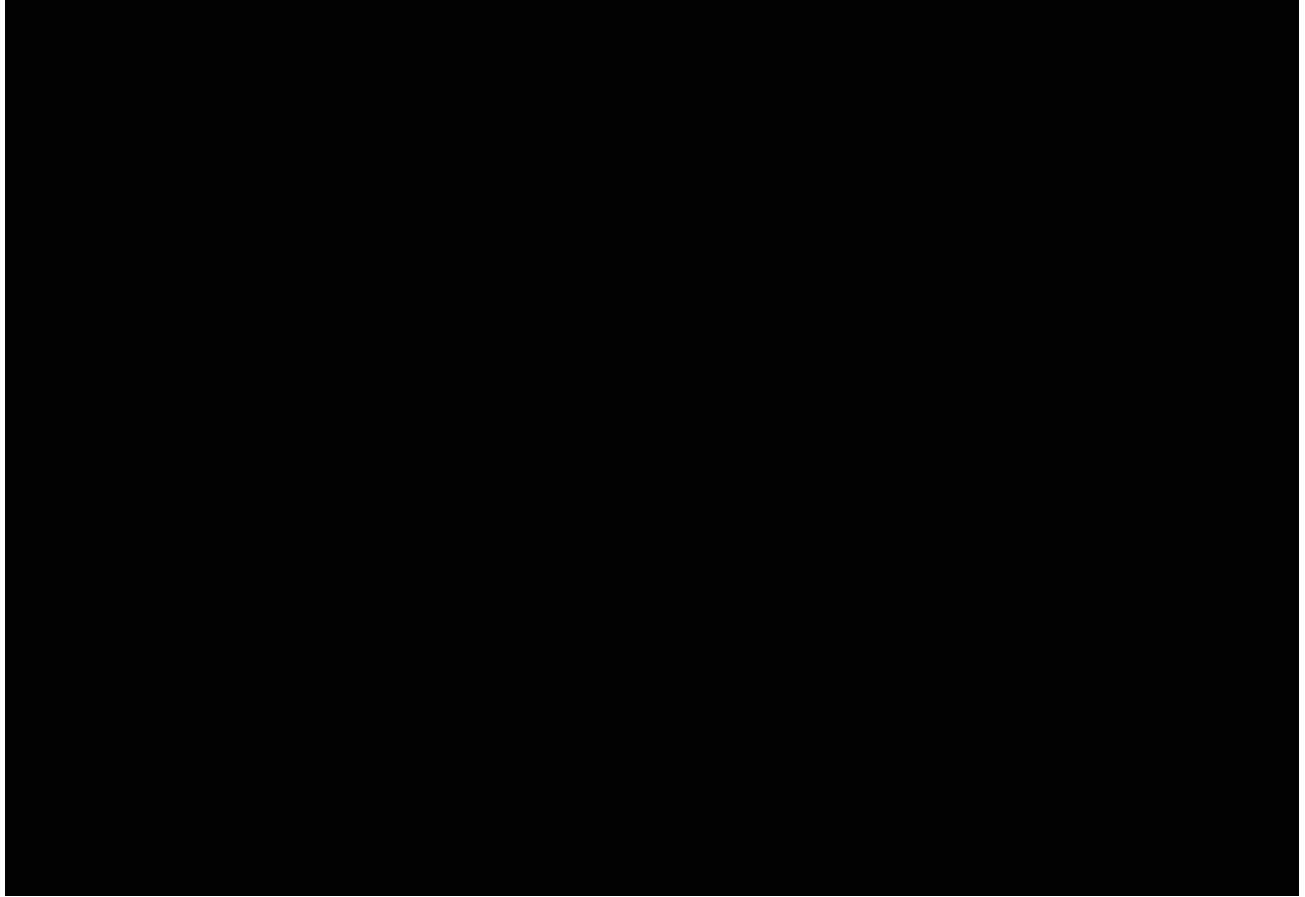
Final Report for Supply Line 33-750 Haskell Station Replacement Project

Figure 9: Regulator Station



Final Report for Supply Line 33-750 Haskell Station Replacement Project

Figure 10: Abatement of Lead Based Paint



## Final Report for Supply Line 33-750 Haskell Station Replacement Project

### D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, transportation and disposal of hydrotreated 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.

Final Report for Supply Line 33-750 Haskell Station Replacement Project

## **IV. PROJECT COSTS**

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### **A. Cost Avoidance Actions**

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project.

### **B. Cost Estimate**

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$5,328,981. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

### **C. Actual Direct and Indirect Costs**

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$18,054,662.

Final Report for Supply Line 33-750 Haskell Station Replacement Project

Table 4: Estimated and Actual Direct Costs and Variances<sup>5</sup>

Direct Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Company Labor	598,845	1,087,149	488,304
Materials	310,547	514,425	203,878
Construction Contractor	2,317,845	6,583,156	4,265,311
Construction Management & Support	421,558	1,137,196	715,638
Environmental	878,861	789,483	(89,378)
Engineering & Design	365,173	1,278,358	913,185
Project Management & Services	361,188	393,351	32,163
ROW & Permits	74,064	402,030	327,066
GMA	0	9,334	9,334
<b>Total Direct Costs</b>	<b>5,328,081</b>	<b>12,194,481</b>	<b>6,866,401</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances<sup>6</sup>

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	1,571,281	4,833,549	3,262,267
AFUDC	125,368	861,822	736,454
Property Taxes	104,277	164,810	60,533
<b>Total Indirect Costs</b>	<b>1,800,926</b>	<b>5,860,180</b>	<b>4,059,254</b>
<b>Total Direct Costs</b>	<b>5,328,081</b>	<b>12,194,481</b>	<b>6,866,401</b>
<b>Total Loaded Costs</b>	<b>7,129,007</b>	<b>18,054,662</b>	<b>10,925,656</b>

The Actual Full-Time Equivalents<sup>7</sup> (FTEs) for this Project are 2.27.

<sup>5</sup> Values may not add to total due to rounding.

<sup>6</sup> Ibid.

<sup>7</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

## Final Report for Supply Line 33-750 Haskell Station Replacement Project

### D. Cost Impacts

The Actual Direct Costs exceeded SoCalGas's preliminary estimate by \$6,865,500. This variance is attributable to:

1. Company Labor: The Project Team increased working hours to meet a planned tie-in date. The new schedule required five 12-hour days and one additional 10-hour Saturday.
2. Materials: Additional pipeline installation was needed outside of the station due to wall loss at the original tie in location.
3. Construction Contractor: The Project Team required an additional Construction Contractor to complete work after the demolition phase. There was a rebid for work during the pipeline construction phase.
4. Construction Management & Support: The Construction Contractor was required to mobilize earlier to meet planned dates. The Project Team increased working hours to meet a planned tie-in date. The new schedule required five 12-hour days and one additional 10-hour Saturday.
5. Engineering & Design: Additional pipeline installation was needed outside of the station due to wall loss at the original tie-in location.
6. Project Management & Services: The project costs associated with TREs and demolition permits were charged to this category. Additionally, costs associated with building condemnation outside of the station were not included in the initial estimate.

### E. Disallowance

There was no disallowance for Supply Line 33-750 Haskell Station Project as there were no post-1955 segments included in the Project without records that provide the minimum information to demonstrate compliance with then applicable industry standards or regulatory strength testing and recordkeeping requirements.

Final Report for Supply Line 33-750 Haskell Station Replacement Project

**V. CONCLUSION**

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Supply Line 33-750 Haskell Station Replacement Project. Through this Replacement Project, SoCalGas successfully replaced 111 feet of pipeline in the City of Encino. The total loaded cost of the Project is \$18,054,662.

SoCalGas executed this project prudently through an open trench replacement, that required three tests, one for the replacement and two additional for the regulator station.

**End of Supply Line 33-750 Haskell Station Replacement Project Final Report**

Final Report for Supply Line 33-750 Hydrotest Project

## I. SUPPLY LINE 33-750 HYDROTEST PROJECT

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### A. Background and Summary

Supply Line 33-750 is a Department of Transportation (DOT) defined transmission<sup>1</sup> line with a predominantly [REDACTED] diameter that runs approximately 7.718 miles from Encino to Studio City. This report describes the activities associated with Supply Line 33-750 Hydrotest Project which consists of the hydrotest of 0.926 miles of pipeline. The pipeline is routed across a [REDACTED] location. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$5,931,590.

The Supply Line 33-750 Hydrotest Project is a component of Supply Line 33-750 Hydrotest and Replacement Project, that was identified through ongoing records research as a 0.82 mile replacement and hydrotest project. The pipeline is located in the cities of Encino and Studio City. For project constructability purposes and due to the unique characteristics related to non-contiguous portions of the pipeline, SoCalGas divided Supply Line 33-750 into two project sections to be managed individually (see Figure 1). Two key reasons drove the decision to manage the work on Supply Line 33-750 in this manner; the sections were in different locations and physically separated from each other by non-PSEP segments of pipeline, the project scopes (hydrotesting and replacement) differed among the sections and had differing permit acquisition timelines.

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<sup>1</sup> As defined in 49 C.F.R. § 192.3 (2024).

Final Report for Supply Line 33-750 Hydrotest Project

Table 1: General Project Information

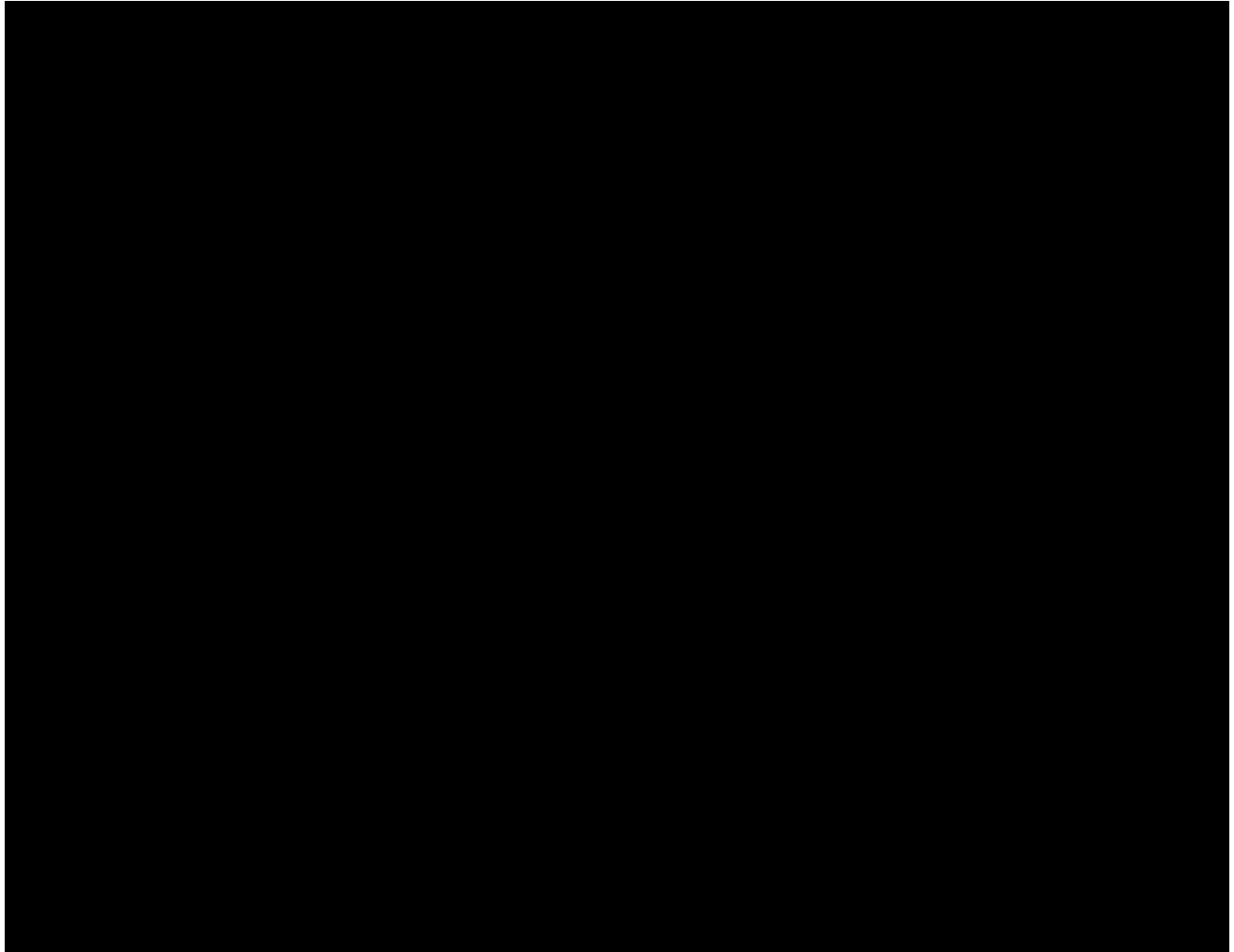
Project Name	Supply Line 33-750 Hydrotest Project		
Project Type	Hydrotest		
PSEP Phase	1A		
Length	0.926 miles		
Location	Studio City		
Class	█		
MAOP	█		
Pipe Grade	█		
Wall Thickness	█		
Pipe Vintage	Multiple vintages from █		
Construction Start	05/24/2021		
Construction Finish	09/20/2021		
Original Pipe Diameter	█		
Original Nominal Diameter	█		
New Diameter	N/A		
Original SMYS <sup>2</sup>	█		
New SMYS	N/A		
Project Costs (\$)	Capital	O&M	Total
Loaded Project Costs	1,673,910	4,257,680	5,931,590
Disallowed Costs	-	-	-

<sup>2</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

## Final Report for Supply Line 33-750 Hydrotest Project

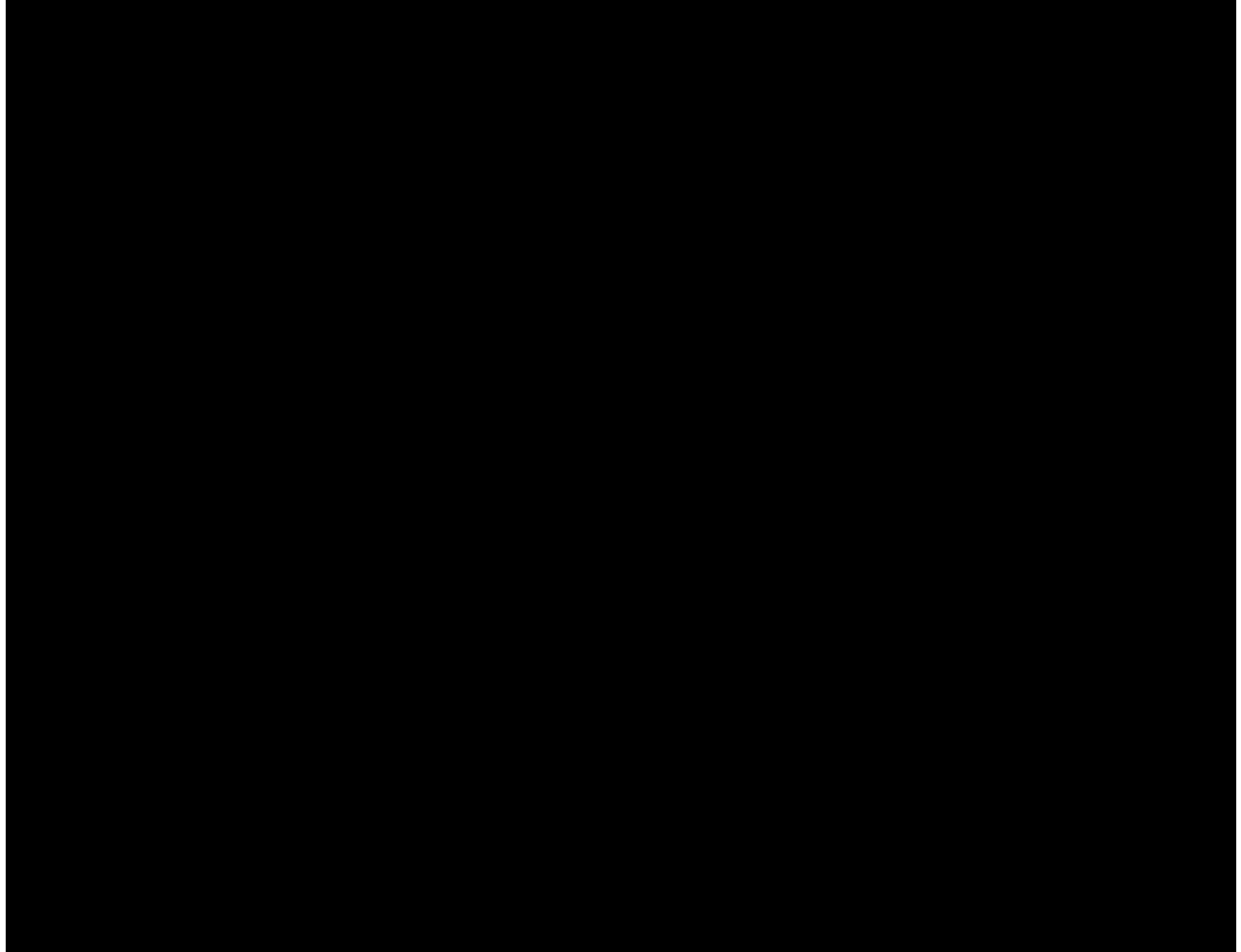
### B. Maps and Images

Figure 1: Overview Map of Supply Line 33-750 Replacement and Hydrotest Project



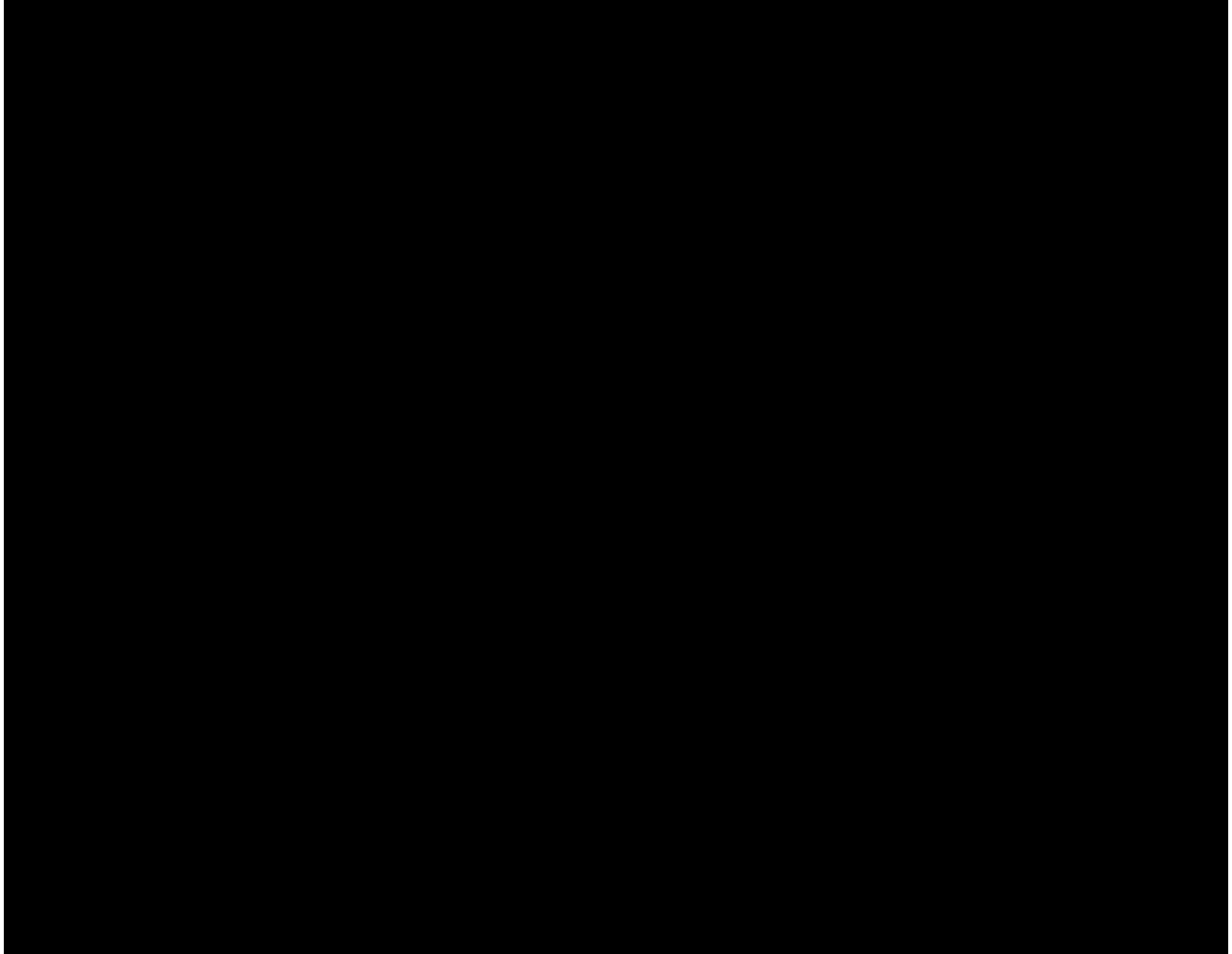
Final Report for Supply Line 33-750 Hydrotest Project

Figure 2: Satellite Image of Supply Line 33-750 Hydrotest Project



Final Report for Supply Line 33-750 Hydrotest Project

Figure 3: Overview Map of Supply Line 33-750 Hydrotest Project



Final Report for Supply Line 33-750 Hydrotest Project

## II. ENGINEERING, DESIGN, AND PLANNING

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### A. Project Scope

Table 2: Mileage Information

	Criteria	Accelerated	Incidental	Total <sup>3</sup>
Final Mileage	0.485 mi.	0 mi.	0.441 mi.	0.926 mi.
	2561 ft.	0 ft.	2327 ft.	4888 ft.

Prior to initiating execution of the Project in 2021, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SoCalGas and SDG&E did not identify Supply Line 33-750 Hydrotest in the 2011 PSEP filing.
2. Scope Validation: Through scope validation activities, before initiating execution of the Project, SoCalGas identified the scope of the Project to include 0.57 miles of Category 4 Criteria pipe. This full scope of work associated with Supply Line 33-750 was divided into two projects: the Supply Line 33-750 Hydrotest Project and the Supply Line 33-750 Haskell Station Replacement Project. The focus of this report is to describe the activities associated with the Supply Line 33-750 Hydrotest Project, consisting of the pipeline mileage described in Table 2 above.
3. Engineering, Design, and Constructability:
  - a. The Project Team determined that to minimize system capacity impacts and prevent service disruptions to customers, Supply Line 33-750 Project should be split into two Projects: Supply Line 33-750 Hydrotest and Supply Line 33-750 Haskell Station Replacement. Unless noted otherwise, information contained in this report is associated with the Supply Line 33-750 Hydrotest Project.

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<sup>3</sup> Values may not add to total due to rounding.

## Final Report for Supply Line 33-750 Hydrotest Project

- b. Additional incidental mileage was included because one of the initial test head locations was changed due to environmental permitting constraints identified at the original location during design.
4. Final Project Scope: The final project scope consists of a 0.917 mile Hydrotest. The mileage includes 0.441 miles of Incidental pipe.

### B. Decision Tree Review

SoCalGas performed a review of the Supply Line 33-750 Hydrotest Project and confirmed the project design should commence as a Hydrotest Project.

For pipeline segments longer than 1,000 feet in length, under the approved PSEP Decision Tree, SoCalGas completes a preliminary review to determine whether SoCalGas can manage customer service impacts if the pipeline segment is taken out of service for a period of two to six weeks to complete pressure testing. Where mitigation of customer impacts to remove the line from service for pressure testing is feasible, SoCalGas compare the costs, constructability, risks, and benefits of pressure testing and replacement to determine whether pressure testing or replacement is the more prudent option.

As a result of this review, SoCalGas identified pressure testing as the more prudent option. Key considerations that support SoCalGas determination to pressure test this segment include:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could be shut-in and the work could be performed during the non-heating season.
2. Customer Impacts: The RER initially identified one residential customer served on-the line and determined they would not be impacted as they could be supplied through an alternative feed during the non-heating season.

## Final Report for Supply Line 33-750 Hydrotest Project

3. Community Impacts: The Project Team identified that the mainline valve (MLV) needed to isolate the line was located on private property. It was also noted that the alignment ran adjacent to Federal Land.
4. Permit Conditions: The Project Team obtained excavation permits from the City of Los Angeles and Traffic Control Plans (TCPs) from the Los Angeles Department of Transportation (DOT).
5. Piggability: Non-piggable.
6. Pipe Vintage: Multiple vintages from [REDACTED].
7. Existing Pipe Attributes: The Project Team determined that the line was non-piggable due to an existing plug valve.
8. Longseam Type: Unknown.
9. Longseam Repair History: No identified issues.
10. Condition of Coating: No identified issues.
11. History of Leaks: No identified issues.

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. Shut-In Analysis: As discussed above, the Project Team completed an RER analysis and concluded that the line could be shut-in during non-heating season.
2. Customer Impact: Per the RER, one residential customer was supplied by the line and required the Project Team to perform construction during non-heating season. The RER initially identified one residential customer on-the line and determined they

## Final Report for Supply Line 33-750 Hydrotest Project

would not be impacted as they could be supplied through an alternative feed during the non-heating season.

3. Community Impact: No identified impacts.
4. Schedule Coordination: No identified impacts.
5. Known Substructures: No identified impacts.
6. Permit Conditions: The Project Team obtained multiple excavation permits for each work location from the City of Los Angeles.
7. Land Use: The Project Team moved one test location to avoid environmental impacts and associated permits. The plan change resulted in locating a new test location and updated TCPs for that area.
8. Environmental: No identified impacts.
9. Reroute: The Project Team determined that any reroute of the pipe would have significant impact on the local community. It was not cost effective to pursue any other design.
10. Traffic Control: The Project Team obtained three separate approved traffic control measures from the City of Los Angeles to provide a safe work area during construction. Two TCPs were developed to divert traffic around the test locations. The third TCP was required to grant the Project Team safe access to a regulator station that required isolation prior to construction.
11. Valves: The Project Team identified one valve to be removed that was located on private property. Engineering analysis determined that replacing the valve was not required. The Project Team decided to replace the existing valve with straight pipe as it was more cost effective and the current location was subject to flooding.
12. Constructability: The Project Team planned for an open trench replacement at the test locations to install and complete the Hydrotest. The Project Team also anticipated restrictions on working hours due to the test locations.

## Final Report for Supply Line 33-750 Hydrotest Project

### D. Scope Changes

There were no notable scope changes during detailed design.

Final Report for Supply Line 33-750 Hydrotest Project

### III. CONSTRUCTION

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#### A. Construction Contractor Selection

As indicated above, there were no notable changes in scope between the time when the Project Team prepared the preliminary cost estimate and when the Performance Partner prepared and submitted its Target Price Estimate. SoCalGas awarded the construction contract to the Performance Partner.

1. SoCalGas’s Preliminary Construction Cost Estimate: SoCalGas’s preliminary cost estimate for construction was \$1,353,889.
2. Construction Contractor’s Target Price Estimate: The Construction Contractor’s cost estimate was [REDACTED] which was [REDACTED] SoCalGas preliminary cost estimate for construction.

#### B. Construction Schedule

Table 3: Construction Timeline

Construction Start Date	05/24/2021
Construction Completion Date	09/20/2021
NOP Date	08/26/2021

## Final Report for Supply Line 33-750 Hydrotest Project

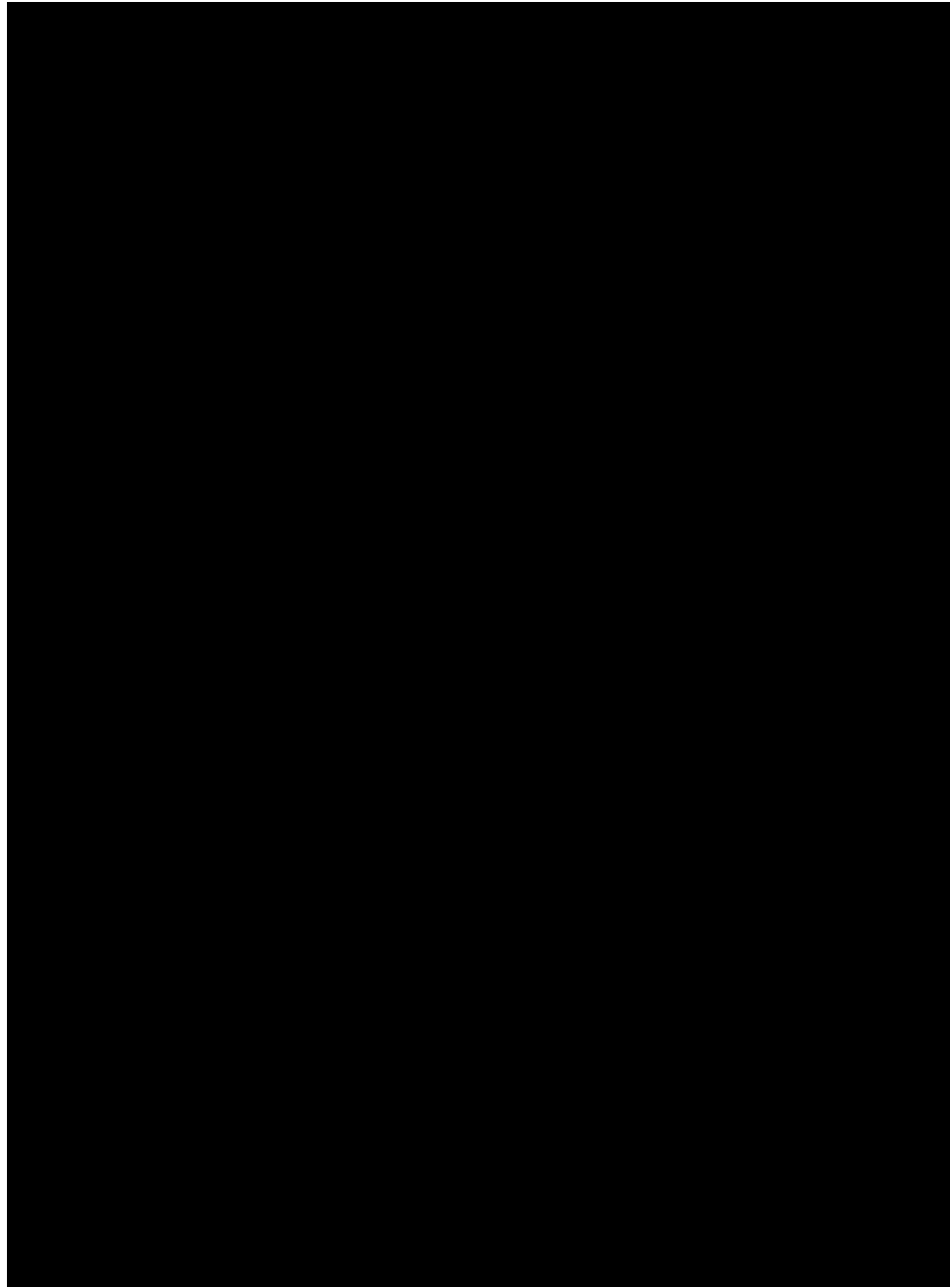
### C. Changes During Construction

The conditions summarized below were encountered during construction. Activities to address or mitigate these conditions resulted in approximately \$660,000 in change orders.

1. Field Design Changes: The Project Team planned to modify a regulator station to monitor the pipeline and safely release natural gas during isolation. The design complexity observed in the field necessitated excavation, temporary removal, and reinstallation of the regulator station to complete hydrotesting.
2. Constructability Issues: The Project Team identified two conduit lines during excavation and had to temporarily realign them to the side of the excavation to complete the Project.

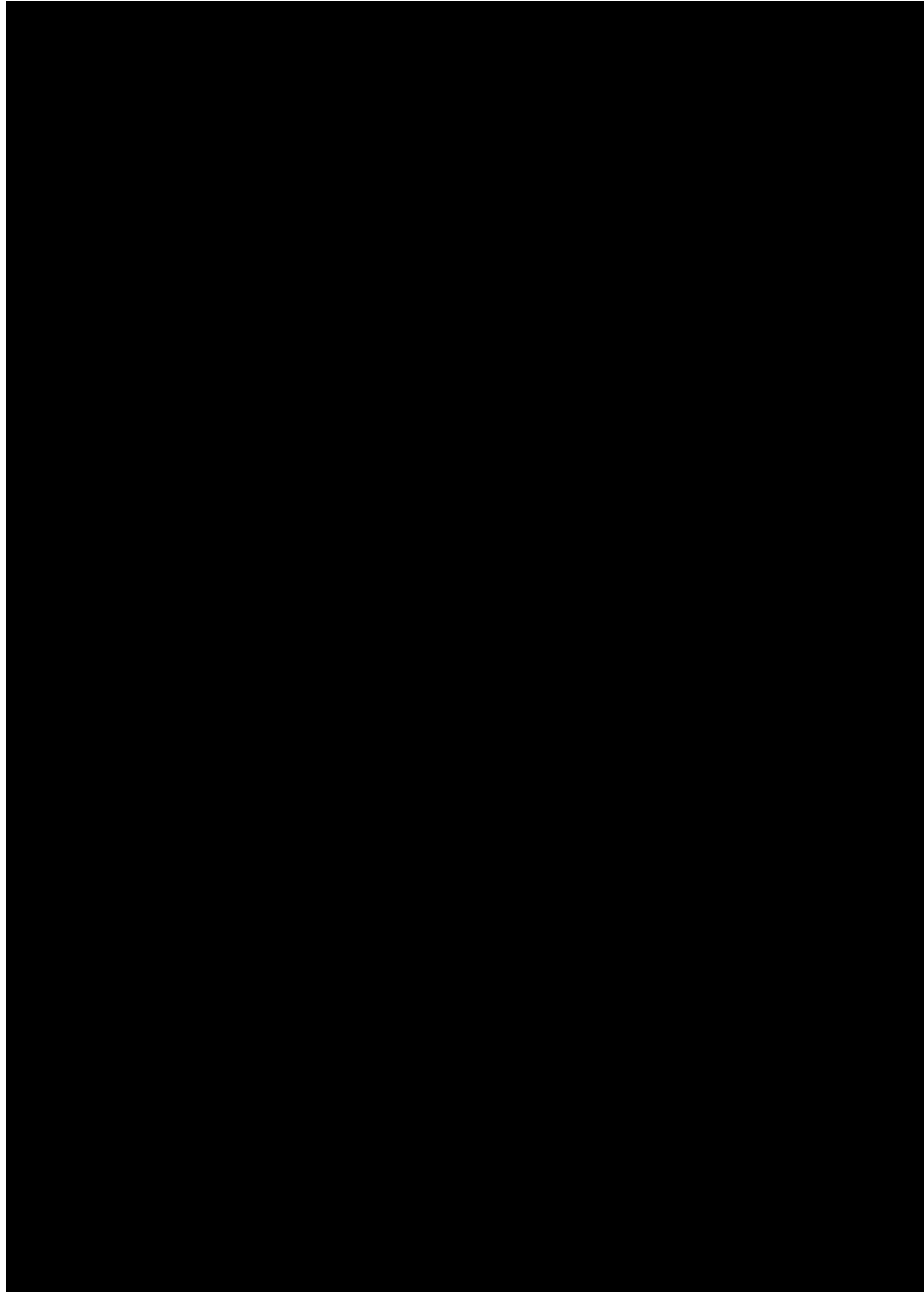
Final Report for Supply Line 33-750 Hydrotest Project

Figure 4: Shoring Box for Bell Hole Located at [REDACTED]



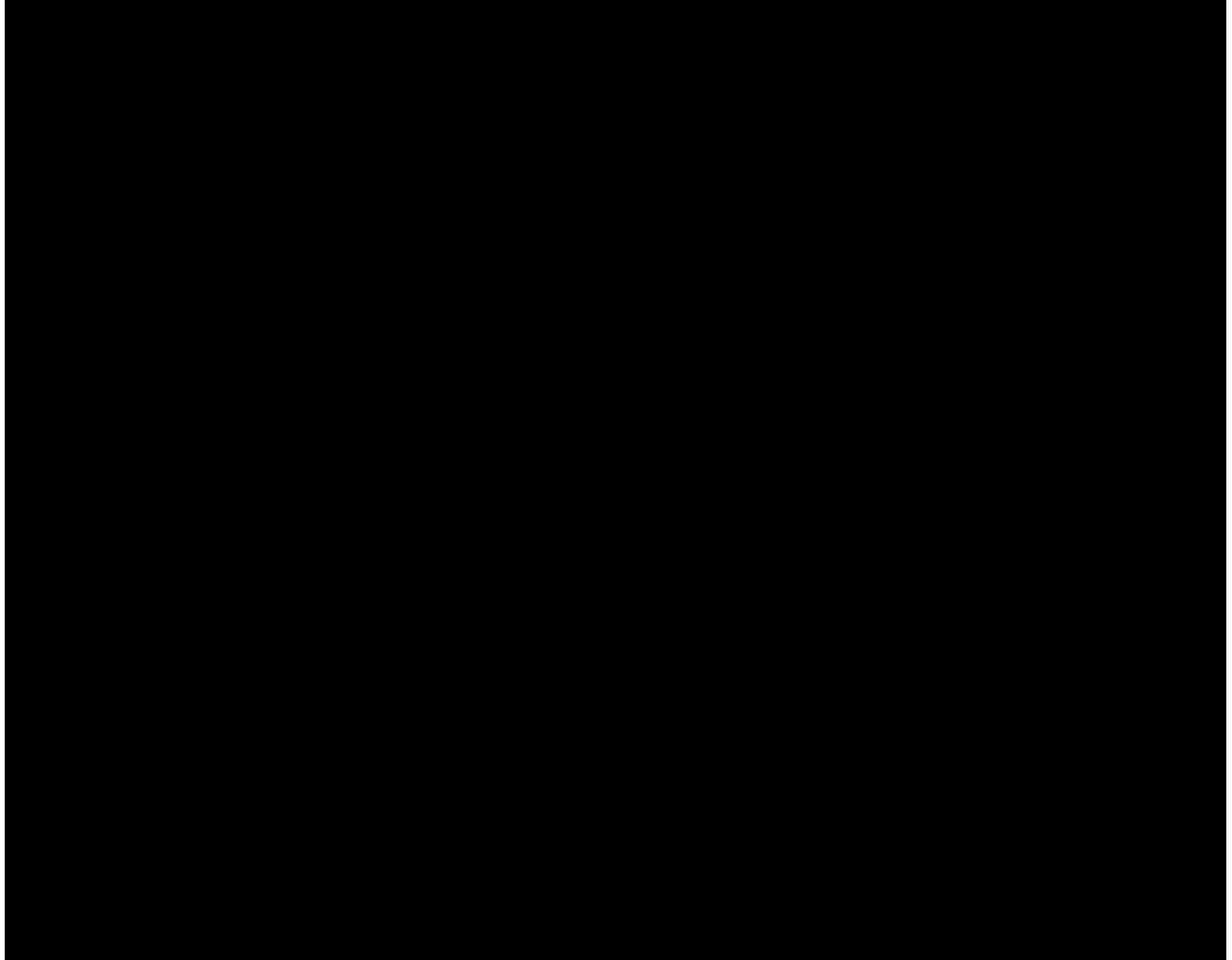
Final Report for Supply Line 33-750 Hydrotest Project

Figure 5: Preparing Pipeline for Hydrotesting



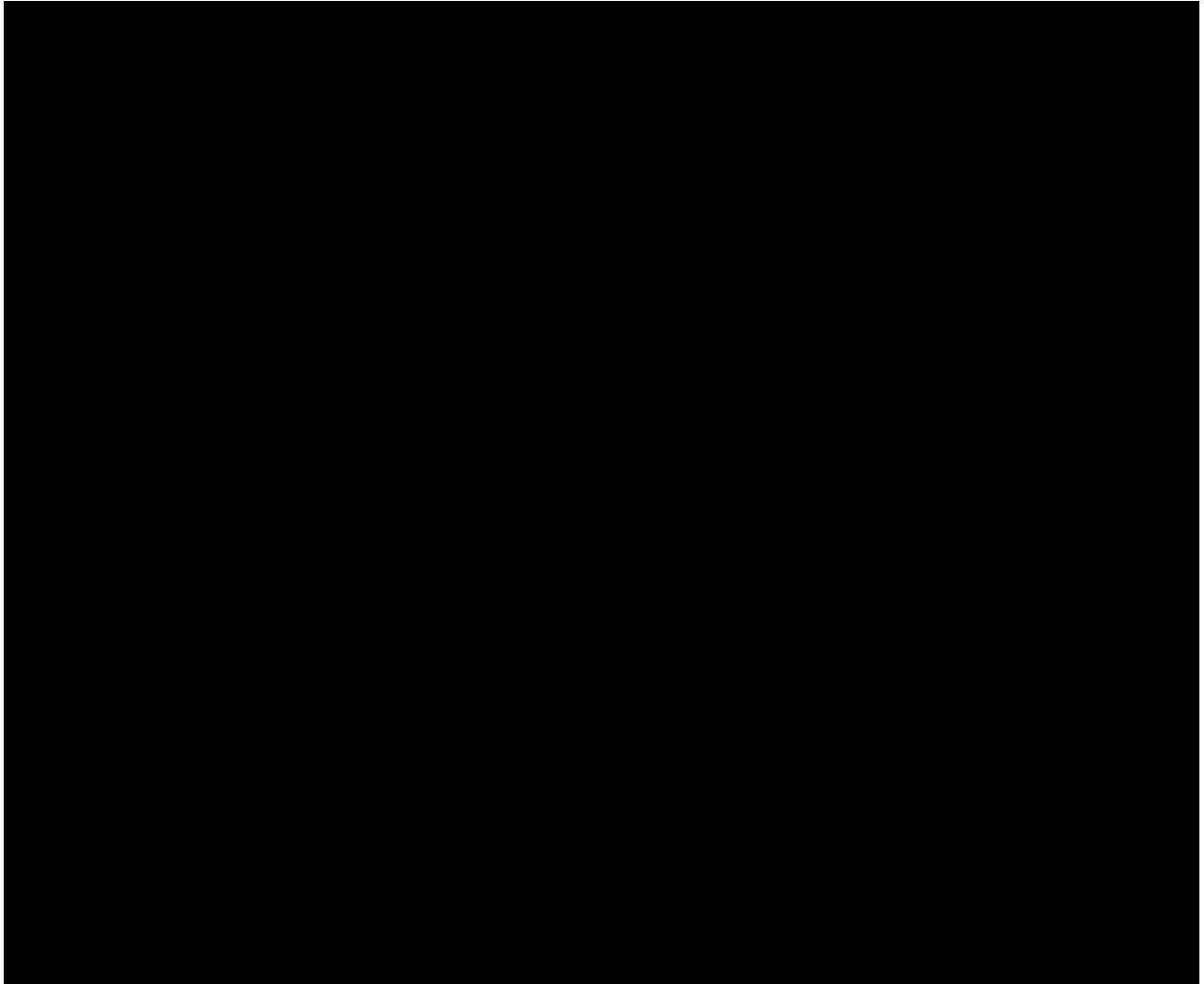
Final Report for Supply Line 33-750 Hydrotest Project

Figure 6: Vault Located on Private Property



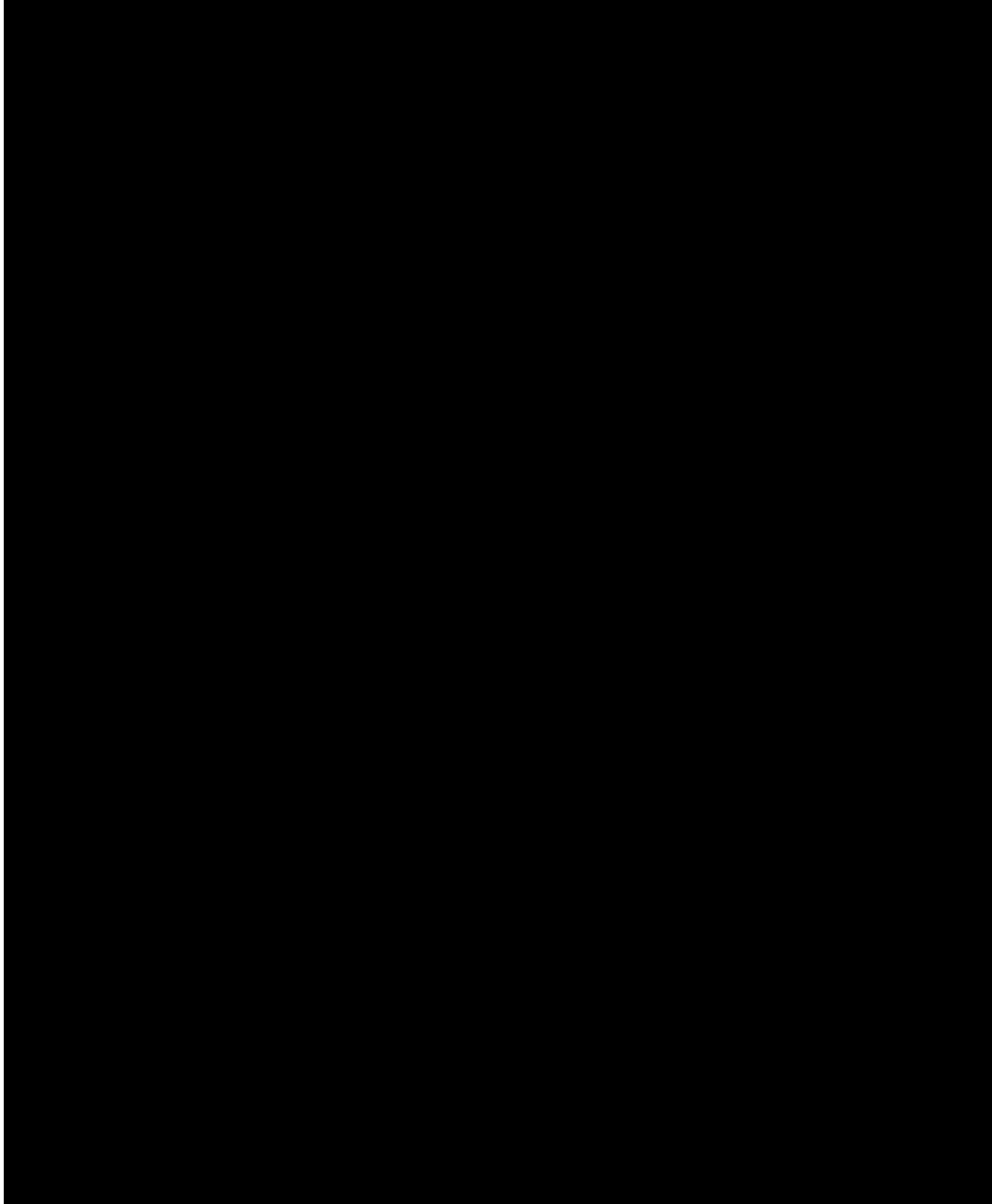
Final Report for Supply Line 33-750 Hydrotest Project

Figure 7: Potholing for Underground Utilities



Final Report for Supply Line 33-750 Hydrotest Project

Figure 8: Regulator Station Exposed for Isolation



## Final Report for Supply Line 33-750 Hydrotest Project

### D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, transportation and disposal of hydrotested 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.

Final Report for Supply Line 33-750 Hydrotest Project

## IV. PROJECT COSTS

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### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project. Specific examples of cost avoidance actions taken on this project are:

1. Scope Change: The Project Team reviewed the pipeline design and determined that the MLV within private property could be removed instead of being replaced, resulting in a cost savings to the project.
2. Materials: The Project Team utilized test heads from available inventory rather than fabricating new ones.

### B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$3,190,120. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

### C. Actual Direct and Indirect Costs

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$5,931,590.

Final Report for Supply Line 33-750 Hydrotest Project

Table 4: Estimated and Actual Direct Costs and Variances<sup>4</sup>

Direct Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Company Labor	482,337	430,813	(51,524)
Materials	136,353	110,604	(25,749)
Construction Contractor	1,353,889	2,849,132	1,495,242
Construction Management & Support	285,871	462,878	177,007
Environmental	239,174	393,628	154,454
Engineering & Design	377,330	451,362	74,033
Project Management & Services	170,666	122,084	(48,581)
ROW & Permits	113,253	42,517	(70,736)
GMA	31,247	193,766	162,519
<b>Total Direct Costs</b>	<b>3,190,120</b>	<b>5,056,784</b>	<b>1,866,664</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances<sup>5</sup>

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	1,315,137	824,841	(490,296)
AFUDC	79,121	43,280	(35,841)
Property Taxes	40,912	6,685	(34,227)
<b>Total Indirect Costs</b>	<b>1,435,170</b>	<b>874,805</b>	<b>(560,365)</b>
<b>Total Direct Costs</b>	<b>3,190,120</b>	<b>5,056,784</b>	<b>1,866,664</b>
<b>Total Loaded Costs</b>	<b>4,625,290</b>	<b>5,931,590</b>	<b>1,306,300</b>

The Actual Full-Time Equivalents<sup>6</sup> (FTEs) for this Project are 0.9.

<sup>4</sup> Values may not add to total due to rounding.

<sup>5</sup> Ibid.

<sup>6</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

## Final Report for Supply Line 33-750 Hydrotest Project

### D. Cost Impacts

The Actual Direct Costs exceeded SoCalGas's preliminary estimate by \$1,866,664. This variance is attributable to:

1. Company Labor: The Project Team required additional working hours to complete the regulator station reinstallation and private property site restoration.
2. Materials: The Project Team used pre-existing test heads and did not need to fabricate new ones as originally planned.
3. Construction Contractor:
  - a. The Project Team exposed a regulator station to install the necessary fittings and gauges to monitor the pipeline and the release of natural gas during the isolation process. Due to the complexity of the design, the Project Team determined that excavation, temporary removal, and subsequent reinstallation of the pipeline were necessary to perform the required retrofit and complete the hydrotesting activities.
4. Environmental:
  - a. The Project Team had to dewater the water tanks due to delays caused by the work on the 33-750 Haskell Station Project.
  - b. Studio City required hydroseeding of the workspace, which led to additional watering of the site.
5. Land Use: The planned west tie-in location was located on a fire road. Feedback from permitting demonstrated that obtaining a permit at this location was not possible due to significant environmental impacts. The Project Team moved the tie-in further west to the intersection of [REDACTED].

### E. Disallowance

There was no disallowance for Supply Line 33-750 as there were no post-1955 segments included in the Project without records that provide the minimum information to demonstrate compliance with then applicable industry standards or regulatory strength testing and recordkeeping requirements.

Final Report for Supply Line 33-750 Hydrotest Project

## **V. CONCLUSION**

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Supply Line 33-750 Hydrotest Project. Through this Hydrotest Project, SoCalGas successfully hydrotested 0.926 miles of pipeline in Studio City. The total loaded cost of the Project is \$5,931,590.

SoCalGas engaged in prudent cost avoidance efforts by utilizing existing part inventory for the hydrotest.

## **End of Supply Line 33-750 Hydrotest Project Final Report**

Final Report for Supply Line 35-20-AB Replacement Project

## I. SUPPLY LINE 35-20-AB REPLACEMENT PROJECT

---

### A. Background and Summary

Supply Line 35-20-AB is a Department of Transportation (DOT) defined transmission<sup>1</sup> line with a [REDACTED] diameter that runs approximately 0.235 miles through Orange County. The pipeline is routed across a [REDACTED] location. This report describes the activities associated with Supply Line 35-20-AB Replacement Project which consists of the replacement of 432 feet of pipeline. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$3,778,096.

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<sup>1</sup> As defined in 49 C.F.R. § 192.3 (2024).

Final Report for Supply Line 35-20-AB Replacement Project

Table 1: General Project Information

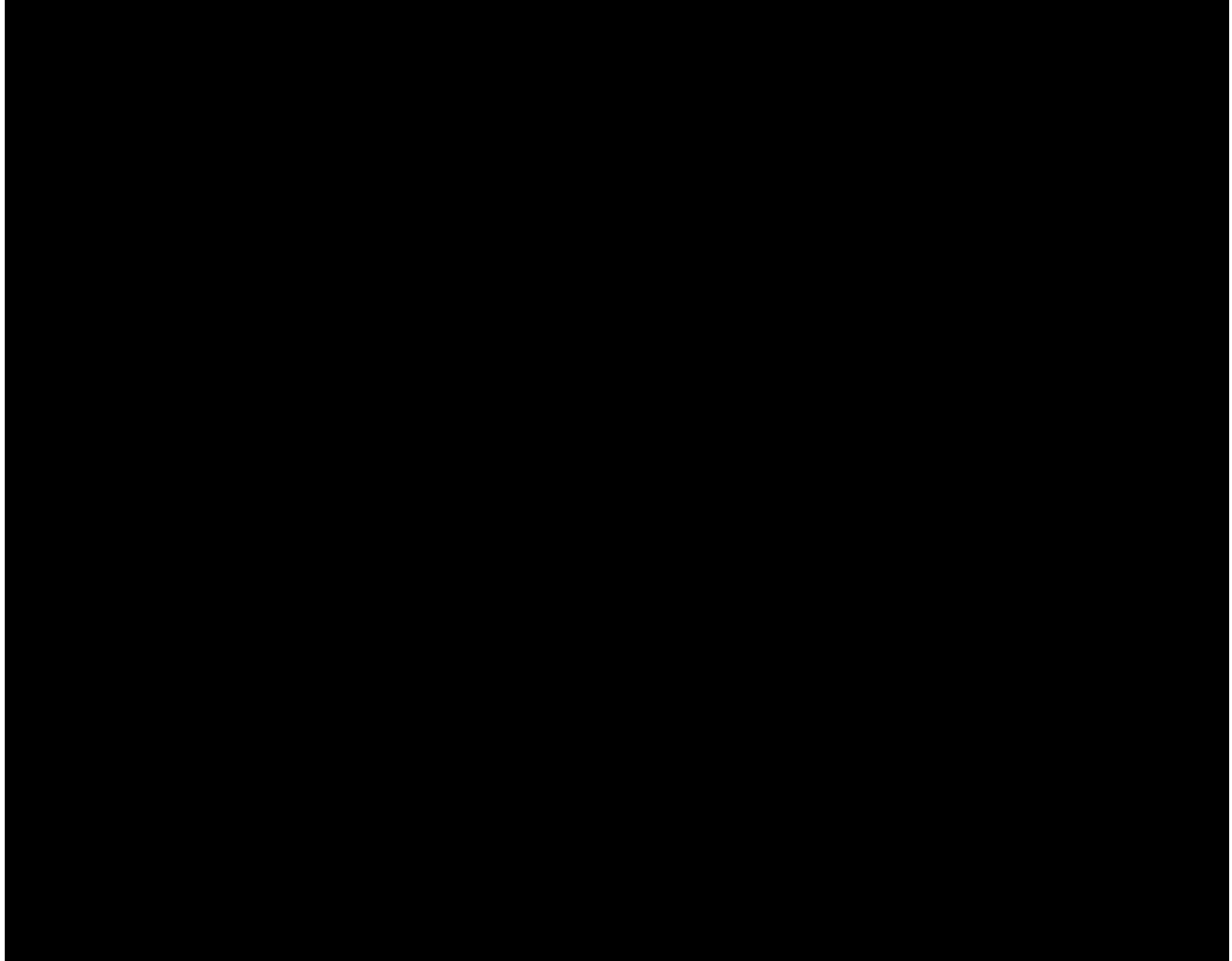
Project Name		Supply Line 35-20-AB		
Project Type	Replacement			
PSEP Phase	1A			
Length	432 feet			
Location	City of Dana Point			
Class	[REDACTED]			
MAOP	[REDACTED]			
Pipe Grade	[REDACTED]			
Wall Thickness	[REDACTED]			
Pipe Vintage	[REDACTED]			
Construction Start	09/20/2024			
Construction Finish	12/13/2024			
Original Pipe Diameter	[REDACTED]			
Original Nominal Diameter	[REDACTED]			
New Diameter	[REDACTED]			
Original SMYS <sup>2</sup>	[REDACTED]			
New SMYS	[REDACTED]			
Project Costs (\$)	Capital	O&M	Total	
Loaded Project Costs	3,778,096	-	3,778,096	
Disallowed Costs	87,322	-	87,322	

<sup>2</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

Final Report for Supply Line 35-20-AB Replacement Project

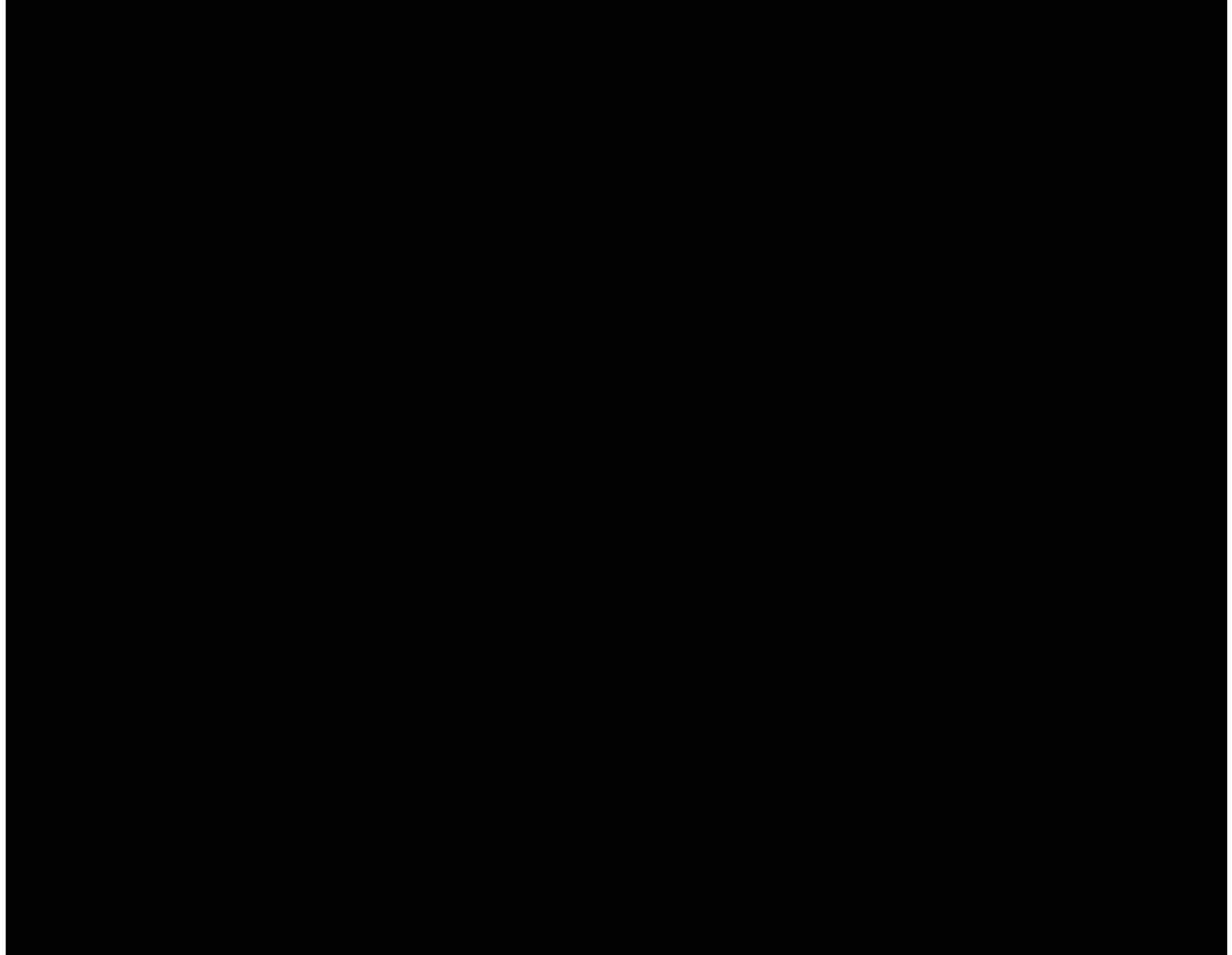
Maps and Images

Figure 1: Satellite Image of Supply Line 35-20-AB Replacement Project



Final Report for Supply Line 35-20-AB Replacement Project

Figure 2: Overview Map of Supply Line 35-20-AB Replacement Project



Final Report for Supply Line 35-20-AB Replacement Project

**II. ENGINEERING, DESIGN, AND PLANNING**

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A. Project Scope

Table 2: Mileage Information

	Criteria	Accelerated	Incidental	New	Total <sup>3</sup>
Final Mileage	0.069 mi. 362 ft.	0 mi. 0 ft.	0.008 mi. 43 ft.	0.005 mi. 27 ft.	0.082 mi. 432 ft.

SoCalGas and SDG&E presented a conceptual project scope in workpapers supporting the 2011 PSEP filing.<sup>4</sup> Prior to initiating execution of the Project in 2024, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SoCalGas did not identify the Supply Line 35-20-AB Project in the 2011 PSEP filing.
2. Scope Validation: Through scope validation activities, SoCalGas successfully reduced the scope of the Project by 6 feet of Category 4 Criteria pipe.
3. Engineering, Design, and Constructability:
  - a. Incidental mileage was included for constructability purposes as it connected the sections of Category 4 Criteria pipe set for replacement.
4. Final Project Scope: The final project scope consists of a 432 feet Replacement that includes 43 feet of Incidental mileage.

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<sup>3</sup> Values may not add to total due to rounding.

<sup>4</sup> See Amended PSEP of SoCalGas and SDG&E, submitted December 2, 2011, in R.11-02-019 and subsequently transferred to A.11-11-002.

## Final Report for Supply Line 35-20-AB Replacement Project

### B. Decision Tree Review

SoCalGas performed a review of the Supply Line 35-20-AB and confirmed the project design should commence as a Replacement Project.

Segments of less than 1,000 feet are identified for replacement under the approved PSEP Decision Tree because, for short segments of pipe, the logistical costs associated with pressure testing (for example, permitting, construction, water handling, and service disruptions for a non-looped system) can approach or exceed the cost of replacement. In such circumstances, replacement affords a more cost-effective approach to achieving compliance with D.11-06-017 while providing equal safety enhancement benefits. Moreover, installation of the new segment can usually be performed while the existing service is maintained to customers, thereby avoiding service disruptions that may otherwise occur during pressure testing.

As a result of this review, SoCalGas identified replacement as the more prudent option. Key considerations that support SoCalGas's determination to replace this segment include:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could be shut-in.
2. Customer Impacts: No identified impacts.
3. Community Impacts: The Project Team was required to perform all work impacting the Pacific Coast Highway during nighttime hours. In addition, the City of Dana Point imposed Friday work restrictions to minimize traffic impacts.
4. Permit Conditions: The Project Team acquired an Encroachment Permit from the City of Dana Point.
5. Piggability: Piggable.
6. Pipe Vintage: [REDACTED]
7. Existing Pipe Attributes: No identified issues.
8. Long Seam Type: Unknown.

## Final Report for Supply Line 35-20-AB Replacement Project

9. Long Seam Repair History: No identified issues.
10. Condition of Coating: No identified issues.
11. History of Leaks: No identified issues.

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records and potholing of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. Shut-In Analysis: As discussed above, the Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could be shut-in.
2. Customer Impact: No identified impacts.
3. Community Impact: The Project Team was required to perform all work impacting the Pacific Coast Highway during nighttime hours. In addition, the City of Dana Point imposed Friday work restrictions to minimize traffic impacts.
4. Known Substructures: The Project Team identified existing underground communication lines.
5. Permit Conditions: The Project Team acquired an Encroachment Permit from the City of Dana Point which had the following special conditions:
  - a. The Project Team was required to perform all work impacting Pacific Coast Highway during nighttime hours.
6. Land Use:
  - a. The Project Team obtained a Temporary Right of Entry Agreement (TRE) from a private landowner to utilize a laydown yard near the construction site.
  - b. The Project Team obtained a permit from Orange County Harbors Beaches and Parks to use a parking lot as a temporary workspace.

## Final Report for Supply Line 35-20-AB Replacement Project

7. Environmental: No identified impacts.

### D. Scope Changes

SoCalGas did not make any notable scope changes during detailed design.

Final Report for Supply Line 35-20-AB Replacement Project

### III. CONSTRUCTION

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#### A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. As indicated above, there were no notable changes in scope between the time when the Project Team prepared the preliminary cost estimate and when the Performance Partner prepared and submitted its Target Price Estimate. SoCalGas awarded the construction contract to the Performance Partner.

1. SoCalGas’s Preliminary Construction Cost Estimate: SoCalGas’s preliminary cost estimate for construction was \$1,344,930.
2. Construction Contractor’s Target Price Estimate: The Construction Contractor’s cost estimate was [REDACTED], which was [REDACTED] than SoCalGas’s preliminary cost estimate for construction.

#### B. Construction Schedule

Table 3: Construction Timeline

Construction Start Date	09/20/2024
Construction Completion Date	12/13/2024
NOP Date	10/23/2024

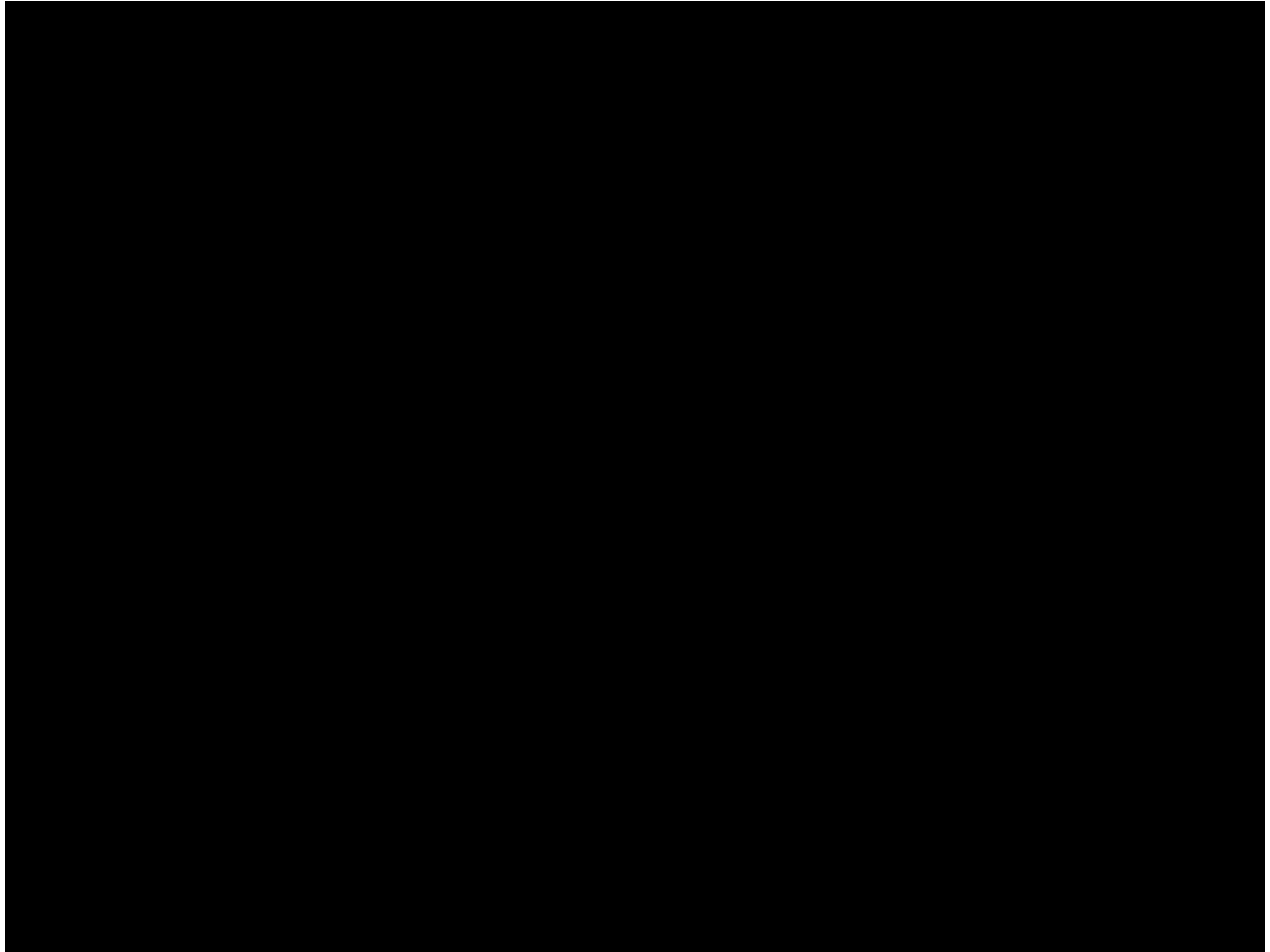
#### C. Changes During Construction

The conditions summarized below were encountered during construction. Activities to address or mitigate these conditions resulted in approximately \$17,403 in change orders.

1. Permits Conditions: The City of Dana Point required a preapproved engineering company to provide geotechnical assessments, inspection, and oversight during the project.

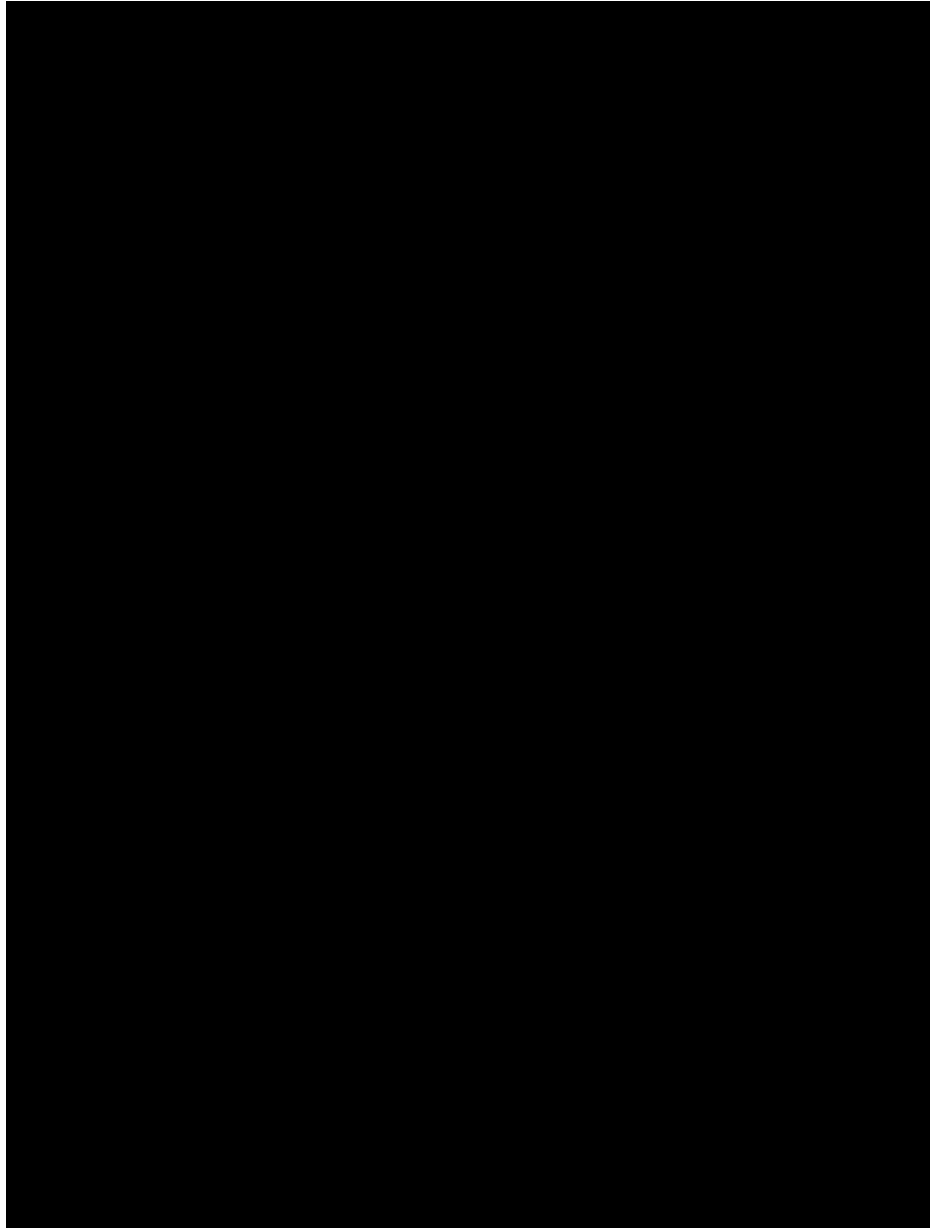
Final Report for Supply Line 35-20-AB Replacement Project

Figure 3: Installation of Pressure Control Fitting (PCF) and Abandon Nipples



Final Report for Supply Line 35-20-AB Replacement Project

Figure 4: Trenching for Pipeline Installation



## Final Report for Supply Line 35-20-AB Replacement Project

### D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, transportation and disposal of hydrotreated 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.

Final Report for Supply Line 35-20-AB Replacement Project

## IV. PROJECT COSTS

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### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project.

### B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$2,724,669. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

### C. Actual Direct and Indirect Costs

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$3,778,096.

Final Report for Supply Line 35-20-AB Replacement Project

Table 4: Estimated and Actual Direct Costs and Variances

Direct Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Company Labor	353,658	217,844	(135,814)
Materials	80,849	36,172	(44,677)
Construction Contractor	1,344,930	1,173,734	(171,196)
Construction Management & Support	177,372	175,938	(1,434)
Environmental	150,463	96,627	(53,836)
Engineering & Design	353,951	554,193	200,242
Project Management & Services	152,584	245,021	92,437
ROW & Permits	110,862	37,806	(73,056)
GMA	-	-	-
<b>Total Direct Costs</b>	<b>2,724,669</b>	<b>2,537,337</b>	<b>(187,332)</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	993,070	1,150,012	156,942
AFUDC	138,127	83,967	(54,161)
Property Taxes	90,766	6,780	(83,986)
<b>Total Indirect Costs</b>	<b>1,221,963</b>	<b>1,240,759</b>	<b>18,795</b>
<b>Total Direct Costs</b>	<b>2,724,669</b>	<b>2,537,337</b>	<b>(187,332)</b>
<b>Total Loaded Costs</b>	<b>3,946,632</b>	<b>3,778,096</b>	<b>(168,537)</b>

The Actual Full-Time Equivalents<sup>5</sup> (FTEs) for this Project are 0.51.

<sup>5</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

## Final Report for Supply Line 35-20-AB Replacement Project

### D. Cost Impacts

Consistent with one of the overarching objectives of PSEP as stated in testimony to maximize the cost effectiveness of safety enhancement investments, SoCalGas effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities may lead to variances between the initial estimate and actuals. The Project Team successfully mitigated these variances whenever feasible through the implementation of effective project management practices, thorough planning, and continuous monitoring.

At the completion of the Supply Line 35-20-AB Replacement Project, Actual Direct Costs came within the AACE Class 3 Total Installed Cost (TIC) accuracy range, adhering to the standard industry practices defined by the Association for the Advancement of Cost Engineering (AACE) International. The Actual Direct Costs were less than the preliminary estimate by \$187,332. This variance is attributable to a variety of factors including: The Project Team was able to increase productivity and shorten the construction schedule; The Project experienced a design change after the initial estimate that reduced the quantity of materials needed. Wedding bands were part of the initial estimate and were not utilized.

## Final Report for Supply Line 35-20-AB Replacement Project

### E. Disallowance

For this replacement project, SoCalGas identified 366 feet of pipe as being installed after 1955 and lacking records that provide the minimum information necessary to demonstrate compliance with then-applicable industry standards or regulatory strength testing and recordkeeping requirements. Of the pipeline that was replaced, 366 feet of Phase 1A pipe is disallowed. Therefore, a \$87,322 reduction to ratebase was calculated by multiplying 0.0693 miles of pipe by \$1.28 million per mile, which was SoCalGas and SDG&E's system average cost of pressure testing at the time the pipeline was returned to service.

Final Report for Supply Line 35-20-AB Replacement Project

## **V. CONCLUSION**

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Supply Line 35-20-AB Replacement Project. Through this Replacement Project, SoCalGas successfully replaced 0.082 miles of pipeline in the City of Dana Point.

SoCalGas executed this project prudently by actively coordinating with the City of Dana Point and incorporating permit requirements into the schedule.

SoCalGas engaged in prudent cost avoidance efforts by shortening the construction schedule and decreasing the amount of materials needed.

## **End of Supply Line 35-20-AB Project Final Report**

Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

## **I. SUPPLY LINE 36-9-09 NORTH SECTION 5B-01 REPLACEMENT PROJECT**

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### **A. Background and Summary**

Supply Line 36-9-09 North is a Department of Transportation (DOT) defined transmission<sup>1</sup> line with a predominantly [REDACTED] ter supply line that runs approximately 62 miles through both commercial and residential neighborhoods in the city of Pismo Beach. This report describes the activities associated with Supply Line 36-9-09 North Section 5B-01 Replacement Project which consists of the replacement and reroute of 756 feet of pipeline to improve accessibility for routine maintenance and emergency response. The pipeline is primarily routed across a [REDACTED] location. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$5,435,726.

The Supply Line 36-9-09 North 5B-01 Replacement Project is a component of Supply Line 36-9-09 North, that was identified in the 2011 PSEP filing<sup>2</sup> as a 16.016 mile replacement project. The pipeline is located in the cities of Atascadero, San Luis Obispo, Pismo Beach, and Arroyo Grande. For project manageability purposes and due to unique characteristics related to non-contiguous portions of the pipeline, SoCalGas divided Supply Line 36-9-09 North into several project sections to be managed individually (see Figure 1). Two key reasons that drove the decision to manage the work on Supply Line 36-9-09 North in this manner; the sections were in different locations and physically separated from each other by non-PSEP segments of pipeline, and the project scopes (hydrotesting, replacement, or abandonment) differed among the sections and had differing permit acquisition timelines. Additionally, the entire length of Supply Line 36-9-09 North was made up of varying pipe diameters. SoCalGas standardized the pipeline diameter to make the pipeline piggable.

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<sup>1</sup> As defined in 49 C.F.R. § 192.3 (2024).

<sup>2</sup>See Amended December 2, 2011 Pipeline Safety Enhancement Plan (PSEP) of SoCalGas and SDG&E.

Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

Table 1: General Project Information

Project Name	Supply Line 36-9-09 North Section 5B-01		
Project Type	Replacement		
PSEP Phase	1A		
Length	756 feet		
Location	Pismo Beach		
Class	[REDACTED]		
MAOP	[REDACTED]		
Pipe Grade	[REDACTED]		
Wall Thickness	[REDACTED]		
Pipe Vintage	Multiple pipe vintages from [REDACTED]		
Construction Start	03/10/2021		
Construction Finish	10/08/2021		
Original Pipe Diameter	[REDACTED]		
Original Nominal Diameter	[REDACTED]		
New Diameter	[REDACTED]		
Original SMYS <sup>3</sup>	[REDACTED]		
New SMYS	[REDACTED]		
Project Costs (\$)	Capital	O&M	Total
Loaded Project Costs	5,435,726	-	5,435,726
Disallowed Costs	-	-	-

<sup>3</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

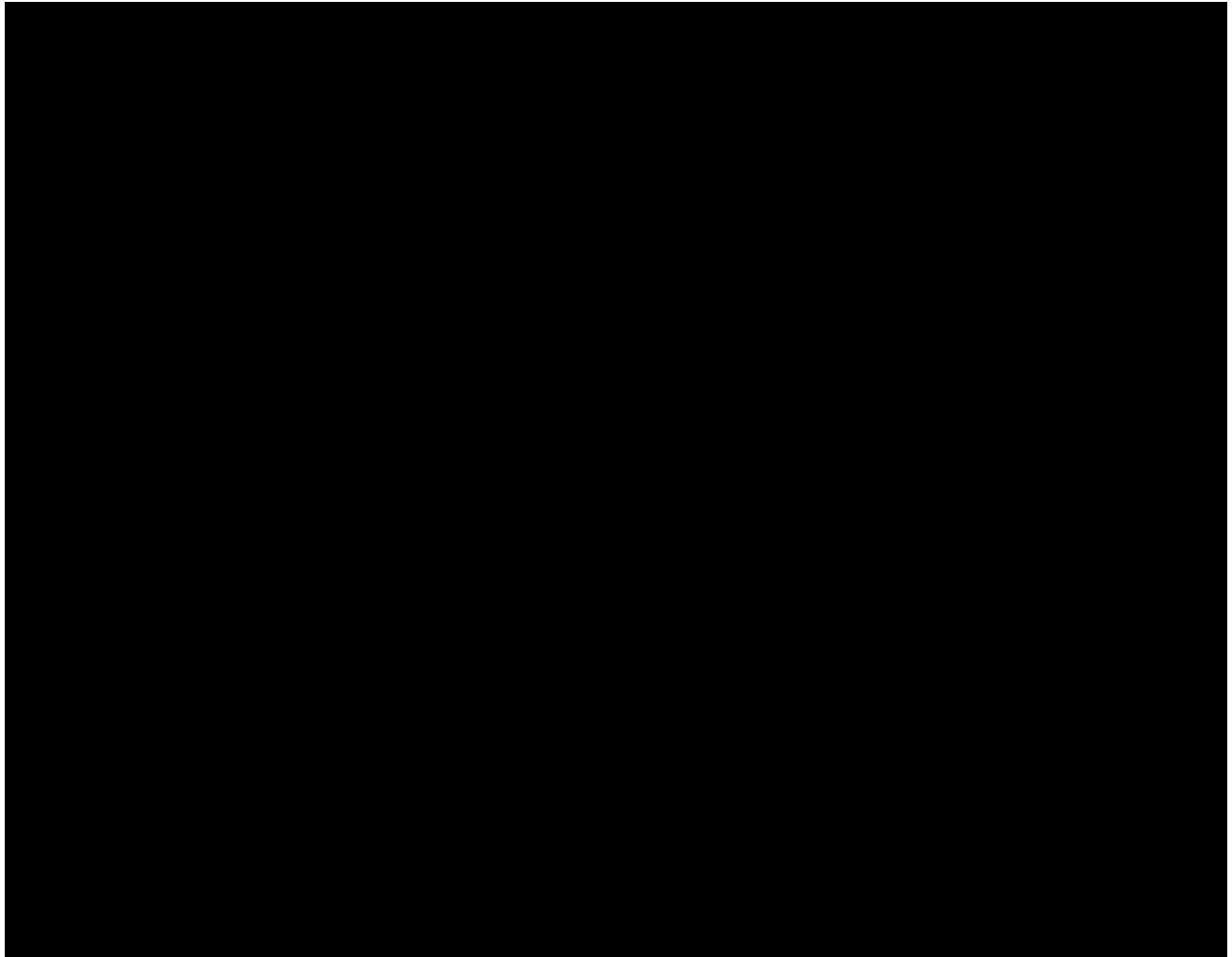
B. Maps and Images

Figure 1: Map of Supply Line 36-9-09 North PSEP Projects



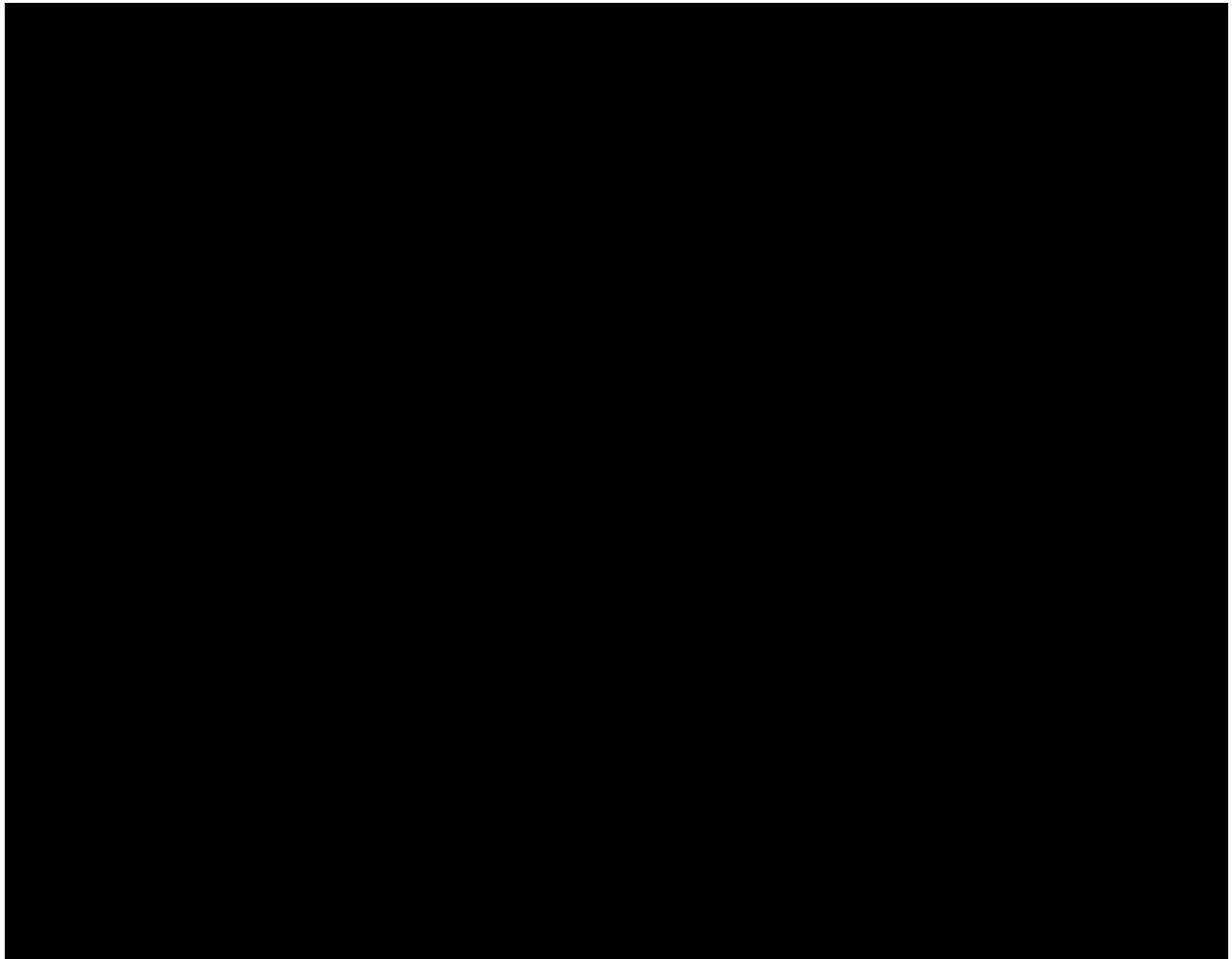
Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

Figure 2: Satellite Image of Supply Line 36-9-09 North Section 5 Projects



Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

Figure 3: Overview Map of Line 36-9-09 North Section 5 Projects



Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

## II. ENGINEERING, DESIGN, AND PLANNING

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### A. Project Scope

Table 2: Mileage Information

	Criteria	Accelerated	Incidental	New	Total <sup>4</sup>
Final Mileage	0.097 mi.	0 mi.	0.020 mi.	0.027 mi.	0.143 mi.
	510 ft.	0 ft.	107 ft.	140 ft.	756 ft.

SoCalGas and SDG&E presented a conceptual project scope in workpapers supporting the 2011 PSEP filing.<sup>5</sup> Prior to initiating execution of the Project in 2021, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: Supply Line 36-9-09 North was identified as a Phase 1A replacement project comprised of 9.662 miles of Category 4 Criteria pipe and 6.354 miles of Accelerated pipe.
2. Scope Validation: Through scope validation activities, after the 2011 filing and before initiating execution of the Project, SoCalGas successfully reduced the scope of the Project by 9.566 miles of Category 4 Criteria pipe.
3. Engineering, Design, and Constructability:
  - a. SoCalGas initially scoped Supply Line 36-9-09 North Section 5 as a single project; however, due to long lead permitting delays and constructability issues, the Project Team decided that Supply Line 36-9-09 North Section 5 should be sectioned into 5A<sup>6</sup>, 5B, and 5C.

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<sup>4</sup> Values may not add to total due to rounding.

<sup>5</sup> See Amended PSEP of SoCalGas and SDG&E, submitted December 2, 2011, in R.11-02-019 and subsequently transferred to A.11-11-002.

<sup>6</sup> Supply Line 36-9-09 North Section 5A Replacement Projects was submitted for Reasonableness Review in the 2018 proceeding.

## Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

- b. Subsequently, the Project Team determined that Section 5B should be further split into two sections, 5B-01 and 5B-02<sup>7</sup>, due to delays in the City of Pismo Beach's construction plans along the proposed alignment for Section 5B.
  - c. The Project Team designed the Supply Line 36-9-09 North Section 5B-01 Project to connect the pipe segments installed on replacement projects Section 5A and Section 5B-02. The new pipe will be installed partially via open trench, and partially supported on steel hangers on the [REDACTED].
4. Final Project Scope: The final project scope consists of a 650 feet Replacement and reroute and 107 feet of Incidental pipe.

## B. Decision Tree Review

SoCalGas performed a review of the Supply Line 36-9-09 North Section 5B-01 and confirmed the project design should commence as a Replacement Project.

Segments of less than 1,000 feet are identified for replacement under the approved PSEP Decision Tree because, for short segments of pipe, the logistical costs associated with pressure testing (for example, permitting, construction, water handling, and service disruptions for a non-looped system) can approach or exceed the cost of replacement. In such circumstances, replacement affords a more cost-effective approach to achieving compliance with D.11-06-017 while providing equal safety enhancement benefits. Moreover, installation of the new segment can usually be performed while the existing service is maintained to customers, thereby avoiding service disruptions that may otherwise occur during pressure testing.

Pipeline segments installed prior to 1946 that are not capable of being assessed using in-line inspection technology are identified for replacement under the approved PSEP Decision Tree. As explained in the testimony supporting the approved PSEP, as part of

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<sup>7</sup> Supply Line 36-9-09 North Section 5B-02 Replacement Project was submitted for Reasonableness Review in the 2024 proceeding.

## Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

the work previously completed during implementation federal gas transmission pipeline integrity management regulations (49 CFR 192, Subpart O), SoCalGas have already identified, retrofitted and in-line inspected pre-1946 transmission pipelines that were constructed using acceptable welding techniques and are operationally suited to in-line inspection. The remaining pre-1946 segments in the SoCalGas/SDG&E system are not suited for in-line inspection, likely have non-state-of-the-art welds, and would require significant investment for retrofitting to accommodate in-line inspection tools. Accordingly, consistent with the Commission's directive in D.11-06-017 to "address retrofitting pipeline to allow for inline inspection tools," the requirement in California Public Utilities Code section 958 that upon completion of the PSEP, where warranted, pipelines are to be capable of accommodating in-line inspection devices, and the overarching objectives of PSEP to enhance the safety of the pipeline system in a proactive, cost effective manner, the approved PSEP Decision Tree identifies pre-1946 non-piggable pipeline segments for abandonment and/or replacement.

As a result of this review, SoCalGas identified replacement as the more prudent option. Key considerations that support SoCalGas's determination to replace this segment include:

1. Shut-In Analysis: As discussed above, the Project Team completed a Request for Engineering Review (RER) analysis and concluded the line could be shut-in.
2. Customer Impact: Per the RER, Compressed Natural Gas (CNG) support would be needed to maintain uninterrupted customer service for one customer during shut-in.
3. Community Impacts: No identified issues.
4. Permit Conditions: The Project Team needed to obtain an encroachment permit from the City of Pismo Beach.
5. Piggability: Non-piggable.
6. Pipe Vintage: Multiple pipe vintages from [REDACTED].
7. Existing Pipe Attributes: Existing non-piggable plug valves and unbarred tees.
8. Long Seam Type: [REDACTED].
9. Long Seam Repair History: No identified issues.

## Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

10. Condition of Coating: No identified issues.

11. History of Leaks: No identified issues.

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. Constructability: The Project Team initially scoped Supply Line 36-9-09 North Section 5 as a single project. Due to long lead delays and constructability issues for crossing [REDACTED] and railroad tracks, the Project Team determined that Supply Line 36-9-09 North Section 5 needed to be sectioned into 5A, 5B, and 5C, and project execution commenced on Sections 5A and 5C.
2. Shut-in Analysis: As discussed above, the Project Team completed an Request for Engineering Review (RER) analysis and concluded the line could be shut-in.
3. Customer Impact: No identified issues.
4. Community impact: No identified issues.
5. Diameter Changes: The Project Team replaced the existing [REDACTED] line with a [REDACTED] line based on the recommendation of the RER to standardize the pipeline for future piggability, taking advantage of cost savings from favorable pricing of bulk purchased pipe.
6. Schedule Coordination:
  - a. The Project Team coordinated with the City of Pismo Beach to install pipeline on a bridge constructed in 2021.
  - b. The coordination was necessary as the planned Horizontal Directional Drill (HDD) was not feasible for this section of the Project.

### Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

- c. A geotechnical evaluation revealed a risk of lateral movement in the event of an earthquake for the HDD crossing of [REDACTED].
  - d. The Project was completed in two phases to avoid a moratorium from the City of Pismo Beach that required curb-to-curb repaving.
7. Known Substructures: The Project Team identified multiple substructures within the proposed construction alignment by reviewing detailed pipeline schematics and utility lines acquired through the City of Pismo Beach's bridge planning and the completion of Section 5A and 5B-02.
  8. Permit Conditions: The Project Team obtained an encroachment permit from the City of Pismo Beach.
  9. Environmental: The Project Team planned for typical abatement activities.

## D. Scope Changes

SoCalGas did not make any notable scope changes during detailed design.

Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

### III. CONSTRUCTION

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#### A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. Following completion of the engineering, design, and planning activities described above, the Project Team directed the Performance Partner to prepare cost estimates based on a more detailed engineering design package. As indicated above, there were no notable changes in scope between the time when the Project Team prepared the preliminary cost estimate and when the Performance Partner prepared and submitted its Target Price Estimate. SoCalGas awarded the construction contract to the Performance Partner.

1. SoCalGas’s Preliminary Construction Cost Estimate: SoCalGas’s preliminary cost estimate for construction was \$1,478,241.
2. Construction Contractor’s (Target Price Estimate): The Construction Contractor’s cost estimate was [REDACTED], which was [REDACTED] than SoCalGas’s preliminary cost estimate for construction.

#### B. Construction Schedule

Table 3: Construction Timeline

Construction Start Date	03/10/2021
Construction Completion Date	10/08/2021
NOP Date	10/01/2021

## Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

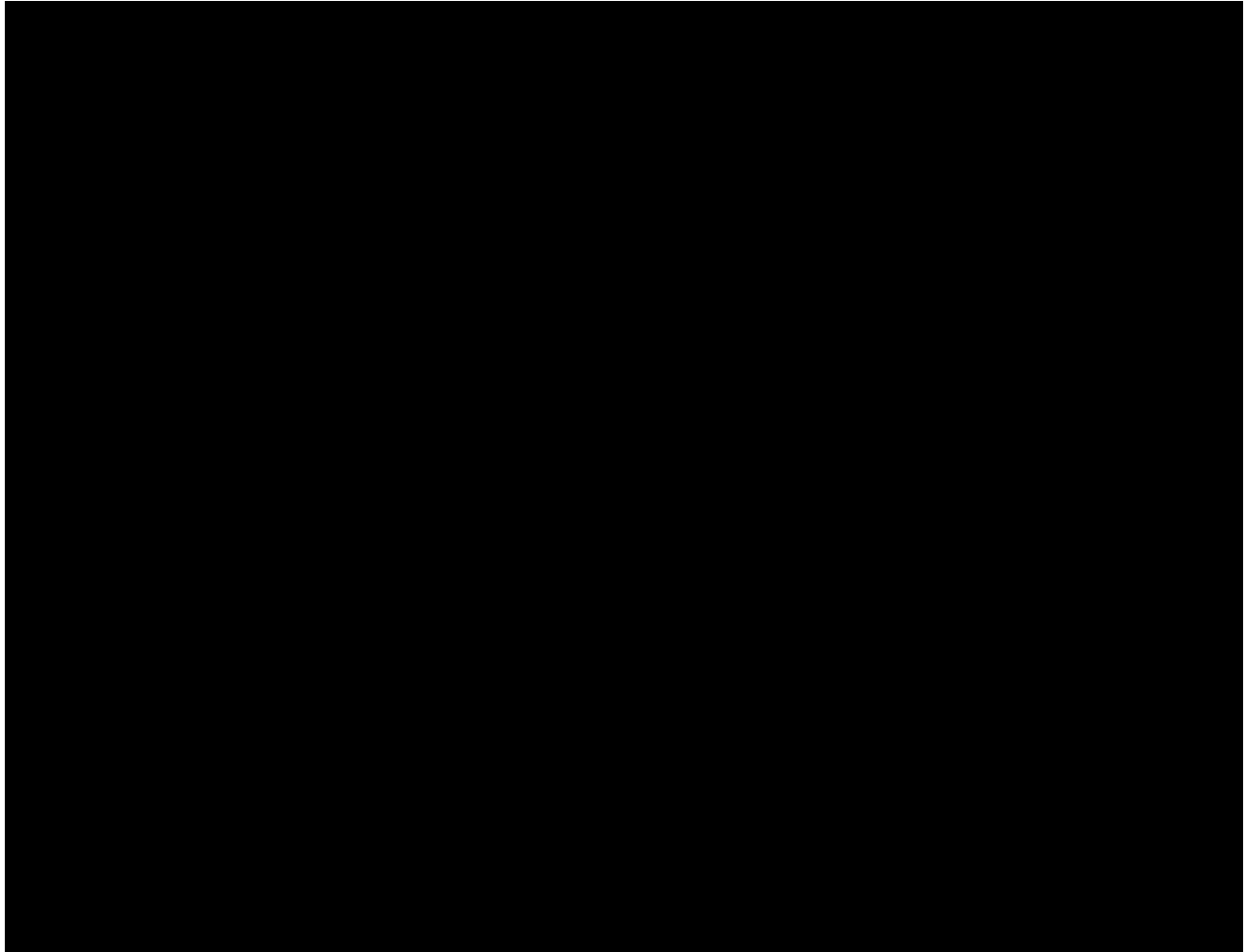
### C. Changes During Construction

The conditions summarized below were encountered during construction. Activities to address or mitigate these conditions resulted in approximately \$340,000 in change orders.

1. Site Restoration: The City of Pismo Beach requested additional restoration requirements for disturbed roadway.
2. Work Hours: The Project Team extended work hours to accommodate the City of Pismo Beach's construction timeline.
3. Field Design Changes: The Project Team adjusted the coating needed for the hanger design due to the surrounding marine atmosphere.
4. Site Conditions: The Project Team relocated the planned Pressure Control Fitting (PCF) install due to high groundwater level.

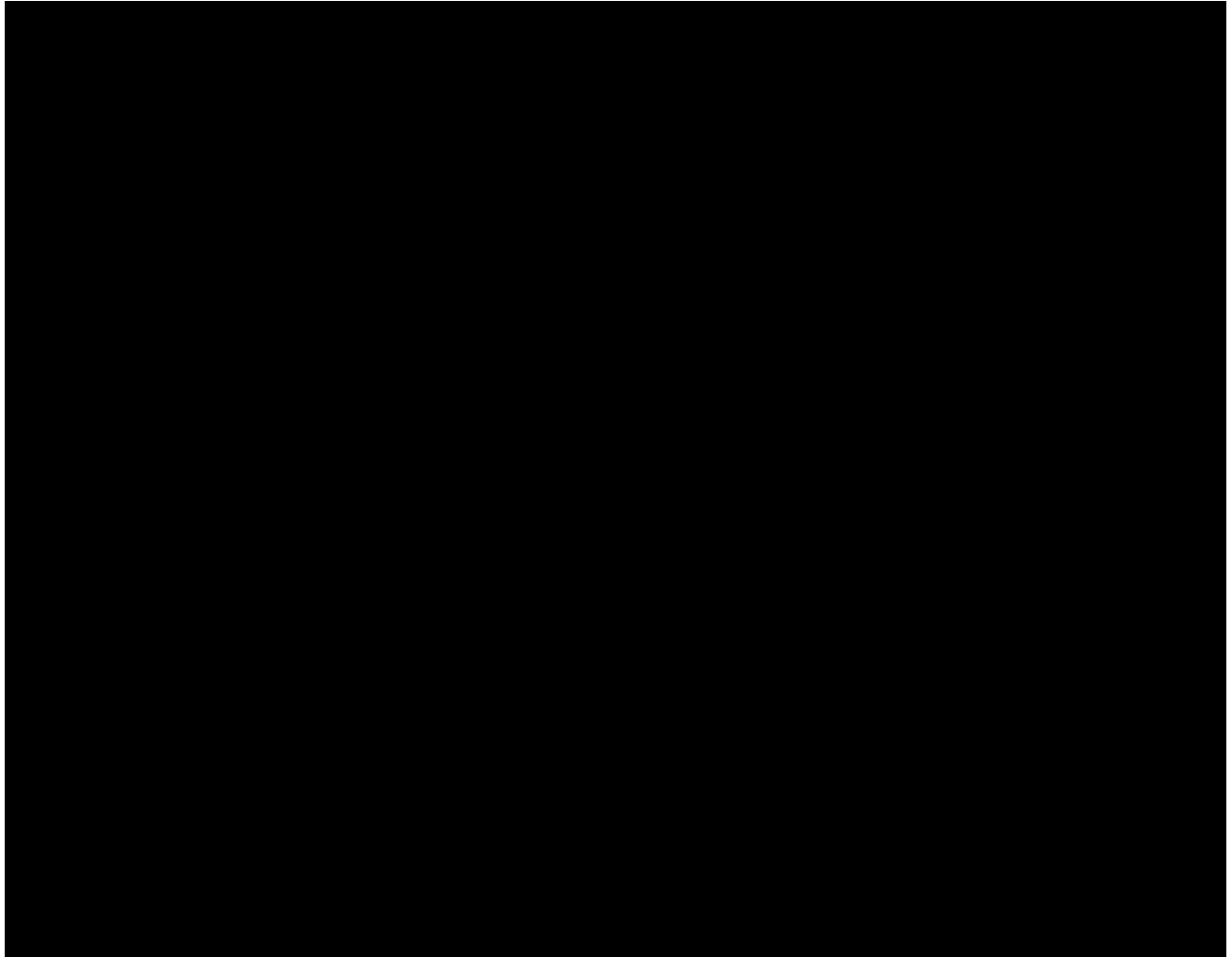
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Figure 4: Sack Slurry Pouring Over the South PCF



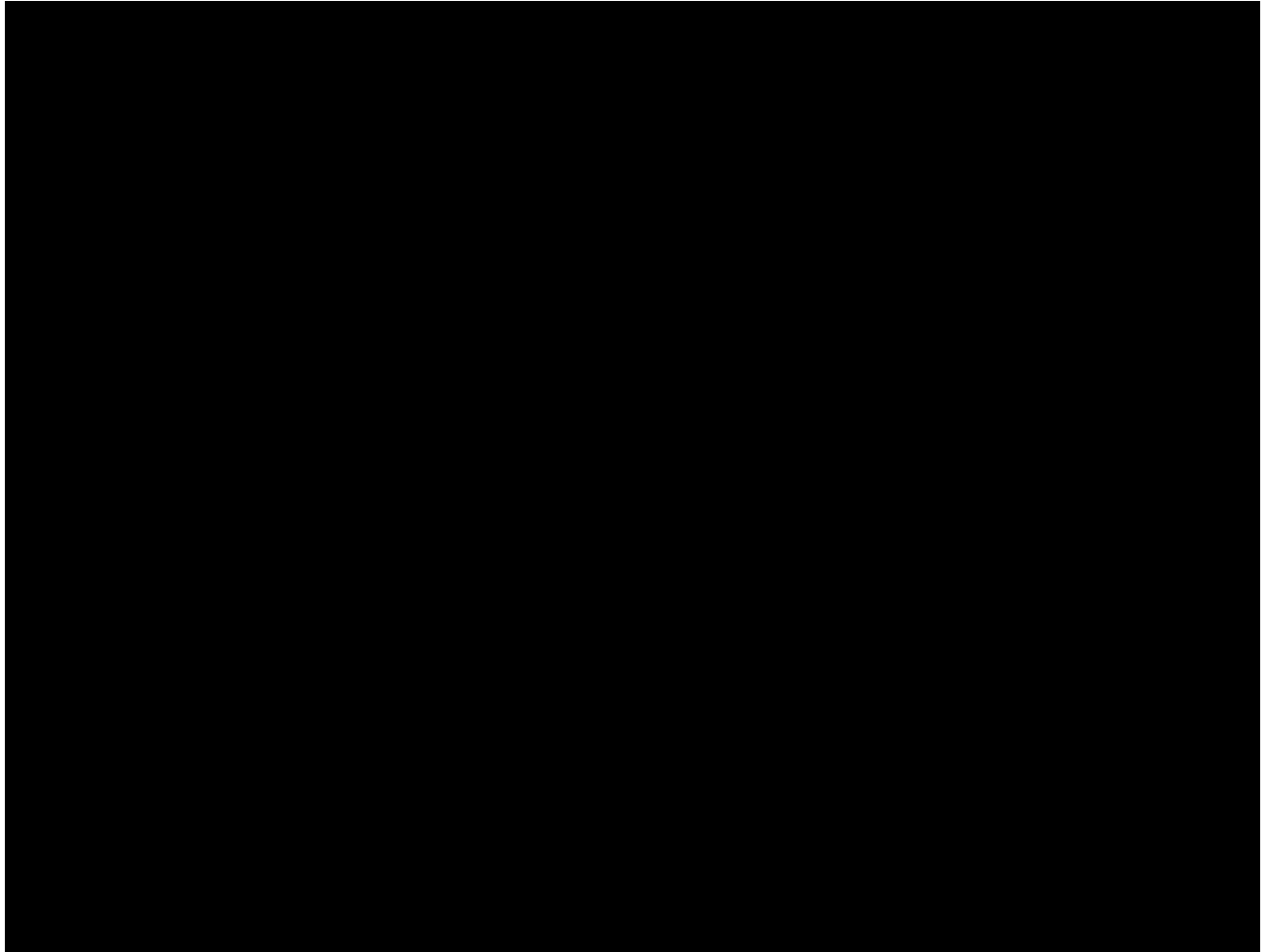
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Figure 5: Excavation of North PCF Bellhole



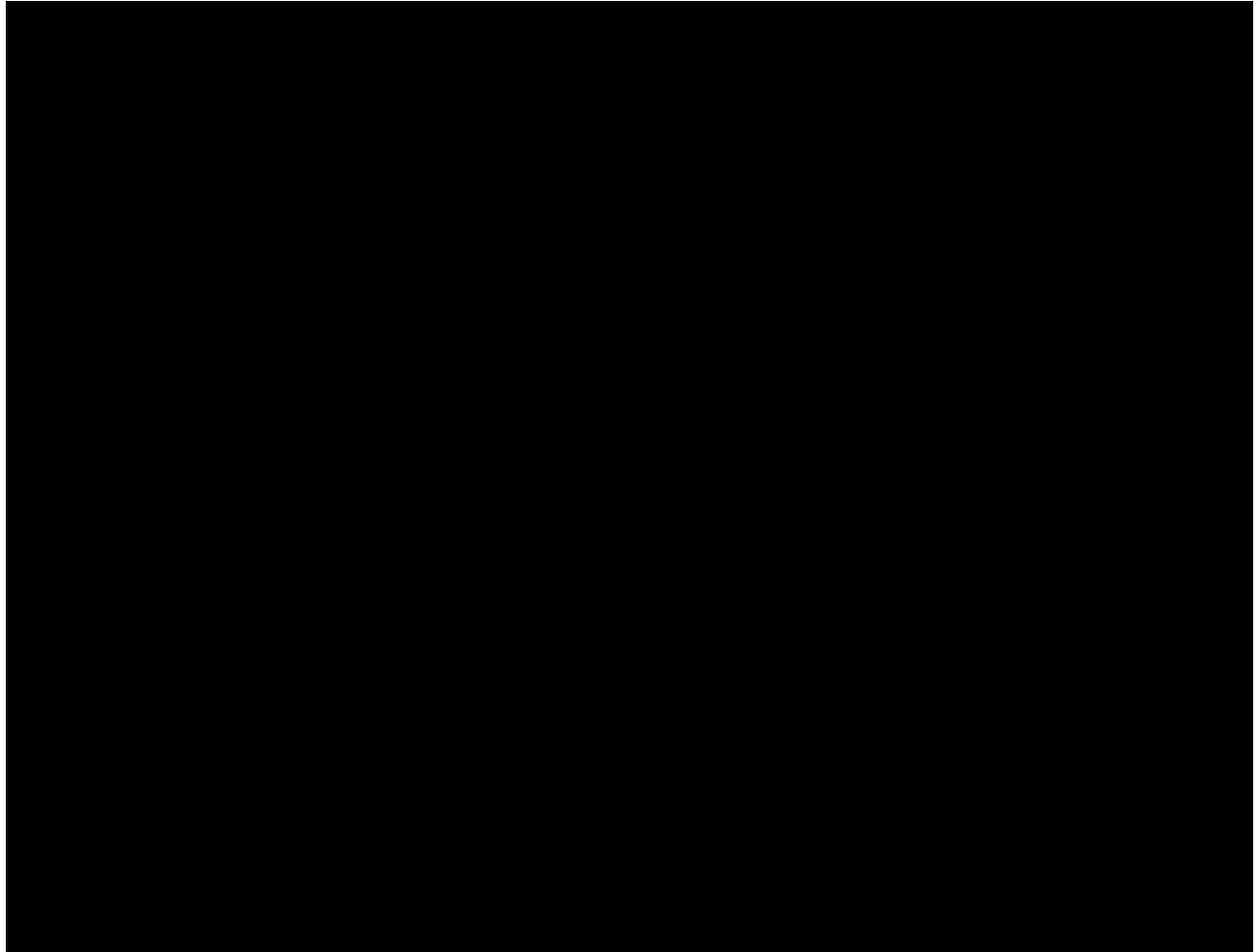
Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

Figure 6: South Tie-in [REDACTED] Test Head



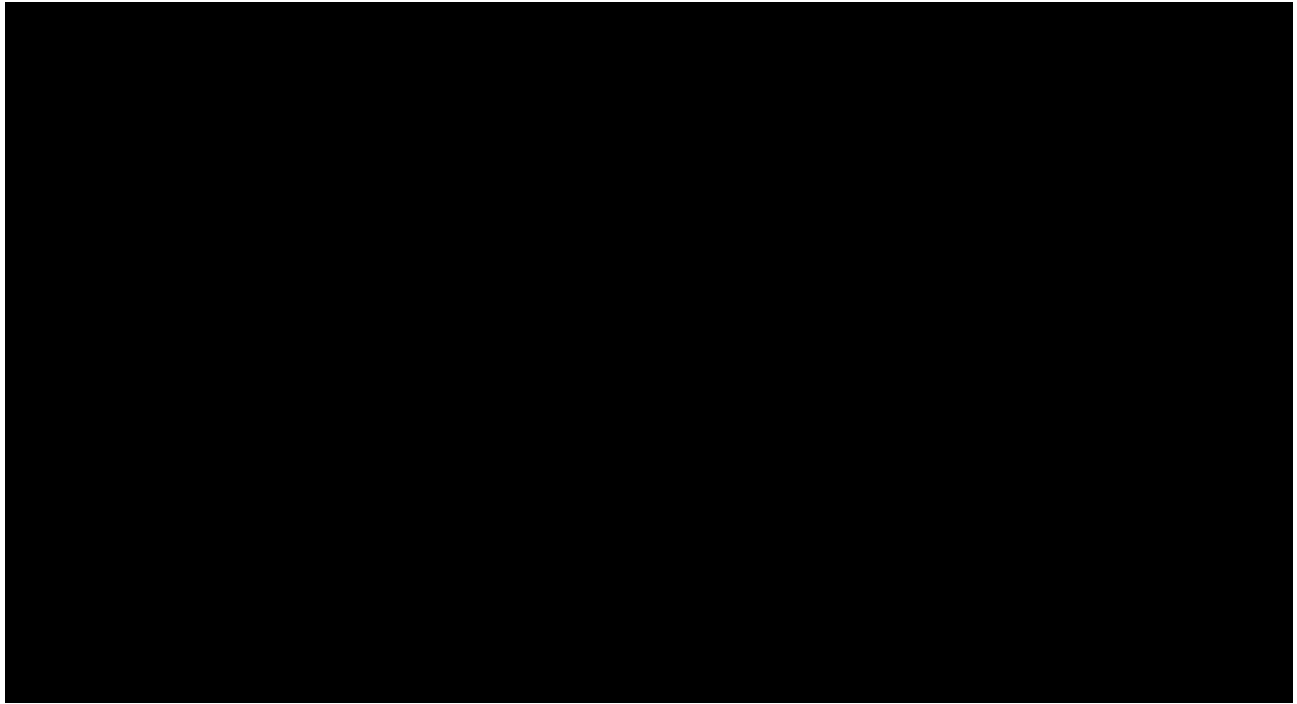
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Figure 7: Pipe Support Installation



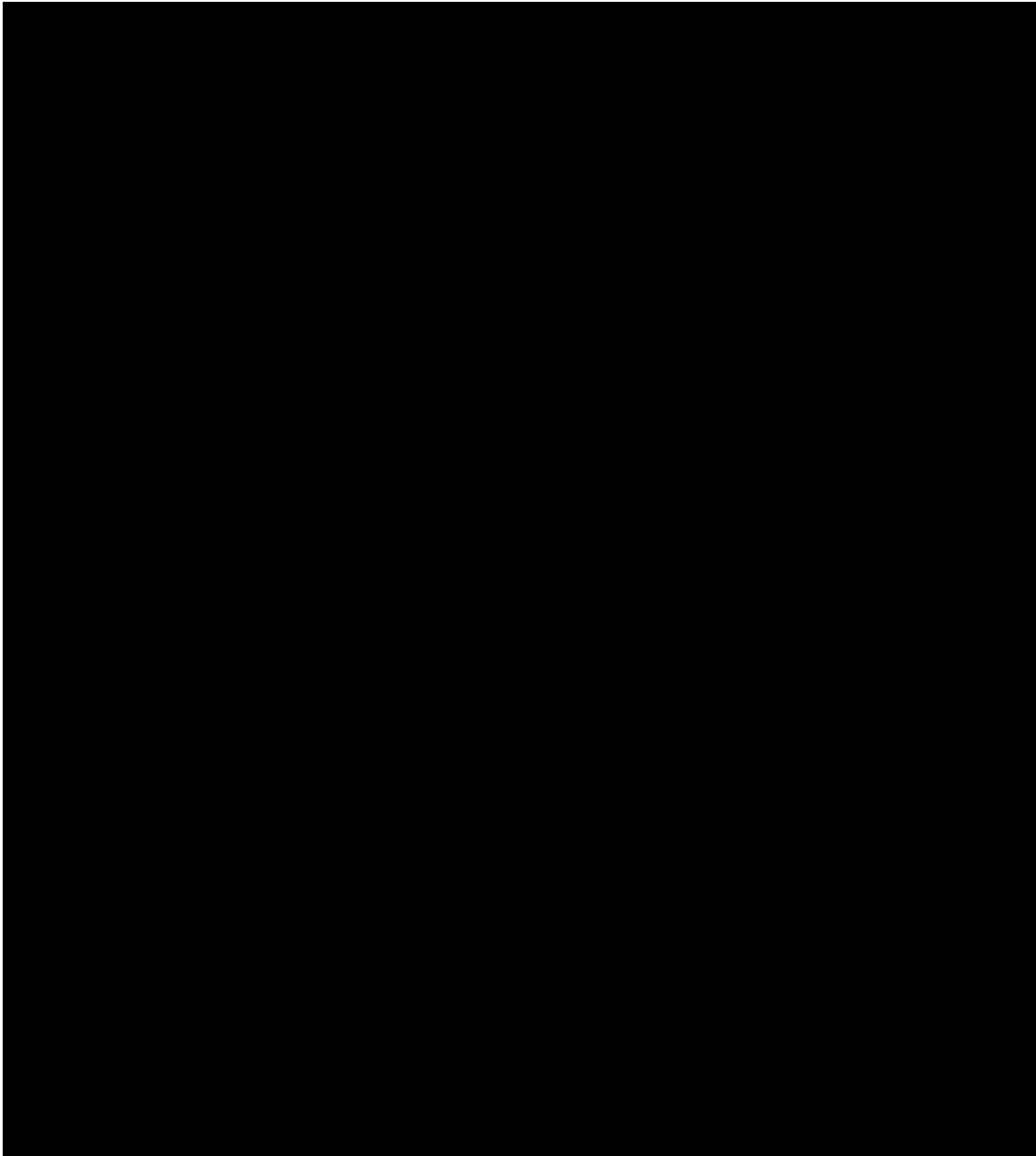
Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

Figure 8: Bridge Installation Prior to Pipeline Installation



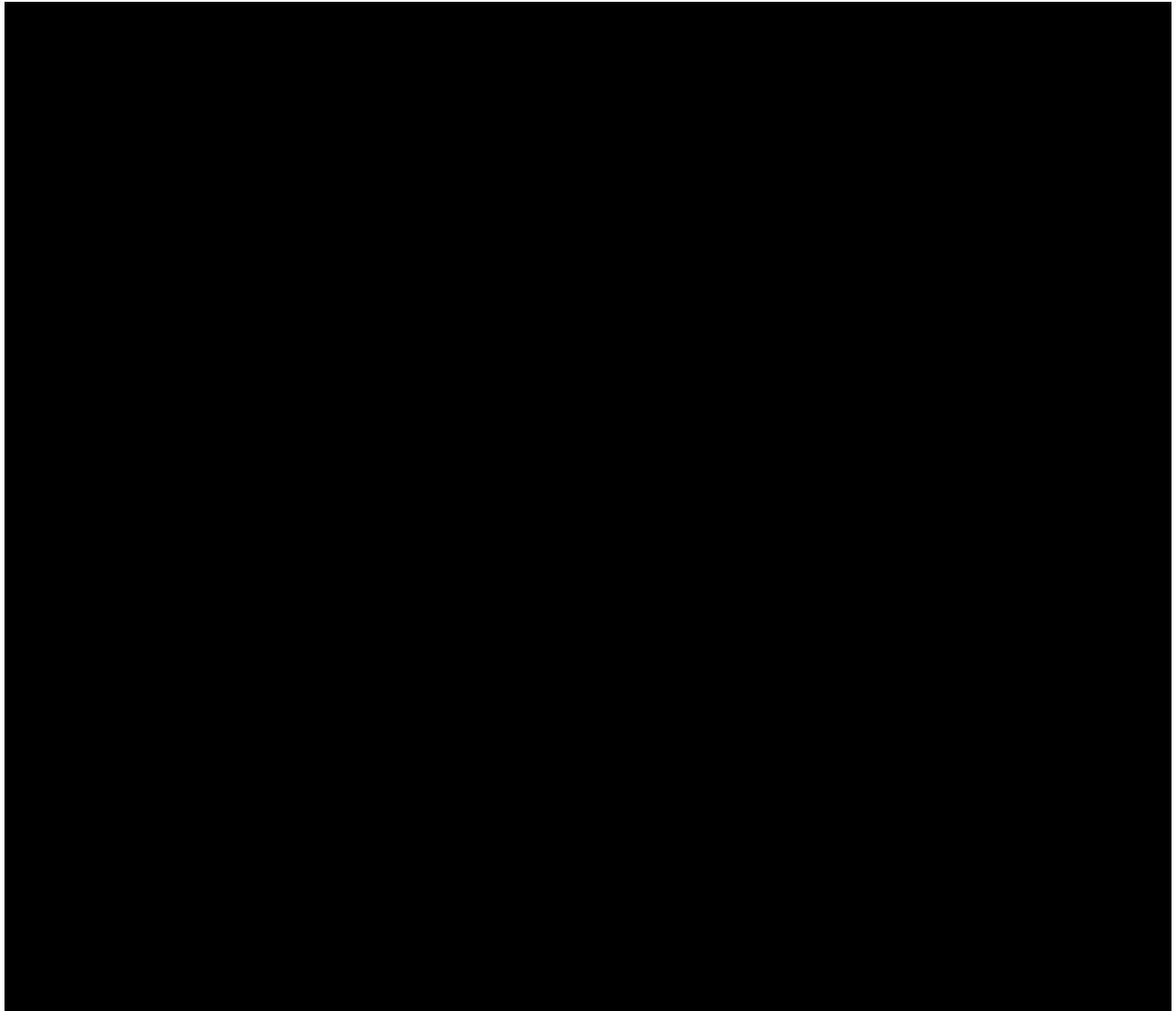
Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

Figure 9: Pipe Installation on the Bridge Pipe Supports



Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

Figure 10: Open trenching



## Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

### D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, transportation and disposal of hydrotreated 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.

Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

## IV. PROJECT COSTS

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### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project. Specific examples of cost avoidance actions taken on this project are:

1. Materials: The Project Team bulk ordered pipe that provided volume pricing for the [REDACTED] pipe.
2. Schedule Coordination: The Project Team completed the Project in two phases to avoid the City of Pismo Beach's moratorium that required curb-to-curb repaving.
3. Construction Execution: The Project Team used a laydown yard adjacent to the bridge contractor, preventing additional paving costs for newly paved road on either side of the bridge, and preventing repairs to new decorative bridge design and sidewalk.

### B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$3,335,816. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

**C. Actual Direct and Indirect Costs**

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$5,435,726.

Table 4: Estimated and Actual Direct Costs and Variances<sup>8</sup>

Direct Costs (\$)	Estimate	Actuals <sup>9</sup>	Delta Over/(Under)
Company Labor	500,405	291,340	(209,065)
Materials	115,344	74,877	(40,467)
Construction Contractor	1,586,370	2,331,971	745,601
Construction Management & Support	219,885	408,455	188,570
Environmental	255,316	237,397	(17,919)
Engineering & Design	160,671	392,657	231,986
Project Management & Services	246,882	165,907	(80,975)
ROW & Permits	248,953	171,953	(77,000)
GMA	1,990	2,069	79
<b>Total Direct Costs</b>	<b>3,335,816</b>	<b>4,076,626</b>	<b>740,810</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances<sup>10</sup>

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	1,482,116	1,236,217	(245,899)
AFUDC	674,085	106,377	(567,707)
Property Taxes	181,882	16,505	(165,377)
<b>Total Indirect Costs</b>	<b>2,338,083</b>	<b>1,359,100</b>	<b>(978,983)</b>
<b>Total Direct Costs</b>	<b>3,335,816</b>	<b>4,076,626</b>	<b>740,810</b>
<b>Total Loaded Costs</b>	<b>5,673,899</b>	<b>5,435,726</b>	<b>(238,173)</b>

<sup>8</sup> Values may not add to total due to rounding.

<sup>9</sup> Actual Material and Construction Contractor costs exclude the cost of upsizing the pipe.

<sup>10</sup> Values may not add to total due to rounding.

## Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

The Actual Full-Time Equivalents<sup>11</sup> (FTEs) for this Project are 0.71.

### D. Cost Impacts

Consistent with one of the overarching objectives of PSEP as stated in testimony to maximize the cost effectiveness of safety enhancement investments, SoCalGas effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities may lead to variances between the initial estimate and actuals. The Project Team successfully mitigated these variances whenever feasible through the implementation of effective project management practices, thorough planning, and continuous monitoring.

At the completion of the Supply Line 36-9-09 North Section 5B-01 Replacement Project, Actual Direct Costs were more than the preliminary estimate by \$740,810. This variance is attributable to a variety of factors including

1. Construction Contractor:

- a. The TPE estimate was approximately \$280,000 higher than the original estimate due to project delays and COVID related costs.
- b. The Project required changes to the hanger design due to conflicts within the bridge area.
- c. The Project required extended work hours, including Saturday hours to counteract the delays caused by the hanger design and to meet the schedule constraints of the City of Pismo Beach. This added approximately \$78,000 in costs.

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<sup>11</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

## Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

2. Engineering & Design: The Project required an accelerated schedule that resulted in higher rate personnel from the contract company to meet the deadline. The contractor was responsible for updating all design files to meet SoCalGas standards as well as an additional design change that included adding bridge hangers.

### E. Disallowance

There was no disallowance for Supply Line 36-9-09 North Section 5B-01 as there were no post-1955 segments included in the Project without records that provide the minimum information to demonstrate compliance with then applicable industry standards or regulatory strength testing and recordkeeping requirements.

Final Report for Supply Line 36-9-09 North Section 5B-01 Replacement Project

## **V. CONCLUSION**

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Supply Line 36-9-09 North Section 5B-01 Replacement Project. Through this Replacement Project, SoCalGas successfully replaced 756 feet of pipeline in the City of Pismo Beach. The total loaded cost of the Project is \$5,435,726.

SoCalGas executed this project prudently through installing 756 feet of pipeline in the City of Pismo Beach.

SoCalGas engaged in prudent cost avoidance efforts by bulk ordering pipe for volume pricing, preventing additional paving costs for the newly paved road on the bridge, maximizing mobilization and demobilization efforts and laydown yard use adjacent to bridge contractor, and preventing repairs to new decorative bridge design and sidewalk.

## **End of Supply Line 36-9-09 North Section 5B-01 Project Final Report**

Final Report for Supply Line 38-1102 Replacement Project

**I. SUPPLY LINE 38-1102 REPLACEMENT PROJECT**

---

**A. Background and Summary**

Supply Line 38-1102 is a Department of Transportation (DOT) defined transmission<sup>1</sup> line with a predominantly [REDACTED] diameter that runs approximately 1.618 miles through Bakersfield. The pipeline is primarily routed across a Class 2 location and traverses some Class 1 locations. This report describes the activities associated with Supply Line 38-1102 Replacement Project which consists of the replacement of 185 feet of pipeline and one valve. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$2,769,695.

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<sup>1</sup> As defined in 49 C.F.R. § 192.3 (2024).

Final Report for Supply Line 38-1102 Replacement Project

Table 1: General Project Information

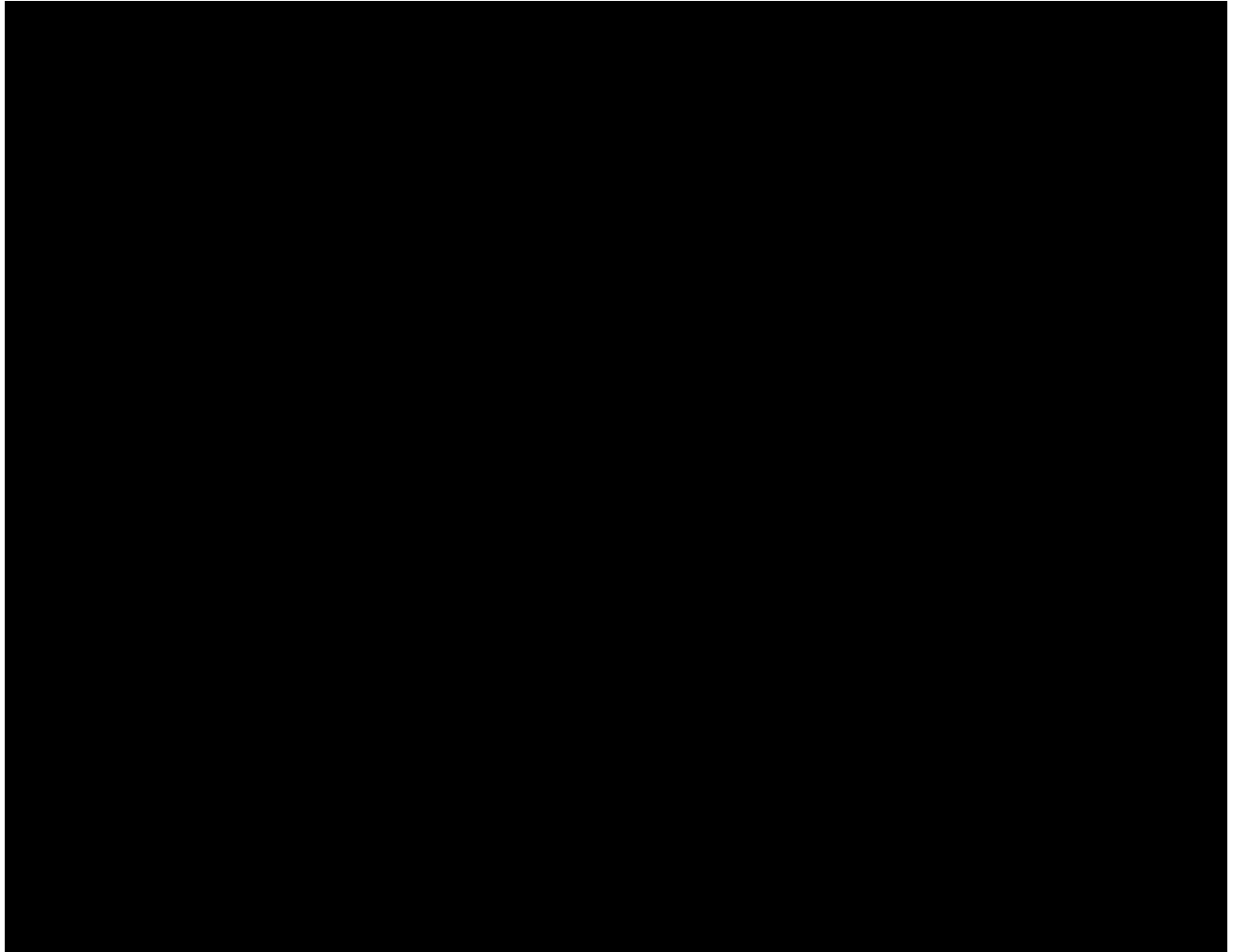
Project Name		Supply Line 38-1102 Replacement		
Project Type	Replacement			
PSEP Phase	2A			
Length	185 feet			
Location	Bakersfield			
Class	1, 2			
MAOP	[REDACTED]			
Pipe Grade	[REDACTED]			
Wall Thickness	[REDACTED]			
Pipe Vintage	Multiple vintages from [REDACTED]			
Construction Start	02/22/2021			
Construction Finish	04/18/2021			
Original Pipe Diameter	[REDACTED]			
Original Nominal Diameter	[REDACTED]			
New Diameter	[REDACTED]			
Original SMYS <sup>2</sup>	[REDACTED]			
New SMYS	[REDACTED]			
Project Costs (\$)	Capital	O&M	Total	
Loaded Project Costs	2,769,695	-	2,769,695	
Disallowed Costs	5,120	-	5,120	

<sup>2</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

## Final Report for Supply Line 38-1102 Replacement Project

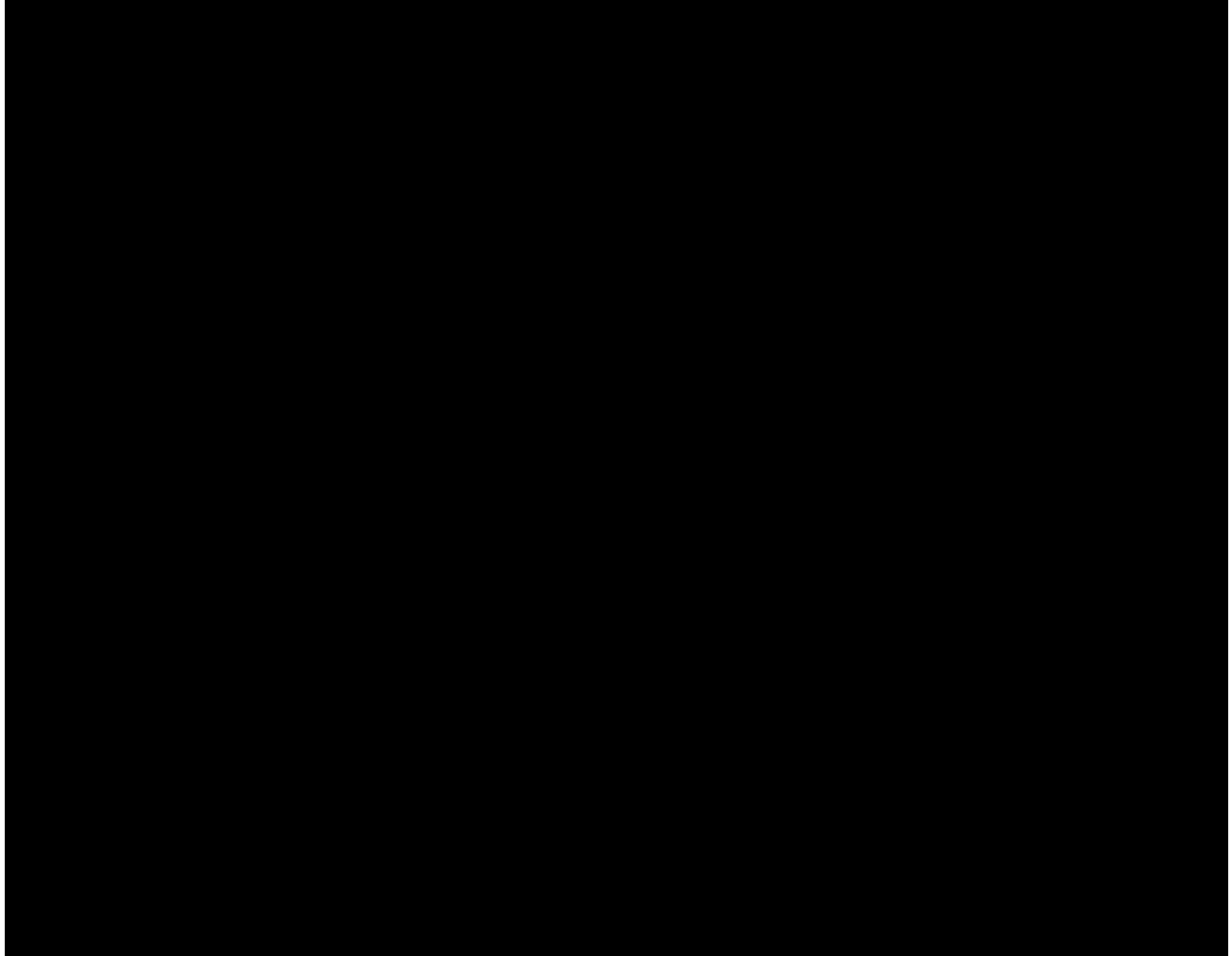
### Maps and Images

Figure 1: Satellite Image of Supply Line 38-1102 Replacement Project



Final Report for Supply Line 38-1102 Replacement Project

Figure 2: Overview Map of Supply Line 38-1102 Replacement Project



Final Report for Supply Line 38-1102 Replacement Project

**II. ENGINEERING, DESIGN, AND PLANNING**

A. Project Scope

Table 2: Mileage Information

	Criteria	Accelerated <sup>3</sup>	Incidental	Replacement Offset	Total <sup>4</sup>
Final Mileage	0 mi.	0.022 mi.	0.014 mi.	-0.001 mi.	0.035 mi.
	0 ft.	115 ft.	72 ft.	-5 ft.	185 ft.

Prior to initiating execution of the Project in 2021, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SoCalGas and SDG&E did not identify Supply Line 38-1102 Replacement Project in the 2011 PSEP filing.
2. Scope Validation: Through scope validation activities, after the 2011 filing and before initiating execution of the Project, SoCalGas identified Supply Line 38-1102 as containing Phase 1B<sup>5</sup> and Phase 2A mileage for remediation.
3. Engineering, Design, and Constructability:
  - a. This Project’s costs were shared by PSEP and Gas Transmission. PSEP funded the activities that remediated PSEP scope and associated activities that provided system isolation through the installation and automation of the new valves. Gas Transmission funded the costs related to the removal of a filter separator and the installation of a new pig launcher and receiver.

<sup>3</sup> Accelerated mileage includes Phase 1B and Phase 2 pipe. The Accelerated mileage was included to realize efficiencies and to enhance project constructability.

<sup>4</sup> Values may not add to total due to rounding.

<sup>5</sup> As authorized in D. 14-06-007, PSEP’s Phase 1B is the replacement or abandonment of non-piggable pre-1946 pipe in non-HCA areas.

## Final Report for Supply Line 38-1102 Replacement Project

- b. After reviewing the existing configuration of the station, the Project Team determined that the project scope would include rerouting the station piping underground and removing a stub. This included replacing station components to improve station safety as the nearby street and traffic posed risks.
  - c. Accelerated and incidental mileage were included for constructability purposes and encompassed the removal of a long stub.
4. Final Project Scope: The final project scope consists of the replacement of 95 feet of pipe, the removal of two valves and the installation of one [REDACTED] valve. The Accelerated mileage consists of 44 feet of Phase 2A pipe and 71 miles of Phase 2B.

### B. Decision Tree Review

SoCalGas performed a review of the Supply Line 38-1102 and confirmed the project design should commence as a Replacement Project.

Segments of less than 1,000 feet are identified for replacement under the approved PSEP Decision Tree because, for short segments of pipe, the logistical costs associated with pressure testing (for example, permitting, construction, water handling, and service disruptions for a non-looped system) can approach or exceed the cost of replacement. In such circumstances, replacement affords a more cost-effective approach to achieving compliance with D.11-06-017 while providing equal safety enhancement benefits. Moreover, installation of the new segment can usually be performed while the existing service is maintained to customers, thereby avoiding service disruptions that may otherwise occur during pressure testing.

As a result of this review, SoCalGas identified replacement as the more prudent option. Key considerations that support SoCalGas's determination to replace this segment include:

- 1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could not be shut-in and that customer service would need to be maintained through alternative means.

## Final Report for Supply Line 38-1102 Replacement Project

2. Customer Impacts: No identified impacts.
3. Community Impacts: The Project Team utilized a nearby horse ranch as a laydown yard.
4. Permit Conditions:
  - a. The Project Team obtained a Road Encroachment Permit from Kern County for traffic control in the County right of way.
5. Piggability: The existing pipeline is piggable.
6. Pipe Vintage: Multiple vintages from [REDACTED].
7. Long Seam Type:  
[REDACTED]  
[REDACTED]
8. Long Seam Repair History: No identified issues.
9. Condition of Coating: No identified issues.
10. History of Leaks: No identified issues.

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records and potholing of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis that concluded the line could not be shut-in and that customer service would need to be maintained through alternative means. The Project Team utilized a temporary bypass line.
2. Customer Impact: No identified issues.
3. Community Impact: No identified issues.

## Final Report for Supply Line 38-1102 Replacement Project

5. Known Substructures: No identified issues.
6. Permit Conditions:
  - a. The Project Team obtained a Road Encroachment Permit from Kern County for traffic control in the County right of way.
7. Land Use:
  - a. The Project Team acquired a Temporary Right of Entry Agreement (TRE) from a private landowner.
  - b. The Project Team acquired a TRE from a private corporation.
8. Environmental: A pre-construction biological survey was required to identify nesting birds in the area. The Swainson's Hawk has moderate potential to nest within the vicinity of the work area, but no nesting birds were identified.
9. Valves: The Project Team replaced a one [REDACTED] valve with a [REDACTED] valve on the pipeline.

### D. Scope Changes

SoCalGas did not make any notable scope changes during detailed design.

Final Report for Supply Line 38-1102 Replacement Project

### III. CONSTRUCTION

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#### A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. Following completion of the engineering, design, and planning activities described above, SoCalGas entered into a competitive bidding process to select a Construction Contractor. SoCalGas awarded the construction contract to the bidder that best met the selection criteria for this project.

1. SoCalGas’s Preliminary Construction Cost Estimate: SoCalGas’s preliminary cost estimate for construction was \$1,325,225.
2. Construction Contractor’s Bid: The Construction Contractor’s bid was [REDACTED], which was [REDACTED] than SoCalGas’s preliminary cost estimate for construction.

#### B. Construction Schedule

Table 3: Construction Timeline

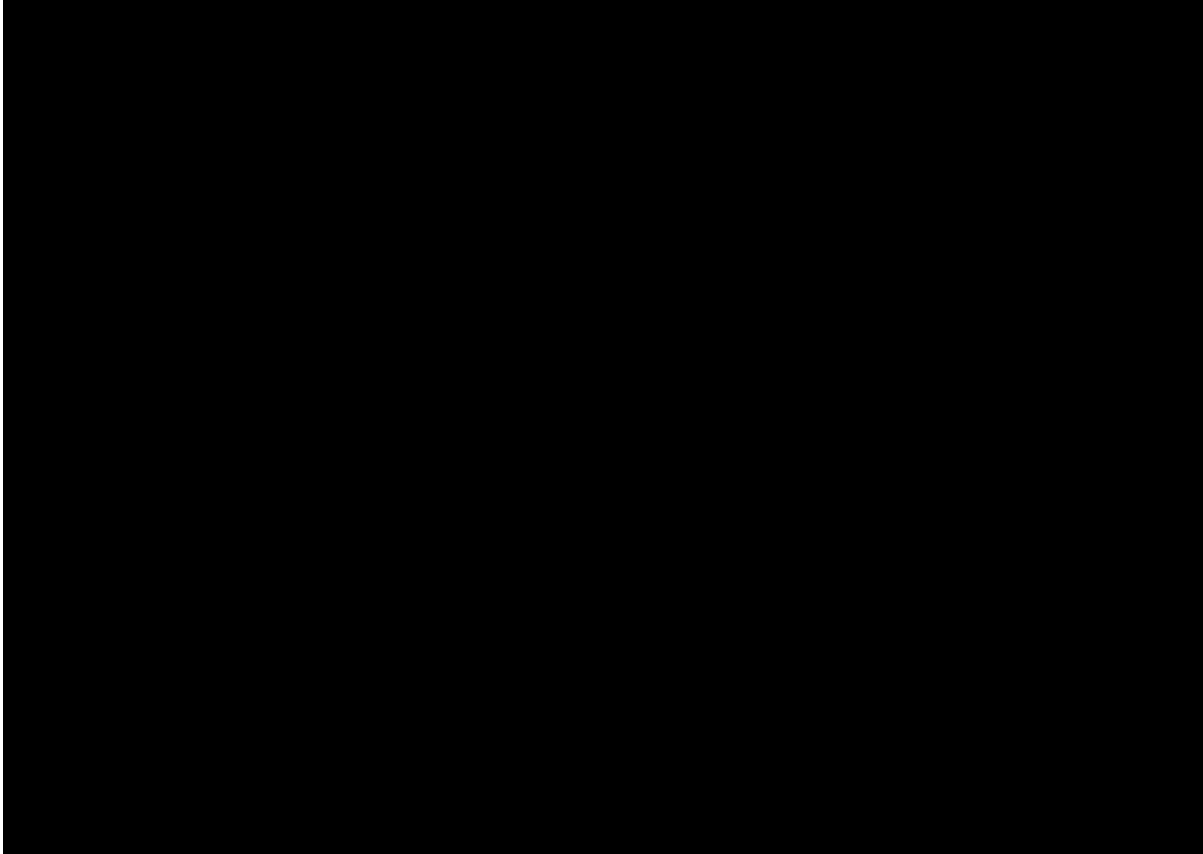
Construction Start Date	02/22/2021
Construction Completion Date	04/14/2021
NOP Date	03/24/2021

#### C. Changes During Construction

SoCalGas successfully mitigated conditions during construction in a manner that minimized potential impacts on project scope, cost, and schedule. As a result, these conditions did not result in any notable change orders.

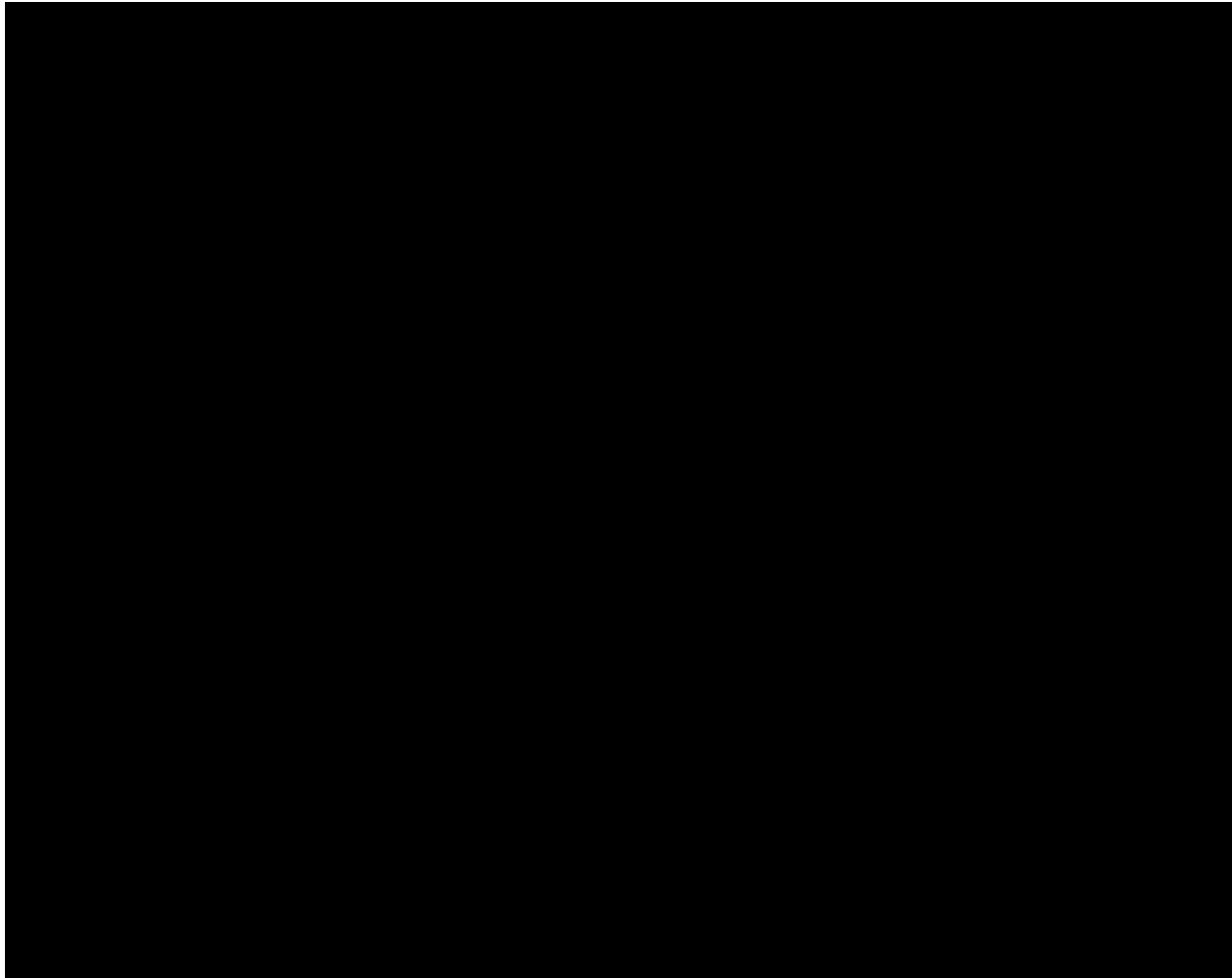
Final Report for Supply Line 38-1102 Replacement Project

Figure 3: Existing Layout prior to Construction



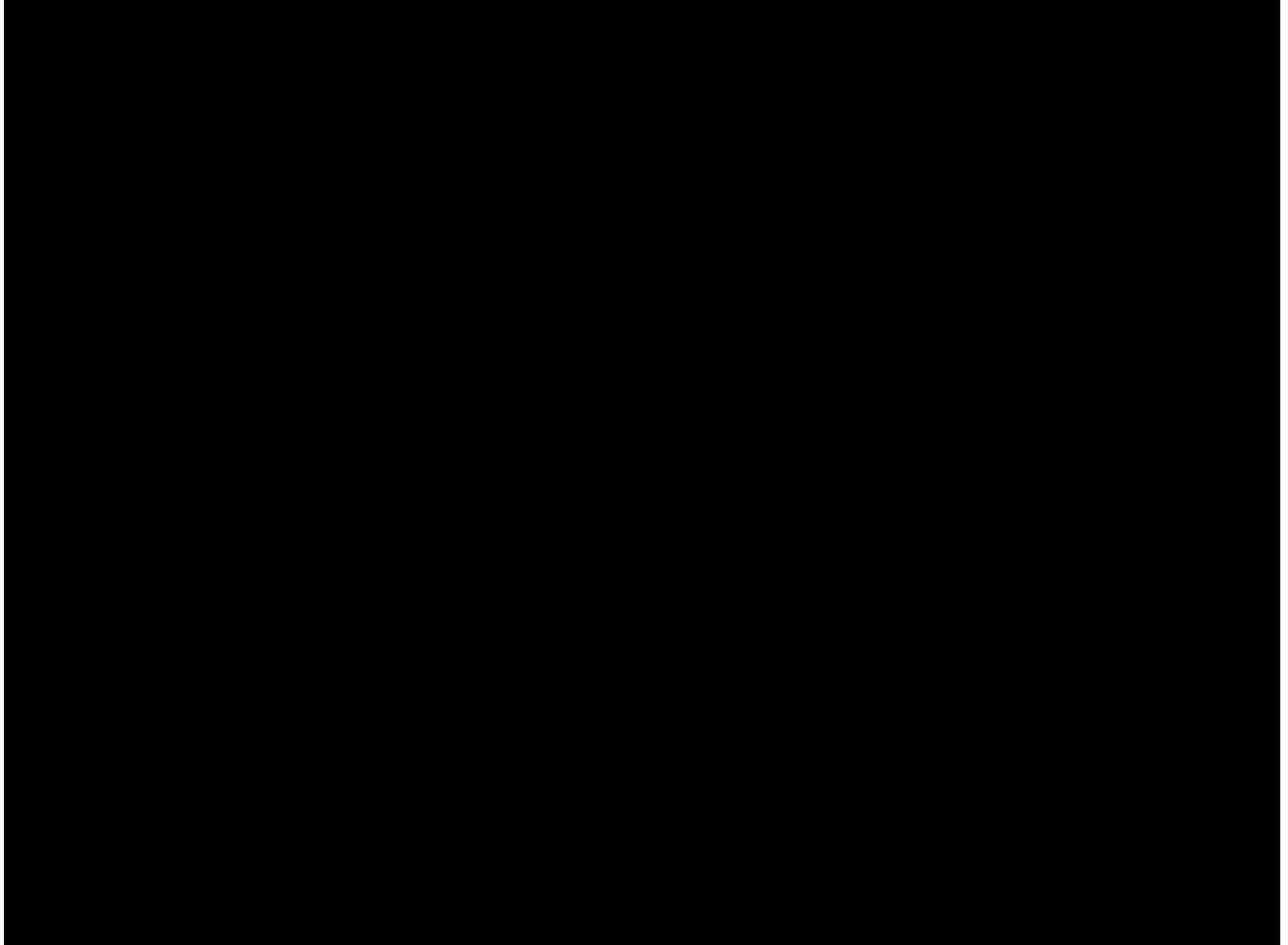
Final Report for Supply Line 38-1102 Replacement Project

Figure 4: Temporary Bypass Line



Final Report for Supply Line 38-1102 Replacement Project

Figure 5: Location after Construction Completion



## Final Report for Supply Line 38-1102 Replacement Project

### D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, transportation and disposal of hydrotreated 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.

Final Report for Supply Line 38-1102 Replacement Project

## IV. PROJECT COSTS

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### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project. Specific examples of cost avoidance actions taken on this project are:

1. Materials: The Construction Contractor obtained fill material at a reduced rate as the leftover backfill dirt was gifted to the laydown yard customer.
2. Future Maintenance: The Project Team removed a long stub during the replacement to avoid costs associated with maintaining and testing the stub post construction.

### B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$2,128,951. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

### C. Actual Direct and Indirect Costs

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$2,769,695.

Final Report for Supply Line 38-1102 Replacement Project

Table 4: Estimated and Actual Direct Costs and Variances

Direct Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Company Labor	291,763	207,385	(84,378)
Materials	182,063	132,462	(49,601)
Construction Contractor	816,077	752,832	(63,245)
Construction Management & Support	166,687	247,688	81,001
Environmental	137,390	79,230	(58,160)
Engineering & Design	293,218	364,940	71,722
Project Management & Services	210,557	152,251	(58,306)
ROW & Permits	31,196	20,573	(10,624)
GMA	-	57,261	57,261
<b>Total Direct Costs</b>	<b>2,128,951</b>	<b>2,014,623</b>	<b>(114,328)</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances<sup>6</sup>

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	743,692	57,009	(686,683)
AFUDC	215,353	157,027	(58,327)
Property Taxes	173,364	28,037	(145,328)
<b>Total Indirect Costs</b>	<b>1,132,410</b>	<b>755,072</b>	<b>(377,337)</b>
<b>Total Direct Costs</b>	<b>2,128,951</b>	<b>2,014,623</b>	<b>(114,328)</b>
<b>Total Loaded Costs</b>	<b>3,261,361</b>	<b>2,769,695</b>	<b>(491,666)</b>

The Actual Full-Time Equivalents<sup>7</sup> (FTEs) for this Project are 0.37.

<sup>6</sup> Values may not add to total due to rounding.

<sup>7</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

## Final Report for Supply Line 38-1102 Replacement Project

### D. Cost Impacts

Consistent with one of the overarching objectives of PSEP as stated in testimony to maximize the cost effectiveness of safety enhancement investments, SoCalGas effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities may lead to variances between the initial estimate and actuals. The Project Team successfully mitigated these variances whenever feasible through the implementation of effective project management practices, thorough planning, and continuous monitoring.

At the completion of the Supply Line 38-1102 Replacement Project, Actual Direct Costs were less than the preliminary estimate by \$114,328. This variance can be attributed to a variety of factors, including the overall Project size and scope, as well as the coordinated use of shared resources to expedite the project schedule that reduced company and third-party resource costs.

## Final Report for Supply Line 38-1102 Replacement Project

### E. Disallowance

For this replacement project, SoCalGas identified 21.2 feet of pipe as being installed after 1955 and lacking records that provide the minimum information necessary to demonstrate compliance with then-applicable industry standards or regulatory strength testing and recordkeeping requirements. Of the pipeline that was replaced, 21.2 feet of Phase 1B pipe is disallowed. Therefore, a \$5,120 reduction to ratebase was calculated by multiplying 0.004 miles of pipe by \$1.28 million per mile, that was SoCalGas and SDG&E's system average cost of pressure testing at the time the pipeline was returned to service.

Final Report for Supply Line 38-1102 Replacement Project

## **V. CONCLUSION**

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Supply Line 38-1102 Replacement Project. Through this Replacement Project, SoCalGas successfully replaced 185 feet of pipeline and one valve in the City of Bakersfield.

SoCalGas executed this project prudently through an expedited construction schedule and limited construction changes.

SoCalGas engaged in prudent cost avoidance efforts by reducing future maintenance through the removal of a stub.

## **End of Supply Line 38-1102 Replacement Project Final Report**

Final Report for Supply Line 44-675 Lateral Replacement Project

## I. SUPPLY LINE 44-675 LATERAL REPLACEMENT PROJECT

---

### A. Background and Summary

Supply Line 44-675 is a Department of Transportation (DOT) defined transmission<sup>1</sup> line with a predominantly [REDACTED] diameter that runs approximately 0.071 miles through the city of Santa Clarita. The pipeline is primarily routed across a Class 3 location and traverses through some Class 1, 2, 3, and 4 locations. This report describes the activities associated with Supply Line 44-675 Lateral Replacement Project which consists of the replacement of 127 feet of pipeline and two [REDACTED] valves. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$1,920,836.

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<sup>1</sup> As defined in 49 C.F.R. § 192.3 (2024).

Final Report for Supply Line 44-675 Lateral Replacement Project

Table 1: General Project Information

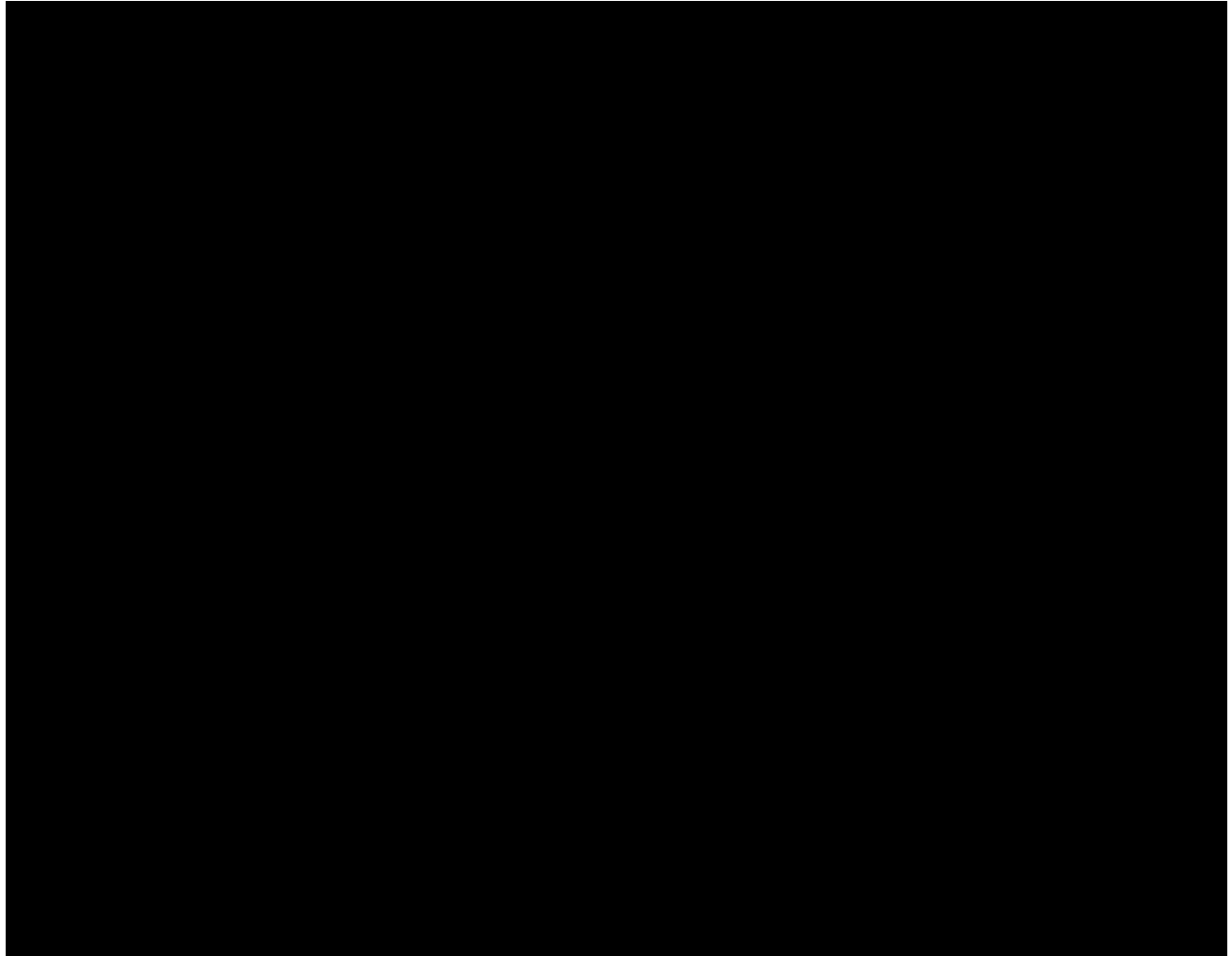
<b>Project Name</b>	<b>Supply Line 44-675 Lateral Replacement</b>		
Project Type	Replacement		
PSEP Phase	1A		
Length	127 feet		
Location	Santa Clarita		
Class	[REDACTED]		
MAOP	[REDACTED]		
Pipe Grade	[REDACTED]		
Wall Thickness	[REDACTED]		
Pipe Vintage	[REDACTED]		
Construction Start	08/19/2024		
Construction Finish	10/04/2024		
Original Pipe Diameter	[REDACTED]		
Original Nominal Diameter	[REDACTED]		
New Diameter	[REDACTED]		
Original SMYS <sup>2</sup>	[REDACTED]		
New SMYS	[REDACTED]		
<b>Project Costs (\$)</b>	<b>Capital</b>	<b>O&amp;M</b>	<b>Total</b>
Loaded Project Costs	1,920,836	-	1,920,836
Disallowed Costs	-	-	-

<sup>2</sup> Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

Final Report for Supply Line 44-675 Lateral Replacement Project

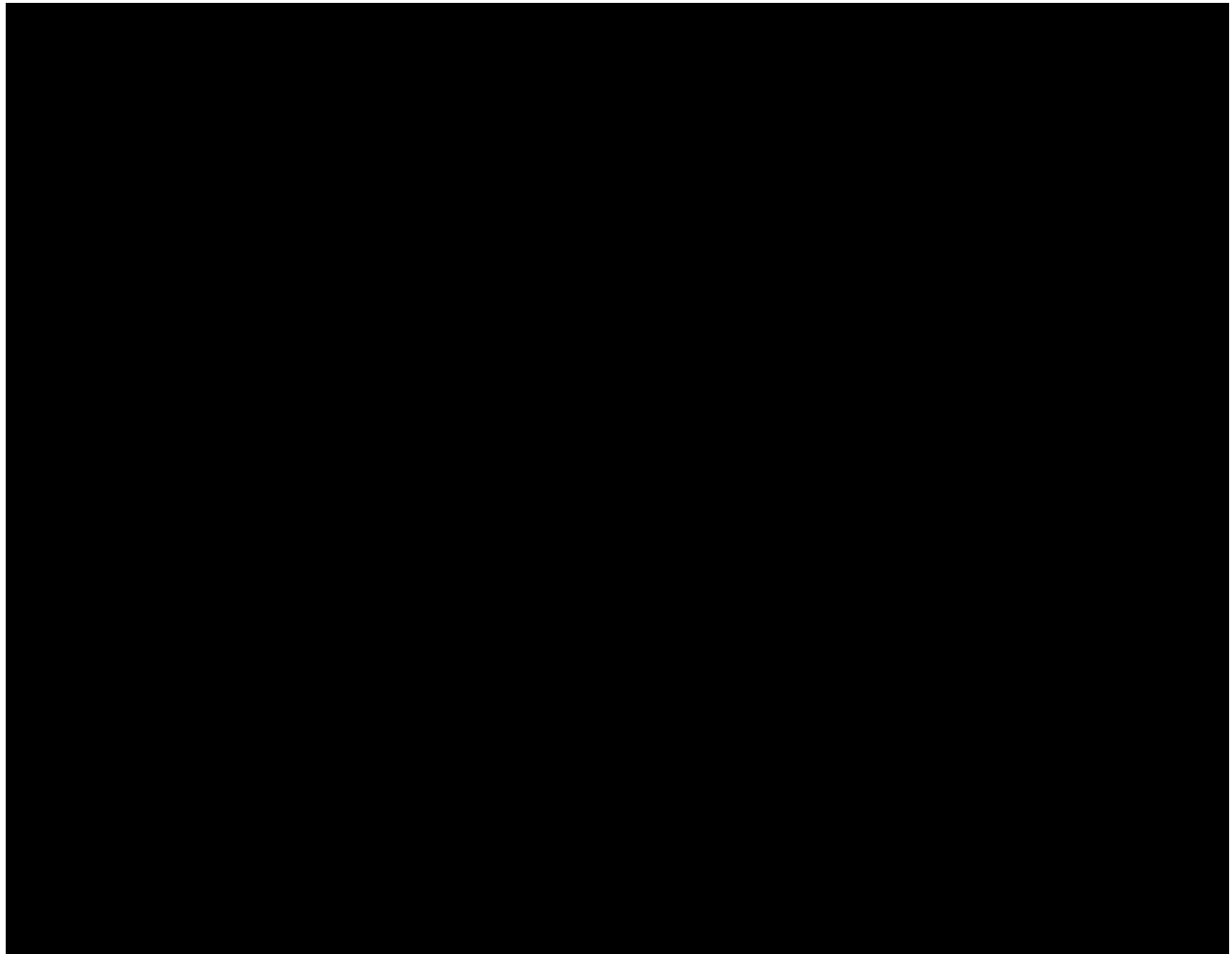
Maps and Images

Figure 1: Satellite Image of Supply Line 44-675 Lateral Replacement Project



Final Report for Supply Line 44-675 Lateral Replacement Project

Figure 2: Overview Map of Supply Line 44-675 Lateral Replacement Project



Final Report for Supply Line 44-675 Lateral Replacement Project

## II. ENGINEERING, DESIGN, AND PLANNING

### A. Project Scope

Table 2: Mileage Information

	Criteria	Accelerated	Incidental	New	Total <sup>3</sup>
Final Mileage	0.009 mi.	0 mi.	0.010 mi.	0.005 mi.	0.024 mi.
	48 ft.	0 ft.	53 ft.	26 ft.	127 ft.

SoCalGas and SDG&E presented a conceptual project scope in workpapers supporting the 2011 PSEP filing.<sup>4</sup> Prior to initiating execution of the Project in 2024, SoCalGas reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SoCalGas further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SoCalGas identified Supply Line 44-675 as a Phase 1A Replacement Project comprised of 59 feet of Category 4 Criteria pipe.
2. Scope Validation: Through scope validation activities, after the 2011 filing and before initiating execution of the Project, SoCalGas reduced the scope of the Project to 48 feet of Category 4 Criteria pipe.
3. Engineering, Design, and Constructability:
  - a. Due to the pipeline location, the Project Team determined that the pipeline would be replaced and installed underground.
  - b. The replacement pipeline was extended to the tie-in locations and the Project Team installed a replacement [REDACTED] filter.
  - c. Incidental mileage was included to reach existing tees in order to easily disconnect the existing pipe from the main line.

<sup>3</sup> Values may not add to total due to rounding.

<sup>4</sup> See Amended PSEP of SoCalGas and SDG&E, submitted December 2, 2011, in R.11-02-019 and subsequently transferred to A.11-11-002.

## Final Report for Supply Line 44-675 Lateral Replacement Project

4. Final Project Scope: The final project scope consists of a 127 feet Replacement that includes 53 feet of Incidental pipe, the replacement of two [REDACTED] valves, and the replacement of an [REDACTED] filter.

### B. Decision Tree Review

SoCalGas performed a review of the Supply Line 44-675 and confirmed the project design should commence as a Replacement Project.

Segments of less than 1,000 feet are identified for replacement under the approved PSEP Decision Tree because, for short segments of pipe, the logistical costs associated with pressure testing (for example, permitting, construction, water handling, and service disruptions for a non-looped system) can approach or exceed the cost of replacement. In such circumstances, replacement affords a more cost-effective approach to achieving compliance with D.11-06-017 while providing equal safety enhancement benefits. Moreover, installation of the new segment can usually be performed while the existing service is maintained to customers, thereby avoiding service disruptions that may otherwise occur during pressure testing.

Pipeline segments installed prior to 1946 that are not capable of being assessed using in-line inspection technology are identified for replacement under the approved PSEP Decision Tree. As explained in the testimony supporting the approved PSEP, as part of the work previously completed during implementation federal gas transmission pipeline integrity management regulations (49 CFR 192, Subpart O), SoCalGas have already identified, retrofitted and in-line inspected pre-1946 transmission pipelines that were constructed using acceptable welding techniques and are operationally suited to in-line inspection. The remaining pre-1946 segments in the SoCalGas/SDG&E system are not suited for in-line inspection, likely have non-state-of-the-art welds, and would require significant investment for retrofitting to accommodate in-line inspection tools. Accordingly, consistent with the Commission's directive in D.11-06-017 to "address

## Final Report for Supply Line 44-675 Lateral Replacement Project

retrofitting pipeline to allow for inline inspection tools,” the requirement in California Public Utilities Code section 958 that upon completion of the PSEP, where warranted, pipelines are to be capable of accommodating in-line inspection devices, and the overarching objectives of PSEP to enhance the safety of the pipeline system in a proactive, cost effective manner, the approved PSEP Decision Tree identifies pre-1946 non-piggable pipeline segments for abandonment and/or replacement.

As a result of this review, SoCalGas identified replacement as the more prudent option. Key considerations that support SoCalGas’s determination to replace this segment include:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded that the line could be isolated during the non-heating season.
2. Customer Impacts: No identified issues.
3. Community Impacts: No identified issues
4. Permit Conditions: The Project Team obtained two encroachment permits from the City of Santa Clarita to cover construction work completed outside of the station.
5. Piggability: Non-piggable
6. Pipe Vintage: [REDACTED]
7. Existing Pipe Attributes: The pipeline is located within a regulator station.
8. Long Seam Type:  
[REDACTED]  
[REDACTED]
9. Long Seam Repair History: No repair history.
10. Condition of Coating: Wrapped and painted.
11. History of Leaks: No identified issues.
12. Constructability: The majority of the pipeline was to be installed below-ground through open trenching. The tie-ins were to remain above-ground.

## Final Report for Supply Line 44-675 Lateral Replacement Project

### C. Engineering, Design, and Planning Factors

SoCalGas reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. Shut-In Analysis: As discussed above, the Project Team completed an RER analysis and concluded that the line could be isolated during the non-heating season.
2. Customer Impact: No identified issues.
3. Community Impact: No identified issues.
4. Known Substructures: The Project Team identified and labeled existing utilities in construction drawings.
5. Permit Conditions: The Project Team obtained two encroachment permits from the City of Santa Clarita to cover construction work completed outside of the station.
6. Land Use: The Project Team utilized a nearby company base to store materials and equipment.
7. Environmental: No identified issues.
8. Reroute: The Project Team updated the scope from its existing location above-ground to an underground installation.
9. Tie-In: The Project Team determined that the tie-ins were to remain above-ground. The replacement pipeline was extended to accommodate this.

## Final Report for Supply Line 44-675 Lateral Replacement Project

### D. Scope Changes

Through engineering, design, and planning activities, SoCalGas determined that changes in scope were appropriate to enhance the design of the Project and address engineering factors. As a result, the preliminary cost estimate does not fully reflect the final scope. Summarized below are notable changes in scope made after the preliminary cost estimate was developed and approved.

The new design buried portions of the existing pipeline and the relocation of the pipeline to avoid a fitting-to-fitting layout. The decision to install the pipeline underground was based on cost and the potential impact of seismic activity if installed on supports above-ground.

Final Report for Supply Line 44-675 Lateral Replacement Project

### III. CONSTRUCTION

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#### A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. Following completion of the engineering, design, and planning activities described above, the Project Team directed the Performance Partner to prepare cost estimates based on a more detailed engineering design package, that included the updated design described in the discussion of notable Scope Changes above.

1. SoCalGas’s Preliminary Construction Cost Estimate: SoCalGas’s preliminary cost estimate for construction was \$345,276.
2. Construction Contractor’s Bid: The Construction Contractor’s cost estimate was [REDACTED] which was [REDACTED] than SoCalGas’s preliminary cost estimate for construction.

#### B. Construction Schedule

Table 3: Construction Timeline

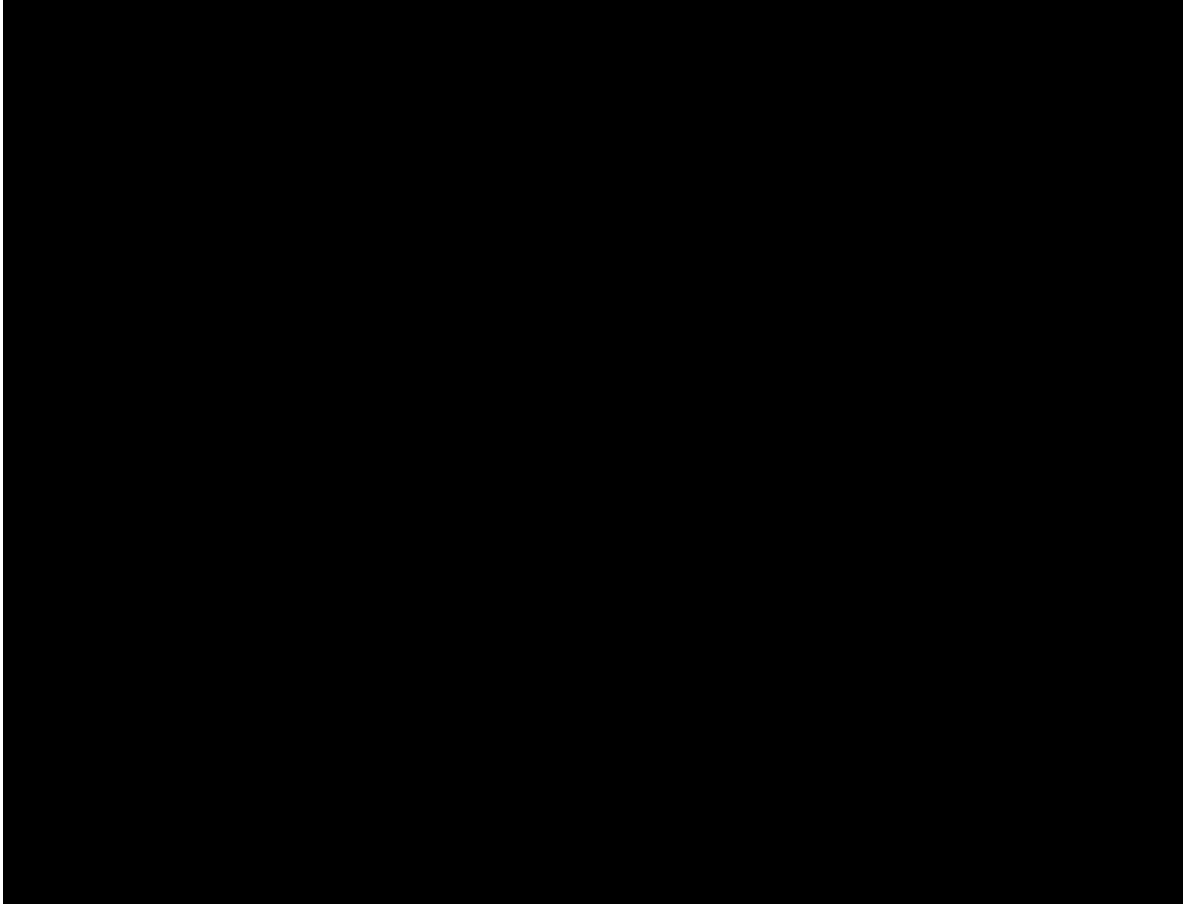
Construction Start Date	08/19/2024
Construction Completion Date	10/04/2024
NOP Date	09/12/2024

#### C. Changes During Construction

SoCalGas successfully mitigated conditions during construction in a manner that minimized potential impacts on project scope, cost, and schedule. As a result, these conditions did not result in any notable change orders.

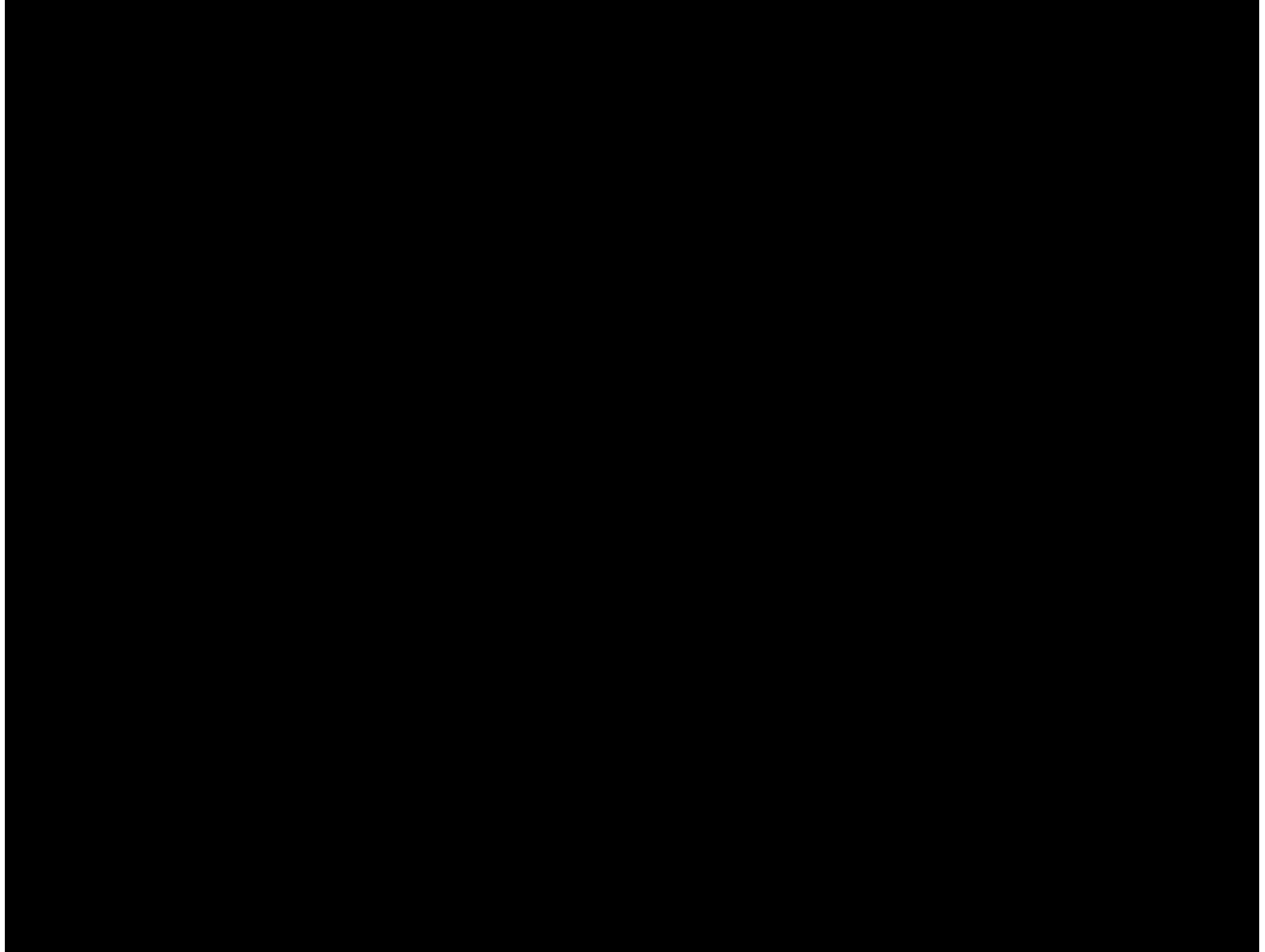
Final Report for Supply Line 44-675 Lateral Replacement Project

Figure 3: Installation of Pipeline Below-Ground



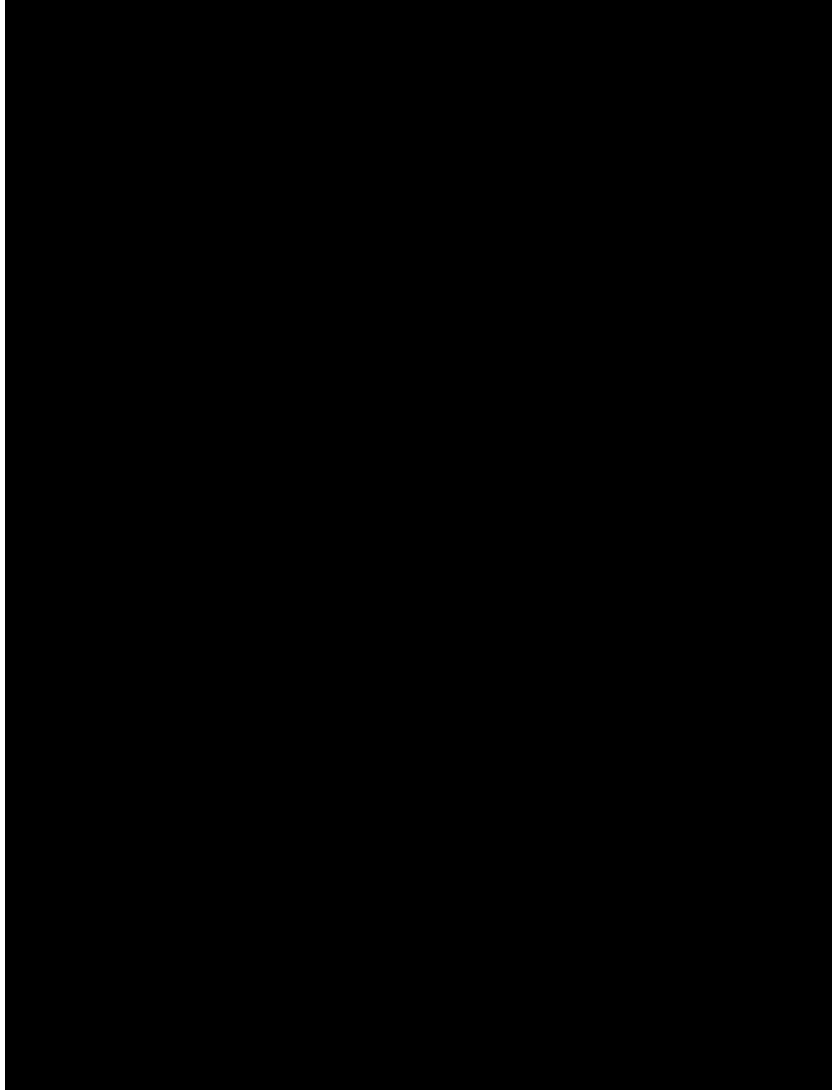
Final Report for Supply Line 44-675 Lateral Replacement Project

Figure 4: Station Post-Construction



Final Report for Supply Line 44-675 Lateral Replacement Project

Figure 5: Station Post Construction



## Final Report for Supply Line 44-675 Lateral Replacement Project

### D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, transportation 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.

Final Report for Supply Line 44-675 Lateral Replacement Project

## IV. PROJECT COSTS

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### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the planning, design, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project. Specific examples of cost avoidance actions taken on this project are:

1. Construction Execution: The Project Team determined that SoCalGas construction crews could perform the work due to crew availability, proximity to a SoCalGas base, and the small scope of the project. The initial estimate from the Performance Partner was higher than expected and it was determined that the company crew was the most cost-effective option in this case.
2. Water Management: The Project Team utilized nitrogen as a test medium instead of hydrotesting to avoid water handling costs.
3. ROW & Permits: The Project Team utilized a SoCalGas base as a storage location for material instead of acquiring an additional laydown yard.

### B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$1,011,593. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

Final Report for Supply Line 44-675 Lateral Replacement Project

C. Actual Direct and Indirect Costs

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$1,920,836.

Table 4: Estimated and Actual Direct Costs and Variances<sup>5</sup>

Direct Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Company Labor	134,784	163,883	29,099
Materials	48,688	62,917	14,229
Construction Contractor	345,276	450,045	104,769
Construction Management & Support	55,898	53,756	(2,142)
Environmental	52,695	25,697	(26,998)
Engineering & Design	317,984	464,388	146,404
Project Management & Services	44,325	192,019	147,694
ROW & Permits	11,943	23,681	11,738
GMA	-	-	-
<b>Total Direct Costs</b>	<b>1,011,593</b>	<b>1,436,386</b>	<b>424,793</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances<sup>6</sup>

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	347,598	439,985	92,387
AFUDC	118,637	37,084	(81,553)
Property Taxes	25,455	7,381	(18,074)
<b>Total Indirect Costs</b>	<b>491,690</b>	<b>484,449</b>	<b>(7,240)</b>
<b>Total Direct Costs</b>	<b>1,011,593</b>	<b>1,436,386</b>	<b>424,793</b>
<b>Total Loaded Costs</b>	<b>1,503,283</b>	<b>1,920,836</b>	<b>417,553</b>

<sup>5</sup> Values may not add to total due to rounding.

<sup>6</sup> Ibid

## Final Report for Supply Line 44-675 Lateral Replacement Project

The Actual Full-Time Equivalents<sup>7</sup> (FTEs) for this Project are 0.49.

### D. Cost Impacts

Consistent with one of the overarching objectives of PSEP as stated in testimony to maximize the cost effectiveness of safety enhancement investments, SoCalGas effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities may lead to variances between the initial estimate and actuals. The Project Team successfully mitigated these variances whenever feasible through the implementation of effective project management practices, thorough planning, and continuous monitoring.

At the completion of the Supply Line 44-675 Lateral Replacement, Actual Direct Costs exceeded the preliminary estimate by \$424,793. This variance is attributable to a variety of factors including:

1. Company Labor: The Project utilized available SoCalGas construction crew to complete construction activities instead of a Construction Contractor.
2. Materials: The Project required additional materials when it was remobilized post-construction. A pressure safety valve and associated instrumentation was installed to comply with updated company standards.
3. Construction Contractor: The Project Team required specially trained contracted personnel to operate machinery during the post-construction phase.

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<sup>7</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

## Final Report for Supply Line 44-675 Lateral Replacement Project

4. Construction Management & Support: The Project utilized available SoCalGas construction crews to complete construction activities instead of a Construction Contractor.
5. Project Management & Services: The Project Team utilized project management services from contracted personnel.

### E. Disallowance

There was no disallowance for Supply Line 44-675 Lateral Replacement Project as there were no post-1955 segments included in the Project without records that provide the minimum information to demonstrate compliance with then applicable industry standards or regulatory strength testing and recordkeeping requirements.

Final Report for Supply Line 44-675 Lateral Replacement Project

## V. CONCLUSION

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SoCalGas enhanced the safety of their integrated natural gas transmission system by prudently executing the Supply Line 44-675 Lateral Replacement Project. Through this Replacement Project, SoCalGas successfully replaced 127 feet of pipeline, two [REDACTED] valves, and an [REDACTED] filter in the City of Santa Clarita.

SoCalGas executed this project prudently through open trenching to reroute the pipeline underground.

SoCalGas engaged in prudent cost avoidance efforts by effectively using company construction crews and facilities to avoid contractor costs and switching from water to nitrogen for pressure testing.

## End of Supply Line 44-675 Lateral Replacement Project Final Report

Final Report for Wilmington Valve Enhancement Project – [REDACTED]

**I. WILMINGTON VALVE ENHANCEMENT PROJECT –**  
[REDACTED]

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**A. Background and Summary**

The Wilmington Valve Enhancement Project – [REDACTED] consists of valve enhancements made to one mainline valve (MLV) and two regulator station valves located in the city of Wilmington. Through this Project, SoCalGas enhanced the safety of its natural gas transmission system by enabling the rapid detection of a significant change in pipeline pressure and remote isolation and depressurization of a portion of Line 1024 and Line 1230 in the event of a pipeline rupture. SoCalGas installed a new shelter, new power equipment, new communications equipment and the necessary automation equipment at the site. The total loaded project cost is \$1,072,238.

The Wilmington Valve Enhancement Project – [REDACTED] site is located within an existing SoCalGas facility near a food distribution center in an industrial area south of [REDACTED] and west of [REDACTED] in the city of Wilmington. SoCalGas bundled this valve project with an additional valve project, Wilmington Valve Enhancement Project – Eubank Station, to gain efficiencies in engineering, planning and construction activities. This workpaper speaks to the [REDACTED] site. This project was designed and executed as one cohesive project. The project costs were shared by PSEP and Gas Transmission; PSEP funded the activities associated with providing system isolation through the automation of the mainline valve and automation of the regulator station valves.

Final Report for Wilmington Valve Enhancement Project – [REDACTED]

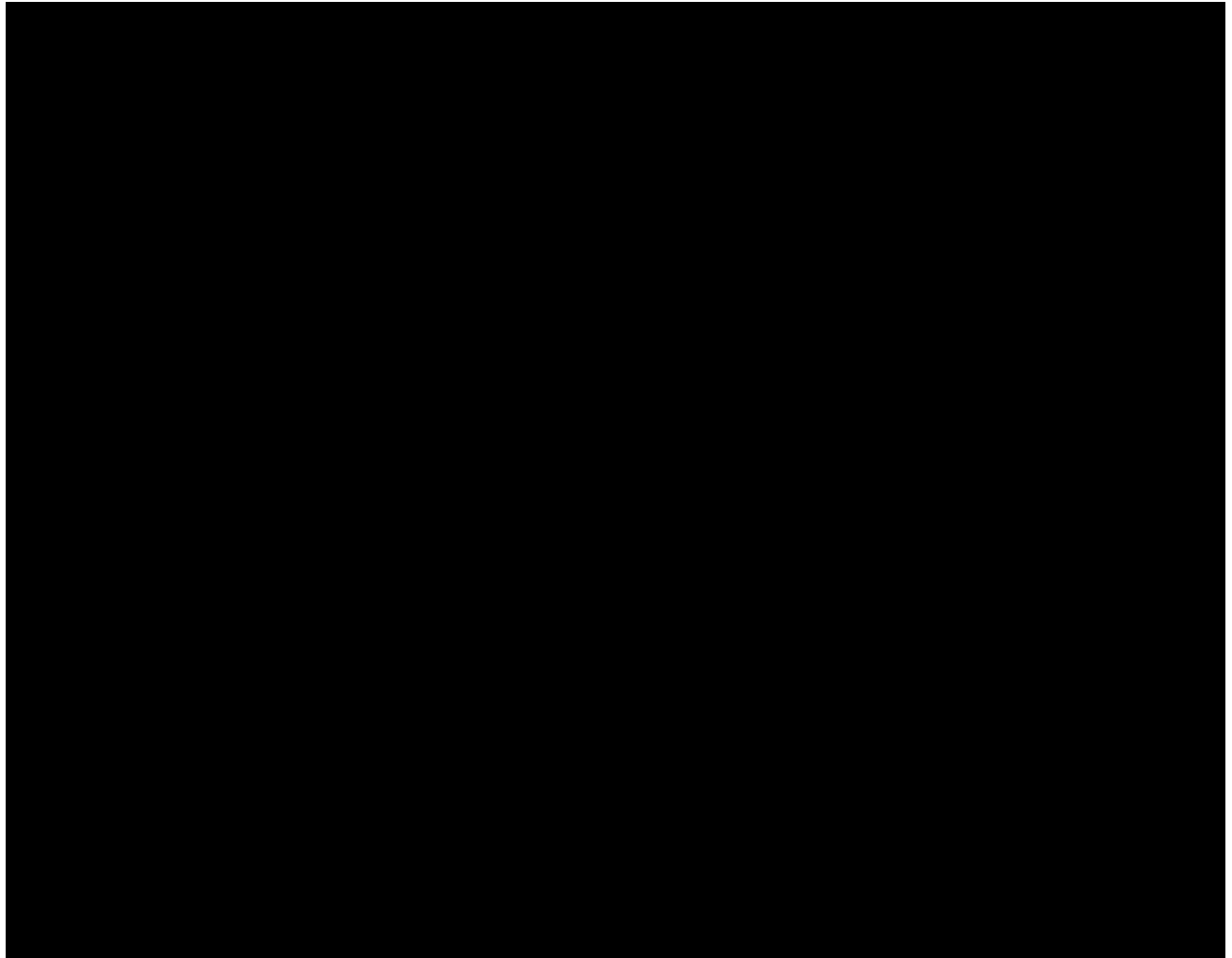
Table 1: General Project Information

<b>Wilmington Valve Enhancement Project – [REDACTED]</b>			
Location	Wilmington		
Days on Site	Phase 1: 15 days Phase 2: 26 days		
Construction Start	10/29/2018		
Construction Finish	3/11/2021		
Commissioning Date	3/25/21		
<b>Valve Upgrades</b>			
Valve Number	1230-1.77-7		
Valve Type	Existing		
Actuator	New		
Actuator Above-/Below-Grade	Above-Grade		
ASV	No		
RCV	Yes		
Valve Number	Reg 1 ID 2160-P		
Valve Type	Existing		
Actuator	New		
Actuator Above-/Below-Grade	Above-Grade		
ASV	No		
RCV	Yes		
Valve Number	Reg 3 ID 2160-P		
Valve Type	Existing		
Actuator	New		
Actuator Above-/Below-Grade	Above-Grade		
ASV	No		
RCV	Yes		
<b>Site Upgrades</b>			
Vault	None		
Power	Existing – Utility		
Communication	New – Radio		
SCADA Panel	New		
Equipment Shelter	New		
Fencing	Yes – Existing		
<b>Project Costs (\$)</b>	<b>Capital</b>	<b>O&amp;M</b>	<b>Total</b>
Loaded Project Costs	1,072,238	-	1,072,238
Disallowed Costs	-	-	-

Final Report for Wilmington Valve Enhancement Project – [REDACTED]

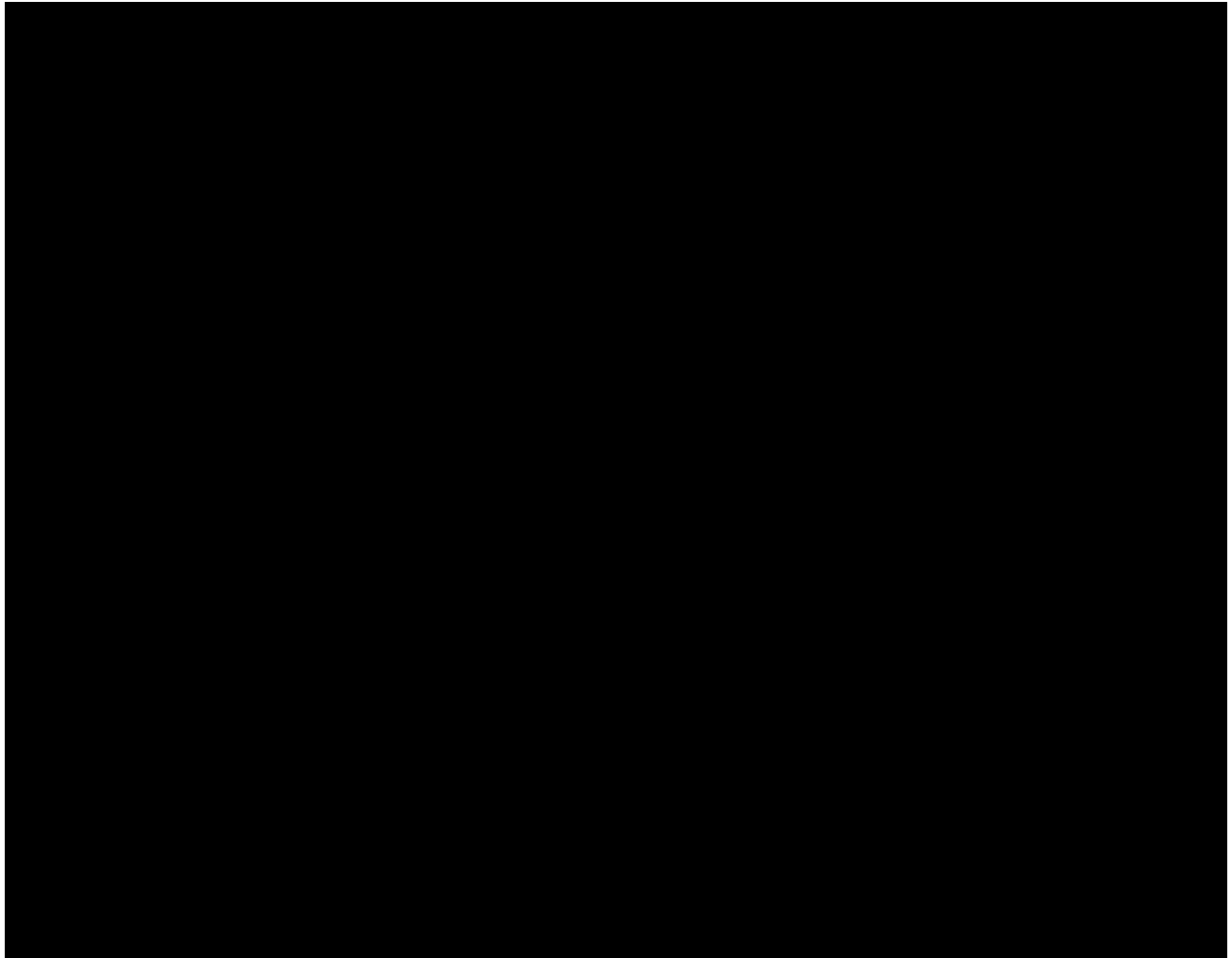
B. Maps and Images

Figure 1: Wilmington Bundle Overview



Final Report for Wilmington Valve Enhancement Project – [REDACTED]

Figure 2: Satellite Image of Wilmington Valve Enhancement Project – [REDACTED]



Final Report for Wilmington Valve Enhancement Project – [REDACTED]

## II. ENGINEERING, DESIGN, AND PLANNING

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### A. Project Scope

SoCalGas presented a conceptual project scope for the Wilmington Valve Enhancement Project - [REDACTED] project in workpapers supporting the Valve Enhancement Plan in the 2011 filing<sup>1</sup>. This conceptual scope identified MLV 1230-1.77-0 for automation to enable remote isolation to a portion of Line 1230 and Line 1024. Prior to initiating execution of the Project, SoCalGas reviewed available information and performed a detailed system flow analysis to validate the scope of the Project. The final project scope is summarized in Table 2 below.

1. 2011 PSEP Filing: SoCalGas identified MLV 1230-1.77-0 for automation to achieve the objective of rapid system isolation. SoCalGas did not identify valves Reg 1 and 3 ID 2160-P for automation at the time of the 2011 PSEP Filing.
2. Updated Scope: Upon project initiation, SoCalGas reviewed the conceptual project scope and determined that this isolation point would not achieve the transmission isolation objectives set forth in the Valve Enhancement Plan. SoCalGas determined it was necessary to instead automate MLV 1230-1.77-7 and two regulator station valves. Together, the automation of these valves enable rapid isolation, thereby achieving Valve Enhancement Plan objectives.
3. Engineering, Design, and Constructability: The Project Team determined that additional communications equipment was necessary due to the location of the project site. The Project Team installed an additional radio antenna at a nearby location to facilitate communications with SoCalGas Gas Control.
4. Final Project Scope: The final project scope consists of the automation of one existing MLV and two new regulator station valves that included the installation of new communication equipment, the installation of one new actuator, the installation of a

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<sup>1</sup> See Workpapers supporting Amended Pipeline Safety Enhancement Plan (PSEP) of SoCalGas and SDG&E, submitted on December 2, 2011, at WP-IX-2-14 through WP-IX-2-25 (A.11-11-002 Exh. SCG-32).

Final Report for Wilmington Valve Enhancement Project – [REDACTED]

new SCADA panel, the installation of a new equipment shelter, and the installation of the necessary automation equipment at the project site.

Table 2: Final Project Scope

Final Project Scope					
Line	Mile	Valve #	Valve Size	Installation Type	Function
1230	1.77	7	[REDACTED]	C/P	RCV
ID 2160-P	-	1	[REDACTED]	C/P	RCV
ID 2160-P	-	3	[REDACTED]	C/P	RCV

## B. Site Evaluation and Planning

SoCalGas initiated the planning process for the Wilmington Valve Enhancement Project - [REDACTED] by performing a pre-design site walk to determine the existing conditions and assess any potential impact on the design. Key factors that influenced the engineering and design of this project are as follows:

1. Site Description: This site is an existing SoCalGas facility located in an industrial area in the City of Wilmington.
2. Land Issues: The Project Team utilized the existing station for the laydown yard.
3. DOT Class: This project site is in a [REDACTED] location.
4. Power Source: The Project Team utilized the existing power source.
5. Communication Technology: There was no preexisting communication equipment. The Project Team installed new communication equipment at the site.

Final Report for Wilmington Valve Enhancement Project – [REDACTED]

## C. Engineering, Design, and Planning Factors

SoCalGas reviewed drawings and records, contacted internal planning groups, communicated with external stakeholders, and completed a site walk. Key factors that influenced the engineering and design of the Project are as follows:

1. Engineering Assessment: During the site evaluation, the Project Team confirmed the existing technology and verified that the station would accommodate the new communication equipment.
2. Valve Details: The existing valve was utilized by The Project Team who coordinated with another SoCalGas department that was completing work at the same site.
3. Actuator Details: The Project Team installed one actuator.
4. Customer Impact: The Project Team did not identify any anticipated service disruptions to customers.
5. Community Impact: The Project Team did not anticipate any notable impacts to the community from this project.
6. Substructures: The Project Team did not identify any existing substructures that affected the design and engineering at this site.
7. Environmental: The Project Team did not identify any notable environmental concerns at the site.
8. Permit Restrictions: There were no special permits or permit restrictions for this project site.
9. Land Use: The Project Team performed all work within the existing SoCalGas easements.
10. Traffic Control: The Project Team did not identify any traffic control needs at the site.

## D. Scope Changes

SoCalGas did not make any notable scope changes during detailed design.

Final Report for Wilmington Valve Enhancement Project – [REDACTED]

### III. CONSTRUCTION

#### A. Construction Contractor Selection

The Project Team directed the Performance Partner to prepare cost estimates based on the final engineering design package. SoCalGas awarded the Construction Contractor the Performance Partner.

1. SoCalGas’ Preliminary Electrical Contractor Estimate: SoCalGas’ preliminary cost estimate for construction was \$116,696.
2. Electrical Contractor’s Estimate: The Electrical Contractor’s estimate was [REDACTED], which was [REDACTED] than SoCalGas’ preliminary cost estimate.

#### B. Construction Schedule

Table 3: Construction Timeline

Construction Start Date Phase 1	10/29/2018
Construction Completion Date	12/13/2018
Phase 2	01/05/2021
Construction Completion Date	03/11/2021
Days on Site	26 days
Commissioning Date	03/25/21

The Project Team completed all construction activities as soon as practicable prior to commissioning. Finalization of commissioning activities is dependent on electrical utility connections, and system and/or resource availability.

Final Report for Wilmington Valve Enhancement Project – [REDACTED]

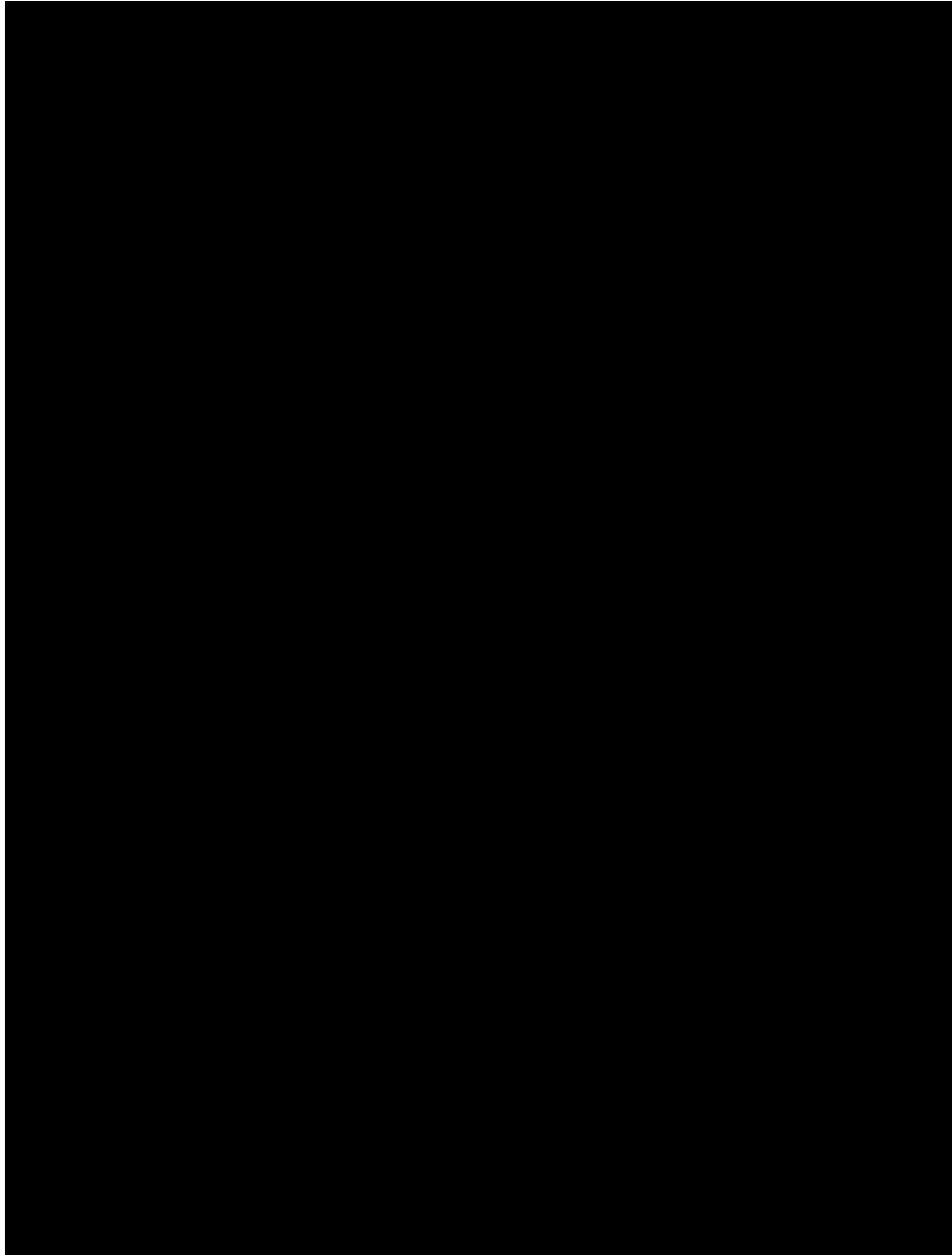
## C. Changes During Construction

The conditions summarized below were encountered during construction. Activities to address or mitigate these conditions resulted in approximately \$219,000 in change orders.

1. Construction Sequencing: The Project was executed in two phases to coordinate with a concurrent SoCalGas project and to support planned future automation at the site. Phase 1 focused on installing foundational infrastructure and preparing the facility for future automated operations, including the installation of an electrical shelter equipped with a SCADA cabinet, Digital Natural Gas Positioner, distribution panel, UPS cabinet, ATS batteries, air conditioning unit, and a mounted surge protector. During this phase, the Project Team also poured the shelter foundation, stubbed up electrical conduits in strategic locations for future automation and RCV equipment, and installed conduit supports and exterior electrical devices for shelter lighting and communications, including provisions for a future antenna. All Phase 1 work was intentionally designed to ensure compatibility with the planned automation scope and to minimize rework after construction by the other SoCalGas project was completed. Phase 2 was performed once that construction was finished and site access was available, allowing the Project Team to install the remaining electrical conduits, automation-related RCV equipment, new lighting poles, and the antenna, effectively tying into and activating the infrastructure established during Phase 1.

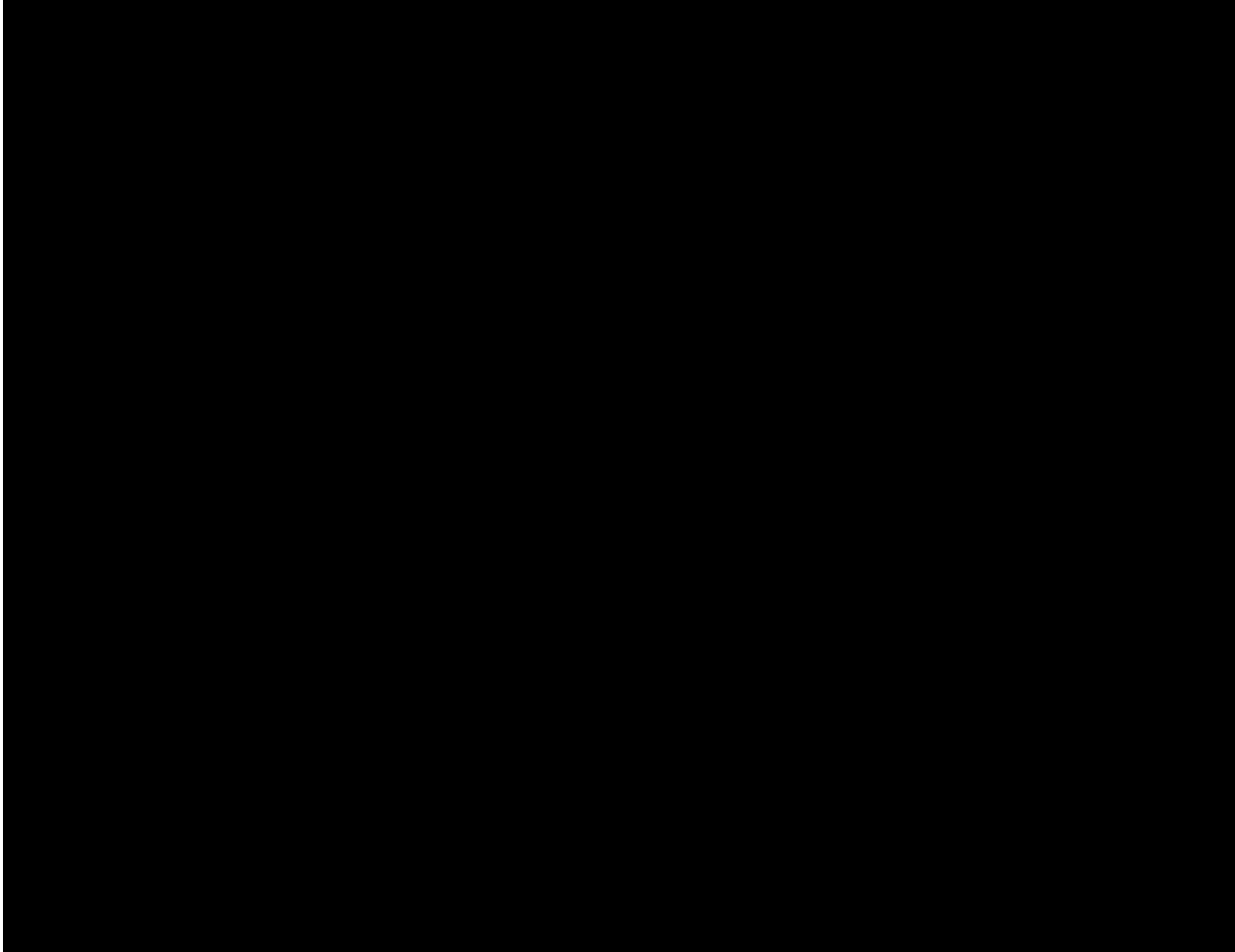
Final Report for Wilmington Valve Enhancement Project – [REDACTED]

Figure 3: Risers held in place by Unistrut.



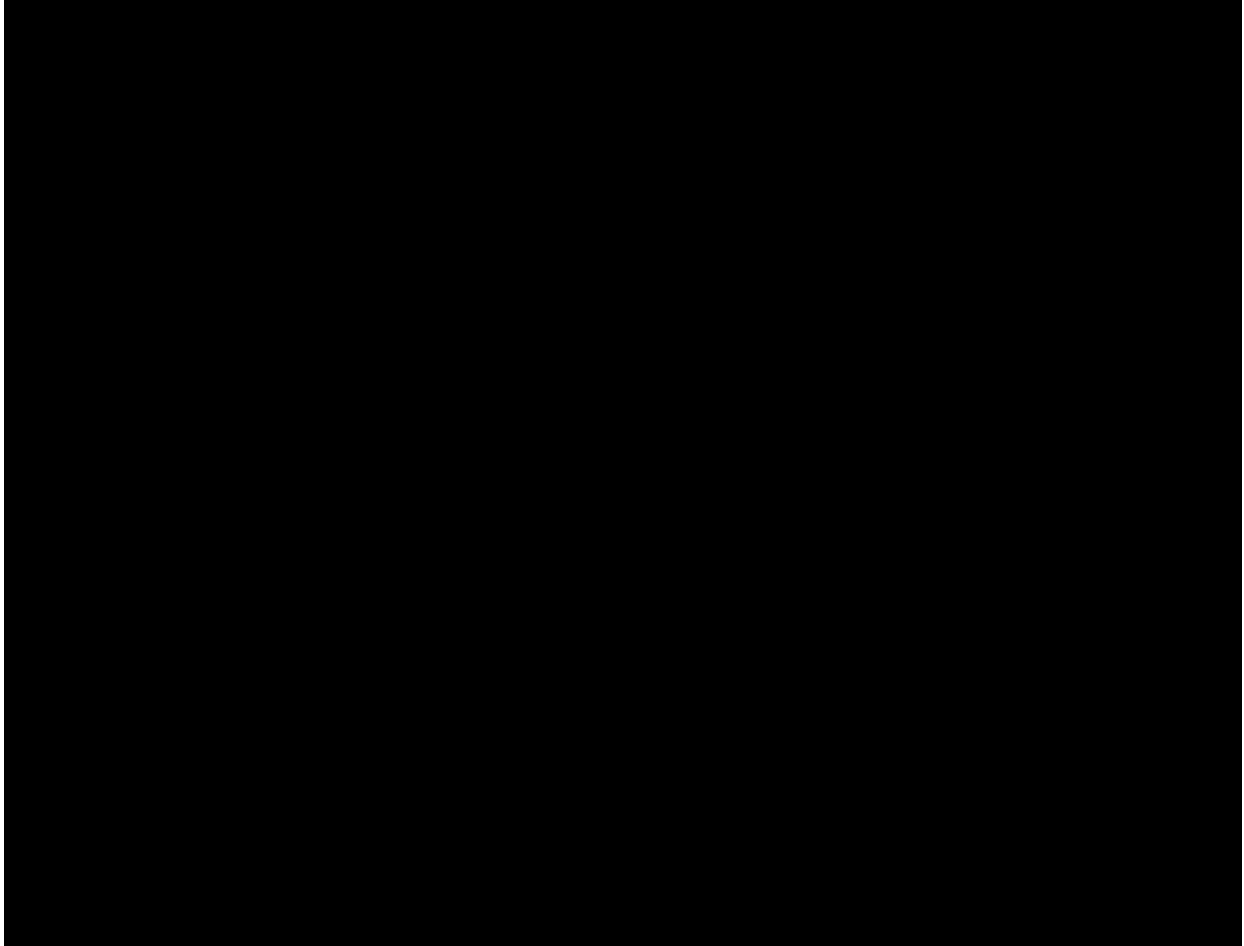
Final Report for Wilmington Valve Enhancement Project – [REDACTED]

Figure 4: Tubing installation on back of cabinets.



Final Report for Wilmington Valve Enhancement Project – [REDACTED]

Figure 5: Tubing Installation to Actuator



Final Report for Wilmington Valve Enhancement Project – [REDACTED]

## D. Commissioning and Site Restoration

Commissioning activities included site restoration, final inspections, and placement of the valves into service. During this stage, SoCalGas successfully performed site acceptance testing and conducted point-to-point verification with SoCalGas Gas Control personnel for the newly-automated valves, and transferred ownership of the new equipment to Field Operations. Closeout activities included development of final drawings, the reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work. The site was commissioned on February 26, 2021, as summarized in Table 3.

## IV. PROJECT COSTS

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### A. Cost Avoidance Actions

SoCalGas exercised due diligence in the design, planning, and construction activities for this project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team reviewed existing records, communicated with external stakeholders, and conducted a site walk to incorporate the site conditions in the project plan and design. Specific examples of cost avoidance actions taken on this project were:

1. Utility Coordination: The Project Team utilized an existing Los Angeles Department of Water & Power (LADWP) pole as the electrical source.
2. Environmental: The Project Team planned for possible abatement activities but due to the scope change of the project, no abatement was required.

### B. Cost Estimates

Based on the preliminary design, once the preliminary project scope was confirmed and engineering, design, and planning activities were underway, SoCalGas prepared an estimate of the Direct Costs of the Project in the amount of \$552,996. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project, based on initial design plans.

SoCalGas estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

### C. Actual Direct and Indirect Costs

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$1,072,238.

Final Report for Wilmington Valve Enhancement Project – [REDACTED]

Table 4: Estimated and Actual Direct Costs and Variances<sup>2</sup>

Direct Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Company Labor	296,373	74,239	(222,134)
Materials	27,134	51,323	24,189
Mechanical Construction Contractor	0	0	0
Electrical Contractor	116,696	325,339	208,643
Construction Management & Support	13,811	115,370	101,559
Environmental	11,988	52	(11,936)
Engineering & Design	4,529	128,898	124,369
Project Management & Services	32,477	94,451	61,974
ROW & Permits	0	4,627	4,627
GMA	49,988	11,865	(38,123)
<b>Total Direct Costs</b>	<b>552,996</b>	<b>806,163</b>	<b>253,167</b>

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances<sup>3</sup>

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	377,168	124,435	(252,733)
AFUDC	52,723	122,760	70,037
Property Taxes	13,615	18,880	5,265
<b>Total Indirect Costs</b>	<b>443,506</b>	<b>266,075</b>	<b>(177,431)</b>
<b>Total Direct Costs</b>	<b>552,996</b>	<b>806,163</b>	<b>253,167</b>
<b>Total Loaded Costs</b>	<b>996,502</b>	<b>1,072,238</b>	<b>75,736</b>

The Actual Full-Time Equivalents<sup>4</sup> (FTEs) for this Project are 0.25.

<sup>2</sup> Values may not add to total due to rounding.

<sup>3</sup> Ibid.

<sup>4</sup> Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

Final Report for Wilmington Valve Enhancement Project – [REDACTED]

## D. Cost Impacts

Consistent with one of the overarching objectives of PSEP to maximize the cost effectiveness of safety enhancement investments, SoCalGas effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities can lead to variances between initial estimates and actual costs. Consistent with prudent management at the time, the Project Team successfully mitigated these variances whenever feasible through the implementation of effective project management practices, thorough planning, and continuous monitoring.

At the completion of the Wilmington Valve Enhancement Project – [REDACTED], Actual Direct Costs came within the AACE Class 3 Total Installed Cost (TIC) accuracy range, adhering to the standard industry practices defined by the Association for the Advancement of Cost Engineering (AACE) International. The Actual Direct Costs were more than the preliminary estimate by \$253,617. This variance can be attributed to several factors including: the Project Team had to pour a new concrete pad for the SCADA shelter after it was determined that the original pad was too small; the Project was completed in two phases adding an additional \$200,000 of construction costs when the Project remobilized during Phase 2.

Final Report for Wilmington Valve Enhancement Project – [REDACTED]

## V. CONCLUSION

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SoCalGas enhanced the safety of their integrated natural gas system by prudently executing the Wilmington Valve Enhancement Project - [REDACTED]. Through this Valve Enhancement Project, SoCalGas successfully automated one existing mainline valve and two new regulator station valves to achieve the objective of enabling rapid system isolation to a portion of Line 1024 and Line 1230 in the city of Wilmington. The total loaded cost of the Project is \$1,072,238.

SoCalGas executed this project prudently through installing the equipment necessary to bring power and communication capabilities to the valves to enable rapid system isolation of a portion of Line 1024 and Line 1230 located in the city of Wilmington.

SoCalGas engaged in prudent cost avoidance efforts to complete this safety enhancement at a reasonable cost by carefully planning and coordinating engineering and construction activities to reduce customer and community impacts.

**End of Wilmington Valve Enhancement Project – [REDACTED]**  
**[REDACTED] Final Report**

**BEFORE THE PUBLIC UTILITIES  
COMMISSION OF THE STATE OF CALIFORNIA**

**DECLARATION OF DEVIN ZORNIZER  
REGARDING CONFIDENTIALITY OF CERTAIN DATA  
PURSUANT TO D.21-09-020**

I, Devin Zornizer, do declare as follows:

1. I am the Vice President of the Infrastructure Project Delivery organization for Southern California Gas Company (SoCalGas). I have reviewed the confidential information included within the SCG Exhibit SCG-06 Gas Major Projects Supplemental Workpaper Volumes I, II, III and V for the 2028 General Rate Case (GRC) proceeding (A.26-05-XXX). I am personally familiar with the facts in this Declaration and, if called upon to testify, I could and would testify to the following based upon my personal knowledge and/or information and belief.

2. I hereby provide this Declaration in accordance with Decision (“D.”) 21-09-020 and General Order (“GO”) 66-D, Revision 2 to demonstrate that the confidential information (“Protected Information”) provided in the SCG Exhibit SCG-06 Gas Major Projects Supplemental Workpaper Volumes I, II, III and V is within scope of the data protected as confidential under applicable law.

3. In accordance with the narrative justification provided in Attachment A, the Protected Information should be protected from public disclosure.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct to the best of my knowledge.

Executed this 12<sup>th</sup> day of June, 2026, at Los Angeles, California.

E-SIGNED by Devin Zornizer  
on 2026-06-12 07:26:07 PDT

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Devin Zornizer  
Infrastructure Project Delivery  
SoCalGas

**ATTACHMENT A**

**SCG Request for Confidentiality on the following information in the response to the 2028 General Rate Case Supplemental Workpaper Volumes I, II, III and V of Devin Zornizer, Exhibit SCG-06 (“Gas Major Projects”)**

<b>Location of Protected Information</b>	<b>Legal Citations</b>	<b>Narrative Justification</b>
<p>All grey highlighted Pipeline attributes (i.e., SMYS, MAOP, diameter, pressure, grade) in the following attachments:</p> <p>SCG-06-WP-S Supplemental Workpapers to Prepared Direct Testimony of Gas Major Projects – Volume I CONFIDENTIAL</p> <p>SCG-06-WP-S Supplemental Workpapers to Prepared Direct Testimony of Gas Major Projects – Volume II CONFIDENTIAL</p> <p>SCG-06-WP-S Supplemental Workpapers to Prepared Direct Testimony of Gas Major Projects – Volume III CONFIDENTIAL</p> <p>SCG-06-WP-S Supplemental Workpapers to Prepared Direct Testimony of Gas Major Projects – Volume V CONFIDENTIAL</p>	<p>California Public Records Act (CPRA) Exemption, Gov’t Code § 6254(ab) (“Critical infrastructure information, as defined in Section 131(3) of Title 6 of the United States Code, that is voluntarily submitted to the Office of Emergency Services for use by that office”);</p> <p>CPRA Exemption, Gov’t Code § 6254(k) (“Records, the disclosure of which is exempted or prohibited pursuant to federal or state law”):</p> <ul style="list-style-type: none"> <li>• 6 U.S.C. §§ 131(3), 133(a)(1)(E);</li> <li>• 6 CFR §§ 29.2(b), 29.8 (defining CII and restricting its disclosure);</li> <li>• 18 CFR § 388.113(c); FERC Orders 630, 643, 649, 662, 683, and 702 (defining CEII);</li> <li>• Critical Energy Infrastructure Information, 68 Fed. Reg. 9862 (Dep’t of Energy Mar. 3, 2003) (final rule) (listing what gas information qualifies as CEII);</li> <li>• FERC’s Guidelines for Filing Critical Energy/Electric Infrastructure Information, February 21, 2017; available at: <a href="https://www.ferc.gov/sites/default/files/2020-04/CEII-Filing-guidelines.pdf">https://www.ferc.gov/sites/default/files/2020-04/CEII-Filing-guidelines.pdf</a></li> <li>• 18 C.F.R. § 157.14(a)(8-10);</li> <li>• 18 C.F.R. § 157.18(c);</li> <li>• 18 C.F.R. § 260.8 (FERC Form 567);</li> <li>• 49 CFR §§ 1520.5, 1520.9 (defining SSI and restricting its disclosure);</li> <li>• <i>Chowdhury v. Nw. Airlines Corp.</i>, 226 F.R.D. 608 (N.D. Cal. 2004);</li> <li>• PHMSA Guidelines, Federal Register Vol. 81, No. 120, June 22, 2016, pg 40764;</li> <li>• CPRA Exemption, Gov’t Code § 6254(ab) (Critical Infrastructure Information)</li> </ul>	<p>These engineering design values of a proposed or existing critical infrastructure could potentially be used to determine the criticality of a gas facility and identify vulnerabilities of the gas delivery network. The value can be used to identify the volume of gas present in an area and ascertain the relative potential consequences of intentional acts against the gas transportation and distribution network.</p>
<p>All grey highlighted Vendor information. (Contracts, Vendor bid and pricing information including rates and invoices, customer and vendor proprietary information) in the following attachments:</p>	<p>California Public Records Act (“CPRA”) Gov’t Code § 6254(k) (“Records the disclosure of which is exempted or prohibited pursuant to federal or state law”)</p> <ul style="list-style-type: none"> <li>• D.11-01-36, 2011 WL 660568 (2011) (confidential prices and contract terms specifically negotiated with a program vendor is proprietary and commercially sensitive and should remain confidential).</li> </ul>	<p>Based on input received by the vendor, and based on SoCalGas position, the produced documents are proprietary and represent and contain information that is proprietary, commercially sensitive, trade secrets, and content not intended for public disclosure. Vendor contracting efforts involve communications and work product which is intended only for access by</p>

<p>SCG-06-WP-S Supplemental Workpapers to Prepared Direct Testimony of Gas Major Projects – Volume V CONFIDENTIAL</p>		<p>designated parties. Public disclosure would pose potential negative impacts and/or harm to the vendors, and/or inhibit SoCalGas/SDG&amp;E’s efforts to reduce costs for customers by obtaining competitive pricing from vendors.</p>
<p>All grey highlighted Pipeline Locational Information (i.e., GPS coordinates, pipeline location) in the following attachments:</p> <p>SCG-06-WP-S Supplemental Workpapers to Prepared Direct Testimony of Gas Major Projects – Volume I CONFIDENTIAL</p> <p>SCG-06-WP-S Supplemental Workpapers to Prepared Direct Testimony of Gas Major Projects – Volume II CONFIDENTIAL</p> <p>SCG-06-WP-S Supplemental Workpapers to Prepared Direct Testimony of Gas Major Projects – Volume V CONFIDENTIAL</p>	<p>CPRA Exemption, Gov’t Code § 7927.705 (“Records, the disclosure of which is exempted or prohibited pursuant to federal or state law”)</p> <ul style="list-style-type: none"> <li>• 18 CFR § 388.113(c) (defining CEII)</li> <li>• FERC Order Nos. 630, 643, 649, 662, 683, and 702 (defining CEII)</li> <li>• FAST Act - Critical Electric Infrastructure Security, Pub. L. 114-94, amended December 4, 2015 (protecting <b>electric</b> infrastructure)</li> <li>• FERC Order 833 (including amendments to the CEII regulations, required by The FAST Act)</li> <li>• Critical Energy Infrastructure Information, 68 Fed. Reg. 9857, 9862 (Dep’t of Energy Mar. 3, 2003) (final rule) (listing what <b>gas</b> information qualifies as CEII)</li> <li>• FERC’s Guidelines for Filing Critical Energy/Electric Infrastructure Information, (Feb. 21, 2017), <i>available at</i> <a href="https://www.ferc.gov/sites/default/files/2020-04/CEII-Filing-guidelines.pdf">https://www.ferc.gov/sites/default/files/2020-04/CEII-Filing-guidelines.pdf</a> <ul style="list-style-type: none"> <li>◦ Exhibits G, G-1, G-II of pipeline certificate applications. 18 CFR § 157.14</li> <li>◦ Exhibit V of abandonment applications. 18 CFR § 157.18</li> <li>◦ FERC Form 567. 18 CFR § 260.8</li> </ul> </li> <li>• CPUC Res. L-436, at 8 (stating CPUC will “refrain from making available to the public detailed maps and schematic diagrams showing the location of specific utility regulator stations, valves, and similar facilities”)</li> <li>• Cal. Pub. Util. Code § 364(d) (“The commission may, consistent with other provisions of law, withhold from the public information generated or obtained pursuant to this section that it deems would pose a security threat to the public if disclosed.”) CPRA Exemption, Gov’t Code § 7922.000 (Balancing Test)</li> </ul>	<p>GPS coordinates and pipeline location are identified as confidential because the data would provide sufficient information to be used by a third party to excavate or access above ground facilities without notifying the utility through the local Underground Service Alert (USA) or could be used to identify locations for illegal tapping or other acts that could impact the safety of residents.</p>