

Company: Southern California Gas Company (U 904 G)
Proceeding: 2028 General Rate Case
Application: A.26-06-014
Exhibit: SCG-06.1-WP-S

REDACTED

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

ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

REVISED

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

VOLUME 2 OF 6

SEPTEMBER 2026



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SCG GTSR Part 1 Replacements and Hydrotest Forecast Project Workpapers

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**SCG GTSR Part 1 Replacements and Hydrotests
Forecast Project Workpapers**

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 127 HYDROTEST PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$9,783	\$48,529	\$28,957	\$308,813	\$115,264	\$511,346
DIRECT NON-LABOR	\$100,523	\$179,831	\$558,632	\$5,014,375	\$131,161	\$5,984,520
TOTAL COSTS - CAPITAL	\$110,305	\$228,360	\$587,589	\$5,323,187	\$246,425	\$6,495,866

Project Description

The Gas Transmission Safety Rule (GTSR) Line 127 Hydrotest Project will hydrotest approximately 1.3 miles of [REDACTED] diameter pipe in the city of Santa Barbara, Santa Barbara County. The project mileage is separated into two test sections with approximately 0.3 miles in between. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 127 HYDROTEST PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 80 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	1.248
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	1.248

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 159 HYDROTEST PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS - CAPITAL	Stage 1^{1,2}	Stage 2³	Stage 3⁴	Stage 4⁵	Stage 5⁶	Total⁷
DIRECT LABOR	\$32,447	\$61,733	\$102,005	\$254,495	\$183,690	\$634,370
DIRECT NON-LABOR	\$182,200	\$207,478	\$697,264	\$3,435,054	\$96,371	\$4,618,368
TOTAL COSTS - CAPITAL	\$214,648	\$269,212	\$799,269	\$3,689,549	\$280,061	\$5,252,737

Project Description

The Gas Transmission Safety Rule (GTSR) Line 159 Hydrotest project will hydrotest approximately 0.6 miles of pipe in the city of Goleta, Santa Barbara County. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 159 HYDROTEST PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 47 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.604
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.604

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 235 WEST HYDROTEST PROJECT

Table 1: Total Direct Project Cost - All Capital

PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$70,875	\$137,888	\$170,686	\$963,675	\$164,141	\$1,507,266
DIRECT NON-LABOR	\$190,570	\$498,985	\$2,254,663	\$25,414,850	\$215,408	\$28,574,475
TOTAL COSTS - CAPITAL	\$261,445	\$636,873	\$2,425,349	\$26,378,524	\$379,550	\$30,081,741

Project Description

The Line 235 West Gas Transmission Safety Rule (GTSR) Hydrotest Project will hydrotest approximately 8.8 miles of [REDACTED] diameter pipeline, extending from Victorville in San Bernardino County to Santa Clarita in Los Angeles County. The scope of work includes non-continuous segments along Line 235 West consisting of seven test sections. In addition, the project encompasses approximately 884 feet of Line 235 West laterals and associated nearby supply lines originating from Line 235 West. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a Total Installed Cost (TIC) estimate to implement the above scope of work. The TIC estimate includes direct costs associated with project management, engineering and design, environmental, permitting, land acquisition, material and equipment procurement, and construction. The estimate was prepared in accordance with AACE Class 3 estimating practices and utilizes a combination of quantity-based, unit-cost, and factored estimating techniques.

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of the project costs are expended during the construction phase. The construction schedule is assumed to be 158 days.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

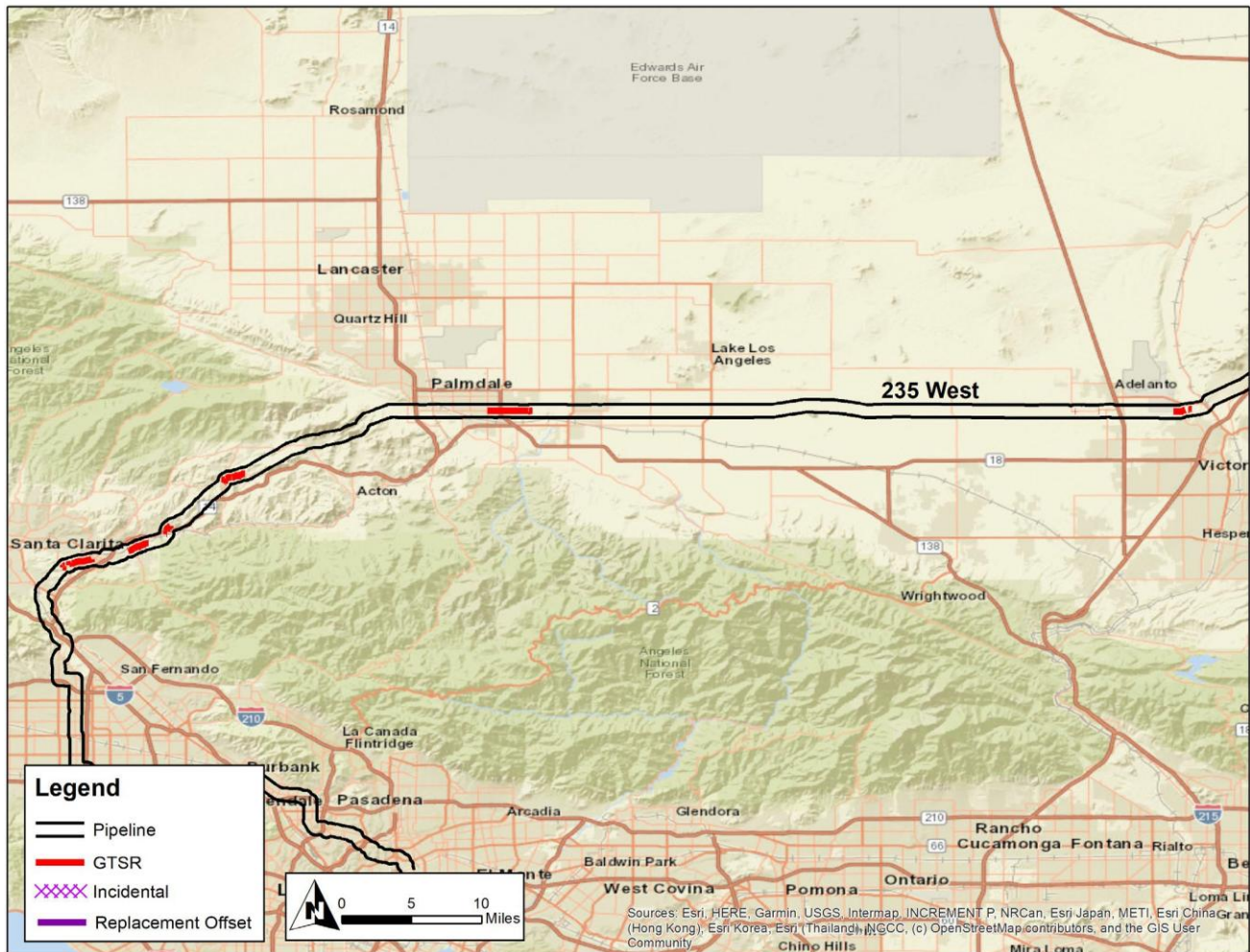
⁶ Closeout.

⁷ Values may not add to total due to rounding.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 235 WEST HYDROTEST PROJECT

Figure 1: Overview Map for Line 235 West Hydrotest Project



GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 235 WEST HYDROTEST PROJECT

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	8.794
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	8.794

The direct costs for each area are summarized below.

Table 3: Material

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$1,371,074	\$2,902,512	\$0	\$4,273,586
TOTAL DIRECT COSTS	\$0	\$0	\$1,371,074	\$2,902,512	\$0	\$4,273,586

Assumptions

Materials for this project will not be purchased until final internal authorization has been granted to purchase long lead time material. This will allow for material to be procured, inspected and delivered to coincide with the anticipated construction start date. The principal cost-driving materials necessary for this project include:

- 731 feet of [REDACTED] pipe.
- 14 [REDACTED] ball valves.
- 10 [REDACTED] x [REDACTED] Tee Reducers
- Gas Purchase to support customers during isolation period.

Table 4: Construction

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$0	\$20,976,434	\$0	\$20,976,434
TOTAL DIRECT COSTS	\$0	\$0	\$0	\$20,976,434	\$0	\$20,976,434

Assumptions

In the development of the construction estimate, the following assumptions and clarifications have been made:

- One mobilization and one demobilization.
- Work has been scheduled using a 10 hour per day, five-day work week.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 235 WEST HYDROTEST PROJECT

- All construction materials, equipment and testing components will be received at the designated laydown yard.
- Test heads will be installed at each hydrotest break location.
- Mechanical excavation will be authorized up to within two feet of the existing pipeline. Hand excavation will be required within the two feet zone.
- All excavations will be backfilled with zero sack slurry or sand padding to one foot above pipeline. Remainder of backfill will be performed using native soil.
- Pipeline isolation utilizing twenty-two existing taps with CNG support.
- Non-Destructive Examination/X-Ray of welds.
- Construction Management and Inspection Services during project execution.
- Hydrotest water will be hauled off and properly disposed of by the Environmental Contractor following completion of testing activities.

Additional Construction Information

- **Site Mobilization / Site Facilities**
 - One mobilization and one demobilization.
 - Two office trailers will be included and located at the laydown yard.
 - Site facility costs cover an eight-month duration.
 - Five laydown yards
 - 7,500 feet of temporary fencing for all laydown yards and test breaks.
 - Preparation of work areas and laydown yards including grading and hauling and disposal of debris.
- **Site Management / Best Management Practices (BMPs)**
 - Fiber rolls, straw bales, demarcation fence, reinforced poly sheeting, silt fencing and stock drains will be procured and installed for BMP measures.
- **Material Handling**
 - 16 loads of material will be unloaded by contractor at the laydown yard and transported as needed.
- **Traffic Control**
 - Three flaggers will be needed for 56 days of traffic control.
- **Utility Locates**
 - Ground Penetrating Radar (GPR) for two lateral replacement sections.
 - 65 Standard and Gas Locates.
- **Isolate Existing Pipeline**
 - Valve closure support utilizing 22 [REDACTED] to [REDACTED] valves, two [REDACTED] valves, two [REDACTED] valves, and six [REDACTED] valves.
 - Purge approximately 39 miles of existing pipeline with nitrogen.
 - Cut Out one Pipe anomaly sections will be replaced.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 235 WEST HYDROTEST PROJECT

- **Pipeline Excavation / Fabrication / Installation**
 - 1,502 SF asphalt removal and disposal.
 - 415 SF concrete removal and disposal.
 - Excavate approximately 600 Cubic Yards (CY) for test break and replacement sections.
 - Fabricate Test heads and isolation caps.
 - Fabricate Tie-In Pieces.
 - Install 1,249 feet of pipeline.
- **Hydrotest / Pressure Test Pipeline**
 - Seven test sections will be hydrotested.
 - Test heads will be installed below grade.
 - 114 frac tanks will be utilized to support hydrostatic testing operations.
- **Tie-In Pipeline**
 - 14 days to prep tie-ins.
 - Three 24-hour shifts to make hot tie-ins.
 - Six 12-hour shifts to make cold tie-ins.
 - 22 tap reconnections.
 - Six supports of mainline valve opening.
- **Retire / Abandon Existing Pipeline**
 - 1,293 feet of pipeline removal.
- **Site Restoration**
 - Restoration of work site locations to original condition which includes base paving, concrete work, removal of temporary fencing and final clean up.
- **Site Demobilization**
 - Demobilization of site facilities, crew, and equipment.
 - Hauling of one load of excess piping to SoCalGas designated yard.
- **Field Overhead**
 - Full-Time Project Manager.
 - Full-Time Superintendent.
 - Full-Time Cost Controller.
 - Full-Time Safety Person.
 - Part-Time Scheduler and Part-Time Timekeeper.
 - One water truck and driver are included full project duration for dust suppression.
 - One low-bed truck is included to assist with equipment.
 - Two site security personnel have been employed for all non-working hours.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 235 WEST HYDROTEST PROJECT

Table 5: Environmental/Permitting/Monitoring/Abatement

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$11,863	\$243,742	\$405,267	\$1,255,540	\$54,412	\$1,970,823
TOTAL DIRECT COSTS	\$11,863	\$243,742	\$405,267	\$1,255,540	\$54,412	\$1,970,823

Assumptions

In calculating the total estimated environmental cost, the following items were considered:

- Environmental Services (permitting support, surveys and monitoring).
- Non-hazardous waste containment/disposal.
- Abatement of Asbestos Containing Material (ACM).
- Water Treatment and Hazardous Materials.

The high-level assumptions and specific level of effort to provide environmental support for this project are described in more detail below.

- **Environmental Document Production**
 - Protocol Survey Reports.
 - Preconstruction Clearance.
 - Storm Water Pollution and Prevention Plan (SWPPP) and Notice of Intent (NOI).
 - Environmental Clearance.
 - Preconstruction wildlife survey report.
- **Construction Monitoring**
 - 11 weeks of full-time monitoring for ground disturbance activities.
 - Part-time cultural monitoring
- **Project Closeout Activities**
 - Restoration support, permit reporting, and closeout.
- **Abatement**
 - 14 days for abatement of ACMs.
- **Water Treatment and Hazardous Materials**
 - Hydrotest water estimated at approximately 2,100,000 gallons.
 - Water delivery is within a 10 mile radius with a capacity to carry 5,000 gallons for 84 days to project site.
 - Used hydrotest water will be transported to a treatment plant and discharged.
 - Waste sampling and profiling anticipated to support disposal of wastes generated during construction.
 - Hazardous and non-hazardous waste transport and disposal anticipated for various wastes.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 235 WEST HYDROTEST PROJECT

- **Permit Fees**

- Stormwater Pollution Prevention Plans (SWPPP).
- Los Angeles County Flood Control District (LACFCD) Discharge Permit.
- Assumes a fugitive dust control plan would not be required and this project does not meet the disturbance threshold in Mojave Desert Air Quality Management District (MDAQMD) and Antelope Valley Air Quality Management (AVAQMD).
- Permitting fees related to encroachment permit and traffic control plans for Santa Clarita, Los Angeles County, Palmdale, San Bernardino County, Adelanto, Victorville and Apple Valley.

Table 6: Land & Right-of-Way Acquisition

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$18,176	\$108,010	\$30,401	\$9,088	\$165,675
TOTAL DIRECT COSTS	\$0	\$18,176	\$108,010	\$30,401	\$9,088	\$165,675

Assumptions

In generating for the total estimated cost for Line 235 West Hydrotest Project the following items were considered:

- **Labor**

- One Senior Land Agent to support land acquisition.

- **Land Acquisition**

- Five Appraisal Reports.
- Five Title Reports.
- Obtaining four Temporary Right-of-Entries (TREs) to be used as laydown yards and workspaces for the project.
- One Permanent easement to be used as a workspace for the project.

Factors such as location, zoning, current market price and square footage are considered to determine a final estimated value specific to easements and temporary rights of entry permits.

Table 7: Company Labor

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$70,875	\$137,888	\$170,686	\$963,675	\$164,141	\$1,507,266
DIRECT NON-LABOR	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DIRECT COSTS	\$70,875	\$137,888	\$170,686	\$963,675	\$164,141	\$1,507,266

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 235 WEST HYDROTEST PROJECT

Assumptions

SoCalGas Labor - Management, Engineering, and Non-Union Labor

SoCalGas Non-Union Labor is estimated based upon activity level of effort and is divided into the following categories:

- Project Management.
- Project Field Management.
- Project Engineers.
- Construction Management.
- Environmental Services.
- Other Departments.

SoCalGas Field Labor – Distribution, Transmission, Pipeline Integrity, and Other Field Departments

SoCalGas Union Labor costs were developed with the guidance of SoCalGas Construction Management and whose costs are duration dependent and activity specific.

Table 8: Other Costs

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$178,707	\$237,067	\$450,251	\$249,963	\$151,909	\$1,267,896
TOTAL DIRECT COSTS	\$178,707	\$237,067	\$450,251	\$249,963	\$151,909	\$1,267,896

Assumptions

Other costs assume use of contracted services for certain Engineering, Survey, Project Management, and Design activities. These costs are included to account for the anticipated professional services required to support project planning, design development, execution, and closeout. The major components in this category include:

- Engineering and Design Services.
- Project Management Services.
- Surveying and As-builts.
- Project Support Services.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 293 HYDROTEST PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$10,331	\$26,749	\$55,488	\$147,847	\$172,546	\$412,961
DIRECT NON-LABOR	\$37,702	\$50,951	\$287,400	\$2,895,597	\$107,481	\$3,379,131
TOTAL COSTS - CAPITAL	\$48,033	\$77,700	\$342,887	\$3,043,444	\$280,027	\$3,792,092

Project Description

The Gas Transmission Safety Rule (GTSR) Line 293 Hydrotest Project will hydrotest approximately 0.4 miles of XXXXXXXXXX diameter pipe from the city of Taft to the city of Bakersfield, Kern County. This project includes one continuous test section. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 293 HYDROTEST PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 50 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.363
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.363

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 404 HYDROTEST PROJECT

Table 1: Total Direct Project Costs – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1^{1,2}	Stage 2³	Stage 3⁴	Stage 4⁵	Stage 5⁶	Stage 1⁷
DIRECT LABOR	\$ 67,622	\$ 137,350	\$ 170,430	\$ 961,203	\$ 162,404	\$ 1,499,010
DIRECT NON-LABOR	\$ 209,726	\$ 459,337	\$ 2,303,166	\$ 33,963,084	\$ 236,900	\$ 37,172,214
TOTAL COSTS - CAPITAL	\$ 277,348	\$ 596,688	\$ 2,473,596	\$ 34,924,288	\$ 399,304	\$ 38,671,223

Project Description

The Line 404 Gas Transmission Safety Rule (GTSR) Hydrotest project will hydrotest approximately 10.8 miles of 48" diameter pipe from the city of Ventura to Encino within Los Angeles County. The project spans 12 test sections and 16 replacement segments that include lateral lines. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a Total Installed Cost (TIC) estimate to implement the above scope of work. The TIC estimate includes direct costs associated with project management, engineering and design, environmental, permitting, land acquisition, material and equipment procurement, and construction. The estimate was prepared in accordance with AACE Class 3 estimating practices and utilizes a combination of quantity-based, unit-cost, and factored estimating techniques.

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of the project costs are expended during the construction phase. The construction schedule is assumed to be 196 days.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

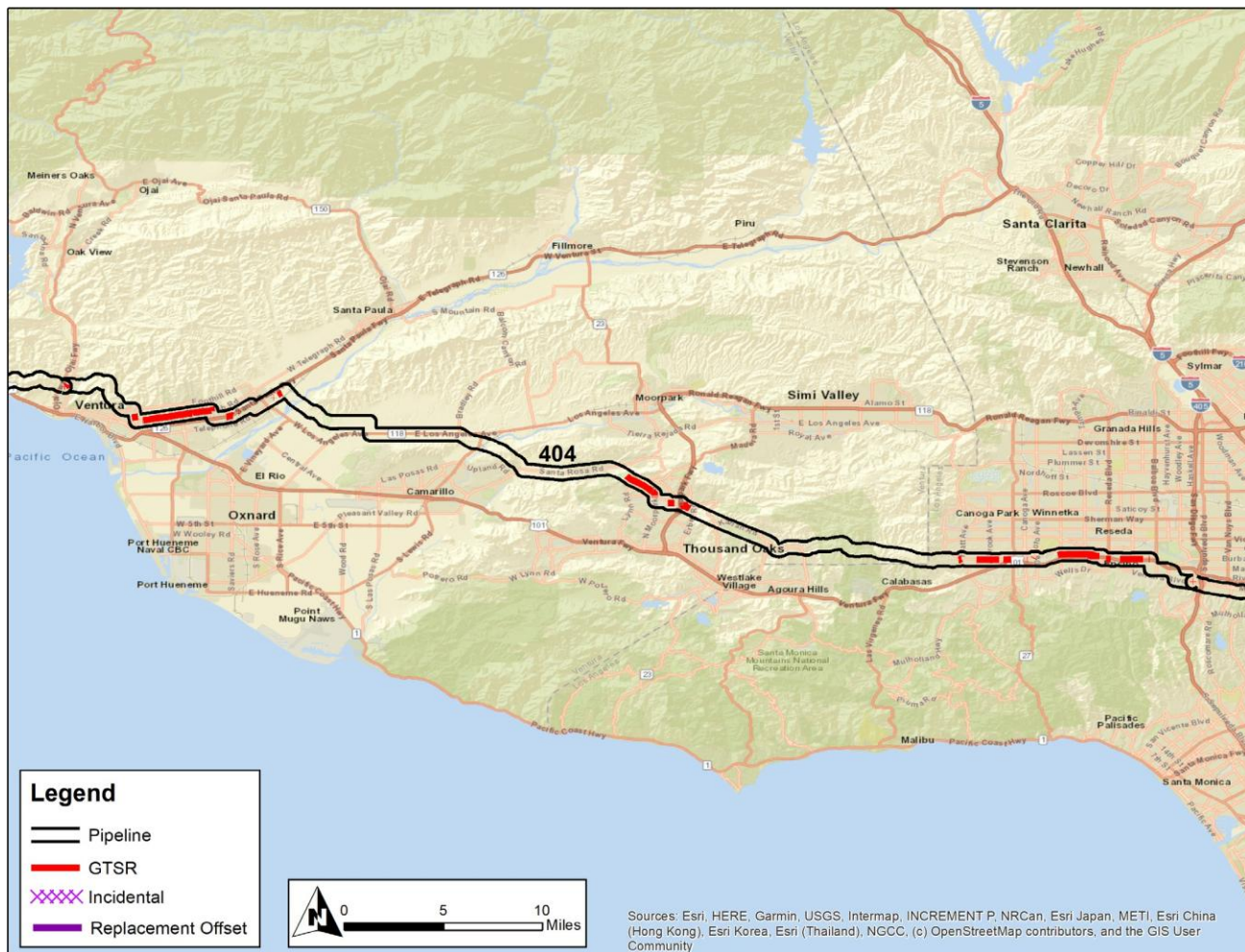
⁶ Closeout.

⁷ Values may not add to total due to rounding.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 404 HYDROTEST PROJECT

Figure 1: Overview Map for Line 404 Hydrotest Project



GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 404 HYDROTEST PROJECT

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	10.818
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	10.818

The direct costs for each area are summarized below.

Table 3: Material

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$1,336,622	\$731,495	\$0	\$2,068,117
TOTAL DIRECT COSTS	\$0	\$0	\$1,336,622	\$731,495	\$0	\$2,068,117

Assumptions

Materials for this project will not be purchased until final internal authorization has been granted to purchase long lead time material. This will allow for material to be procured, inspected and delivered to coincide with the anticipated construction start date. The principal cost-driving materials necessary for this project include:

- 1,388 feet of [REDACTED] pipe.
- 24 [REDACTED] ball valves.
- 144 [REDACTED] ball valves.

Table 4: Construction

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$0	\$31,462,501	\$0	\$31,462,501
TOTAL DIRECT COSTS	\$0	\$0	\$0	\$31,462,501	\$0	\$31,462,501

Assumptions

In the development of the construction estimate, the following assumptions and clarifications have been made:

- One mobilization and one demobilization.
- Work has been scheduled using a 10 hour per day, five-day work week.
- All materials will be received at the laydown yard.

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- Test heads will be installed at each hydrotest break location.
- Mechanical excavation will be authorized up to within two feet of the existing pipeline. Hand excavation will be required within the two foot zone.
- All excavations will be backfilled with zero sack slurry or sand padding to one foot above the pipeline. Remainder of backfill will be performed using native soil.
- Hydrotest will be performed with individual test breaks and test heads.
- Temporary water storage using frac tanks with associated pumping equipment to support hydrostatic testing operations.
- Line taps will be fabricated and then reconnected after line is brought back into service.
- Non-Destructive Examination/X-Ray of welds is included.
- Construction Management and Inspection Services during project execution.
- Hydrotest water will be hauled off site and properly disposed of by Environmental Contractor.
- Dust control is required.
- Separate hydrotest for tie-in spool pieces and replacement section piping.
- Construction Management and Inspection Services during project execution.

Additional Construction Information

- **Site Mobilization / Site Facilities**
 - One mobilization and one demobilization.
 - 13 Laydown yards.
 - 14,200 Linear feet (LF) of temporary fencing for the laydown yards and test breaks.
 - 400 Square yard (SY) access road construction.
 - Four workspaces to be cleared.
 - 550 Tons of debris for removal and disposal.
 - Two office trailers will be placed at the laydown yards.
 - Site facility costs over a nine-month duration.
- **Site Management / Best Management Practices (BMPs)**
 - Fiber rolls, sandbags, straw bales, poly sheeting, silt fencing and demarcation fencing will be procured and installed for BMP measures.
 - 42 sock drains.
- **Material Handling**
 - Six loads of SoCalGas furnished material will be unloaded by the contractor at the laydown yard.
- **Traffic Control**
 - Three flaggers during construction in roadways.
- **Utility Locates**
 - One day Ground Penetrating Radar (GPR).
 - Approximately 70 Gas Locates.

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LINE 404 HYDROTEST PROJECT

- Two Standard Locates.
- **Isolate Existing Pipeline**
 - Valve closure support for eleven valves.
 - 180 Square Feet (SF) of asphalt removal and disposal.
 - 40 cubic yards (CY) of excavation to expose taps.
 - 10 cut point abatements.
 - Three shifts to purge the three isolation sections.
 - Cut out and replace two pipe sections with anomalies that include excavation, section removal, section installation, and backfill of excavation.
- **Pipeline Excavation / Fabrication / Installation**
 - 5,000 SF asphalt removal and disposal.
 - 1,350 SF concrete removal and disposal.
 - 12,300 SF asphalt grind for plate installation.
 - Excavate Bell holes for replacement sections.
 - Fabricate test heads and isolation caps.
 - Fabricate tie-in pieces.
 - Install 1,370 feet of pipeline.
- **Hydrotest / Pressure Test Pipeline**
 - Test and Replacement sections to be hydrotested.
 - Test heads will be installed below-grade.
 - Frac tanks will be utilized to support hydrostatic testing operations.
- **Tie-In Pipeline**
 - 48 days to prep tie-ins.
 - Seven 24-hr shifts to complete hot tie-ins.
 - 17 24-hr shifts to complete cold tie-ins.
 - Five tap reconnections.
- **Site Restoration**
 - Restoration of work site locations to original condition which includes base paving, concrete work, removal of temporary fencing and final clean up.
- **Site Demobilization**
 - Demobilization of site facilities, crew, and equipment.
 - Hauling of one load of excess piping to SoCalGas designated yard.
- **Field Overhead**
 - Full-Time Project Manager.
 - Full-Time Superintendent.

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- Full-Time Cost Controller.
- Full-Time Safety Person.
- Part-Time Scheduler
- Part-time Timekeeper.
- One water truck and driver for duration of the project for dust suppression.
- Two site security personnel for non-working hours.

Table 5: Environmental/Permitting/Monitoring/Abatement

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$ 41,523	\$ 199,621	\$ 316,356	\$ 1,151,116	\$ 56,784	\$ 1,765,401
TOTAL DIRECT COSTS	\$ 41,523	\$ 199,621	\$ 316,356	\$ 1,151,116	\$ 56,784	\$ 1,765,401

Assumptions

In calculating the total estimated environmental cost, the following items were considered:

- Environmental Services (permitting support, surveys and monitoring).
- Non-hazardous waste containment/disposal.
- Abatement of Asbestos Containing Material (ACM).
- Water Treatment and Hazardous Materials.
- Permit Fees.

The high-level assumptions and specific level of effort to provide environmental support for this project are described in more detail below.

- **Preconstruction Surveys**
 - 40 weeks of preconstruction support.
- **Construction Monitoring**
 - Biological monitoring for the duration of project.
- **Project Closeout Activities**
 - Restoration support, permit reporting, and closeout.
- **Abatement**
 - 20 days for abatement of ACMs.
- **Water Treatment and Hazardous Materials**
 - Hydrotest water is estimated at 970,000 gallons of potable water within 10 miles of project.

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- Water treatment services for approximately two months.
- Hazardous and non-hazardous waste transport and disposal anticipated for various wastes.
- **Permit Fees**
 - Stormwater Pollution Prevention Plans.
 - Los Angeles County Flood Control District (LACFCD) Discharge Permit.
 - Permitting fees related to encroachment permits and traffic control plan costs from Ventura County, Thousand Oaks, Los Angeles County and Caltrans.

Table 6: Land & Right-of-Way Acquisition

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
DIRECT NON-LABOR	\$0	\$ 19,918	\$ 174,686	\$ 385,758	\$ 9,959	\$ 590,321
TOTAL DIRECT COSTS	\$0	\$ 19,918	\$ 174,686	\$ 385,758	\$ 9,959	\$ 590,321

Assumptions

In generating the total estimated cost for Line 404 Hydrotest Project the following items were considered:

- **Labor**
 - One Senior Land Agent to support land acquisition.
- **Land Acquisition**
 - Eight Appraisal reports.
 - Eight Title reports.
 - Obtaining 15 Temporary Right-of-Entries (TREs) to be used as laydown yards, work areas, or for water storage.

Factors such as location, zoning, current market price and square footage are considered to determine a final estimated value specific to easements and temporary rights of entry permits.

Table 7: Company Labor

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$ 67,622	\$ 137,350	\$ 170,430	\$ 961,203	\$ 162,404	\$ 1,499,010
DIRECT NON-LABOR	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DIRECT COSTS	\$ 67,622	\$ 137,350	\$ 170,430	\$ 961,203	\$ 162,404	\$ 1,499,010

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LINE 404 HYDROTEST PROJECT

Assumptions

SoCalGas Labor - Management, Engineering, and Non-Union Labor

SoCalGas Non-Union Labor is estimated based upon activity level of effort and is divided into the following categories:

- Project Management.
- Project Field Management.
- Project Engineers.
- Construction Management.
- Environmental Services.
- Other Departments.

SoCalGas Field Labor – Distribution, Transmission, Pipeline Integrity, and Other Field Departments

SoCalGas Union Labor costs were developed with the guidance of SoCalGas Construction Management and whose costs are duration dependent and activity specific.

Table 8: Other Costs

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
DIRECT NON-LABOR	\$ 168,203	\$ 239,798	\$ 475,501	\$ 232,214	\$ 170,157	\$ 1,285,874
TOTAL DIRECT COSTS	\$ 168,203	\$ 239,798	\$ 475,501	\$ 232,214	\$ 170,157	\$ 1,285,874

Assumptions

Other costs assume use of contracted services for certain Engineering, Survey, Project Management, and Design activities. These costs are included to account for the anticipated professional services required to support project planning, design development, execution, and closeout. The major components in this category include:

- Engineering and Design Services.
- Project Management Services.
- Surveying and As-builts.
- Project Support Services.

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LINE 406 HYDROTEST PROJECT

Table 1: Total Direct Project Costs – All Capital

TOTAL PROJECT COSTS - CAPITAL	Stage 1^{1,2}	Stage 2³	Stage 3⁴	Stage 4⁵	Stage 5⁶	Total⁷
DIRECT LABOR	\$68,006	\$137,554	\$175,178	\$874,288	\$163,180	\$1,418,206
DIRECT NON-LABOR	\$173,709	\$377,553	\$1,339,388	\$16,625,786	\$201,154	\$18,717,590
TOTAL COSTS - CAPITAL	\$241,714	\$515,107	\$1,514,566	\$17,500,075	\$364,333	\$20,135,796

Project Description

The Line 406 Gas Transmission Safety Rule (GTSR) Part 1 Hydrotest Project will hydrotest approximately 7.8 miles of [REDACTED] and [REDACTED] diameter pipe from the city of Ventura to the city of Burbank, Los Angeles County. This project will consist of eight test sections and two replacement sections. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a Total Installed Cost (TIC) estimate to implement the above scope of work. The TIC estimate includes direct costs associated with project management, engineering and design, environmental, permitting, land acquisition, material and equipment procurement, and construction. The estimate was prepared in accordance with AACE Class 3 estimating practices and utilizes a combination of quantity-based, unit-cost, and factored estimating techniques.

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of the project costs are expended during the construction phase. The construction schedule is assumed to be 160 days.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to total due to rounding.

Legend

- Pipeline
- GTSR
- Incidental
- Replacement Offset

0 5 10 Miles

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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LINE 406 HYDROTEST PROJECT

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	7.820
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	7.820

The direct costs for each area are summarized below.

Table 3: Material

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$461,004	\$215,582	\$0	\$676,587
TOTAL DIRECT COSTS	\$0	\$0	\$461,004	\$215,582	\$0	\$676,587

Assumptions

Materials for this project will not be purchased until final internal authorization has been granted to purchase long lead time material. This will allow for material to be procured, inspected and delivered to coincide with the anticipated construction start date. The principal cost-driving materials necessary for this project include:

- 540 feet of [REDACTED] pipe.
- 34 [REDACTED] caps.
- 10 [REDACTED] ball valves.
- 96 [REDACTED] ball valves.

Table 4: Construction

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$0	\$14,937,331	\$0	\$14,937,331
TOTAL DIRECT COSTS	\$0	\$0	\$0	\$14,937,331	\$0	\$14,937,331

Assumptions

In the development of the construction estimate, the following assumptions and clarifications have been made:

- One mobilization and one demobilization.

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LINE 406 HYDROTEST PROJECT

- Work has been scheduled using a 10 hour per day, five-day work week.
- All materials will be received at the designated laydown yard.
- Mechanical excavation will be authorized up to within two feet of the existing pipeline. Hand excavation will be required within the two feet zone and within existing stations.
- All excavations will be backfilled with zero sack slurry or sand padding to one foot above pipeline. Remainder of backfill performed using zero sack and one sack.
- Test heads will be installed at each test break location.
- Frac tanks will be utilized to support hydrostatic testing operations.
- Isolation of twelve existing taps is assumed.
- Non-Destructive Examination/X-Ray of welds.
- Construction Management and Inspection Services during project execution.

Additional Construction Information

- **Site Mobilization / Site Facilities**
 - One mobilization and one demobilization.
 - Two office trailers have been included and located at the laydown yards.
 - Site facility costs cover an eight-month duration.
 - Three laydown yards.
 - Temporary fencing for all laydown yards, test breaks and replacement work areas.
 - Grading for temporary access roads.
- **Site Management / Best Management Practices (BMPs)**
 - Fiber rolls, straw bales, sandbags, sock drains, reinforced poly sheeting, demarcation fence, and silt fencing will be procured and installed for BMP measures.
- **Material Handling**
 - Five loads of material will be unloaded at laydown yard and transported as needed by the Contractor.
- **Traffic Control**
 - Traffic control crew provided during potholing activities, tie-in locations, hydrotesting and during site restoration for approximately 155 days.
- **Utility Locates**
 - 32 Gas locates.
 - 16 Standard locates.
- **Isolate Existing Pipeline**
 - Isolation of existing pipeline will be conducted using existing mainline valves.
 - Isolate and purge pipeline with nitrogen.
 - One anomaly assumed to be replaced.

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LINE 406 HYDROTEST PROJECT

- **Pipeline Excavation / Fabrication / Installation**
 - Removal of 4,200 square feet (SF) of asphalt.
 - Removal of 200 SF of concrete.
 - Excavate test break locations totaling approximately 710 cubic yards (CY).
 - Fabricate six test heads.
 - Fabricate five tie-in pieces and one fitting.
 - Weld, lay, and coat pipeline.
- **Hydrotest / Pressure Test Pipeline**
 - Eight test sections will be hydrotested.
 - The replacement pipe will be hydrotested in laydown yard prior to installation.
 - Test heads will be installed below grade.
- **Tie-In Pipeline**
 - 16 days to prepare tie-ins for test breaks.
 - Eight 24-hour shifts to conduct tie-ins for each test section.
- **Site Restoration**
 - Hydroseeding of disturbed areas.
 - Restoration work and grading of unimproved work sites.
 - 4,200 square feet (SF) base paving and 13,200 SF of grind and cap concrete work.
 - 20,000 SF of temporary fence removal.
 - BMP removal and final clean up.
- **Site Demobilization**
 - Demobilization of site facilities, crew, and equipment.
 - One day to haul excess piping to SoCalGas designated yard.
- **Field Overhead**
 - Full-Time Project Manager.
 - Full-Time Superintendent.
 - Full-Time Cost Controller.
 - Full-Time Safety Person.
 - Part-Time Scheduler.
 - Part-Time Timekeeper.
 - One water truck and driver for the duration of the project to provide dust suppression.
 - One low bed truck included to assist with equipment move arounds.
 - Two site security personnel for non-working hours.

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LINE 406 HYDROTEST PROJECT

Table 5: Environmental/Permitting/Monitoring/Abatement

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$18,962	\$128,418	\$347,090	\$923,907	\$55,792	\$1,474,169
TOTAL DIRECT COSTS	\$18,962	\$128,418	\$347,090	\$923,907	\$55,792	\$1,474,169

Assumptions

In calculating the total estimated environmental cost, the following items were considered:

- Environmental Services (permitting support, surveys and monitoring).
- Non-hazardous waste containment/disposal.
- Water Treatment and Hazardous Materials.
- Permit Fees.

The high-level assumptions and specific level of effort to provide environmental support for this project are described in more detail below.

- **Environmental Document Production**
 - Preconstruction Clearance.
 - Environmental Clearance.
- **Preconstruction Surveys**
 - Preconstruction survey reports.
 - Pedestrian survey.
- **Construction Monitoring**
 - One full-time biological monitor for duration of project.
- **Project Closeout Activities**
 - Final site visit and documentation.
 - Restoration support, permit reporting, and closeout.
- **Abatement**
 - 14 days for abatement of ACMs.
- **Water Treatment and Hazardous Materials**
 - Hydrotest water, estimated at 847,000 gallons, from fire hydrant within 10 miles.
 - Hydrotest water will be transported to a central yard for treatment and discharge to surface water.
 - Hydrotest water treatment duration for two months.

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LINE 406 HYDROTEST PROJECT

- Water disposal to storm drain.
- Water sampling and profiling anticipated to support disposal of water generated during construction.
- Hazardous and non-hazardous waste transport and disposal anticipated for various wastes.
- **Permit Fees**
 - Permitting fees related to encroachment permit and traffic control plans from various municipalities such as Ventura County, city of Ventura and city of Los Angeles.
 - Los Angeles County Fire Control Discharge Permit.
 - Five SWPPP fees for laydown yards, test sections, work areas and water storage location.

Table 6: Land & Right-of-Way Acquisition

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$14,962	\$107,697	\$321,538	\$7,481	\$451,678
TOTAL DIRECT COSTS	\$0	\$14,962	\$107,697	\$321,538	\$7,481	\$451,678

Assumptions

In generating for the total estimated cost for Line 406 Hydrotest Project the following items were considered:

- **Labor**
 - One contract land agent.
 - Administrative support and document control specialist.
- **Land Acquisition**
 - Appraisal Reports.
 - Title Reports.
- **Temporary Right of Entry**
 - Laydown yards.
 - Workspaces.
 - Water Storage area is included.

Factors such as location, zoning, current market price and square footage are considered to determine a final estimated value specific to easements and temporary rights of entry permits.

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LINE 406 HYDROTEST PROJECT

Table 7: Company Labor

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$68,006	\$137,554	\$175,178	\$874,288	\$163,180	\$1,418,206
DIRECT NON-LABOR	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DIRECT COSTS	\$68,006	\$137,554	\$175,178	\$874,288	\$163,180	\$1,418,206

Assumptions

SoCalGas Labor - Management, Engineering, and Non-Union Labor

SoCalGas Non-Union Labor is estimated based upon activity level of effort and is divided into the following categories:

- Project Management.
- Project Field Management.
- Project Engineers.
- Construction Management.
- Environmental Services.
- Other Departments.

SoCalGas Field Labor – Distribution, Transmission, Pipeline Integrity, and Other Field Departments

SoCalGas Union Labor costs were developed with the guidance of SoCalGas Construction Management and whose costs are duration dependent and activity specific.

Table 8: Other Costs

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$154,747	\$234,174	\$289,198	\$227,428	\$137,881	\$1,043,426
TOTAL DIRECT COSTS	\$154,747	\$234,174	\$289,198	\$227,428	\$137,881	\$1,043,426

Assumptions

Other costs assume use of contracted services for certain Engineering, Survey, Project Management, and Design activities. These costs are included to account for the anticipated professional services required to support project planning, design development, execution, and closeout. The major components in this category include:

- Engineering and Design Services.
- Project Management Services.
- Surveying and As-builts.
- Project Support Services.

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LINE 407 HYDROTEST PROJECT

Table 1: Total Direct Project Costs – All Capital

TOTAL PROJECT COSTS - CAPITAL	Stage 1^{1,2}	Stage 2³	Stage 3⁴	Stage 4⁵	Stage 5⁶	Total⁷
DIRECT LABOR	\$70,384	\$137,916	\$177,562	\$608,765	\$139,108	\$1,133,735
DIRECT NON-LABOR	\$130,228	\$431,962	\$1,629,211	\$11,006,717	\$165,998	\$13,364,116
TOTAL COSTS - CAPITAL	\$200,612	\$569,878	\$1,806,773	\$11,615,482	\$305,106	\$14,497,851

Project Description

The Line 407 Hydrotest Gas Transmission Safety Rule (GTSR) Hydrotest Project will hydrotest approximately 5.1 miles of transmission pipeline from Tarzana, Los Angeles County to Los Angeles, Los Angeles County. This project includes two continuous test sections, each with an approximate length of 2.4 miles and 2.7 miles respectively, along with a pipeline replacement of 0.05 miles and replacement 75 feet of lateral pipeline. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a Total Installed Cost (TIC) estimate to implement the above scope of work. The TIC estimate includes direct costs associated with project management, engineering and design, environmental permitting, land acquisition, material and equipment procurement, and construction. The estimate was prepared in accordance with AACE Class 3 estimating practices and utilizes a combination of quantity-based, unit-cost, and factored estimating techniques.

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of the project costs are expended during the construction phase. The construction schedule is assumed to be 100 days.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

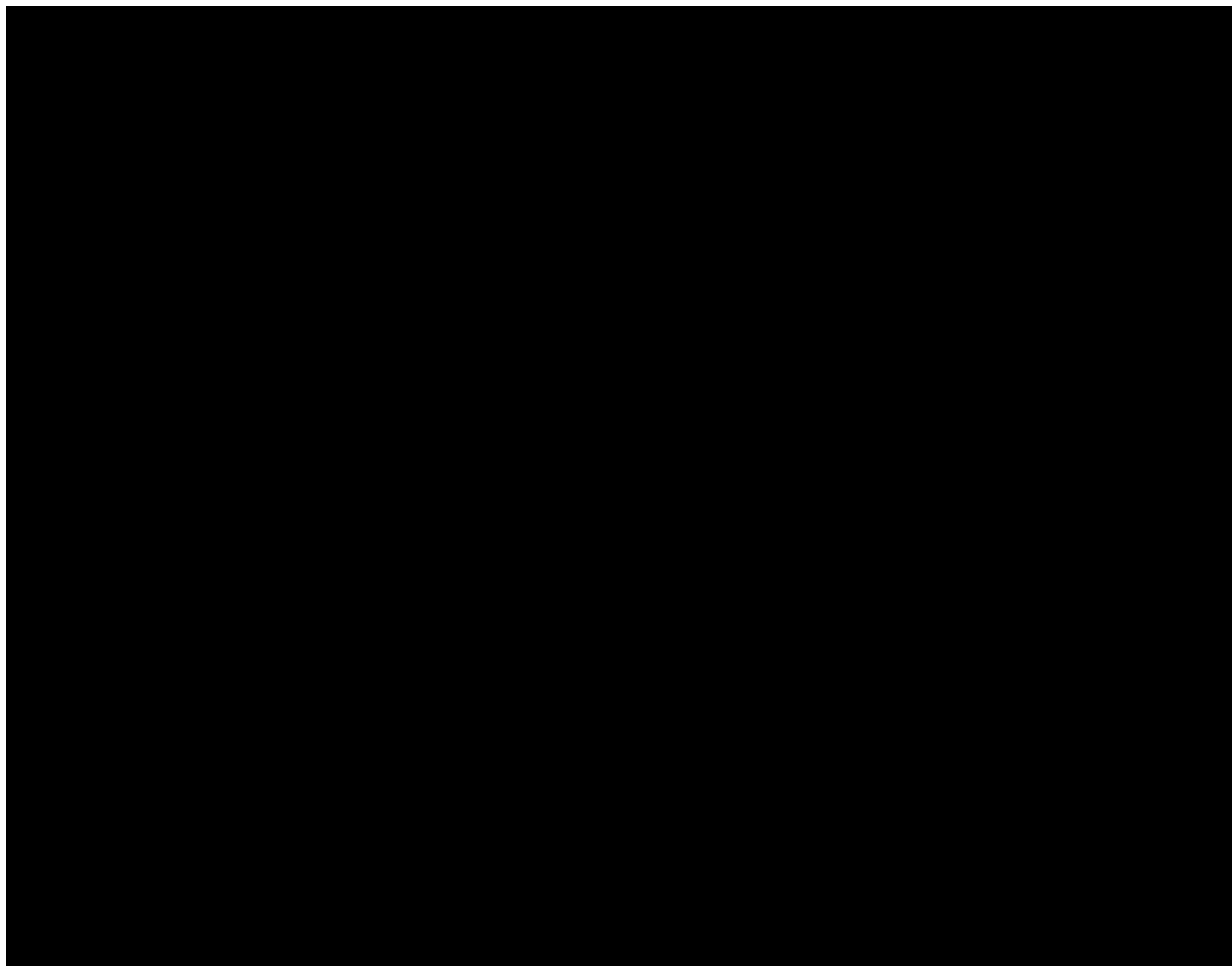
⁵ Construction.

⁶ Closeout.

⁷ Values may not add to total due to rounding.

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LINE 407 HYDROTEST PROJECT

Figure 1: Overview Map for Line 407 Hydrotest Project



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LINE 407 HYDROTEST PROJECT

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	4.962
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	4.962

The direct costs for each area are summarized below.

Table 3: Material

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$688,532	\$712,001	\$0	\$1,400,533
TOTAL DIRECT COSTS	\$0	\$0	\$688,532	\$712,001	\$0	\$1,400,533

Assumptions

Materials for this project will not be purchased until final internal authorization has been granted to purchase long lead time material. This will allow for material to be procured, inspected and delivered to coincide with the anticipated construction start date. The principal cost-driving materials necessary for this project include:

- 408 feet of [REDACTED] pipe.
- Two [REDACTED] ball valves.
- 24 [REDACTED] ball valves.
- Four [REDACTED] ball valves.

Table 4: Construction

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$0	\$8,624,477	\$0	\$8,624,477
TOTAL DIRECT COSTS	\$0	\$0	\$0	\$8,624,477	\$0	\$8,624,477

Assumptions

In the development of the construction estimate, the following assumptions and clarifications have been made:

- One mobilization and one demobilization.
- Work has been scheduled using a 10-hour per day, five-day work week.

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- All materials, equipment and testing components will be received, staged and distributed from the laydown yard.
- Mechanical excavation will be authorized up to within two feet of the existing pipeline. Hand excavation will be required within the two feet zone and within existing stations.
- Test heads will be installed at each hydrotest break location.
- Temporary water storage and pumping equipment (frac tanks and associated temporary fill piping) will support hydrostatic testing operations.
- Hydrostatic testing will be performed on three primary test sections with individual test breaks and test heads.
- Pipeline isolation required for hydrostatic testing will be achieved through a combination of existing mainline valves (MLV) prior to testing activities.
- Hydrotest water will be hauled off and properly disposed of by the Environmental Contractor following completions of testing activities.
- All excavations will be backfilled with zero sack slurry or sand padding to one foot above pipeline. Remainder of backfill will be performed using native soil.
- Three pressure control fittings (PCFs) will be installed to utilize to support customers.
- Isolation and final tie-ins for a 24-hour continuous duration.
- Line taps will be fabricated and then reconnected after line is brought back into service.
- Non-Destructive Examination/X-Ray of welds.
- Construction Management and Inspection Services during project execution.
- Hydrotest water will be hauled off and disposed by others.

Additional Construction Information

- **Site Mobilization / Site Facilities**
 - One mobilization and one demobilization.
 - Two office trailers have been included for management and inspection personnel at the northern and southern station laydown yards.
 - Site facility costs cover a three-month duration.
 - 500 linear feet (LF) of temporary fencing for all laydown yards.
 - Track out plates have been included at street access points.
- **Site Management / Best Management Practices (BMPs)**
 - Fiber rolls, demarcation fence, straw bales, sock drains, and silt fencing will be procured and installed for BMP measures.
- **Material Handling**
 - One load of SoCalGas furnished material will be unloaded by the contractor at the laydown yard.
- **Traffic Control**
 - Nine days of traffic control included during potholing activities.
- **Utility Locates**
 - 36 Gas Locates.

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LINE 407 HYDROTEST PROJECT

- Four Standard Locates.
- **Pipeline Excavation / Fabrication**
 - Remove and dispose of 2,400 square feet (SF) of asphalt.
 - Excavate 215 linear feet (LF) of trench in preparation of replacement section.
 - Weld, lay and coat 215 LF of pipeline.
 - Excavate 475 cubic yards (CY) for tie-in pieces excavation locations.
 - Fabricate tie-in pieces for pipeline.
 - Fabricate test heads and isolation caps of various sizes.
- **Isolate Existing Pipeline**
 - Isolate pipeline using existing MLVs.
 - Purge existing pipeline with nitrogen.
- **Hydrotest / Pressure Test Pipeline**
 - Three test sections will be hydrotested.
 - Test heads will be installed below grade. Costs for vertical offset installation of test heads to an above-ground orientation have not been included.
 - Contractor will assist with the preparatory work for water contractor.
 - Test heads will be fabricated by onsite contractor.
 - The pipeline will be tested in three individual segments: isolation caps, bypass, and new pipe.
- **Tie-In Pipeline**
 - Five days to prep tie-ins for test breaks and the replacement section.
 - Three 24-hr shifts to make hot tie-ins.
 - One 10-hr shift to make cold tie-in.
 - 18 tap reconnections.
 - Two supports of mainline valve opening.
 - The existing pipeline will be tied in during a 24-hour continuous shift.
- **Retire / Abandon Existing Pipeline**
 - 215 feet of existing [REDACTED] pipeline.
- **Site Restoration**
 - 3,400 square feet (SF) of base paving.
 - 2,700 SF of grind and cap concrete work.
 - Restoration of four traffic loops.
 - 225 LF of street striping.
 - 180 LF of concrete curb and gutter.
 - 1,600 LF of temporary fence removal.
 - BMP removal and final clean up.

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LINE 407 HYDROTEST PROJECT

- Hydroseeding of disturbed areas.
- Restoration of work site locations to original condition.
- **Site Demobilization**
 - One shift included for excess materials to be hauled to SoCalGas designated yard.
 - Demobilization of site facilities, crew, and equipment.
- **Field Overhead**
 - Full-Time Project Manager.
 - Full-Time Superintendent.
 - Full-Time Cost Controller.
 - Full-Time Safety Person.
 - Part-Time Scheduler.
 - Part-Time Timekeeper.
 - One water truck and driver are included for full project duration for dust suppression.
 - One Low-bed truck have been included to assist with equipment move arounds.
 - Two site security personnel have been employed for all non-working hours.

Table 5: Environmental/Permitting/Monitoring/Abatement

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$6,381	\$272,954	\$401,491	\$647,521	\$43,042	\$1,371,389
TOTAL DIRECT COSTS	\$6,381	\$272,954	\$401,491	\$647,521	\$43,042	\$1,371,389

Assumptions

In calculating the total estimated environmental cost, the following items were considered:

- Environmental Services (permitting support, surveys and monitoring).
- Non-hazardous waste containment/disposal.
- Abatement of Asbestos Containing Material (ACM).
- Water Treatment and Hazardous Materials.
- Permit Fees.

The high-level assumptions and specific level of effort to provide environmental support for this project are described in more detail below.

- **Environmental Document Production**
 - Protocol Survey Reports.
 - Preconstruction Clearance.
 - Storm Water Pollution and Prevention Plan (SWPPP) and Notice of Intent (NOI).
 - Application/Report of Waste Discharge – ROWD for RWQCB and Notice of Intent (NOI), Description of

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LINE 407 HYDROTEST PROJECT

- Activities Report and Facility Map.
 - Los Angeles County Flood Control District (LACFCD), EPIC-LA Permit Application,
 - Worker Environmental Awareness Procedure (WEAP).
 - Environmental Clearance.
- **Preconstruction Surveys**
 - Preconstruction wildlife and nesting bird survey reports.
 - Preconstruction wildlife survey report.
 - Rare plant survey and topsoil flagging.
- **Construction Monitoring**
 - One full-time monitor for duration of project.
- **Project Closeout Activities**
 - Restoration support, permit reporting, and closeout.
- **Abatement**
 - Six days for abatement of ACMs.
- **Water Treatment and Hazardous Materials**
 - Hydrotest water, estimated at 990,000 gallons to be obtained from hydrant.
 - Hydrotest water is assumed to be hauled off and properly disposed of by the Environmental Contractor following completions of testing activities.
 - Three days for hydrotest standby support.
 - Waste sampling and profiling anticipated to support disposal of wastes generated during construction.
 - Hazardous and non-hazardous waste transport and disposal anticipated for various wastes.
- **Permit Fees**
 - Permit fees related to encroachment permit and traffic control plans from the city of Los Angeles.
 - Permitting fees for three counties/municipalities and Caltrans.
 - California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) exempt.
 - California Department of Fish & Wildlife (CDFW) Fee.
 - SWPPP fee.
 - LACFCD fee.

Table 6: Land & Right-of-Way Acquisition

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$8,551	\$195,217	\$788,020	\$4,275	\$996,063
TOTAL DIRECT COSTS	\$0	\$8,551	\$195,217	\$788,020	\$4,275	\$996,063

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LINE 407 HYDROTEST PROJECT

Assumptions

In generating for the total estimated cost for Line 407 Hydrotest Project the following items were considered:

- **Labor**
 - Administrative assistant and document control.
 - Senior Land Agent.
 - Land Manager.
 - Land Advisor
- **Acquisition Costs**
 - Appraisal Reports.
 - Title Reports.
- **Temporary Right of Entry**
 - Laydown yards.

Factors such as location, zoning, current market price and square footage are considered to determine a final estimated value specific to easements and temporary rights of entry permits.

Table 7: Company Labor

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$70,384	\$137,916	\$177,562	\$608,765	\$139,108	\$1,133,735
DIRECT NON-LABOR	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DIRECT COSTS	\$70,384	\$137,916	\$177,562	\$608,765	\$139,108	\$1,133,735

Assumptions

SoCalGas Labor - Management, Engineering, and Non-Union Labor

SoCalGas Non-Union Labor is estimated based upon activity level of effort and is divided into the following categories:

- Project Management.
- Project Field Management.
- Project Engineers.
- Construction Management.
- Environmental Services.
- Other Departments.

SoCalGas Field Labor – Distribution, Transmission, Pipeline Integrity, and Other Field Departments

SoCalGas Union Labor costs were developed with the guidance of SoCalGas Construction Management and whose costs are duration dependent and activity specific.

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LINE 407 HYDROTEST PROJECT

Table 8: Other Costs

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$123,847	\$150,457	\$343,971	\$234,699	\$118,680	\$971,655
TOTAL DIRECT COSTS	\$123,847	\$150,458	\$343,971	\$234,699	\$118,680	\$971,655

Assumptions

Other costs assume use of contracted services for certain Engineering, Survey, Project Management, and Design activities. These costs are included to account for the anticipated professional services required to support project planning, design development, execution, and closeout. The major components in this category include:

- Engineering and Design Services.
- Project Management Services.
- Surveying and As-builts.
- Project Support Services.

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LINE 408 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost - All Capital

PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total
DIRECT LABOR	\$11,764	\$29,295	\$57,067	\$209,535	\$168,899	\$476,558
DIRECT NON-LABOR	\$109,135	\$172,833	\$1,036,341	\$4,713,393	\$106,437	\$6,138,138
TOTAL COSTS - CAPITAL	\$120,898	\$202,128	\$1,093,407	\$4,922,928	\$275,335	\$6,614,696

Project Description

The Gas Transmission Safety Rule (GTSR) Line 408 Replacement Project will replace approximately 0.2 miles of [REDACTED] and [REDACTED] diameter pipe in Newhall, Los Angeles County. This project includes four continuous sections and includes 39 feet of lateral pipe originating from Line 408. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁷ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

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LINE 408 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 50 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.161
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.161

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LINE 1003 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1^{1,2}	Stage 2³	Stage 3⁴	Stage 4⁵	Stage 5⁶	Total⁷
DIRECT LABOR	\$30,986	\$62,626	\$102,836	\$336,561	\$189,874	\$722,883
DIRECT NON-LABOR	\$203,331	\$219,566	\$634,914	\$5,960,070	\$104,767	\$7,122,649
TOTAL COSTS - CAPITAL	\$234,318	\$282,192	\$737,750	\$6,296,631	\$294,641	\$7,845,532

Project Description

The Gas Transmission Safety Rule (GTSR) Line 1003 Replacement project will replace approximately 0.15 miles of [REDACTED] pipeline in the city of Carpinteria, Santa Barbara County. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

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LINE 1003 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 40 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.153
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.153

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LINE 1004 HYDROTEST PROJECT

Table 1: Total Direct Project Costs – All Capital

TOTAL PROJECT COSTS - CAPITAL	Stage 1^{1,2}	Stage 2³	Stage 3⁴	Stage 4⁵	Stage 5⁶	Total⁷
DIRECT LABOR	\$68,898	\$136,750	\$115,182	\$726,835	\$162,583	\$1,210,247
DIRECT NON-LABOR	\$157,949	\$420,690	\$964,762	\$11,549,375	\$191,566	\$13,284,343
TOTAL COSTS - CAPITAL	\$226,847	\$557,439	\$1,079,944	\$12,276,211	\$354,149	\$14,494,590

Project Description

The Line 1004 Gas Transmission Safety Rule (GTSR) Hydrotest Project will hydrotest approximately 3.4 miles of pipe. The project includes four test sections, four replacement sections and one lateral line. The project begins in the city of Santa Barbara, Santa Barbara County and ends in the city of Ventura, Los Angeles County. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a Total Installed Cost (TIC) estimate to implement the above scope of work. The TIC estimate includes direct costs associated with project management, engineering and design, environmental, permitting, land acquisition, material and equipment procurement, and construction. The estimate was prepared in accordance with AACE Class 3 estimating practices and utilizes a combination of quantity-based, unit-cost, and factored estimating techniques.

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of the project costs are expended during the construction phase. The construction schedule is assumed to be 144 days.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

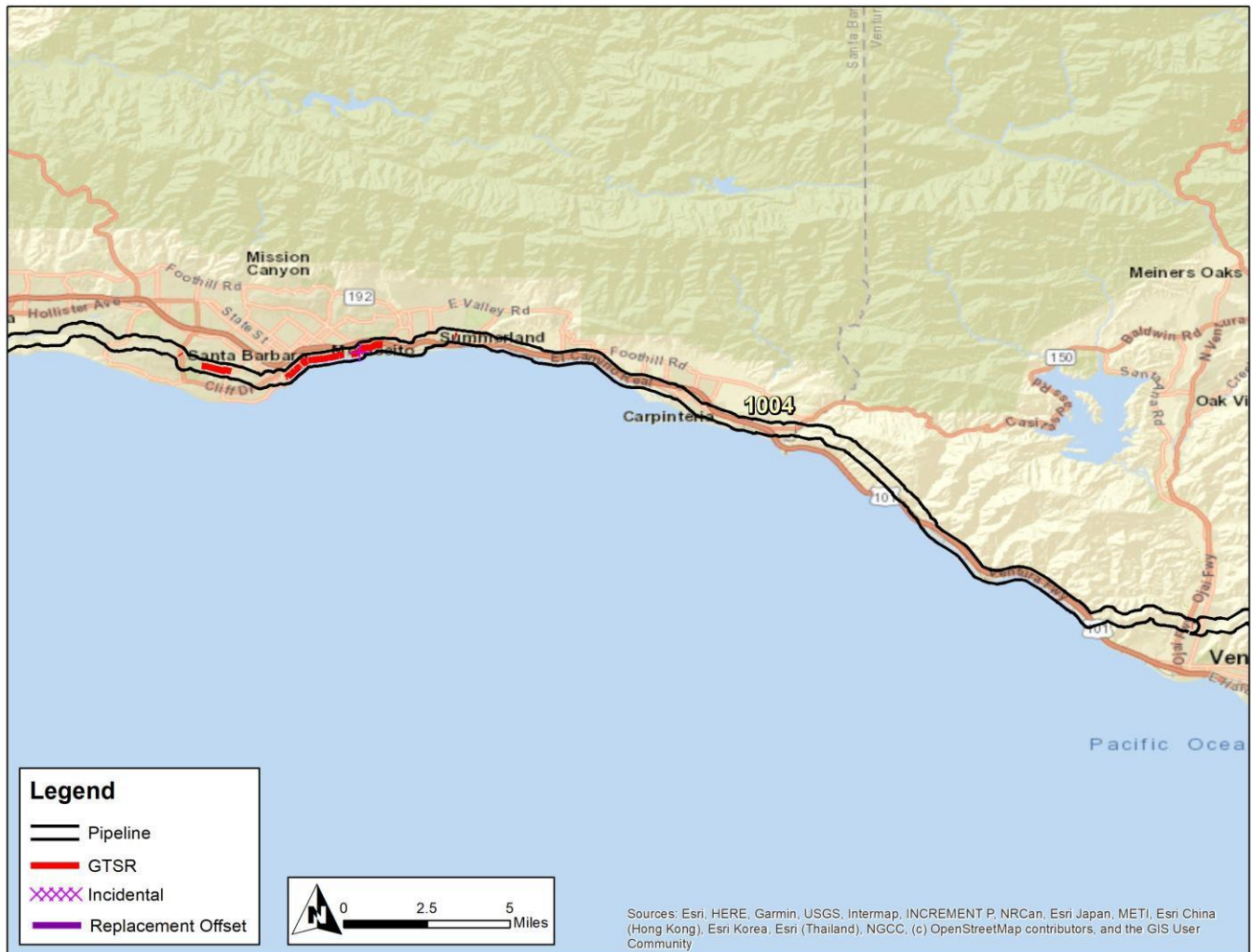
⁶ Closeout.

⁷ Values may not add to total due to rounding.

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LINE 1004 HYDROTEST PROJECT

Figure 1: Overview Map for Line 1004 Hydrotest Project



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LINE 1004 HYDROTEST PROJECT

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	3.415
INCIDENTAL	0.005
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	3.420

The direct costs for each area are summarized below.

Table 3: Material

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$305,358	\$80,255	\$0	\$385,614
TOTAL DIRECT COSTS	\$0	\$0	\$305,358	\$80,255	\$0	\$385,614

Assumptions

Materials for this project will not be purchased until final internal authorization has been granted to purchase long lead time material. This will allow for material to be procured, inspected and delivered to coincide with the anticipated construction start date. The principal cost-driving materials necessary for this project include:

- 233 feet of [REDACTED] pipe.
- Seven ball valves.

Table 4: Construction

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$0	\$10,282,017	\$0	\$10,282,017
TOTAL DIRECT COSTS	\$0	\$0	\$0	\$10,282,017	\$0	\$10,282,017

Assumptions

In the development of the construction estimate, the following assumptions and clarifications have been made:

- One mobilization and one demobilization.
- Work has been scheduled using a 10 hour per day, five-day work week.
- All construction materials, equipment, and testing components will be received, staged and distributed from the designated laydown yards.

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LINE 1004 HYDROTEST PROJECT

- Mechanical excavation is assumed to be permitted to be within two feet of the existing pipeline. Hand excavation is assumed within the final two-foot tolerance zone.
- Excavations are assumed to be backfilled with sand padding or zero slurry to one foot above the pipeline, with the remaining backfill performed using zero sack and one sack.
- Pipeline isolation required for hydrostatic testing is assumed to be achieved through closing a combination of existing mainline valves (MLV) prior to testing activities.
- Frac tanks will be utilized to support hydrostatic testing operations.
- Hydrostatic testing will be performed on four test sections with individual test breaks and test heads.
- Test heads will be installed at each hydrotest break location.
- Hydrotest water to be hauled off and properly disposed of by Environmental Contractor following completion of testing activities.
- Non-Destructive Examination/X-Ray of welds.
- Construction Management and Inspection Services during project execution.

Additional Construction Information

- **Site Mobilization / Site Facilities**
 - One mobilization of crew and equipment.
 - Four laydown yards.
 - 4,570 feet of temporary fencing for the laydown yards.
 - Two office trailers have been included for management and inspection personnel at the laydown yard.
 - Site facility costs cover a seven-month duration.
- **Site Management / Best Management Practices (BMPs)**
 - Fiber rolls, demarcation fence, straw bales, sock drains, and silt fencing will be procured and installed for BMP measures.
- **Material Handling**
 - Two loads of SoCalGas furnished material will be unloaded at the laydown yards.
- **Traffic Control**
 - Traffic control for approximately 80 days is included during potholing, tie-ins, hydrotesting, and site restoration activities.
- **Site ROW Clearing**
 - 4,350 square yards (SY) of clearing test break locations.
- **Utility Locates**
 - 22 locates for all test breaks and replacements.
- **Pipeline Excavation / Fabrication / Installation**
 - Site demolition includes removal and disposal of 480 square feet (SF) asphalt and 400 SF concrete.

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LINE 1004 HYDROTEST PROJECT

- Excavate 690 cubic yards (CY) for hydrotest and replacement locations.
- Fabricate [REDACTED] and [REDACTED] tie-in pieces, test heads, and isolation caps.
- **Isolate Existing Pipeline**
 - Valve closure support for [REDACTED] and [REDACTED] valves.
 - Purge three existing pipeline sections with nitrogen.
- **Hydrotest / Pressure Test Pipeline**
 - Four test sections will be hydrotested.
 - One test for all replacement sections that will be conducted aboveground at the laydown yard prior to installation.
 - The remaining test heads will be installed below-grade.
- **Tie-In Pipeline**
 - Eight days to prep tie-ins for test breaks.
 - Eight shifts to make tie-ins for each test section.
 - Six tap reconnections.
 - Support for mainline valve operation.
- **Retire / Abandon Existing Pipeline**
 - 220 feet of existing pipeline to be removed.
- **Site Restoration**
 - 480 SF of base paving.
 - 4,800 SF of grind and cap.
 - 160 feet of striping.
 - 2,900 feet of temporary fence removal.
 - 400 SF of concrete sidewalk restoration.
 - Landscaping restoration for all disturbed areas.
 - BMP removal and final clean up.
 - Removal of all temporary fencing.
- **Site Demobilization**
 - All site facilities will be demobilized.
 - One shift included for excess piping to be hauled to SoCalGas designated yard.
 - One demobilization for crew and equipment.
- **Field Overhead**
 - One Project Manager, one Superintendent, one Cost Controller, and one Safety Personnel have been included for full project duration.
 - One Part-Time Scheduler and one Part-Time Timekeeper.
 - One water truck and driver is included for the full project duration for dust suppression.

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- One Low-bed truck is included to assist with equipment move arounds.
- Two site security personnel have been employed for all non-working hours.

Table 5: Environmental/Permitting/Monitoring/Abatement

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$12,054	\$193,748	\$203,886	\$822,819	\$45,492	\$1,277,999
TOTAL DIRECT COSTS	\$12,054	\$193,748	\$203,886	\$822,819	\$45,492	\$1,277,999

Assumptions

In calculating the total estimated environmental cost, the following items were considered:

- Environmental Services (permitting support, surveys and monitoring).
- Non-hazardous waste containment/disposal.
- Abatement of Asbestos Containing Material (ACM).
- Water Treatment and Hazardous Materials.
- Permit Fees.
- Mitigation Fees.

The high-level assumptions and specific level of effort to provide environmental support for this project are described in more detail below.

- **Environmental Document Production**
 - Protocol Survey Reports.
 - Preconstruction Clearance.
 - Storm Water Pollution and Prevention Plan (SWPPP) and Notice of Intent (NOI).
 - Worker Environmental Awareness Procedure (WEAP).
 - Environmental Clearance.
- **Preconstruction Surveys**
 - No cultural resources are anticipated.
 - Preconstruction wildlife and nesting bird survey reports.
 - Preconstruction wildlife survey report.
 - Cultural survey.
 - Rare plant survey and topsoil flagging.
- **Construction Monitoring**
 - One full-time monitor for duration of project.
 - 111 days full time monitoring.

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LINE 1004 HYDROTEST PROJECT

- **Project Closeout Activities**
 - Restoration support, permit reporting, and closeout.
- **Abatement**
 - 6 days for abatement of ACMs.
- **Water Treatment and Hazardous Materials**
 - Hydrotest water to be hauled off and properly disposed of following completion of testing activities.
 - Hydrotest water is estimated at 260,000 gallons.
 - Water delivery for four days to project site.
 - Water disposal is included.
 - Two days for hydrotest standby support.
 - Waste sampling and profiling anticipated to support disposal of wastes generated during construction.
 - Hazardous and non-hazardous waste transport and disposal anticipated for various wastes.
- **Permit Fees**
 - Permitting fees for Municipal, Environmental, and Land & Right of Way.
 - Permitting fees related to encroachment permit and traffic control plans.
 - Permitting fees for three counties/municipalities and Caltrans for each project.
 - SWPPP fee.

Table 6: Land & Right-of-Way Acquisition

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$13,195	\$90,873	\$136,289	\$6,597	\$246,954
TOTAL DIRECT COSTS	\$0	\$13,195	\$90,873	\$136,289	\$6,597	\$246,954

Assumptions

In generating for the total estimated cost for Line 1004 Hydrotest Project the following items were considered:

- **Labor**
 - One Senior Land Agent to support land acquisition.
- **Land Acquisition**
 - Appraisal Reports.
 - Title Reports.
- **Legal Services**
 - Assume legal services from third party to support parcel acquisition and contract negotiations for 263 hours.

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LINE 1004 HYDROTEST PROJECT

- **Temporary Right of Entry**
 - Three laydown yards.
 - Four workspaces.

Factors such as location, zoning, current market price and square footage are considered to determine a final estimated value specific to easements and temporary rights of entry permits.

Table 7: Company Labor

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$68,898	\$136,750	\$115,182	\$726,835	\$162,583	\$1,210,247
DIRECT NON-LABOR	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DIRECT COSTS	\$68,898	\$136,750	\$115,182	\$726,835	\$162,583	\$1,210,247

Assumptions

SoCalGas Labor - Management, Engineering, and Non-Union Labor

SoCalGas Non-Union Labor is estimated based upon activity level of effort and is divided into the following categories:

- Project Management.
- Project Field Management.
- Project Engineers.
- Construction Management.
- Environmental Services.
- Other Departments.

SoCalGas Field Labor – Distribution, Transmission, Pipeline Integrity, and Other Field Departments

SoCalGas Union Labor costs were developed with the guidance of SoCalGas Construction Management and whose costs are duration dependent and activity specific.

Table 8: Other Costs

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$145,895	\$213,747	\$364,645	\$227,996	\$139,477	\$1,091,759
TOTAL DIRECT COSTS	\$145,895	\$213,747	\$364,645	\$227,996	\$139,477	\$1,091,759

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1004 HYDROTEST PROJECT

Assumptions

Other costs assume use of contracted services for certain Engineering, Survey, Project Management, and Design activities. These costs are included to account for the anticipated professional services required to support project planning, design development, execution, and closeout. The major components in this category include:

- Engineering and Design Services.
- Project Management Services.
- Surveying and As-builts.
- Project Support Services.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 1015 HYDROTEST PROJECT

Table 1: Total Direct Project Costs – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1^{1,2}	Stage 2³	Stage 3⁴	Stage 4⁵	Stage 5⁶	Total⁷
DIRECT LABOR	\$56,666	\$190,562	\$96,173	\$611,615	\$180,530	\$1,135,546
DIRECT NON-LABOR	\$416,478	\$1,666,063	\$1,082,775	\$14,526,802	\$319,974	\$18,012,092
TOTAL COSTS - CAPITAL	\$473,144	\$1,856,625	\$1,178,948	\$15,138,417	\$500,504	\$19,147,638

Project Description

The Line 1015 Gas Transmission Safety Rule (GTSR) Hydrotest Project will hydrotest approximately 8.8 miles of pipe from the cities of Placentia to Santa Ana. This project includes approximately 93 feet of nearby supply line originating from Line 1015. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a Total Installed Cost (TIC) estimate to implement the above scope of work. The TIC Estimate includes direct costs associated with project management, engineering and design, environmental, permitting, land acquisition, material and equipment procurement, and construction. The estimate was prepared in accordance with AACE Class 3 estimating practices and utilizes a combination of quantity-based, unit-cost, and factored estimating techniques.

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of the project costs are expended during the construction phase. The construction schedule is assumed to be 103 days.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

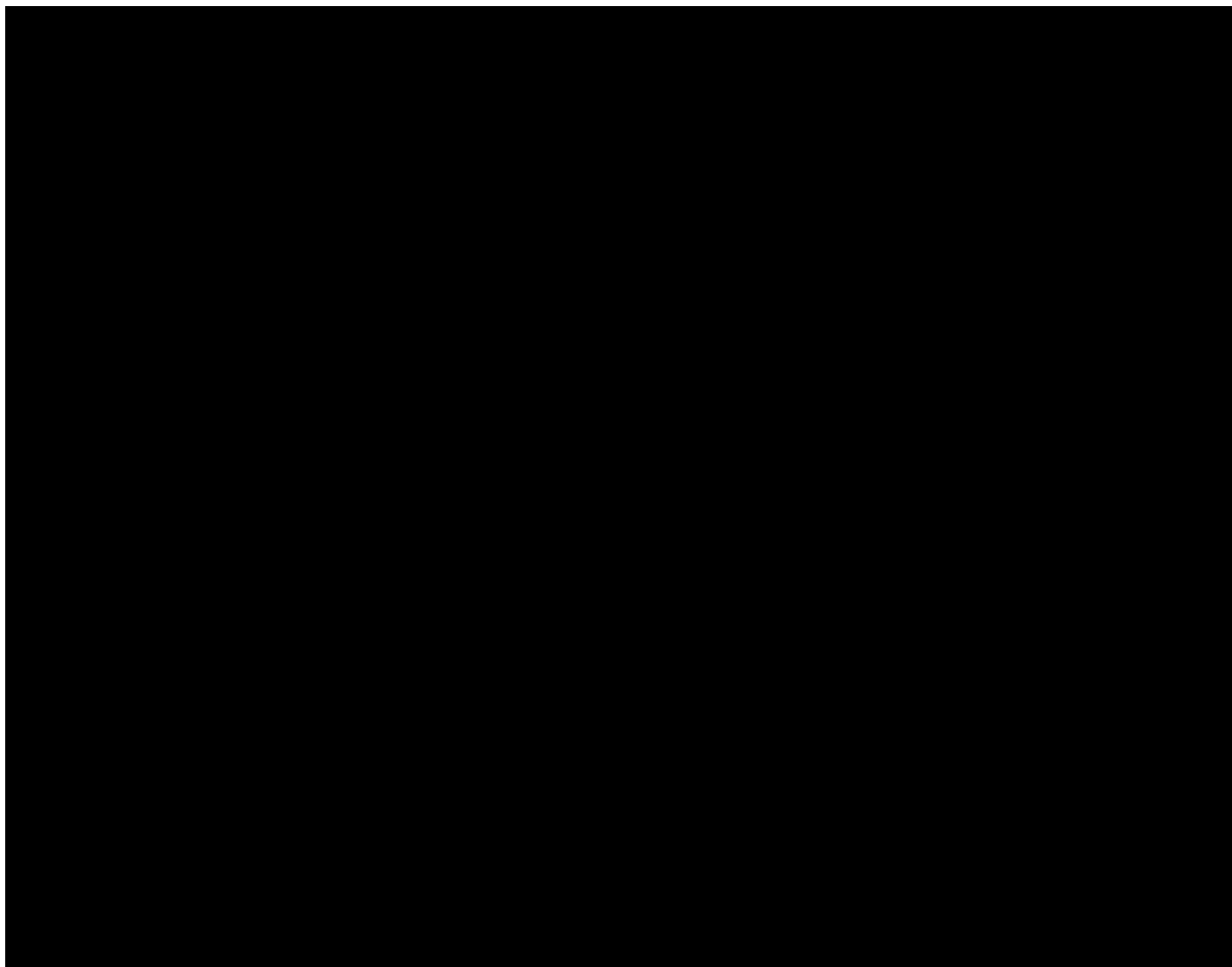
⁵ Construction.

⁶ Closeout.

⁷ Values may not add to total due to rounding.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 1015 HYDROTEST PROJECT

Figure 1: Overview Map for Line 1015 Hydrotest Project



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Table 2: Project Mileage

TYPE	MILEAGE
GTSR	7.103
INCIDENTAL	1.985
REPLACEMENT OFFSET	0.004
TOTAL MILEAGE	9.092

The direct costs for each area are summarized below.

Table 3: Material

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$128	\$464,780	\$790,327	\$0	\$1,255,234
TOTAL DIRECT COSTS	\$0	\$128	\$464,780	\$790,327	\$0	\$1,255,234

Assumptions

Materials for this project will not be purchased until final internal authorization has been granted to purchase long lead time material. This will allow for material to be procured, inspected and delivered to coincide with the anticipated construction start date. The principal cost-driving materials necessary for this project include:

- 394 feet of [REDACTED] pipe.
- Six [REDACTED] test heads.
- Two [REDACTED] Pressure Control Fittings (PCFs).

Table 4: Construction

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$2,642	\$0	\$11,896,054	\$0	\$11,898,696
TOTAL DIRECT COSTS	\$0	\$2,642	\$0	\$11,896,054	\$0	\$11,898,696

Assumptions

In the development of the construction estimate, the following assumptions and clarifications have been made:

- One mobilization and one demobilization.
- Work has been scheduled using a 10-hour per day, five-day work week.
- All materials, equipment and testing components will be received, staged and distributed at the laydown yard.

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- Mechanical excavation will be authorized up to within two feet of the existing pipeline. Hand excavation will be required within the two feet zone and 100% hand excavation within existing stations.
- All excavations will be backfilled with zero sack slurry or sand padding to one foot above pipeline. Remainder of backfill will be performed using zero sack and one sack.
- Isolation of eight existing taps.
- Hydrostatic testing will be performed on four primary test sections with individual test breaks and test heads.
- Pipeline isolation required to perform hydrotest activities will be achieved using existing mainline valves (MLVs).
- Line taps will be fabricated and then reconnected after line is brought back into service.
- Non-Destructive Examination/X-Ray of welds.
- Construction Management and Inspection Services during project execution.

Additional Construction Information

- **Site Mobilization / Site Facilities**
 - One mobilization and one demobilization.
 - Two laydown yards will be acquired.
 - Two office trailers and site facility equipment will be included for management and inspection personnel at one of the laydown yards.
- **Site Management / Best Management Practices (BMPs)**
 - Assumes six days for BMP installation and maintenance.
 - Temporary fencing will be installed for BMP measures at the laydown yards.
- **Material Handling**
 - Four days to unload and stage of Company materials at laydown yard and transport as needed.
- **Traffic Control**
 - Daily traffic control closures at all locations except for the water storage areas.
- **Utility Locates**
 - Utility locates at all project locations is included.
- **Pipeline Excavation / Fabrication / Installation**
 - Excavation, layout, weld, string, coating of pipeline, backfill and base pave.
 - Installation and fabrication of replacement piping.
 - Installation and fabrication of [REDACTED] test heads.
- **Isolate Existing Pipeline**
 - Hot cutting of existing pipeline and weld on two isolation caps.
 - Mainline isolations at two locations.
 - Assumes a 24-hour isolation for the mainline.

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- Includes purging existing pipelines with nitrogen.
- **Hydrotest / Pressure Test Pipeline**
 - For a total of five hydrotests; four for the mainline test and one for the replacement pipe.
 - Four test break locations to install test heads.
 - Four 12-hour shifts to fill pipeline with water.
 - Four 12-hour shifts to test pipeline.
 - Four 12-hour shifts to dewater pipeline.
 - Four 16-hour shifts to dry pipeline.
- **Tie-In Pipeline**
 - The existing pipeline will be tied in during a 24-hour continuous shift.
 - Three 10-hour cold tie-ins at the test breaks.
 - Seven 10-hour shifts for the tap reconnections.
- **Site Restoration**
 - Paving restoration of concrete curb/gutter and flatwork.
 - Grind and cap will be two feet outside the grounded area for the steel plates at all locations.
 - Removal of BMP measures and final clean-up.
- **Site Demobilization**
 - Demobilization of site facilities, crew, and equipment.
- **Field Overhead**
 - Full-Time Superintendent.
 - Full-Time Cost Controller.
 - Full-Time Timekeeper.
 - Full-Time Safety Person.
 - Full-Time Scheduler.
 - Three site security personnel for non-working hours; two guards working 24-hours for four weeks during the line seasoning duration.

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LINE 1015 HYDROTEST PROJECT

Table 5: Environmental/Permitting/Monitoring/Abatement

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$2,255	\$169,387	\$701,306	\$97,426	\$970,374
TOTAL DIRECT COSTS	\$0	\$2,255	\$169,387	\$701,306	\$97,426	\$970,374

Assumptions

In calculating the total estimated environmental cost, the following items were considered:

- Environmental Services (permitting support, surveys and monitoring).
- Non-hazardous waste containment/disposal.
- Abatement of Asbestos Containing Material (ACM).
- Water Treatment and Hazardous Materials.
- Permit Fees.

The high-level assumptions and specific level of effort to provide environmental support for this project are described in more detail below.

- **Environmental Document Production**
 - Preconstruction Clearance.
 - Storm Water Pollution and Prevention Plan (SWPPP) and Notice of Intent (NOI).
 - Development of Erosion Control Plan.
 - Water Discharge Permit support.
- **Preconstruction Surveys**
 - One half-day to complete a preconstruction survey.
- **Construction Monitoring**
 - One full-time monitor for five days, 10-hour shifts.
 - One part-time monitor for 43 days, five-hour shifts.
- **Project Closeout Activities**
 - Restoration support, permit reporting, and closeout.
- **Abatement**
 - 4 days for abatement of ACMs.
- **Water Treatment and Hazardous Materials**
 - Hydrotest water, estimated at 1.1 million gallons, to be obtained from a hydrant.

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- Waste sampling and profiling anticipated to support disposal of wastes generated during construction.
- Hazardous and non-hazardous waste transport and disposal anticipated for various wastes.
- **Permit Fees**
 - County of Los Angeles Permit.
 - California Environmental Quality Act (CEQA).
 - SWPPP fee.
 - Water Discharge.

Table 6: Land & Right-of-Way Acquisition

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$27,372	\$696,019	\$4,349	\$727,741
TOTAL DIRECT COSTS	\$0	\$0	\$27,372	\$696,019	\$4,349	\$727,741

Assumptions

In generating for the total estimated cost for Line 1015 Hydrotest Project the following items were considered:

- **Labor**
 - One contract land agent and one permit team lead for land acquisition.
- **Land Acquisition**
 - Appraisal Reports.
 - Title Reports.
- **Temporary Right of Entry**
 - Three workspaces/laydown yards are included.

Factors such as location, zoning, current market price and square footage are considered to determine a final estimated value specific to easements and temporary rights of entry permits.

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Table 7: Company Labor

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$56,666	\$190,562	\$96,173	\$611,615	\$180,530	\$1,135,546
DIRECT NON-LABOR	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DIRECT COSTS	\$56,666	\$190,562	\$96,173	\$611,615	\$180,530	\$1,135,546

Assumptions

SoCalGas Labor - Management, Engineering, and Non-Union Labor

SoCalGas Non-Union Labor is estimated based upon activity level of effort and is divided into the following categories:

- Project Management.
- Project Field Management.
- Project Engineers.
- Construction Management.
- Environmental Services.
- Other Departments.

SoCalGas Field Labor – Distribution, Transmission, Pipeline Integrity, and Other Field Departments

SoCalGas Union Labor costs were developed with the guidance of SoCalGas Construction Management and whose costs are duration dependent and activity specific.

Table 8: Other Costs

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$416,478	\$1,661,038	\$421,236	\$443,096	\$218,199	\$3,160,046
TOTAL DIRECT COSTS	\$416,478	\$1,661,038	\$421,236	\$443,096	\$218,199	\$3,160,046

Assumptions

Other costs assume use of contracted services for certain Engineering, Survey, Project Management, and Design activities. These costs are included to account for the anticipated professional services required to support project planning, design development, execution, and closeout. The major components in this category include:

- Engineering and Design Services.
- Project Management Services.
- Surveying and As-builts.
- Project Support Services.

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LINE 1016 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS - CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$33,269	\$62,273	\$103,379	\$248,003	\$184,767	\$631,690
DIRECT NON-LABOR	\$181,267	\$204,008	\$699,653	\$3,137,456	\$94,867	\$4,317,251
TOTAL COSTS - CAPITAL	\$214,536	\$266,281	\$803,032	\$3,385,459	\$279,634	\$4,948,941

Project Description

The Gas Transmission Safety Rule (GTSR) Line 1016 Replacement Project will replace approximately 105 feet of [REDACTED] pipe from the city of Yorba Linda to the city of Orange, within Orange County. This project includes two segments on L1016, each measuring four feet and 47 feet, respectively. This project also includes 29 feet of a [REDACTED] lateral line. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

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LINE 1016 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 43 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.015
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.015

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LINE 1017 HYDROTEST AND REPLACEMENT PROJECT

Table 1: Total Direct Project Costs – All Capital

TOTAL PROJECT COSTS - CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$78,061	\$183,769	\$654,745	\$1,467,688	\$286,890	\$2,671,152
DIRECT NON-LABOR	\$324,130	\$1,151,552	\$5,176,369	\$40,660,620	\$328,325	\$47,640,996
TOTAL COSTS - CAPITAL	\$402,191	\$1,335,321	\$5,831,114	\$42,128,308	\$615,215	\$50,312,149

Project Description

The Line 1017 Test Gas Transmission Safety Rule (GTSR) Test and Replacement Project consists of the relocation, removal, and hydrotesting of existing and newly installed [REDACTED] diameter pipe in the cities of Santa Ana, Costa Mesa, and Irvine.

The North section of the project will consist of approximately 3.3 miles of hydrotesting [REDACTED] diameter pipe starting at [REDACTED] to south of [REDACTED] intersection in the city of Irvine. The South section of the project will consist of relocating a section of the existing [REDACTED] Line 1017 alignment from Irvine to Costa Mesa. This will include installing approximately 1.5 miles of [REDACTED] pipe, starting south of the intersection of [REDACTED], then continuing along [REDACTED] intersection.

In addition to the replacement, hydrotesting of approximately 1.8 miles of existing pipe will be conducted at both the start and end points of the new pipeline installation. Lastly, the existing pipeline will be removed from within [REDACTED] property. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a Total Installed Cost (TIC) estimate to implement the above scope of work. The TIC Estimate includes direct costs associated with project management, engineering and design, environmental, permitting, land acquisition, material and equipment procurement, and construction. The estimate was prepared in accordance with AACE Class 3 estimating practices and utilizes a combination of quantity-based, unit-cost, and factored estimating techniques.

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to total due to rounding.

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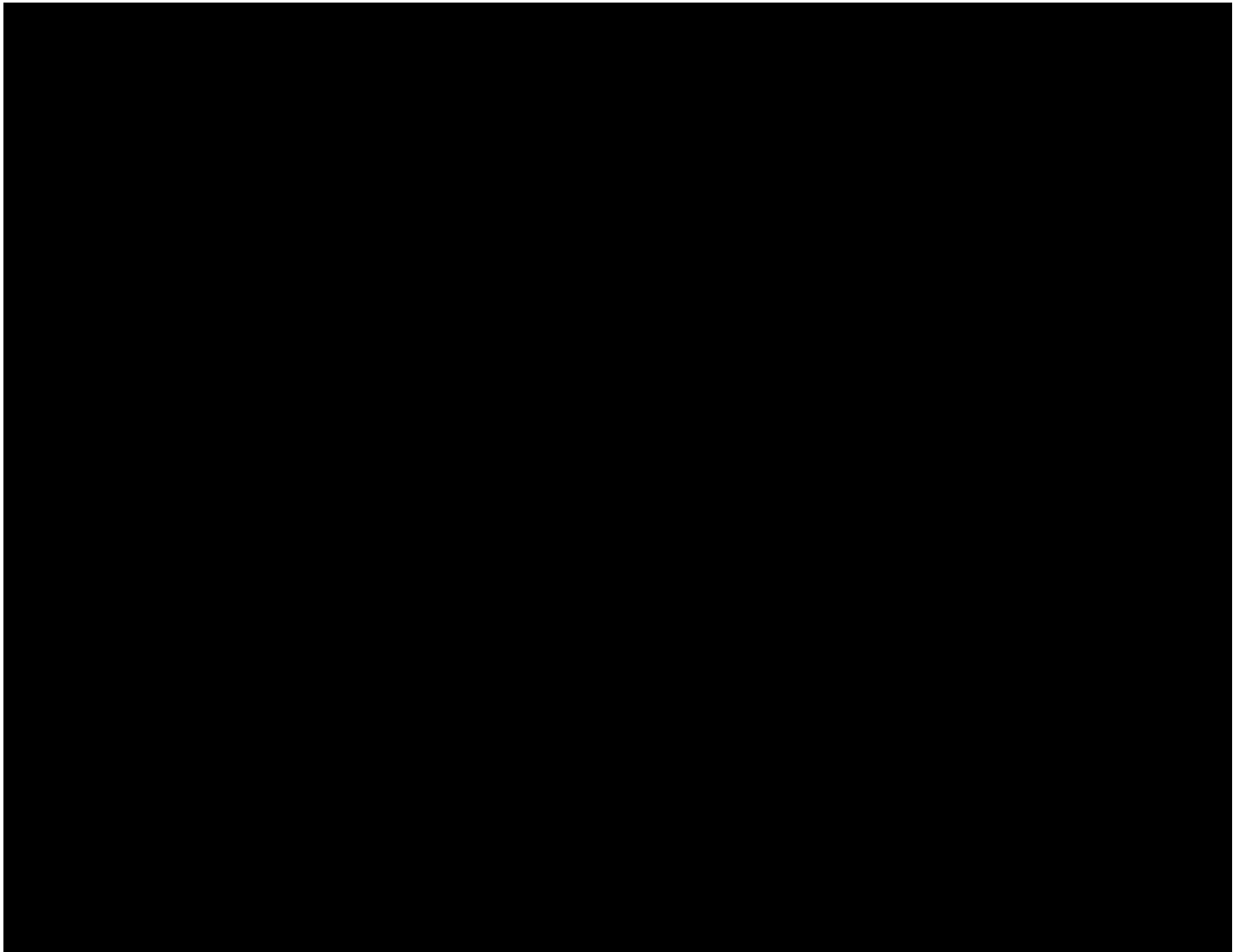
LINE 1017 HYDROTEST AND REPLACEMENT PROJECT

were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of the project costs are expended during the construction phase. The construction schedule is assumed to be 95 days for the North section and 235 days for the South section.

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LINE 1017 HYDROTEST AND REPLACEMENT PROJECT

Figure 1: Overview Map for Line 1017 Test Hydrotest and Replacement Project



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LINE 1017 HYDROTEST AND REPLACEMENT PROJECT

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	5.486
INCIDENTAL	1.200
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	6.686

The direct costs for each area are summarized below.

Table 3: Material

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$3,824,534	\$1,448,734	\$0	\$5,273,268
TOTAL DIRECT COSTS	\$0	\$0	\$3,824,534	\$1,448,734	\$0	\$5,273,268

Assumptions

Materials for this project will not be purchased until final internal authorization has been granted to purchase long lead time material. This will allow for material to be procured, inspected and delivered to coincide with the anticipated construction start date. The principal cost-driving materials necessary for this project include:

- 1.5 miles of [REDACTED] pipe.
- Two [REDACTED] Pressure Control Fittings.
- Eight [REDACTED] ball valves.
- 24 [REDACTED] ball valves.

Table 4: Construction

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$29,960	\$149,146	\$0	\$37,350,169	\$0	\$37,529,275
TOTAL DIRECT COSTS	\$29,960	\$149,146	\$0	\$37,350,169	\$0	\$37,529,275

Assumptions

In the development of the construction estimate, the following assumptions and clarifications have been made:

- One mobilization and one demobilization.
- Work has been scheduled using a 10-hour per day, five-day work week.

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LINE 1017 HYDROTEST AND REPLACEMENT PROJECT

- All materials will be received at the laydown yard.
- Test heads will be fabricated and pretested for each test section.
- Mechanical excavation will be authorized up to within two feet of the existing pipeline. Hand excavation will be required within the two feet zone.
- All excavations will be backfilled with zero sack slurry or sand padding to one foot above pipeline. Remainder of backfill will be performed using native soil.
- Pressure control fittings (PCFs) will be installed to utilize to support impacted customers.
- The pipeline will be tested in multiple test segments.
- Isolation and final tie-ins for a 24-hour continuous duration.
- Line taps will be fabricated and then reconnected after line is brought back into service.
- Non-Destructive Examination/X-Ray of welds is included.
- Construction Management and Inspection Services during project execution.
- Hydrotest water will be hauled off and disposed.

Additional Construction Information

- **Site Mobilization / Site Facilities**
 - One mobilization and one demobilization.
 - Two office trailers will be placed in the main laydown yard for both the North and South section.
 - Site facility costs cover a 16-month duration.
 - 2,200 linear feet (LF) of temporary fencing for all laydown yards and water storage areas.
- **Site Management / Best Management Practices (BMPs)**
 - Fiber rolls, sandbags, reinforced poly sheeting, silt fencing, sock drains, and rumble plates will be procured and installed for BMP measures.
 - Two days to install BMP measures at three laydown yards.
- **Material Handling**
 - 22 loads of material will be unloaded at laydown yard and transported as needed.
- **Traffic Control**
 - 360 days of traffic control for pipeline activities in roadways.
- **Utility Locates**
 - 152 utility locates.
- **Pipeline Excavation (South section)**
 - Washed bedding sand, zero sack slurry, one sack slurry, steel beams and plates for shoring included for site excavation.
 - 33,000 square feet (SF) of asphalt removal included for site demolition.
 - Asphalt transportation and disposal are included.
 - 22 days for trench excavation.

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LINE 1017 HYDROTEST AND REPLACEMENT PROJECT

- Three standard bell-holes for excavation.
- 138 non-standard bell-holes for excavation.
- Six excavation locations for test breaks
- Two pipe replacements at a mainline valve (MLV) locations.
- Excavations at tap locations on the pipeline.
- **Pipeline Fabrication**
 - Fabricate Isolation / Test Caps
 - Four [REDACTED] isolation caps.
 - Eight [REDACTED] fittings.
 - Six [REDACTED] test caps.
 - Fabrication of [REDACTED] test heads.
 - Fabrication of hard line piping.
 - Test and certify [REDACTED] test headers and iso caps.
 - 17 days to fabricate and install [REDACTED] replacement pipe sections.
- **Trenchless Technology (HDD)**
 - 2,200 LF of string pipe, drill and pull back support for HDD.
 - 13 days to fabricate pipe for HDD.
 - Six days to fabricate fittings for HDD.
 - Two days to fabricate tie in pieces for HDD.
 - 62 weld coat joints for HDD.
- **Cathodic Protection**
 - Eight EIJ installations.
- **Isolate Existing Pipeline**
 - [REDACTED] MLV closure support.
 - Stopple installation and removal support included.
 - Abatement support for [REDACTED] cut and cap.
 - Cut isolation points and cap [REDACTED] pipeline sections.
 - Support to Nitrogen Purge existing pipeline is included.
- **Hydrotest / Pressure Test Pipeline**
 - [REDACTED] and [REDACTED] pigs, compressor and dryer equipment for both sections.
 - Eight days to install [REDACTED] test heads.
 - One day to fabricate and install fill and drain hard line piping.
 - Hydrotesting Activities:
 - One day each to fill each section with water.
 - One day each to test each section.
 - One day each to dewater pipeline sections.
 - Two days each to dry pipeline sections.

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LINE 1017 HYDROTEST AND REPLACEMENT PROJECT

- **Tie-In Pipeline**
 - Four days to remove [REDACTED] test heads and isolation caps.
 - 11 days for tie-in prep at test breaks and replacement sections.
 - Ten days to make tie-in connections.
 - Three days to assist in tapping.
 - One day to reconnect taps.
- **Retire / Abandon Existing Pipeline (South Section)**
 - Sawcut and demolition of 31,300 square feet (SF) of asphalt.
 - Trench excavation of abandoned pipeline.
 - 160 bell holes for excavation.
 - Abatement of 160 cut points.
- **Site Restoration**
 - 35,000 SF of base paving.
 - 140,000 SF of grind and cap.
 - Removal of 2,200 LF temporary fence removal.
 - Four days of SWPPP / BMP Measure removal and final clean up.
- **Backfill excavations**
 - 13 days to coat fabrication and tie-in welds of [REDACTED] pipe sections and test breaks.
 - 62 days to backfill excavations.
 - Additional six days are allotted for backfill crew move arounds.
- **Site Demobilization**
 - Demobilization of site facilities, crew, and equipment.
 - Hauling of excess piping to SoCalGas designated yard and laydown yard breakdown.
- **Field Overhead**
 - Full-Time Project Engineer.
 - Full-Time Superintendent.
 - Full-Time Cost Controller.
 - Full-Time Safety Person.
 - Part-time Timekeeper.
 - Part-time scheduler.
 - Two site security personnel for non-working hours.
 - Two water trucks are included for full project duration to support dust suppression.
 - One forklift included to assist with loading and unloading of tools, supplies, skids, and piping materials.
 - 20 days for street sweeping included.

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LINE 1017 HYDROTEST AND REPLACEMENT PROJECT

Table 5: Environmental/Permitting/Monitoring/Abatement

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$199,296	\$1,082,698	\$66,804	\$1,348,798
TOTAL DIRECT COSTS	\$0	\$0	\$199,296	\$1,082,698	\$66,804	\$1,348,798

Assumptions

In calculating the total estimated environmental cost, the following items were considered:

- Environmental Services (permitting support, surveys and monitoring).
- Non-hazardous waste containment/disposal.
- Abatement of Asbestos Containing Material (ACM).
- Water Treatment and Hazardous Materials.
- Permit Fees.

The high-level assumptions and specific level of effort to provide environmental support for this project are described in more detail below.

- **Preconstruction Surveys**
 - 30 weeks of preconstruction support.
- **Construction Monitoring**
 - Biological monitoring for the duration of project.
- **Project Closeout Activities**
 - Restoration support, permit reporting, and closeout.
- **Abatement**
 - 32 days for abatement of ACMs.
- **Water Treatment and Hazardous Materials**
 - Hydrotest water is estimated at approximately 890,000 gallons of potable water within 10 miles of project.
 - Water treatment services for approximately one month.
 - Hazardous and non-hazardous waste transport and disposal anticipated for various wastes.
- **Permit Fees**
 - Stormwater Pollution Prevention Plans.
 - Permitting fees related to an encroachment permit and traffic control plan costs from: Orange County, Costa Mesa, Irvine, and Caltrans.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1017 HYDROTEST AND REPLACEMENT PROJECT

Table 6: Land & Right-of-Way Acquisition

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$444,869	\$284,662	\$8,714	\$738,244
TOTAL DIRECT COSTS	\$0	\$0	\$444,869	\$284,662	\$8,714	\$738,244

Assumptions

In generating the total estimated cost for Line 1017 Hydrotest and Replacement Project the following items were considered:

- **Labor**
 - One Senior Land Agent to support land acquisition.
- **Land Acquisition**
 - Two Appraisal reports.
 - Two Title reports.
 - Obtain One Temporary Right-of-Entry (TRE) for laydown yard.

Factors such as location, zoning, current market price and square footage are considered to determine a final estimated value specific to easements and temporary rights of entry permits.

Table 7: Company Labor

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$78,061	\$183,769	\$654,745	\$1,467,688	\$286,890	\$2,671,152
DIRECT NON-LABOR	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DIRECT COSTS	\$78,061	\$183,769	\$654,745	\$1,467,688	\$286,890	\$2,671,152

Assumptions

SoCalGas Labor - Management, Engineering, and Non-Union Labor

SoCalGas Non-Union Labor is estimated based upon activity level of effort and is divided into the following categories:

- Project Management.
- Project Field Management.
- Project Engineers.
- Construction Management.
- Environmental Services.
- Other Departments.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06**LINE 1017 HYDROTEST AND REPLACEMENT PROJECT****SoCalGas Field Labor – Distribution, Transmission, Pipeline Integrity, and Other Field Departments**

SoCalGas Union Labor costs were developed with the guidance of SoCalGas Construction Management and whose costs are duration dependent and activity specific.

Table 8: Other Costs

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$294,170	\$1,002,406	\$707,671	\$494,357	\$252,807	\$2,751,410
TOTAL DIRECT COSTS	\$294,170	\$1,002,406	\$707,671	\$494,357	\$252,807	\$2,751,410

Assumptions

Other costs assume use of contracted services for certain Engineering, Survey, Project Management, and Design activities. These costs are included to account for the anticipated professional services required to support project planning, design development, execution, and closeout. The major components in this category include:

- Engineering and Design Services.
- Project Management Services.
- Surveying and As-builts.
- Project Support Services.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 1018 MISSION VIEJO HYDROTEST PROJECT

Table 1: Total Direct Project Cost – All Capital

PROJECT COSTS – CAPITAL	Stage 1^{1,2}	Stage 2³	Stage 3⁴	Stage 4⁵	Stage 5⁶	Total⁷
DIRECT LABOR	\$37,592	\$176,121	\$122,629	\$1,162,263	\$103,181	\$1,601,787
DIRECT NON-LABOR	\$96,224	\$790,897	\$3,201,973	\$10,328,173	\$246,917	\$14,664,185
TOTAL COSTS - CAPITAL	\$133,816	\$967,018	\$3,324,603	\$11,490,436	\$350,098	\$16,265,972

Project Description

The Line 1018 Mission Viejo Gas Transmission Safety Rule (GTSR) Hydrotest Project will hydrotest approximately 10 miles of [REDACTED] diameter pipe from Lake Forest to El Toro Station in San Juan Capistrano. This project will also consist of the replacement of two [REDACTED] mainline valves (MLV). This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a Total Installed Cost (TIC) estimate to implement the above scope of work. The TIC Estimate includes direct costs associated with project management, engineering and design, environmental, permitting, land acquisition, material and equipment procurement, and construction. The estimate was prepared in accordance with AACE Class 3 estimating practices and utilizes a combination of quantity-based, unit-cost, and factored estimating techniques.

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of the project costs are expended during the construction phase. The construction schedule is assumed to be 86 days.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

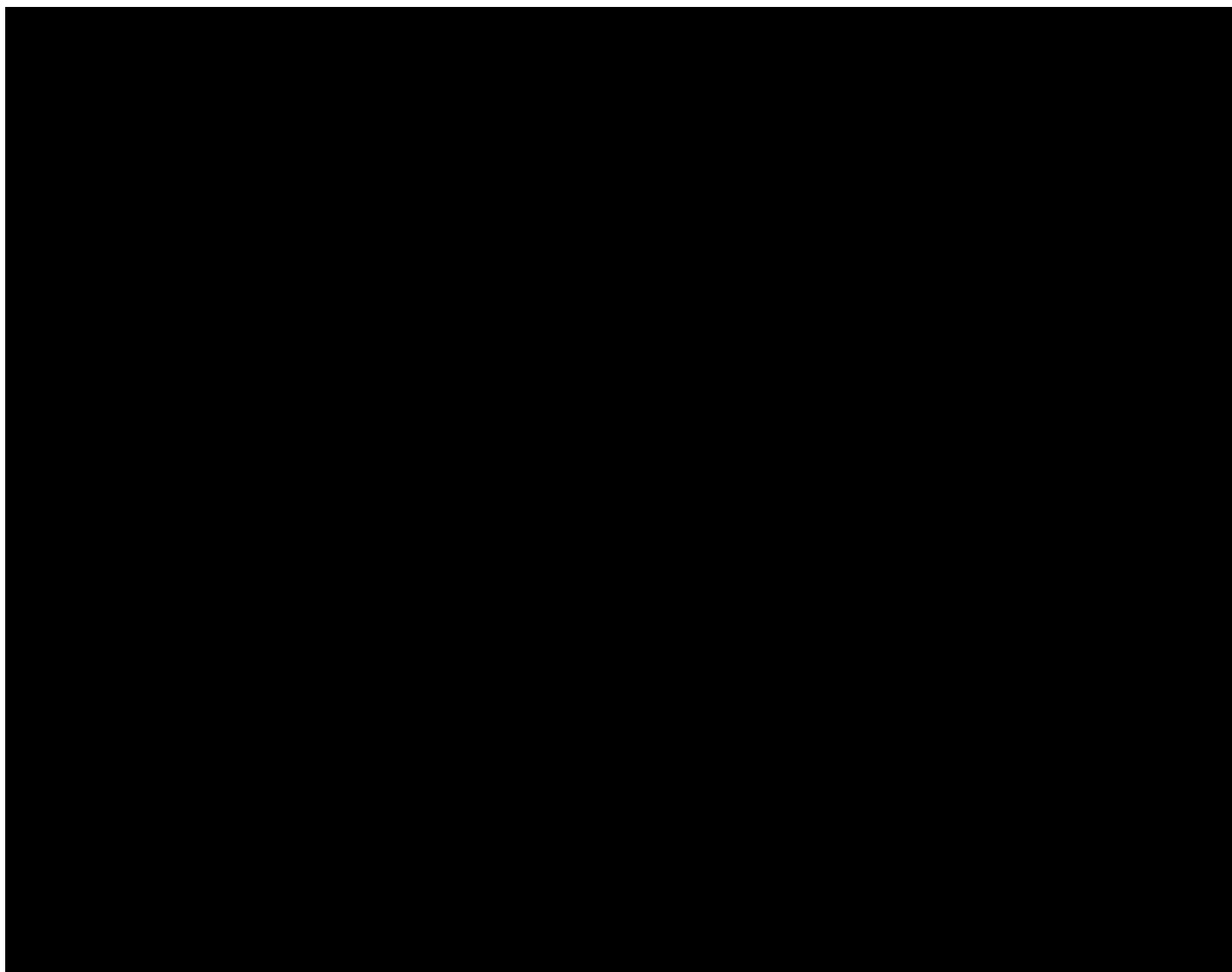
⁵ Construction.

⁶ Closeout.

⁷ Values may not add to total due to rounding.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 1018 MISSION VIEJO HYDROTEST PROJECT

Figure 1: Overview Map for Line 1018 Mission Viejo Hydrotest Project



GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1018 MISSION VIEJO HYDROTEST PROJECT

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	9.810
INCIDENTAL	0.209
REPLACEMENT OFFSET	0.009
TOTAL MILEAGE	10.019

The direct costs for each area are summarized below.

Table 3: Material

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$8,759	\$1,372,281	\$5,005	\$3,754	\$1,389,799
TOTAL DIRECT COSTS	\$0	\$8,759	\$1,372,281	\$5,005	\$3,754	\$1,389,799

Assumptions

Materials for this project will not be purchased until final internal authorization has been granted to purchase long lead time material. This will allow for material to be procured, inspected and delivered to coincide with the anticipated construction start date. The principal cost-driving materials necessary for this project include:

- 320 feet of [REDACTED] pipe.
- Two [REDACTED] Pressure Control Fittings (PCFs).
- One [REDACTED] PCF.
- Six [REDACTED] and two [REDACTED] valves.

Table 4: Construction

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$0	\$9,516,674	\$0	\$9,516,674
TOTAL DIRECT COSTS	\$0	\$0	\$0	\$9,516,674	\$0	\$9,516,674

Assumptions

In the development of the construction estimate, the following assumptions and clarifications have been made:

- One mobilization and one demobilization.
- Work has been scheduled using a 10 hour per day, six-day work week.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1018 MISSION VIEJO HYDROTEST PROJECT

- All materials will be received at the laydown yards.
- Test heads will be installed at each of the five test sections.
- Five primary test sections with individual test breaks.
- Mechanical excavation will be authorized up to within two feet of the existing pipeline. Hand excavation will be required within the two feet zone.
- All excavations will be backfilled with zero sack slurry or sand padding to one foot above pipeline. Remainder of backfill will be performed using zero sack and one sack.
- Isolation of ten existing taps.
- Replacement of two mainline valves (MLV).
- Isolation and final tie-ins for a 24-hour continuous duration.
- Non-Destructive Examination/X-Ray of welds.
- Line seasoning is required.
- Frac tanks and lake tanks will be utilized to support hydrostatic testing operations.
- Construction Management and Inspection Services during project execution.

Additional Construction Information

- **Site Mobilization / Site Facilities**
 - One mobilization and one demobilization.
 - Two laydown yards.
 - Two office trailers have been included at the laydown yards.
 - Site facility costs cover a four-month duration.
 - 4,200 linear feet (LF) of temporary fencing for all laydown yards, test breaks, and replacement work areas.
- **Site Management / Best Management Practices (BMPs)**
 - Fiber rolls, straw bales, sandbags, reinforced poly sheeting, silt fencing, rumble plates, and sock drains will be procured and installed for BMP measures.
- **Material Handling**
 - Three loads of material will be unloaded at laydown yard and transported as needed.
- **Traffic Control**
 - Traffic control during potholing, excavation, tie-ins, hydrotesting, and site restoration.
- **Utility Locates**
 - 25 Gas locates.
- **Isolate Existing Pipeline**
 - Pipeline will be isolated using two Pressure Control Fittings.
 - Existing pipeline will be purged with nitrogen.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1018 MISSION VIEJO HYDROTEST PROJECT

- **Pipeline Excavation / Fabrication / Installation**
 - 608 square feet (SF) asphalt removal and disposal.
 - Excavate eight test break locations.
 - Fabricate Test heads.
 - Fabricate Tie-In Pieces.
- **Hydrotest / Pressure Test Pipeline**
 - Five test sections will be hydrotested.
 - Test heads will be installed below grade.
 - Replacement of two Mainline Valves.
- **Tie-In Pipeline**
 - Five days to prep tie-ins for test breaks.
 - Five 24-hour shifts to make tie-ins for test section.
 - Reconnection of 10 taps.
 - Two supports required for MLV operations.
- **Site Restoration**
 - Install 1,650 SF of base paving.
 - Grind and Cap of approximately 1,644 SF of paving.
 - Installation of 20,000 SF of slurry seal.
 - Removal of 4,200 feet of temporary fence.
 - BMP removal and final clean up.
- **Site Demobilization**
 - Demobilization of site facilities, crew, and equipment.
 - Hauling of one load of excess piping to SoCalGas designated yard.
- **Field Overhead**
 - Full-Time Project Manager
 - Full-Time Superintendent.
 - Full-Time Cost Controller.
 - Full-Time Safety Person.
 - Part-Time Scheduler
 - Part-Time Timekeeper
 - One water truck and driver are included for full project duration for dust suppression.
 - One low bed truck is included to assist with moving equipment.
 - Two site security personnel for non-working hours.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 1018 MISSION VIEJO HYDROTEST PROJECT

Table 5: Environmental/Permitting/Monitoring/Abatement

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$10,278	\$104,362	\$254,316	\$526,953	\$76,386	\$972,295
TOTAL DIRECT COSTS	\$10,278	\$104,362	\$254,316	\$526,953	\$76,386	\$972,295

Assumptions

In calculating the total estimated environmental cost, the following items were considered:

- Environmental Services (permitting support, surveys and monitoring).
- Non-hazardous waste containment/disposal.
- Abatement of Asbestos Containing Material (ACM).
- Water Treatment and Hazardous Materials.
- Permit Fees.

The high-level assumptions and specific level of effort to provide environmental support for this project are described in more detail below.

- **Environmental Document Production**
 - Storm Water Pollution and Prevention Plan (SWPPP) and Notice of Intent (NOI).
- **Construction Monitoring**
 - One environmental monitor for duration of project.
- **Project Closeout Activities**
 - Restoration support, permit reporting, and closeout.
- **Abatement**
 - 28 days for abatement of Asbestos Containing Materials (ACMs).
- **Water Treatment and Hazardous Materials**
 - Hydrotest water, estimated at 1.1 million gallons of potable water sourced from fire hydrant.
 - Discharge to sewer after water treatment under municipality permit.
 - Discharge rate of 18,000 gallons a day for approximately 53 days treatment.
 - Two weeks for water sampling and analysis and 10 weeks for water treatment equipment.
 - Hazardous and non-hazardous waste transport and disposal anticipated.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 1018 MISSION VIEJO HYDROTEST PROJECT

- **Permit Fees**
 - Caltrans Permit fee.
 - Permit fees are included for the Cities of Lake Forest, Laguna Niguel, Mission Viejo, Laguna Hills, and San Juan Capistrano.
 - Army Corp of Engineers Permit fee.
 - Orange County Flood Control Permit fee.
 - Environmental Permit fee for Tree Removal.

Table 6: Land & Right-of-Way Acquisition

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$180,324	\$1,138,433	\$0	\$0	\$1,318,757
TOTAL DIRECT COSTS	\$0	\$180,324	\$1,138,433	\$0	\$0	\$1,318,757

Assumptions

In generating for the total estimated cost for Line 1018 Mission Viejo Hydrotest Project the following items were considered:

- **Labor**
 - One Senior Land Agent to support land acquisition.
- **Land Acquisition**
 - Three Appraisal Reports.
 - Three Title Reports.
 - Obtaining six Temporary Right-of-Entries (TREs) to be used as laydown yards and workspaces for the project.

Factors such as location, zoning, current market price and square footage are considered to determine a final estimated value specific to easements and temporary rights of entry permits.

Table 7: Company Labor

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$37,592	\$176,121	\$122,629	\$1,162,263	\$103,181	\$1,601,787
DIRECT NON-LABOR	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DIRECT COSTS	\$37,592	\$176,121	\$122,629	\$1,162,263	\$103,181	\$1,601,787

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1018 MISSION VIEJO HYDROTEST PROJECT

Assumptions

SoCalGas Labor - Management, Engineering, and Non-Union Labor

SoCalGas Non-Union Labor is estimated based upon activity level of effort and is divided into the following categories:

- Project Management.
- Project Field Management.
- Project Engineers.
- Construction Management.
- Environmental Services.
- Other Departments.

SoCalGas Field Labor – Distribution, Transmission, Pipeline Integrity, and Other Field Departments

SoCalGas Union Labor costs were developed with the guidance of SoCalGas Construction Management and whose costs are duration dependent and activity specific.

Table 8: Other Costs

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$85,947	\$497,452	\$287,947	\$279,541	\$166,777	\$1,317,663
TOTAL DIRECT COSTS	\$85,947	\$497,452	\$287,947	\$279,541	\$166,777	\$1,317,663

Assumptions

Other costs assume use of contracted services for certain Engineering, Survey, Project Management, and Design activities. These costs are included to account for the anticipated professional services required to support project planning, design development, execution, and closeout. The major components in this category include:

- Engineering and Design Services.
- Project Management Services.
- Construction Management and Inspection Services.
- Surveying and As-builts.
- Project Support Services.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 1018 SANTA ANA HYDROTEST PROJECT

Table 1: Total Direct Project Costs – All Capital

TOTAL PROJECT COSTS - CAPITAL	Stage 1^{1,2}	Stage 2³	Stage 3⁴	Stage 4⁵	Stage 5⁶	Total⁷
DIRECT LABOR	\$69,593	\$208,782	\$301,741	\$751,856	\$137,034	\$1,469,006
DIRECT NON-LABOR	\$97,732	\$376,796	\$2,387,335	\$13,743,502	\$225,731	\$16,831,096
TOTAL COSTS - CAPITAL	\$167,324	\$585,578	\$2,689,076	\$14,495,358	\$362,765	\$18,300,102

Project Description

The Line 1018 Santa Ana Gas Transmission Safety Rule (GTSR) Hydrotest Project will hydrotest approximately 12.4 miles of [REDACTED] diameter pipe. The project will be divided into five test sections, each to be tested independently. The project will be divided into three discrete test segments with laydown yards established at each test break location. Due to the existing taps that cannot be shut off, the testing operations will be conducted in two phases. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a Total Installed Cost (TIC) estimate to implement the above scope of work. The TIC estimate includes direct costs associated with project management, engineering and design, environmental, permitting, land acquisition, material and equipment procurement, and construction. The estimate was prepared in accordance with AACE Class 3 estimating practices and utilizes a combination of quantity-based, unit-cost, and factored estimating techniques.

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of the project costs are expended during the construction phase. The construction schedule is assumed to be 132 days.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

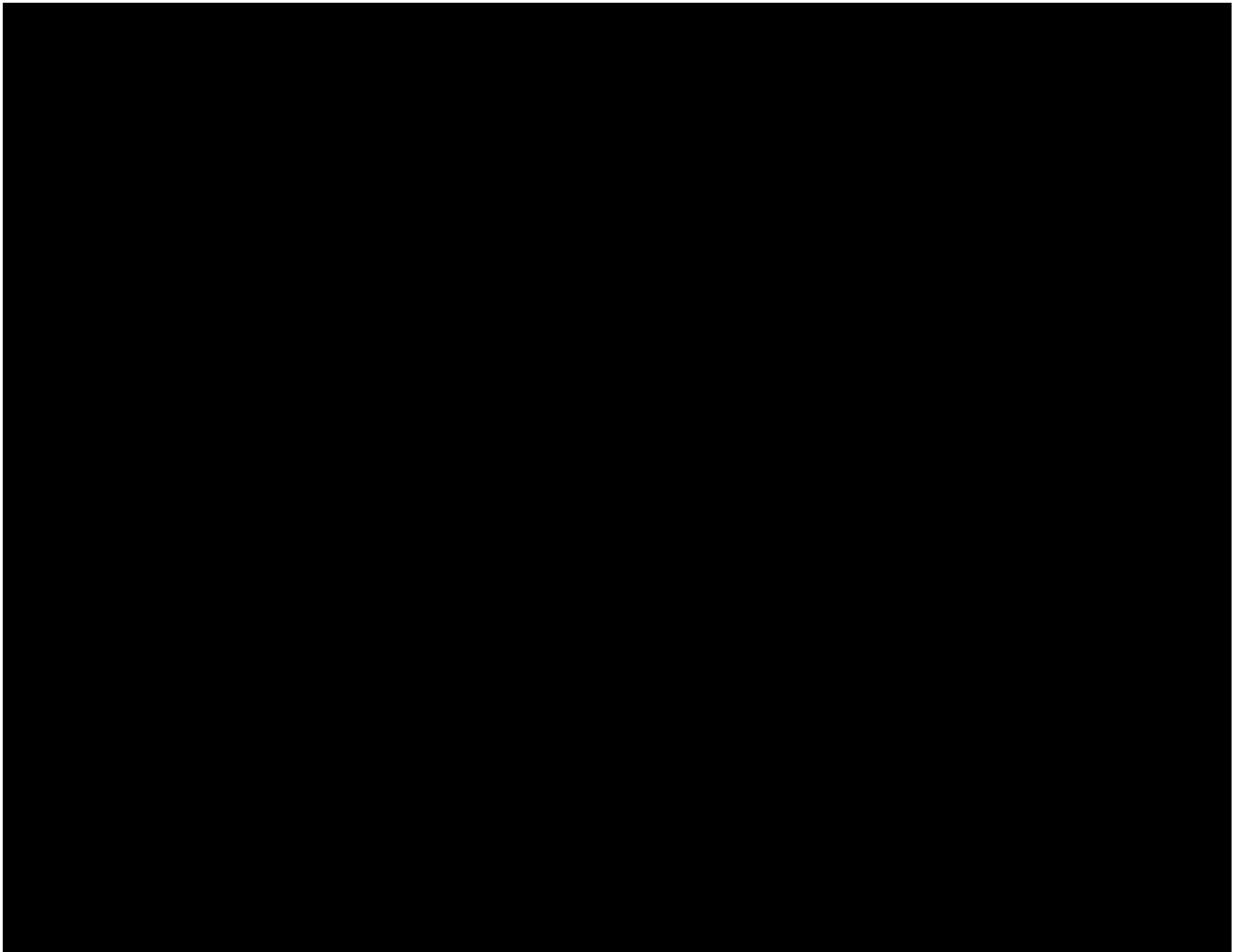
⁵ Construction.

⁶ Closeout.

⁷ Values may not add to total due to rounding.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 1018 SANTA ANA HYDROTEST PROJECT

Figure 1: Overview Map for Line 1018 Santa Ana Hydrotest Project



GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1018 SANTA ANA HYDROTEST PROJECT

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	11.360
INCIDENTAL	1.063
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	12.423

The direct costs for each area are summarized below.

Table 3: Material

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$976,816	\$0	\$0	\$976,816
TOTAL DIRECT COSTS	\$0	\$0	\$976,816	\$0	\$0	\$976,816

Assumptions

Materials for this project will not be purchased until final internal authorization has been granted to purchase long lead time material. This will allow for material to be procured, inspected and delivered to coincide with the anticipated construction start date. The principal cost-driving materials necessary for this project include:

- 240 feet of [REDACTED] pipe.
- Thr e [REDACTED] ball valves.
- Two [REDACTED] and tv [REDACTED] ball valves.

Table 4: Construction

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$0	\$12,002,203	\$0	\$12,002,203
TOTAL DIRECT COSTS	\$0	\$0	\$0	\$12,002,203	\$0	\$12,002,203

Assumptions

In the development of the construction estimate, the following assumptions and clarifications have been made:

- One mobilization and one demobilization.
- Work has been scheduled using a 8-hour per day, five-day work week.
- All materials, equipment, and testing components will be received at the laydown yard.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1018 SANTA ANA HYDROTEST PROJECT

- Mechanical excavation will be permitted to be within two feet of the existing pipeline. Hand excavation will be required within the two feet zone and within existing stations.
- All excavations will be backfilled with zero sack slurry or sand padding to one foot above pipeline. Remainder of backfill will be performed with zero sack and one sack.
- Frac tanks will be utilized to support hydrostatic testing operations.
- Test heads will be fabricated, pretested and installed at each test break.
- The pipeline will be tested in five test sections with individual test breaks and test heads.
- Pipeline isolation required for hydrostatic testing will be conducted using existing MLVs prior to testing activities.
- Line seasoning will be required.
- Non-Destructive Examination/X-Ray of welds.
- Construction Management and Inspection Services during project execution.

Additional Construction Information

- **Site Mobilization / Site Facilities**
 - One mobilization and one demobilization.
 - Two office trailers will be placed at the laydown yards.
 - Two laydown yards and six workspaces will be cleared.
 - 9,940 feet of temporary fencing, test breaks, and replacement work areas.
 - Site facility costs cover a six-month duration.
- **Site Management / Best Management Practices (BMPs)**
 - Fiber rolls, straw bales, metal tee posts, orange snow fencing, sock drains, silt fencing and high tensile wire will be procured and installed for BMP measures.
- **Material Handling**
 - Four loads of material will be unloaded at laydown yard and transported as needed by the Contractor.
- **Traffic Control**
 - Traffic control will be required for approximately 144 days during potholing, tie-in procedure, hydrotesting and site restoration.
- **Utility Locates**
 - 10 Standard Locates.
 - 12 Gas utility locates.
- **Isolate Existing Pipeline**
 - Valve closure isolation using existing [REDACTED] valves.
 - Two shifts to purge the two isolation sections.
 - Purge two existing pipelines sections with nitrogen.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1018 SANTA ANA HYDROTEST PROJECT

- **Pipeline Excavation / Fabrication**
 - Removal and disposal of asphalt.
 - Excavate locations for hydrotesting test breaks.
 - Excavate one location for the MLV replacement.
 - Excavate tap locations for isolation.
 - Fabricate test heads, isolation caps, and tie-in pieces.
- **Hydrotest / Pressure Test Pipeline**
 - Five test sections will be hydrotested.
 - Test heads will be installed below-grade.
- **Tie-In Pipeline**
 - Five days to prepare tie-ins.
 - The existing pipeline will be tied in during a 24-hour continuous shift at each test section (5).
 - Complete tap reconnections.
- **Site Restoration**
 - 1,880 square feet (SF) of base paving.
 - 2,700 SF of grind and cap.
 - 225 feet of stripping.
 - 1,600 feet of temporary fence removal.
 - Restoration of work site locations to original condition
 - BMP removal and final clean up.
- **Site Demobilization**
 - Demobilization of site facilities, crew, and equipment.
 - Hauling of one load of excess piping to SoCalGas designated yard.
- **Field Overhead**
 - Full-Time Project Manager.
 - Full-Time Superintendent.
 - Full-Time Cost Controller.
 - Full-Time Safety Person.
 - Part-Time Scheduler.
 - Part-Time Timekeeper.
 - One water truck and driver for the duration of the project.
 - One low-bed truck and driver to assist with equipment move arounds.
 - Two site security personnel for non-working hours.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1018 SANTA ANA HYDROTEST PROJECT

Table 5: Environmental/Permitting/Monitoring/Abatement

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$6,650	\$286,695	\$460,923	\$686,485	\$45,209	\$1,485,963
TOTAL DIRECT COSTS	\$6,650	\$286,695	\$460,923	\$686,485	\$45,209	\$1,485,963

Assumptions

In calculating the total estimated environmental cost, the following items were considered:

- Environmental Services (permitting support, surveys and monitoring).
- Non-hazardous waste containment/disposal.
- Abatement of Asbestos Containing Material (ACM).
- Water Treatment and Hazardous Materials.
- Permit Fees.

The high-level assumptions and specific level of effort to provide environmental support for this project are described in more detail below.

- **Environmental Document Production**
 - Preconstruction Clearance.
 - Storm Water Pollution and Prevention Plan (SWPPP) and Notice of Intent (NOI).
 - Environmental Clearance.
- **Preconstruction Surveys**
 - 16 weeks for preconstruction support.
- **Construction Monitoring**
 - Biological monitoring for the duration of project.
- **Project Closeout Activities**
 - Restoration support, permit reporting, and closeout.
- **Abatement**
 - 6 days for abatement of ACMs.
- **Water Treatment and Hazardous Materials**
 - Hydrotest water, estimated at approximately 2.3 million gallons of water.
 - Water treatment services are included.
 - Hazardous and non-hazardous waste transport and disposal anticipated for various wastes.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1018 SANTA ANA HYDROTEST PROJECT

- **Permit Fees**

- Stormwater Pollution Prevention Plans.
- Regional Water Quality Control Board (RWCQB) Permit.
- Los Angeles County Flood Control District (LACFCD) Discharge Permit.
- Permitting fees related to an encroachment permit and traffic control plan costs from: Orange County, Los Angeles County and Caltrans.

Table 6: Land & Right-of-Way Acquisition

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$8,981	\$304,788	\$816,594	\$4,491	\$1,134,854
TOTAL DIRECT COSTS	\$0	\$8,981	\$304,788	\$816,594	\$4,491	\$1,134,854

Assumptions

In generating for the total estimated cost for Line 1018 Santa Ana Hydrotest Project the following items were considered:

- **Labor**

- One Senior Land Agent, land manager, and land advisor to support with land acquisition.

- **Land Acquisition**

- Three Appraisal Reports.
- Three Title Reports.

- **Temporary Right of Entry**

- Obtain six Temporary Right of Entries (TREs) to be used as laydown yards, work areas, or for water storage.

Factors such as location, zoning, current market price and square footage are considered to determine a final estimated value specific to easements and temporary rights of entry permits.

Table 7: Company Labor

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$69,593	\$208,782	\$301,741	\$751,856	\$137,034	\$1,469,006
DIRECT NON-LABOR	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DIRECT COSTS	\$69,593	\$208,782	\$301,741	\$751,856	\$137,034	\$1,469,006

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1018 SANTA ANA HYDROTEST PROJECT

Assumptions

SoCalGas Labor - Management, Engineering, and Non-Union Labor

SoCalGas Non-Union Labor is estimated based upon activity level of effort and is divided into the following categories:

- Project Management.
- Project Field Management.
- Project Engineers.
- Construction Management.
- Environmental Services.
- Other Departments.

SoCalGas Field Labor – Distribution, Transmission, Pipeline Integrity, and Other Field Departments

SoCalGas Union Labor costs were developed with the guidance of SoCalGas Construction Management and whose costs are duration dependent and activity specific.

Table 8: Other Costs

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$91,081	\$81,120	\$644,808	\$238,220	\$176,031	\$1,231,260
TOTAL DIRECT COSTS	\$91,081	\$81,120	\$644,808	\$238,220	\$176,031	\$1,231,260

Assumptions

Other costs assume use of contracted services for certain Engineering, Survey, Project Management, and Design activities. These costs are included to account for the anticipated professional services required to support project planning, design development, execution, and closeout. The major components in this category include:

- Engineering and Design Services.
- Project Management Services.
- Surveying and As-builts.
- Project Support Services.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1024 HYDROTEST PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS - CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$35,081	\$63,263	\$105,260	\$236,774	\$185,570	\$625,946
DIRECT NON-LABOR	\$189,951	\$207,356	\$987,905	\$4,062,072	\$97,417	\$5,544,700
TOTAL COSTS - CAPITAL	\$6,170,646	\$225,032	\$270,619	\$1,093,164	\$4,298,845	\$6,170,646

Project Description

The Gas Transmission Safety Rule (GTSR) Line 1024 Hydrotest project will hydrotest approximately 0.5 miles of [REDACTED] and [REDACTED] diameter pipe in the city of Wilmington, Los Angeles County. This project includes a hydrotest of 0.438 miles and replacement sections totaling approximately 56 feet of pipeline and laterals. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1024 HYDROTEST PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 49 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.449
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.449

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1172 HYDROTEST PROJECT

Table 1: Total Direct Project Cost - All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$13,031	\$26,180	\$72,880	\$253,171	\$190,361	\$555,623
DIRECT NON-LABOR	\$78,511	\$104,597	\$479,832	\$3,278,640	\$100,915	\$4,042,495
TOTAL COSTS - CAPITAL	\$91,542	\$130,777	\$ 552,711	\$3,531,811	\$291,276	\$4,598,118

Project Description

The Gas Transmission Safety Rule (GTSR) Line 1172 Hydrotest project will hydrotest approximately 0.8 miles of pipe in the city of El Segundo, Los Angeles County. This project includes three sections on Line 1172 and 64 feet of laterals originating from Line 1172. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1172 HYDROTEST PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 44 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.793
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.793

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 1192 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost - All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$33,132	\$62,015	\$102,816	\$255,818	\$183,925	\$637,705
DIRECT NON-LABOR	\$179,910	\$184,357	\$628,837	\$2,678,471	\$92,231	\$3,763,806
TOTAL COSTS - CAPITAL	\$213,041	\$246,371	\$731,653	\$2,934,289	\$276,156	\$4,401,511

Project Description

The Gas Transmission Safety Rule (GTSR) Line 1192 Replacement project will replace approximately 224 feet of pipe including laterals from the city of Northridge to Porter Ranch, Los Angeles County. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

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LINE 1192 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 46 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.042
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.042

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 2000 MORENO VALLEY HYDROTEST PROJECT

Table 1: Total Direct Project Costs – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$19,244	\$36,185	\$355,032	\$522,855	\$152,388	\$1,085,704
DIRECT NON-LABOR	\$101,559	\$198,601	\$1,014,643	\$5,969,679	\$151,618	\$7,436,099
TOTAL COSTS - CAPITAL	\$120,803	\$234,785	\$1,369,675	\$6,492,534	\$304,006	\$8,521,804

Project Description

The Line 2000 Moreno Valley Gas Transmission Safety Rule (GTSR) Hydrotest Project consists of approximately 0.5 miles of [REDACTED] diameter pipe to be divided into three sections; one section will be hydrotested and two sections will be replaced. For constructability purposes, the project will be executed in three separate mobilizations. Section 1 is in the City of Corona near the [REDACTED] on private property that will consist of approximately 271 feet of a pipeline replacement. Section 2 is in the City of Riverside with test breaks located on private property and nearby to [REDACTED]. This section of the project consists of 0.4 miles of pipeline to be hydrotested, including two spans that will require temporary pipeline supports. Section 3 is in the City of Moreno Valley at [REDACTED] that will consist of 107 feet of pipeline replacement. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a Total Installed Cost (TIC) estimate to implement the above scope of work. The TIC estimate includes direct costs associated with project management, engineering and design, environmental, permitting, land acquisition, material and equipment procurement, and construction. The estimate was prepared in accordance with AACE Class 3 estimating practices and utilizes a combination of quantity-based, unit-cost, and factored estimating techniques.

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to total due to rounding.

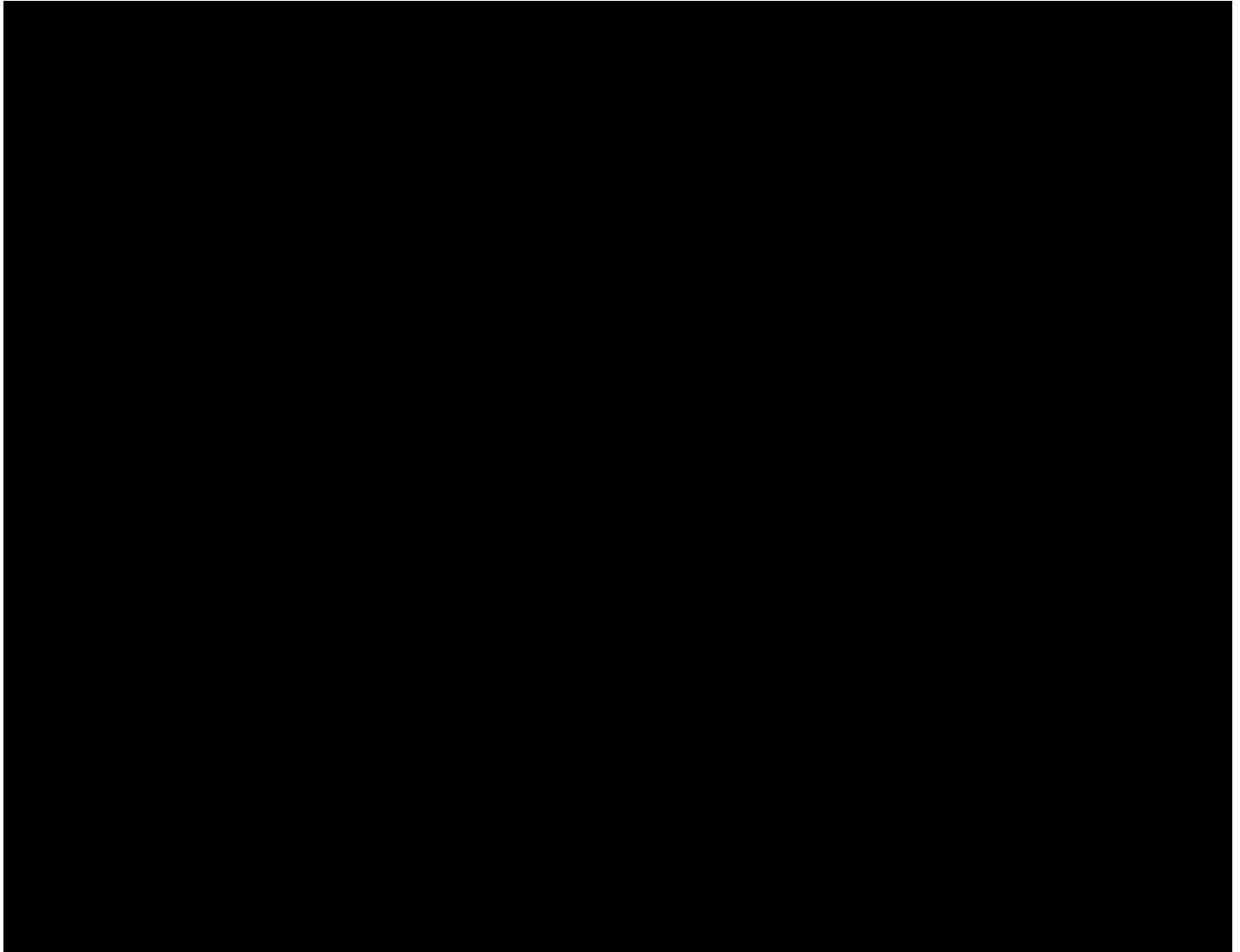
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LINE 2000 MORENO VALLEY HYDROTEST PROJECT

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of the project costs are expended during the construction phase. The construction schedule is assumed to be 106 days.

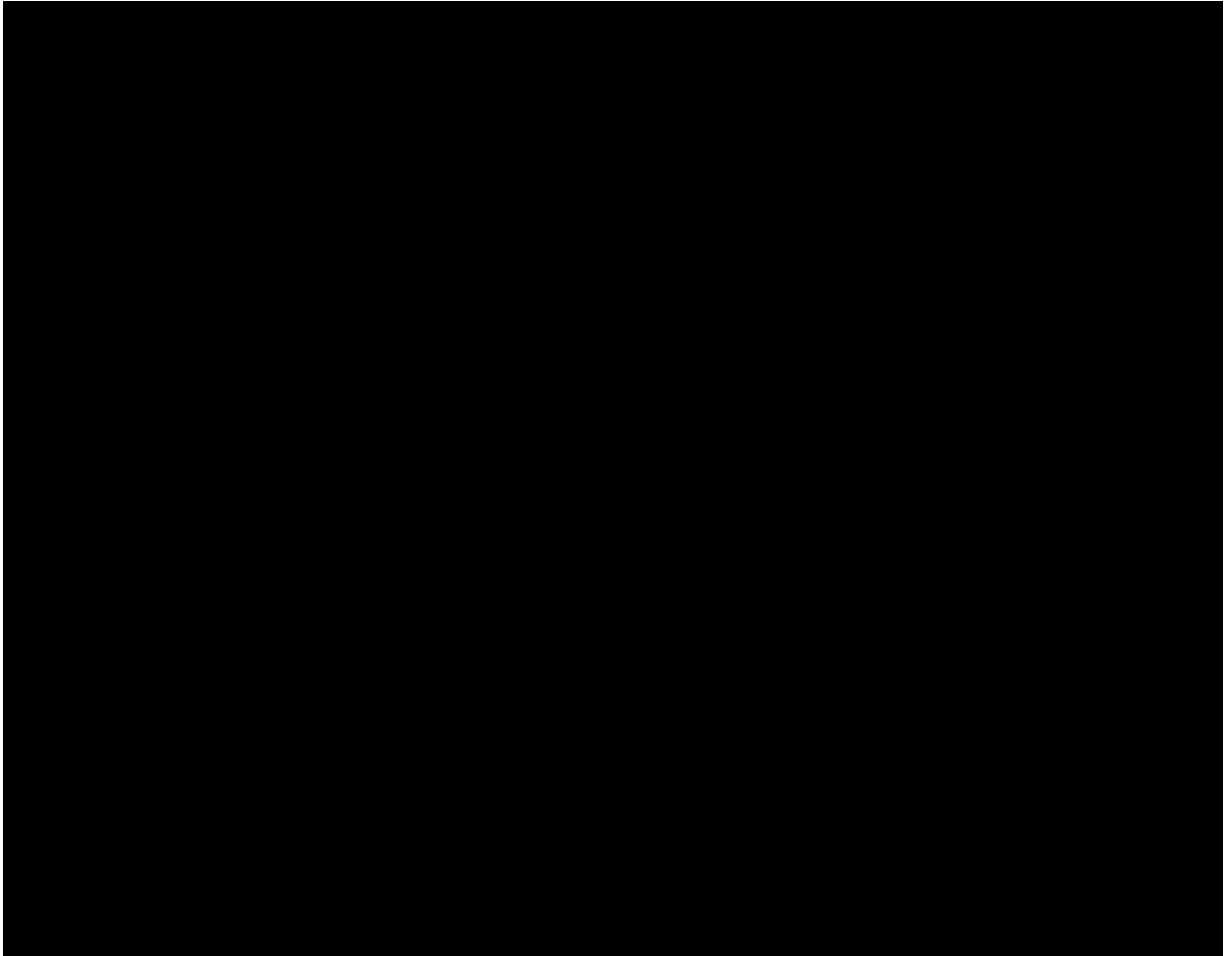
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LINE 2000 MORENO VALLEY HYDROTEST PROJECT

Figure 1: Overview Maps for Line 2000 Moreno Valley Hydrotest Project – Section 1



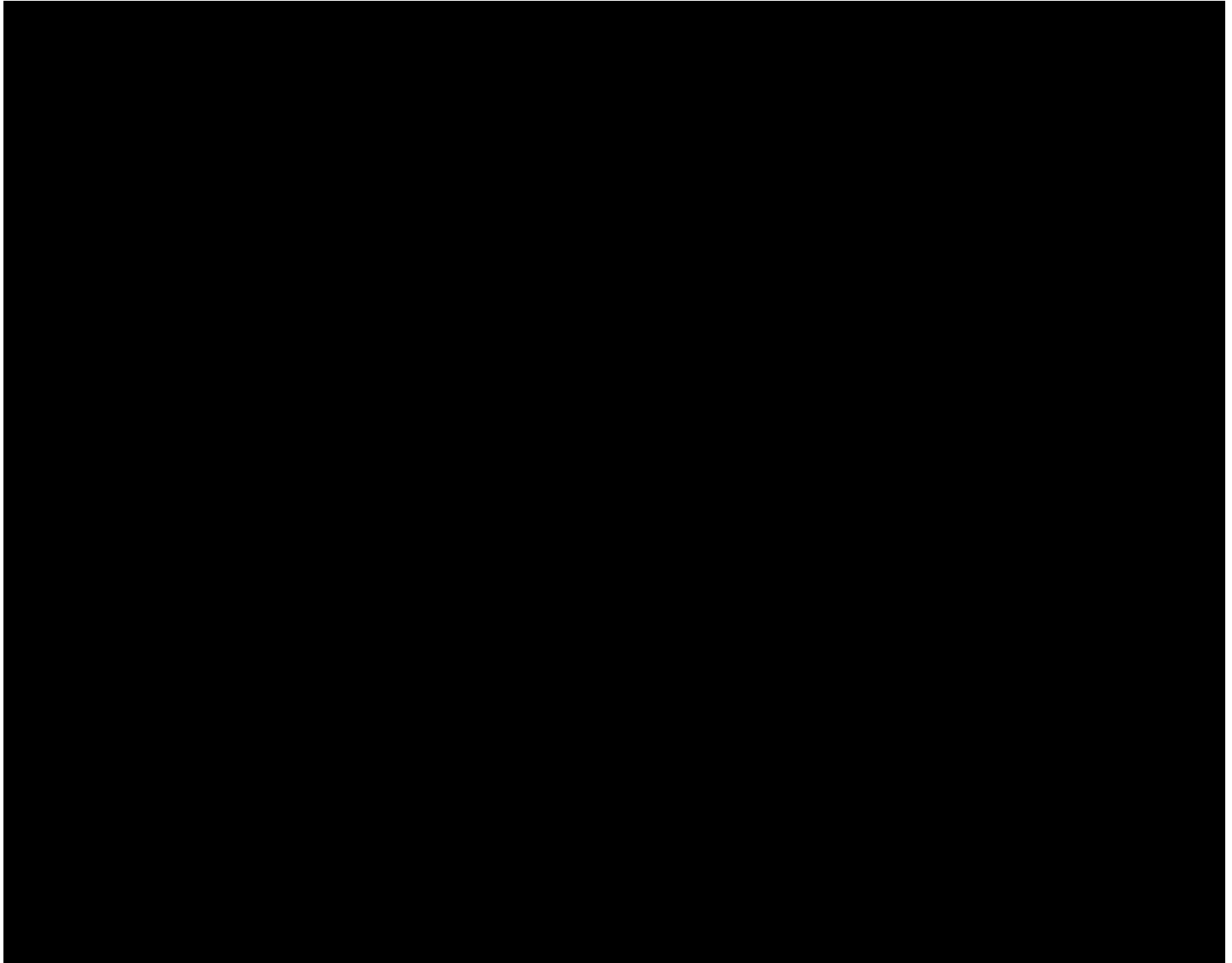
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LINE 2000 MORENO VALLEY HYDROTEST PROJECT

Figure 2: Overview Maps for Line 2000 Moreno Valley Hydrotest Project – Section 2



GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 2000 MORENO VALLEY HYDROTEST PROJECT

Figure 3: Overview Maps for Line 2000 Moreno Valley Hydrotest Project – Section 3



GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 2000 MORENO VALLEY HYDROTEST PROJECT

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.314
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.314

The direct costs for each area are summarized below.

Table 3: Material

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$13	\$0	\$359,133	\$0	\$0	\$359,146
TOTAL DIRECT COSTS	\$13	\$0	\$359,133	\$0	\$0	\$359,146

Assumptions

Materials for this project will not be purchased until final internal authorization has been granted to purchase long lead time material. This will allow for material to be procured, inspected and delivered to coincide with the anticipated construction start date. The principal cost-driving materials necessary for this project include:

- 400 feet of [REDACTED] pipe.
- Six [REDACTED] ball valves.

Table 4: Construction

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$0	\$5,630,421	\$0	\$5,630,421
TOTAL DIRECT COSTS	\$0	\$0	\$0	\$5,630,421	\$0	\$5,630,421

Assumptions

In the development of the construction estimate, the following assumptions and clarifications have been made:

- Work has been scheduled using a 10-hour per day, five-day work week.
- All materials will be received, staged and distributed from the laydown yard.
- Mechanical excavation will be authorized up to two feet of the existing pipeline. Hand excavation will be required within the two feet tolerance zone and all hand excavation will be within the existing stations.

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LINE 2000 MORENO VALLEY HYDROTEST PROJECT

- All excavations will be backfilled with zero sack slurry or sand padding to one foot above pipeline. Remainder of backfill will be performed using zero sack and one sack.
- Frac tanks and associated pumping equipment will be utilized to support hydrostatic testing operations.
- Construction Management and Inspection Services during project execution.
- Non-Destructive Examination/X-Ray of welds. All welds will be x-rayed.

Additional Construction Information

- **Site Mobilization / Site Facilities / Site Preparation**
 - Two office trailers, four storage containers and other facility equipment will be placed at the laydown yards for SoCalGas personnel and Contractor.
 - Site facility costs cover a six-month duration.
 - Clearing and grading of three laydown yards.
 - 1200 feet of temporary fencing for all laydown yards.
 - Three access routes will be graded for Sections 1, 2, and 3.
 - Installation of three pipe supports.
- **Site Management / Best Management Practices (BMPs)**
 - Fiber rolls, sandbags, silt fencing with wooden stakes, straw bales, rumble plates, and wooden stakes will be procured and installed for BMP measures.
- **Material Handling**
 - Eight loads of SoCalGas material will be unloaded by the Contractor at laydown yard.
- **Traffic Control**
 - 17 days of traffic control for Section 3.
- **Utility Locates**
 - Eight utility locates.
- **Isolate Existing Pipeline**
 - Pipeline isolation required for hydrostatic testing is assumed to be achieved through a combination of existing mainline valves prior to testing activities.
- **Hydrotest / Pressure Test Pipeline**
 - Test sections will be hydrotested, with individual test breaks and test heads.
- **Pipeline Excavation / Excavation**
 - Excavate 206 tons of washed bedding sand.
 - Excavate 1,247 cubic yards (CY) and include shoring for Sections 1, 2, and 3.
 - Six [REDACTED] isolation test caps for Sections 1, 2, and 3.
 - Fabricate replacement piping with eight welds for Sections 1, 2, and 3.
 - Fabricate two test heads and two isolation caps.

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LINE 2000 MORENO VALLEY HYDROTEST PROJECT

- Sections for cut out, cap and isolation will include 26 support abatement for sections 1, 2, and 3.
- **Tie-In Pipeline**
 - Three days to prepare tie-ins for test breaks and the replacement section.
 - Three days to complete final tie-ins.
- **Site Restoration**
 - 315 square feet (SF) base pave for Section 2.
 - 30 feet of station fencing repairs.
 - Remove 1,200 feet of temporary fencing.
 - BMP removal and final clean up.
- **Site Demobilization**
 - Demobilization of site facilities, crew, and equipment.
 - Hauling of one load of excess piping to SoCalGas designated yard.
- **Field Overhead**
 - Full-Time Project Manager.
 - Full-Time Superintendent.
 - Full-Time Cost Controller.
 - Full-Time Timekeeper.
 - Part-Time Scheduler.
 - Full-Time Safety Personnel.
 - Full-Time water truck and driver for full project duration and dust suppression.
 - One low-bed truck to move equipment around.
 - Two site security personnel for non-working hours.

Table 5: Environmental/Permitting/Monitoring/Abatement

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$12,518	\$296,411	\$183,654	\$41,581	\$534,164
TOTAL DIRECT COSTS	\$0	\$12,518	\$296,411	\$183,654	\$41,581	\$534,164

Assumptions

In calculating the total estimated environmental cost, the following items were considered:

- Environmental Services (permitting support, surveys and monitoring).
- Non-hazardous waste containment/disposal.
- Abatement of Asbestos Containing Material (ACM).
- Water Treatment and Hazardous Materials.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 2000 MORENO VALLEY HYDROTEST PROJECT

The high-level assumptions and specific level of effort to provide environmental support for this project are described in more detail below.

- **Preconstruction Surveys**
 - 40 weeks of preconstruction support.
- **Construction Monitoring**
 - Biological monitoring for the duration of project.
- **Project Closeout Activities**
 - Restoration support, permit reporting, and closeout.
- **Abatement**
 - 11 days for abatement of ACMs.
- **Water Treatment and Hazardous Materials**
 - Hydrotest water is estimated at 85,000 gallons of water.
 - Water treatment services are included.
 - Hazardous and non-hazardous waste transport and disposal anticipated for various wastes.
- **Permit Fees**
 - Dust Control Plan
 - Stormwater Pollution Prevention Plans.
 - Permitting fees related to municipality encroachment permit costs from: Los Angeles County, Caltrans, and BLM.

Table 6: Land & Right-of-Way Acquisition

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$50,879	\$62,013	\$4,326	\$117,218
TOTAL DIRECT COSTS	\$0	\$0	\$50,879	\$62,013	\$4,326	\$117,218

Assumptions

In generating the total estimated cost for Line 2000 Moreno Valley Hydrotest Project the following items were considered:

- **Labor**
 - One Senior Land Agent to support land acquisition.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 2000 MORENO VALLEY HYDROTEST PROJECT

- **Land Acquisition**

- Obtaining five Temporary Right-of-Entries (TREs) to be used as laydown yards, work areas, or for water storage.

Factors such as location, zoning, current market price and square footage are considered to determine a final estimated value specific to easements and temporary rights of entry permits.

Table 7: Company Labor

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$19,244	\$36,185	\$355,032	\$522,855	\$152,388	\$1,085,704
DIRECT NON-LABOR	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DIRECT COSTS	\$19,244	\$36,185	\$355,032	\$522,855	\$152,388	\$1,085,704

Assumptions

SoCalGas Labor - Management, Engineering, and Non-Union Labor

SoCalGas Non-Union Labor is estimated based upon activity level of effort and is divided into the following categories:

- Project Management.
- Project Field Management.
- Project Engineers.
- Construction Management.
- Environmental Services.
- Other Departments.

SoCalGas Field Labor – Distribution, Transmission, Pipeline Integrity, and Other Field Departments

SoCalGas Union Labor costs were developed with the guidance of SoCalGas Construction Management and whose costs are duration dependent and activity specific.

Table 8: Other Costs

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$101,546	\$186,082	\$308,220	\$93,591	\$105,711	\$795,150
TOTAL DIRECT COSTS	\$101,546	\$186,082	\$308,220	\$93,591	\$105,711	\$795,150

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LINE 2000 MORENO VALLEY HYDROTEST PROJECT

Assumptions

Other costs assume use of contracted services for certain Engineering, Survey, Project Management, and Design activities. These costs are included to account for the anticipated professional services required to support project planning, design development, execution, and closeout. The major components in this category include:

- Engineering and Design Services.
- Project Management Services.
- Surveying and As-builts.
- Project Support Services.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 2003 CULVER CITY TO WEST LA HYDROTEST PROJECT

Table 1: Total Direct Project Costs – All Capital

TOTAL PROJECT COSTS - CAPITAL	Stage 1^{1,2}	Stage 2³	Stage 3⁴	Stage 4⁵	Stage 5⁶	Total⁷
DIRECT LABOR	\$8,418	\$16,836	\$271,217	\$331,629	\$150,124	\$778,224
DIRECT NON-LABOR	\$388,319	\$1,098,619	\$3,524,293	\$7,137,521	\$104,728	\$12,253,480
TOTAL COSTS - CAPITAL	\$396,737	\$1,115,455	\$3,795,510	\$7,469,150	\$254,851	\$13,031,703

Project Description

The Line 2003 Gas Transmission Safety Rule (GTSR) Hydrotest Project will hydrotest approximately 4.5 miles of [REDACTED] diameter pipe from Culver City to West Los Angeles. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a Total Installed Cost (TIC) estimate to implement the above scope of work. The TIC estimate includes direct costs associated with project management, engineering and design, environmental, permitting, land acquisition, material and equipment procurement, and construction. The estimate was prepared in accordance with AACE Class 3 estimating practices and utilizes a combination of quantity-based, unit-cost, and factored estimating techniques.

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of the project costs are expended during the construction phase. The construction schedule is assumed to be 63 days.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

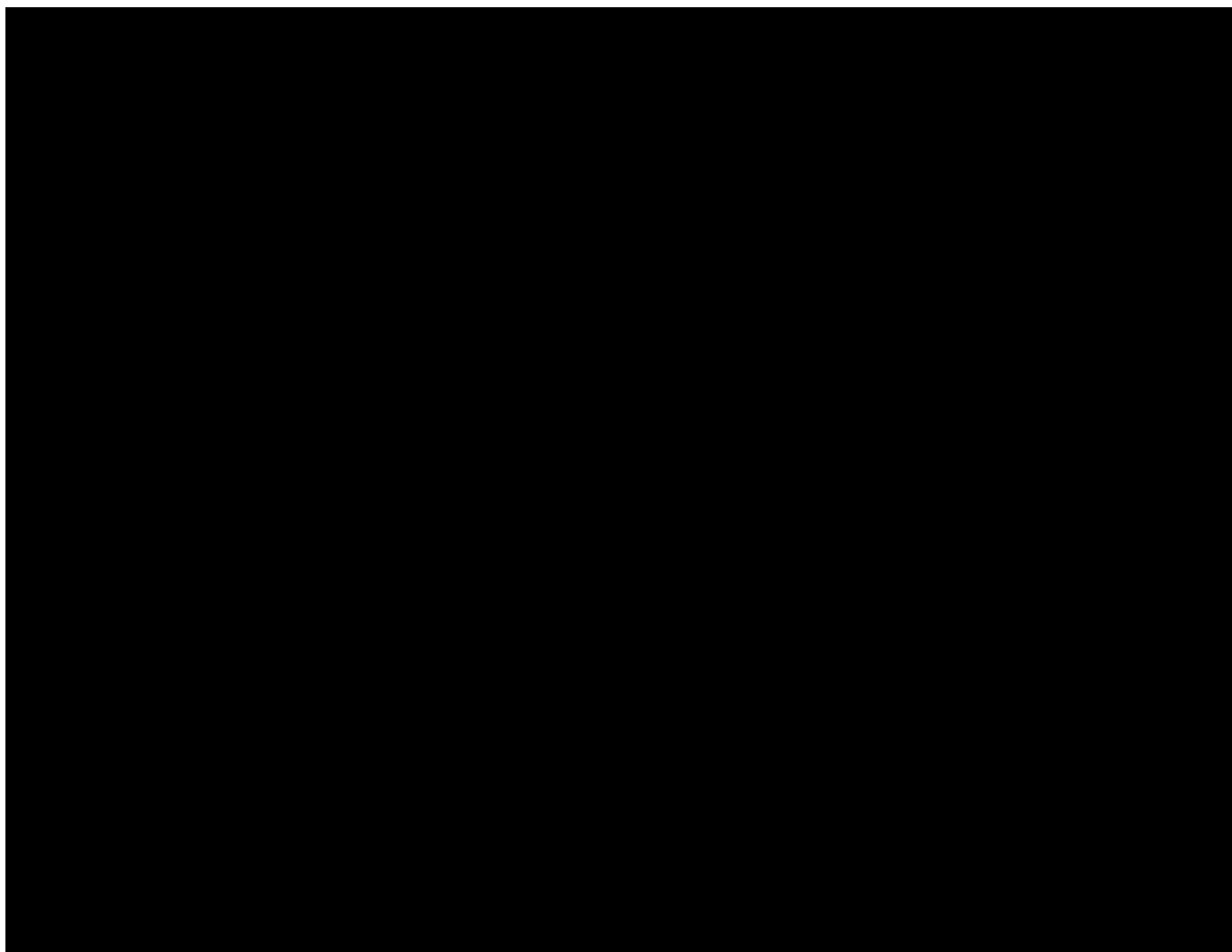
⁵ Construction.

⁶ Closeout.

⁷ Values may not add to total due to rounding.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 2003 CULVER CITY TO WEST LA HYDROTEST PROJECT

Figure 1: Overview Map for Line 2003 Hydrotest Project



GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 2003 CULVER CITY TO WEST LA HYDROTEST PROJECT

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	4.340
INCIDENTAL	0.217
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	4.557

The direct costs for each area are summarized below.

Table 3: Material

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$258,456	\$689,644	\$0	\$948,100
TOTAL DIRECT COSTS	\$0	\$0	\$258,456	\$689,644	\$0	\$948,100

Assumptions

Materials for this project will not be purchased until final internal authorization has been granted to purchase long lead time material. This will allow for material to be procured, inspected and delivered to coincide with the anticipated construction start date. The principal cost-driving materials necessary for this project include:

- 80 feet of [REDACTED] Pipe
- Five [REDACTED] elbows.
- Two [REDACTED] caps.
- Four [REDACTED] Wedding Bands.
- Two [REDACTED] ball valve.

Table 4: Construction

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$29,113	\$31,512	\$5,830,910	\$0	\$5,891,535
TOTAL DIRECT COSTS	\$0	\$29,113	\$31,512	\$5,830,910	\$0	\$5,891,535

Assumptions

In the development of the construction estimate, the following assumptions and clarifications have been made:

- One mobilization and one demobilization.

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LINE 2003 CULVER CITY TO WEST LA HYDROTEST PROJECT

- Work has been scheduled using a 10-hour per day, five-day work week.
- All materials will be received at the laydown yard.
- Mechanical excavation will be authorized up to within two feet of the existing pipeline. Hand excavation will be required within the two feet zone and within SoCalGas stations.
- Backfill excavations will be backfilled with zero sack shading and then one sack slurry to [REDACTED] below asphalt or grade, at all other locations. Zero sack slurry backfill for areas that are hand excavated.
- Non-Destructive Examination/X-Ray of welds is included.
- Construction Management and Inspection Services during project execution.

Additional Construction Information

- **Site Mobilization / Site Facilities**
 - One mobilization and one demobilization.
 - Two office trailers have been included for management and Contractor personnel at the laydown yards.
 - Temporary fencing will be installed at the laydown yard.
- **Site Management / Best Management Practices (BMPs)**
 - Two shifts for BMP installation and maintenance.
 - Site right-of-way (ROW) clearing includes grubbing and grading for the main laydown yard.
 - Install and remove steel plates over vernal pools.
- **Material Handling**
 - One shift for offloading and staging of Company materials, pipe fittings and test heads.
- **Traffic Control**
 - Four permanent traffic control set ups, and two daily traffic control set ups.
- **Utility Locates**
 - Utility locates at seven locations and approximately 20 utilities to be located.
- **Pipeline Excavation / Fabrication / Installation**
 - Installation of replacement piping at each test break.
 - Replacement of [REDACTED] pipe and install a new tap valve at the tap location.
 - Fabrication for replacement piping.
 - Installation of an [REDACTED] fill pipe.
 - Includes hand digging excavation within the stations.
- **Isolate Existing Pipeline**
 - Hot cutting of existing pipeline and welding on isolation caps.
 - Mainline isolations at two locations.
 - Isolations to be completed at the station.
 - One 24-hour shift for mainline isolation.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 2003 CULVER CITY TO WEST LA HYDROTEST PROJECT

- Three 10-hour days for tap isolation.
- Three 10-hour days for the tap reconnections.
- Three days for cross compression support.
- **Hydrotest / Pressure Test Pipeline**
 - Costs associated with welding hauling test sections to test break locations.
 - Contractor will conduct the following hydrotest activities for each test section (two):
 - 12-hour shift for Filling.
 - 10-hour shift Test Preparation.
 - 12-hour shift Testing.
 - 12-hour shift Dewatering.
 - 16-hour shift Drying.
- **Tie in Pipeline and Reconnect Taps**
 - The line will be self-seasoned.
 - Two 12-hour cold tie-ins.
 - One 24-hour hot tie-in.
 - Three 10-hour days assumed for the tap reconnections.
 - X-ray of all welds.
- **Catholic Protection**
 - Installation of cathodic protection.
- **Site Restoration**
 - Pavement restoration.
 - The restoration of one-line panels at a station.
 - The installation of all electrical work at a station.
 - Four traffic loops will be restored.
 - Asphalt restoration is included.
- **Site Demobilization**
 - Demobilization of site facilities, crew, and equipment.
 - Includes cost to mobilize and demobilize extra side booms.
- **Field Overhead**
 - Full-Time Timekeeper.
 - Full-Time Teamsters.
 - Full-Time Scheduler.
 - Full-Time Superintendent.
 - Full-Time Cost Controller.
 - Full-Time Safety Person.

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LINE 2003 CULVER CITY TO WEST LA HYDROTEST PROJECT

- Two part-time site security personnel for non-working hours at the project site and one part-time security personnel when the hydrotest equipment is on the right-of-way.

Table 5: Environmental/Permitting/Monitoring/Abatement

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$4,520	\$262,105	\$564,031	\$0	\$830,656
TOTAL DIRECT COSTS	\$0	\$4,520	\$262,105	\$564,031	\$0	\$830,656

Assumptions

In calculating the total estimated environmental cost, the following items were considered:

- Environmental Services (permitting support, surveys and monitoring).
- Non-hazardous waste containment/disposal.
- Abatement of Asbestos Containing Material (ACM).
- Water Treatment and Hazardous Materials.
- Mitigation Fees.

The high-level assumptions and specific level of effort to provide environmental support for this project are described in more detail below.

- **Environmental Document Production**
 - Protocol Survey Reports.
 - Preconstruction Clearance.
 - Storm Water Pollution and Prevention Plan (SWPPP) and Notice of Intent (NOI).
 - Environmental Clearance.
- **Construction Monitoring**
 - One full-time monitor for duration of project.
 - 69 days of monitoring.
- **Project Closeout Activities**
 - Restoration support, permit reporting, and closeout.
- **Abatement**
 - Six days for abatement of ACMs.
- **Water Treatment and Hazardous Materials**
 - Hydrotest water, estimated at 850,000 gallons, from hydrant and obtained by pipeline contractor.
 - Water disposal from 100 miles roundtrip plus disposal fee.

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LINE 2003 CULVER CITY TO WEST LA HYDROTEST PROJECT

- Twelve days for hydrotest standby support.
 - Soil contamination is not anticipated.
 - Groundwater is not anticipated.
 - Waste sampling and profiling anticipated to support disposal of waste generated during construction.
 - Hazardous and non-hazardous waste transport and disposal anticipated for various wastes.
- **Permit Fees**
 - Permitting fees related to encroachment permit and traffic control plans.
 - Permitting fees for City of Los Angeles.
 - SWPPP fee.

Table 6: Land & Right-of-Way Acquisition

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$1,500,589	\$0	\$0	\$1,500,589
TOTAL DIRECT COSTS	\$0	\$0	\$1,500,589	\$0	\$0	\$1,500,589

Assumptions

In generating for the total estimated cost for Line 2003 Culver City to West LA Hydrotest Project the following items were considered:

- **Labor**
 - One contract land agent for project land acquisition.
- **Land Acquisition**
 - Appraisal Reports.
 - Title Reports.
- **Temporary Right of Entry**
 - Laydown yard.
 - Workspace.

Factors such as location, zoning, current market price and square footage are considered to determine a final estimated value specific to easements and temporary rights of entry permits.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 2003 CULVER CITY TO WEST LA HYDROTEST PROJECT

Table 7: Company Labor

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$8,418	\$16,836	\$271,217	\$331,629	\$150,124	\$778,224
DIRECT NON-LABOR	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DIRECT COSTS	\$8,418	\$16,836	\$271,217	\$331,629	\$150,124	\$778,224

Assumptions

SoCalGas Labor - Management, Engineering, and Non-Union Labor

SoCalGas Non-Union Labor is estimated based upon activity level of effort and is divided into the following categories:

- Project Management.
- Project Field Management.
- Project Engineers.
- Construction Management.
- Environmental Services.
- Other Departments.

SoCalGas Field Labor – Distribution, Transmission, Pipeline Integrity, and Other Field Departments

SoCalGas Union Labor costs were developed with the guidance of SoCalGas Construction Management and whose costs are duration dependent and activity specific.

Table 8: Other Costs

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$388,319	\$1,064,987	\$1,471,631	\$52,937	\$104,726	\$3,082,600
TOTAL DIRECT COSTS	\$388,319	\$1,064,987	\$1,471,631	\$52,937	\$104,726	\$3,082,600

Assumptions

Other costs assume use of contracted services for certain Engineering, Survey, Project Management, and Design activities. These costs are included to account for the anticipated professional services required to support project planning, design development, execution, and closeout. The major components in this category include:

- Engineering and Design Services.
- Project Management Services.
- Surveying and As-builts.
- Project Support Services.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06**LINE 2003 PICO RIVERA TO SOUTH LA HYDROTEST PROJECT****Table 1: Total Direct Project Costs – All Capital**

TOTAL PROJECT COSTS - CAPITAL	Stage 1^{1,2}	Stage 2³	Stage 3⁴	Stage 4⁵	Stage 5⁶	Total⁷
DIRECT LABOR	\$86,926	\$163,136	\$303,580	\$665,866	\$171,383	\$1,390,890
DIRECT NON-LABOR	\$388,993	\$1,101,086	\$3,278,498	\$12,816,040	\$138,333	\$17,722,950
TOTAL COSTS - CAPITAL	\$475,919	\$1,264,221	\$3,582,078	\$13,481,906	\$309,716	\$19,113,840

Project Description

The Line 2003 Pico Rivera to South LA Gas Transmission Safety Rule (GTSR) Hydrotest Project will hydrotest approximately 11 miles of [REDACTED] diameter pipe from Pico Rivera to South LA. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a Total Installed Cost (TIC) estimate to implement the above scope of work. The TIC estimate includes direct costs associated with project management, engineering and design, environmental, permitting, land acquisition, material and equipment procurement, and construction. The estimate was prepared in accordance with AACE Class 3 estimating practices and utilizes a combination of quantity-based, unit-cost, and factored estimating techniques.

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of the project costs are expended during the construction phase. The construction schedule is assumed to be 110 days.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

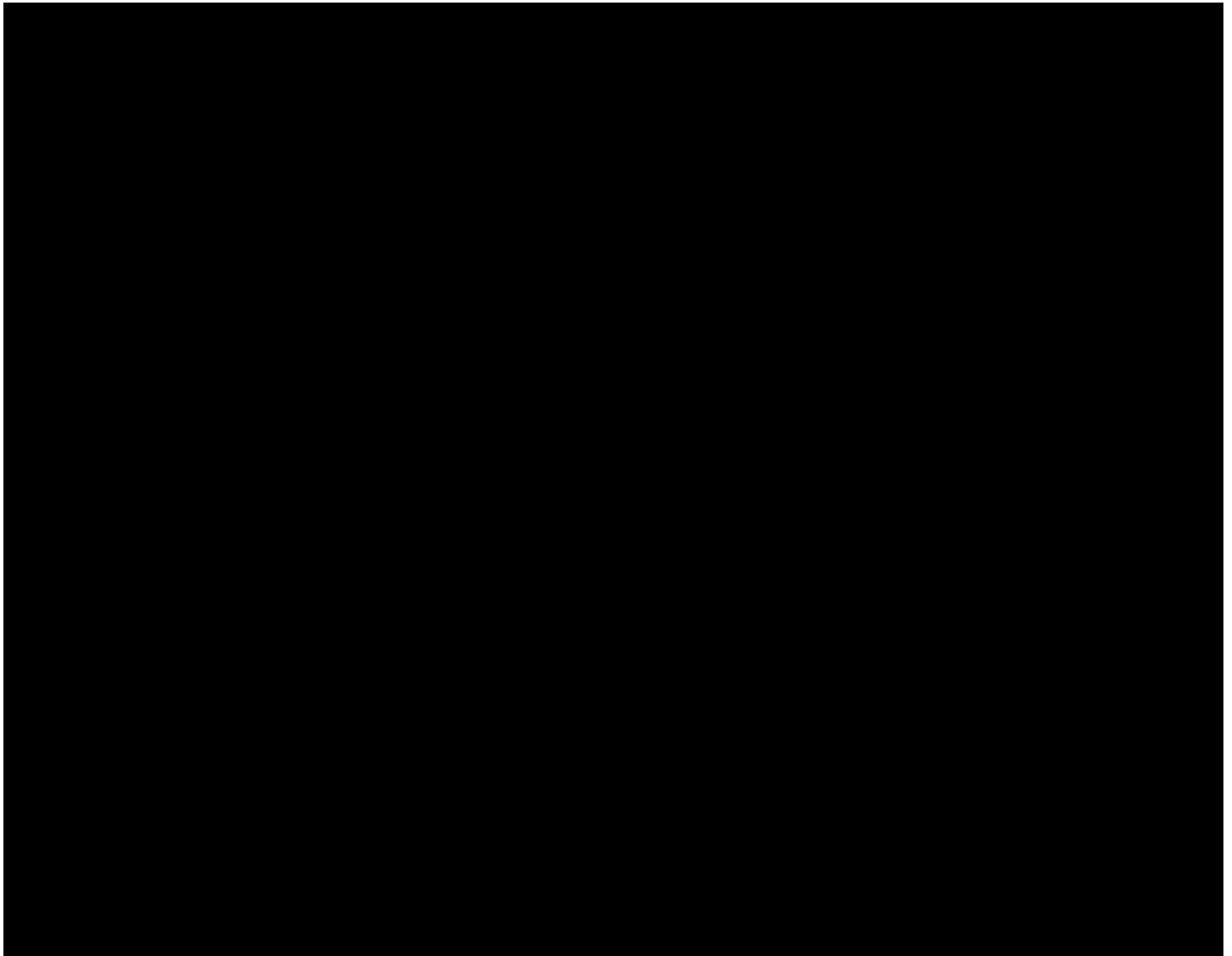
⁵ Construction.

⁶ Closeout.

⁷ Values may not add to total due to rounding.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 2003 PICO RIVERA TO SOUTH LA HYDROTEST PROJECT

Figure 1: Overview Map for Line 2003 Pico Rivera to South LA Hydrotest Project



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LINE 2003 PICO RIVERA TO SOUTH LA HYDROTEST PROJECT

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	10.226
INCIDENTAL	0.755
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	10.981

The direct costs for each area are summarized below.

Table 3: Material

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$708,465	\$697,309	\$0	\$1,405,773
TOTAL DIRECT COSTS	\$0	\$0	\$708,465	\$697,309	\$0	\$1,405,773

Assumptions

Materials for this project will not be purchased until final internal authorization has been granted to purchase long lead time material. This will allow for material to be procured, inspected and delivered to coincide with the anticipated construction start date. The principal cost-driving materials necessary for this project include:

- 570 feet of [REDACTED] pipe.
- 39 [REDACTED] ball valves.
- 10 [REDACTED] ball valves.
- One [REDACTED] ball valve.

Table 4: Construction

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$29,113	\$511,957	\$10,684,604	\$0	\$11,225,674
TOTAL DIRECT COSTS	\$0	\$29,113	\$511,957	\$10,684,604	\$0	\$11,225,674

Assumptions

In the development of the construction estimate, the following assumptions and clarifications have been made:

- One mobilization and one demobilization.
- Work has been scheduled using a 10 hour per day, five-day work week.

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LINE 2003 PICO RIVERA TO SOUTH LA HYDROTEST PROJECT

- Two laydown yards will be included.
- All materials will be received at the laydown yard.
- Mechanical excavation will be authorized up to within two feet of the existing pipeline. Hand excavation will be required within the two feet zone.
- All excavations will be backfilled with one or zero sack slurry and washed bedding sand up to [REDACTED] of top grade.
- The project will require a fabrication crew, mechanical crew and hand excavation crew.
- Three tie-ins for mainline pipe for a 24-hour continuous duration.
- Non-Destructive Examination/X-Ray of welds.
- Construction Management and Inspection Services during project execution.

Additional Construction Information

- **Site Mobilization / Site Facilities**
 - One mobilization and one demobilization.
 - Two office trailers have been included at the laydown yards.
 - Site facility costs cover a six-month duration.
 - 2,850 linear feet (LF) of temporary fencing have been included for the laydown yards.
 - Installation of wood pipe dunnage for vegetation protection.
 - Installation of two lake tanks.
 - One day for receiving and unloading materials and equipment.
- **Site Management / Best Management Practices (BMPs)**
 - Fiber rolls, sandbags, hay/straw bales, reinforced poly sheeting, sock drains, and silt fencing will be procured and installed for BMP measures.
 - Rumble plates have also been added for BMP measures.
- **Material Handling**
 - Five loads of material will be unloaded at laydown yard and transported as needed by the Contractor.
- **Traffic Control**
 - Three-person traffic control crew for duration of construction.
 - An additional three-person traffic control crew for hydrotest activities.
 - Included are reflective signs and cones for traffic control support.
- **Site ROW Clearing**
 - Demolition of 20 feet of station fencing.
 - Removal of one tree.
 - Hauling and disposal of all debris.
- **Utility Locates**
 - Two days of Ground Penetrating Radar (GPR).

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LINE 2003 PICO RIVERA TO SOUTH LA HYDROTEST PROJECT

- 25 potholes for standard utility locates.
- 40 potholes for existing pipelines locates.
- **Pipeline Excavation / Fabrication / Installation**
 - Removal and disposal of 4,050 square feet (SF) of asphalt.
 - Assume one fabrication crew, one mechanical crew and one hand excavation crew are included.
 - Eight days to fabricate [REDACTED] isolation and test caps and [REDACTED] transition piping.
 - Fabrication of taps and replacement segments.
 - 13 days to disconnect and cap the existing taps.
 - Three days to fabricate and install a new mainline valve (MLV).
- **Isolate Existing Pipeline**
 - Procure three nitrogen trucks.
 - Seven days for abatement of cut-outs.
 - Three 16-hour shifts to cut and cap.
 - Six days to purge existing pipeline.
- **Hydrotest / Pressure Test Pipeline**
 - Hydrotest days are assumed to be 12-hour days.
 - Six shifts to install test heads, isolation caps, flanges, and transition piping.
 - Two and half crew hours to fabricate and install hard fill piping.
 - Each of the four hydrotests will require five shifts to fill, test, dewater and dry.
- **Tie-In Pipeline**
 - 10-hour shift for tie-in preparation for each tie-in.
 - The existing pipeline will be tied in during a 24-hour continuous shift for each tie-in.
 - Four and half days to remove test heads.
 - Six days to reconnect existing taps after gas up.
- **Site Restoration**
 - Removal of temporary pipe supports.
 - Base pave 4,050 square feet (SF) of asphalt.
 - 500 LF of 4-inch wide striping.
 - Restoration of one traffic loop.
 - Temporary fencing removal.
 - One shift for removal of BMP.
 - Three days to remove lake tanks and final cleanup.
- **Site Demobilization**
 - Demobilization of site facilities, crew, and equipment.
 - Two loads to haul excess piping to SoCalGas designated yard.

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LINE 2003 PICO RIVERA TO SOUTH LA HYDROTEST PROJECT

- Two days to break down laydown yards.
- **Field Overhead**
 - Full-Time Project Manager.
 - Full-Time Superintendent.
 - Full-Time Cost Controller.
 - Full-Time Safety Person.
 - One forklift, a low deck trailer, a street sweeper, and a 4,000-gallon water truck.
 - One site security personnel for non-working hours.

Table 5: Environmental/Permitting/Monitoring/Abatement

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$5,586	\$206,419	\$1,285,240	\$26,743	\$1,523,988
TOTAL DIRECT COSTS	\$0	\$5,586	\$206,419	\$1,285,240	\$26,743	\$1,523,988

Assumptions

In calculating the total estimated environmental cost, the following items were considered:

- Environmental Services (permitting support, surveys and monitoring).
- Non-hazardous waste containment/disposal.
- Abatement of Asbestos Containing Material (ACM).
- Water Treatment and Hazardous Materials.
- Permit Fees.
- Mitigation Fees.

The high-level assumptions and specific level of effort to provide environmental support for this project are described in more detail below.

- **Environmental Document Production**
 - Protocol Survey Reports.
 - Preconstruction Clearance.
 - Worker Environmental Awareness Procedure (WEAP).
 - Environmental Clearance.
- **Preconstruction Surveys**
 - Preconstruction wildlife and nesting bird survey reports.
 - Preconstruction wildlife survey report.
 - Cultural survey.
 - Rare plant survey and topsoil flagging.

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LINE 2003 PICO RIVERA TO SOUTH LA HYDROTEST PROJECT

- **Construction Monitoring**
 - One full-time biological monitor for the duration of the project.
- **Project Closeout Activities**
 - Restoration support, permit reporting, and closeout.
- **Abatement**
 - 17 days for abatement of ACMs.
- **Water Treatment and Hazardous Materials**
 - Hydrotest water to be obtained from hydrant.
 - Two days for hydrotest standby support.
 - Waste sampling and profiling anticipated to support disposal of waste generated during construction.
 - Hazardous and non-hazardous waste transport and disposal anticipated for various wastes.
- **Permit Fees**
 - Permitting fees related to encroachment permits and traffic control plans.
 - SWPPP fee.

Table 6: Land & Right-of-Way Acquisition

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$1,097,008	\$0	\$0	\$1,097,008
TOTAL DIRECT COSTS	\$0	\$0	\$1,097,008	\$0	\$0	\$1,097,008

Assumptions

In generating for the total estimated cost for Line 2003 Pico Rivera to South LA hydrotest Project the following items were considered:

- **Labor**
 - One contract land agent.
 - Administrative support and document control specialist.
- **Land Acquisition**
 - Appraisal Reports.
 - Title Reports.
- **Temporary Right of Entry**
 - Laydown yard.

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LINE 2003 PICO RIVERA TO SOUTH LA HYDROTEST PROJECT

- Workspace.
- Access road.

Factors such as location, zoning, current market price and square footage are considered to determine a final estimated value specific to easements and temporary rights of entry permits.

Table 7: Company Labor

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$86,926	\$163,136	\$303,580	\$665,866	\$171,383	\$1,390,890
DIRECT NON-LABOR	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DIRECT COSTS	\$86,926	\$163,136	\$303,580	\$665,866	\$171,383	\$1,390,890

Assumptions

SoCalGas Labor - Management, Engineering, and Non-Union Labor

SoCalGas Non-Union Labor is estimated based upon activity level of effort and is divided into the following categories:

- Project Management.
- Project Field Management.
- Project Engineers.
- Construction Management.
- Environmental Services.
- Other Departments.

SoCalGas Field Labor – Distribution, Transmission, Pipeline Integrity, and Other Field Departments

SoCalGas Union Labor costs were developed with the guidance of SoCalGas Construction Management and whose costs are duration dependent and activity specific.

Table 8: Other Costs

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$388,993	\$1,066,387	\$754,649	\$148,888	\$111,590	\$2,470,507
TOTAL DIRECT COSTS	\$388,993	\$1,066,387	\$754,649	\$148,888	\$111,590	\$2,470,507

Assumptions

Other costs assume use of contracted services for certain Engineering, Survey, Project Management, and Design activities. These costs are included to account for the anticipated professional services required to support project

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LINE 2003 PICO RIVERA TO SOUTH LA HYDROTEST PROJECT

planning, design development, execution, and closeout. The major components in this category include:

- Engineering and Design Services.
- Project Management Services.
- Surveying and As-builts.
- Project Support Services.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06**LINE 2003 SOUTH LA TO CULVER CITY PROJECT****Table 1: Total Direct Project Costs – All Capital**

TOTAL PROJECT COSTS - CAPITAL	Stage 1^{1,2}	Stage 2³	Stage 3⁴	Stage 4⁵	Stage 5⁶	Total⁷
DIRECT LABOR	\$39,423	\$78,845	\$895,060	\$450,473	\$93,820	\$1,557,621
DIRECT NON-LABOR	\$388,319	\$1,098,619	\$2,909,469	\$10,720,884	\$117,677	\$15,234,968
TOTAL COSTS - CAPITAL	\$427,741	\$1,177,464	\$3,804,529	\$11,171,357	\$211,497	\$16,792,589

Project Description

The Line 2003 South LA to Culver City Gas Transmission Safety Rule (GTSR) Project will hydrotest approximately 11.5 miles of [REDACTED] diameter pipe from South Los Angeles to Culver City. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a Total Installed Cost (TIC) estimate to implement the above scope of work. The TIC estimate includes direct costs associated with project management, engineering and design, environmental, permitting, land acquisition, material and equipment procurement, and construction. The estimate was prepared in accordance with AACE Class 3 estimating practices and utilizes a combination of quantity-based, unit-cost, and factored estimating techniques.

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of the project costs are expended during the construction phase. The construction schedule is assumed to be 89 days.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

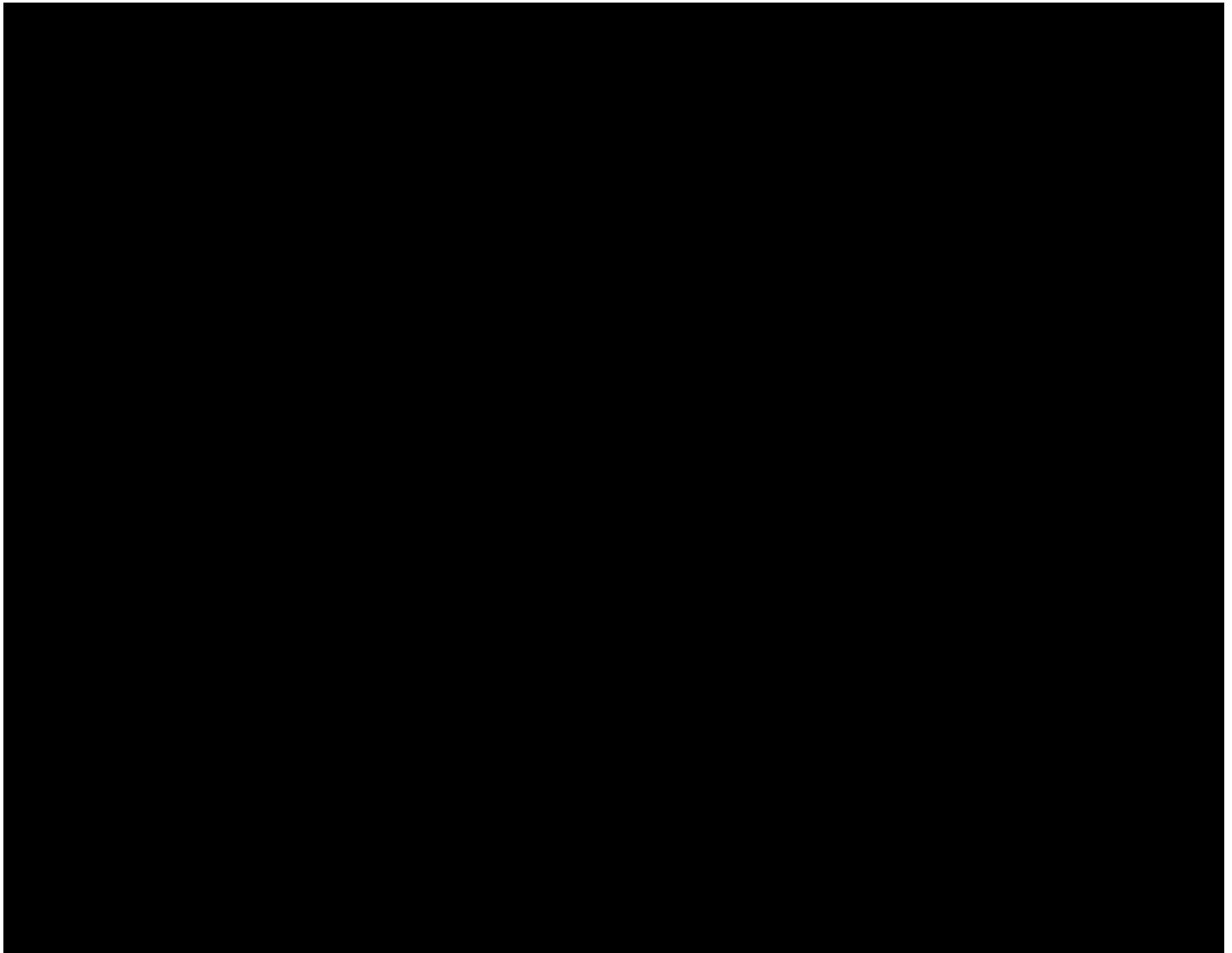
⁵ Construction.

⁶ Closeout.

⁷ Values may not add to total due to rounding.

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LINE 2003 SOUTH LA TO CULVER CITY PROJECT

Figure 1: Overview Map for Line 2003 South LA to Culver City Hydrotest Project



GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 2003 SOUTH LA TO CULVER CITY PROJECT

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	10.930
INCIDENTAL	0.760
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	11.690

The direct costs for each area are summarized below.

Table 3: Material

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$452,041	\$693,633	\$0	\$1,145,673
TOTAL DIRECT COSTS	\$0	\$0	\$452,041	\$693,633	\$0	\$1,145,673

Assumptions

Materials for this project will not be purchased until final internal authorization has been granted to purchase long lead time material. This will allow for material to be procured, inspected and delivered to coincide with the anticipated construction start date. The principal cost-driving materials necessary for this project include:

- 160 feet of [REDACTED] pipe.
- Eight [REDACTED] caps.
- 27 [REDACTED] ball valves.
- Eight [REDACTED] ball valves.

Table 4: Construction

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$29,113	\$59,669	\$8,700,313	\$0	\$8,789,095
TOTAL DIRECT COSTS	\$0	\$29,113	\$59,669	\$8,700,313	\$0	\$8,789,095

Assumptions

In the development of the construction estimate, the following assumptions and clarifications have been made:

- One mobilization and one demobilization.
- Work has been scheduled using a 10-hour per day, five-day work week.

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LINE 2003 SOUTH LA TO CULVER CITY PROJECT

- Mechanical excavation will be authorized up to within two feet of the existing pipeline. Hand excavation will be required within the two feet zone.
- All excavations will be backfilled with washed bedding sand and one or zero sack slurry up to 6-inches of top of grade. Excess spoils will be hauled disposed.
- There will be two tie-ins for the mainline pipe during a 24-hour period.
- Hydrotest water will be treated and discharged.
- Non-Destructive Examination/X-Ray of welds.
- Construction Management and Inspection Services during project execution.

Additional Construction Information

- **Site Mobilization / Site Facilities**
 - One mobilization and one demobilization.
 - One day for receiving and unloading materials and equipment.
 - Project site includes one laydown yard.
 - Installation of temporary fencing installed at laydown yards.
 - Installation of two Lake Tanks.
 - Two office trailers, a storage container, and other facility equipment have been included for management and inspection personnel at the laydown yard.
 - Site facility costs cover a six-month duration.
- **Site Management / Best Management Practices (BMPs)**
 - Fiber rolls, hay/straw bales, sandbags, reinforced poly sheet, silt fence with wooden stakes, and sock drains have been included for BMP construction materials.
 - 8 foot x 10 foot rumble plates have been included for BMPs.
- **Material Handling**
 - Five loads of SoCalGas furnished material will be unloaded by the contractor at the laydown yard.
- **Traffic Control**
 - Three-man traffic control crew for the duration of construction.
 - Additional three-man traffic control crew during hydrotest activities.
 - Includes reflective signs and cones for traffic control support.
- **Site ROW Clearing**
 - Removal of approximately 20 linear feet (LF) of station fencing.
 - Removal of one station panel.
 - Includes the hauling and disposal of debris.
- **Utility Locates**
 - Includes two days of Ground Penetrating Radar scans (GPR).
 - 40 potholes for standard utility locates and pipeline locates.

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LINE 2003 SOUTH LA TO CULVER CITY PROJECT

- **Pipeline Excavation / Fabrication / Installation**
 - Removal and disposal of 2,000 square feet (SF) of asphalt.
 - Assume one fabrication crew, one mechanical crew and one hand excavation crew are included.
 - Six days to fabricate [REDACTED] isolation and test caps and [REDACTED] transition piping.
 - Fabrication of taps and replacement segments.
 - 12 days to disconnect and cap the existing taps.
- **Isolate Existing Pipeline**
 - Two nitrogen trucks are included.
 - Four days to support abatement of cut-outs.
 - Two 16-hour shifts to cut and cap pipeline.
 - Eight days to purge existing pipeline.
- **Hydrotest / Pressure Test Pipeline**
 - Hydrotest days are assumed to be 12-hour days.
 - Five shifts to install test heads, isolation caps, flanges, and transition piping.
 - Fabricate and install hard fill piping.
 - A total of two hydrotests at four shifts each to fill, test, dewater and dry.
- **Tie-In Pipeline**
 - Four days to remove test heads and caps.
 - Assume 10-hour shifts for preparation for tie-in activity for each test, a total of two shifts.
 - Two tie-ins for the mainline pipe assumed at 24-hour shifts.
 - 13 days to reconnect existing taps after gas up.
- **Site Restoration**
 - Remove temporary pipe supports.
 - Base pave of 1,720 square feet (SF) of asphalt.
 - 330 feet of 4-inch wide striping.
 - Restoration of four traffic loops.
 - Temporary fencing removal.
 - One shift for removal of BMPs.
 - Two days for removal of lake tank and final cleanup.
- **Site Demobilization**
 - Two loads of excess materials will be transported to nearest SoCalGas facility.
 - One demobilization of crew and equipment.
 - One day for loading materials and equipment.
 - Two days to break down laydown yards.
- **Field Overhead**
 - Full-Time Project Manager.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06**LINE 2003 SOUTH LA TO CULVER CITY PROJECT**

- Full-Time Superintendent.
- Full-Time Cost Controller.
- Full-Time Safety Person.
- One forklift, a low deck trailer, a street sweeper, and a 4,000-gallon water truck.
- One site security personnel for non-working hours.

Table 5: Environmental/Permitting/Monitoring/Abatement

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$4,520	\$213,790	\$1,136,219	\$10,218	\$1,364,746
TOTAL DIRECT COSTS	\$0	\$4,520	\$213,790	\$1,136,219	\$10,218	\$1,364,746

Assumptions

In calculating the total estimated environmental cost, the following items were considered:

- Environmental Services (permitting support, surveys and monitoring).
- Non-hazardous waste containment/disposal.
- Abatement of Asbestos Containing Material (ACM).
- Water Treatment and Hazardous Materials.
- Permit Fees.

The high-level assumptions and specific level of effort to provide environmental support for this project are described in more detail below.

- **Environmental Document Production**
 - Protocol Survey Reports.
 - Preconstruction Clearance.
 - Storm Water Pollution and Prevention Plan (SWPPP) and Notice of Intent (NOI).
 - Environmental Clearance.
- **Construction Monitoring**
 - One full-time monitor for duration of project.
- **Project Closeout Activities**
 - Restoration support, permit reporting, and closeout.
- **Abatement**
 - 17 days for abatement of ACMs.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06**LINE 2003 SOUTH LA TO CULVER CITY PROJECT****• Water Treatment and Hazardous Materials**

- Hydrotest water, estimated at 2.1 million gallons from hydrant.
- Hydrotest water will be treated and discharged.
- Twelve days for hydrotest standby support.
- Waste sampling and profiling anticipated to support disposal of waste generated during construction.
- Hazardous and non-hazardous waste transport and disposal anticipated for various wastes.

• Permit Fees

- Permitting fees related to encroachment permit and traffic control plans.
- Permitting fees for City of Inglewood & Los Angeles County.
- SWPPP fee.

Table 6: Land & Right-of-Way Acquisition

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$671,665	\$0	\$0	\$671,665
TOTAL DIRECT COSTS	\$0	\$0	\$671,665	\$0	\$0	\$671,665

Assumptions

In generating for the total estimated cost for Line 2003 South LA to Culver City Project the following items were considered:

• Labor

- One contract land agent to support land acquisition.

• Temporary Right of Entry

- Three laydown yards.
- Two Workspaces.

Factors such as location, zoning, current market price and square footage are considered to determine a final estimated value specific to easements and temporary rights of entry permits.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 2003 SOUTH LA TO CULVER CITY PROJECT

Table 7: Company Labor

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$39,423	\$78,845	\$895,060	\$450,473	\$93,820	\$1,557,621
DIRECT NON-LABOR	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DIRECT COSTS	\$39,423	\$78,845	\$895,060	\$450,473	\$93,820	\$1,557,621

Assumptions

SoCalGas Labor - Management, Engineering, and Non-Union Labor

SoCalGas Non-Union Labor is estimated based upon activity level of effort and is divided into the following categories:

- Project Management.
- Project Field Management.
- Project Engineers.
- Construction Management.
- Environmental Services.
- Other Departments.

SoCalGas Field Labor – Distribution, Transmission, Pipeline Integrity, and Other Field Departments

SoCalGas Union Labor costs were developed with the guidance of SoCalGas Construction Management and whose costs are duration dependent and activity specific.

Table 8: Other Costs

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$388,319	\$1,064,987	\$1,512,304	\$190,720	\$107,459	\$3,263,789
TOTAL DIRECT COSTS	\$388,319	\$1,064,987	\$1,512,304	\$190,720	\$107,459	\$3,263,789

Assumptions

Other costs assume use of contracted services for certain Engineering, Survey, Project Management, and Design activities. These costs are included to account for the anticipated professional services required to support project planning, design development, execution, and closeout. The major components in this category include:

- Engineering and Design Services.
- Project Management Services.
- Surveying and As-builts.
- Project Support Services.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 3000 WEST HYDROTEST PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1^{1,2}	Stage 2³	Stage 3⁴	Stage 4⁵	Stage 5⁶	Total⁷
DIRECT LABOR	\$65,230	\$136,602	\$177,726	\$800,788	\$161,025	\$1,341,371
DIRECT NON-LABOR	\$124,262	\$393,237	\$1,122,703	\$12,788,689	\$169,704	\$14,598,595
TOTAL COSTS - CAPITAL	\$189,492	\$529,839	\$1,300,429	\$13,589,478	\$330,729	\$15,939,966

Project Description

The Line 3000 West Hydrotest will remediate approximately 1.3 miles of [REDACTED] diameter pipe from Santa Clarita to Los Angeles, within Los Angeles County. This project scope includes a total of four non-contiguous segments, each measuring approximately 55 feet, 65 feet, 1.2 miles, and 365 feet. Of these four sections, approximately 1.2 miles will be hydrotested, and 120 feet of the remaining sections will be replaced. In addition, this project also includes the replacement of approximately 90 feet of Line 3000 West laterals and nearby supply lines connecting to Line 3000 West. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP) of the pipeline, in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a Total Installed Cost (TIC) estimate to implement the above scope of work. The TIC Estimate includes direct costs associated with project management, engineering and design, environmental permitting, land acquisition, material and equipment procurement, and construction. The estimate was prepared in accordance with AACE Class 3 estimating practices and utilizes a combination of quantity-based, unit-cost, and factored estimating techniques.

Schedule

The schedule was developed based on the five-stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of the project costs are expended during the construction phase. The construction schedule is assumed to be 144 days.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

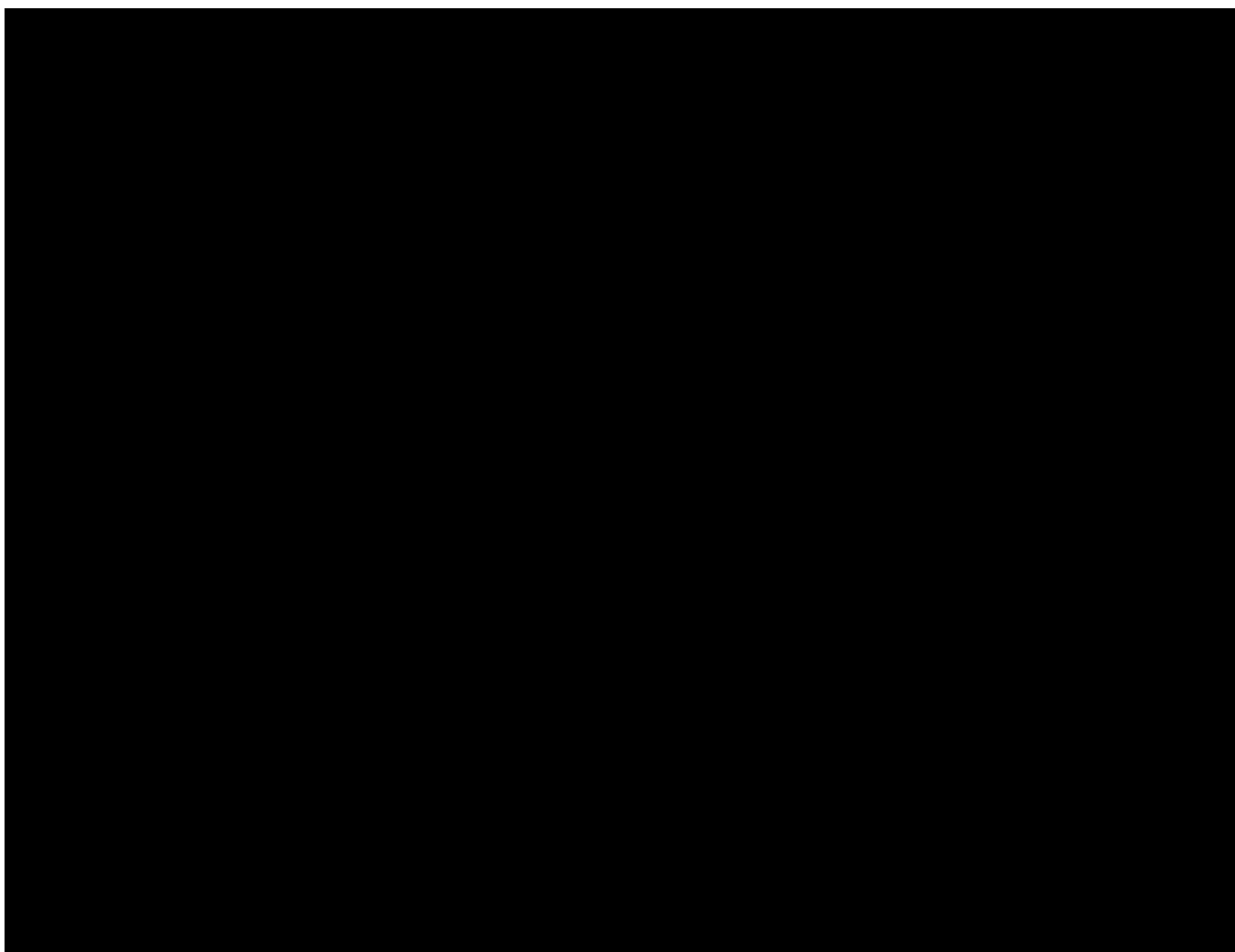
⁵ Construction.

⁶ Closeout.

⁷ Values may not add to total due to rounding.

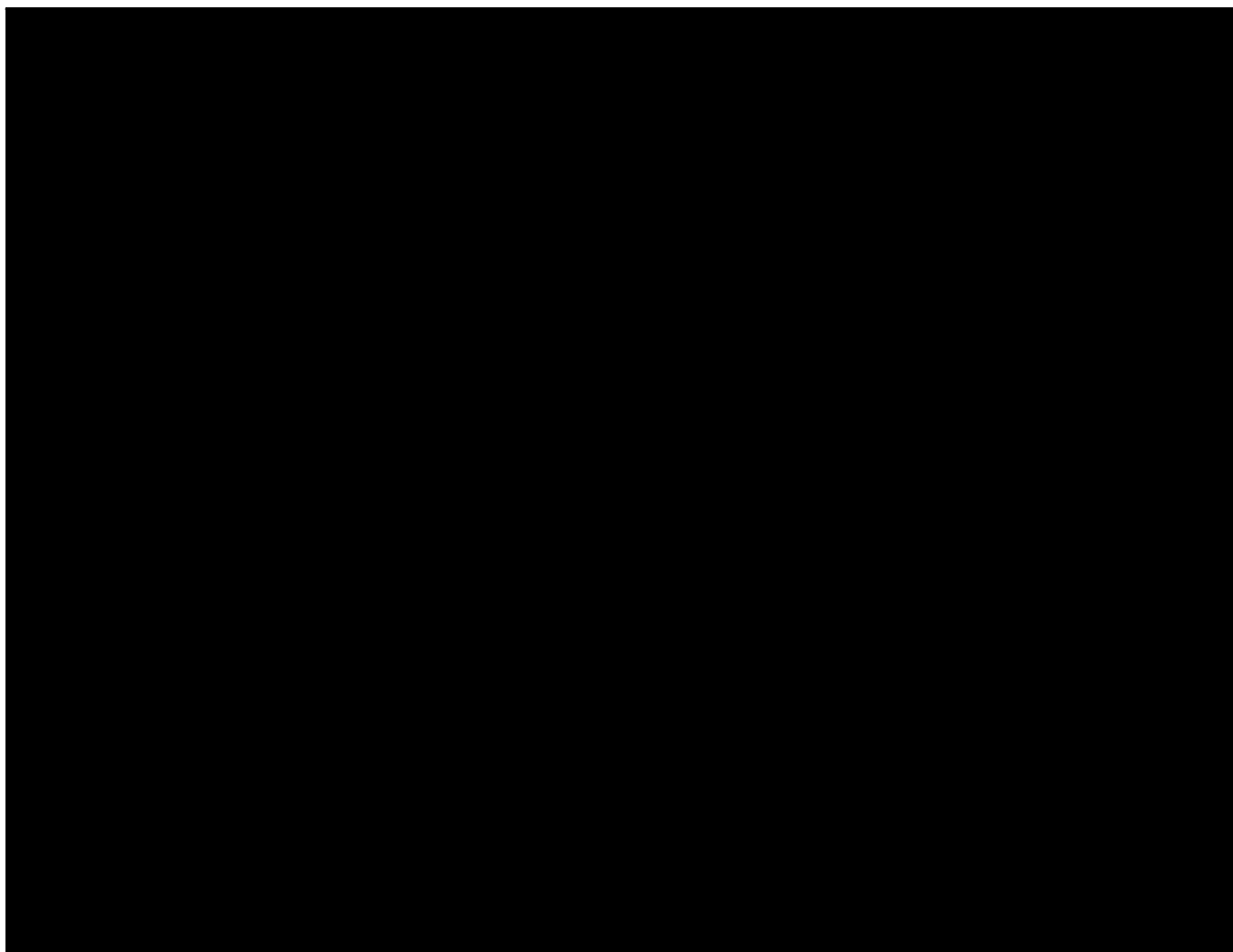
GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 3000 WEST HYDROTEST PROJECT

Figure 1: Overview Map for Line 3000 West Hydrotest Project – Southern Segments



GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 3000 WEST HYDROTEST PROJECT

Figure 2: Overview Map for Line 3000 West Hydrotest Project – Northern Segment



GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 3000 WEST HYDROTEST PROJECT

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	1.278
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	1.278

The direct costs for each area are summarized below.

Table 3: Material

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$387,645	\$686,586	\$0	\$1,074,231
TOTAL DIRECT COSTS	\$0	\$0	\$387,645	\$686,586	\$0	\$1,074,231

Assumptions

Materials for this project will not be purchased until final internal authorization has been granted to purchase long lead time material. This will allow for material to be procured, inspected and delivered to coincide with the anticipated construction start date. The principal cost-driving materials necessary for this project include:

- 273 feet of [REDACTED] pipe.
- Three [REDACTED] ball valves.
- Four [REDACTED] ball valves.
- 24 [REDACTED] ball valves.

Table 4: Construction

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$0	\$0	\$10,982,279	\$0	\$10,982,279
TOTAL DIRECT COSTS	\$0	\$0	\$0	\$10,982,279	\$0	\$10,982,279

Assumptions

In the development of the construction estimate, the following assumptions and clarifications have been made:

- One mobilization and one demobilization.
- Work has been scheduled using a 10 hour per day, five-day work week.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 3000 WEST HYDROTEST PROJECT

- All materials will be received at the laydown yard.
- Mechanical excavation will be authorized up to within two feet of the existing pipeline. Hand excavation will be required within the two feet zone and within existing stations.
- Frac tanks will be utilized to support the hydrostatic testing operations.
- All excavations will be backfilled with zero sack slurry or sand padding to one foot above pipeline. Remainder of backfill will be performed using zero sack and one sack.
- Isolation of eight existing taps.
- Pipeline isolation will be achieved through a combination of existing mainline valves.
- The pipeline will be tested in three primary test segments.
- Non-Destructive Examination and X-Ray of welds.
- Construction Management and Inspection Services during project execution.
- Hydrotest water will be hauled off and disposed by Environmental Contractor.

Additional Construction Information

- **Site Mobilization / Site Facilities**
 - One mobilization and one demobilization.
 - Two laydown yards.
 - Two office trailers have been included for management and inspection personnel at the laydown yard.
 - Site facility costs cover a seven-month duration.
 - Temporary fencing for the laydown yard and test break locations.
 - Clearing for laydown yard and replacement section workspace.
- **Site Management / Best Management Practices (BMPs)**
 - Fiber rolls, straw bales, sandbags, sock drains, demarcation fence, and silt fencing will be procured and installed for BMP measures.
- **Material Handling**
 - Three loads of material will be unloaded at laydown yard and transported as needed.
- **Traffic Control**
 - Three flaggers will be used for traffic control for approximately 144 days.
- **Utility Locates**
 - One day of Ground Penetrating Radar (GPR).
 - 35 Gas Locates.
 - 18 Standard Locates.
- **Excavation / Fabrication / Installation**
 - Removal of 2,500 square feet (SF) of asphalt.
 - Removal of 1,300 SF of concrete and 240 LF of concrete curb and gutter.
 - Excavate trench and 17 bell holes.

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LINE 3000 WEST HYDROTEST PROJECT

- Fabricate test heads and isolation caps.
- Fabricate tie-in pieces.
- Weld, lay, and coat pipeline.
- **Isolate Existing Pipeline**
 - Pipeline will be isolated using existing valves.
 - Cut and cap tap locations.
 - Purge existing pipeline with nitrogen.
- **Hydrotest / Pressure Test Pipeline**
 - The pipeline will be hydrotested in three test sections.
 - Test heads will be installed below grade.
- **Tie-In Pipeline**
 - Fabricate four [REDACTED] tie-in pieces.
 - 11 days of preparation to complete tie-in.
 - The existing pipeline will be tied in during 24-hour shifts for each test section.
- **Site Restoration**
 - Hydroseeding of disturbed areas.
 - Base paving, grind and cap, concrete sidewalks, and curb restoration.
 - Restoration of work site locations to original condition.
- **Site Demobilization**
 - Demobilization of site facilities, crew, and equipment.
 - Hauling of one load of excess piping to SoCalGas designated yard.
- **Field Overhead**
 - Full-Time Project Manager.
 - Full-Time Superintendent.
 - Full-Time Cost Controller.
 - Full-Time Safety Person.
 - Part-Time Timekeeper.
 - Part-Time Scheduler.
 - One water truck and driver for full duration of project for dust suppression.
 - One low-bed truck is included to assist with moving onsite equipment.
 - Two site security personnel for non-working hours.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 3000 WEST HYDROTEST PROJECT

Table 5: Environmental/Permitting/Monitoring/Abatement

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$8,259	\$195,572	\$133,015	\$669,613	\$35,008	\$1,041,466
TOTAL DIRECT COSTS	\$8,259	\$195,572	\$133,015	\$669,613	\$35,008	\$1,041,466

Assumptions

In calculating the total estimated environmental cost, the following items were considered:

- Environmental Services (permitting support, surveys and monitoring).
- Non-hazardous waste containment/disposal.
- Abatement of Asbestos Containing Material (ACM).
- Water Treatment and Hazardous Materials.
- Permit Fees.

The high-level assumptions and specific level of effort to provide environmental support for this project are described in more detail below.

- **Environmental Document Production**
 - Preconstruction Clearance.
 - Storm Water Pollution and Prevention Plan (SWPPP) and Notice of Intent (NOI).
 - Environmental Clearance.
- **Preconstruction Surveys**
 - Preconstruction wildlife and bumble bee survey reports.
- **Construction Monitoring**
 - Full-time environmental monitoring for ground disturbing activities for 10 weeks, then two full days per week for the remaining duration of construction.
 - Multiple SWPPP inspections and other associated inspections.
- **Project Closeout Activities**
 - Restoration support, permit reporting, and closeout.
 - Final site visit and photo documentation.
- **Abatement**
 - 10 days for abatement of ACMs.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 3000 WEST HYDROTEST PROJECT

- **Water Treatment and Hazardous Materials**
 - Hydrotest water source, estimated at 250,000 gallons, will be within 10 miles of the project.
 - Two months estimated for water treatment prior to disposal to the storm drain.
 - Water sampling and profiling anticipated to support disposal of wastes generated during construction.
 - Hazardous and non-hazardous waste transport and disposal anticipated for various wastes.
- **Permit Fees**
 - Permitting fees related to encroachment and traffic control plans from county/municipalities including the cities of Los Angeles, Santa Clarita, Burbank, Glendale, Alhambra, Los Angeles County, and Caltrans.
 - SWPPP fee.
 - Los Angeles County Flood Control District's (LACFCD) Discharge Permit.

Table 6: Land & Right-of-Way Acquisition

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$0	\$7,470	\$63,321	\$226,727	\$3,735	\$301,253
TOTAL DIRECT COSTS	\$0	\$7,470	\$63,321	\$226,727	\$3,735	\$301,253

Assumptions

In generating for the total estimated cost for Line 3000 West Hydrotest Project the following items were considered:

- **Labor**
 - Administrative support and document control specialist.
- **Acquisition Costs**
 - Appraisal Reports.
 - Title Reports.
- **Temporary Right of Entry**
 - Two Laydown yards; one for the Replacement Section 1 and Test Section 1.
 - Three Workspaces.

Factors such as location, zoning, current market price and square footage are considered to determine a final estimated value specific to easements and temporary rights of entry permits.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06
LINE 3000 WEST HYDROTEST PROJECT

Table 7: Company Labor

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$65,230	\$136,602	\$177,726	\$800,788	\$161,025	\$1,341,371
DIRECT NON-LABOR	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DIRECT COSTS	\$65,230	\$136,602	\$177,726	\$800,788	\$161,025	\$1,341,371

Assumptions

SoCalGas Labor - Management, Engineering, and Non-Union Labor

SoCalGas Non-Union Labor is estimated based upon activity level of effort and is divided into the following categories:

- Project Management.
- Project Field Management.
- Project Engineers.
- Construction Management.
- Environmental Services.
- Other Departments.

SoCalGas Field Labor – Distribution, Transmission, Pipeline Integrity, and Other Field Departments

SoCalGas Union Labor costs were developed with the guidance of SoCalGas Construction Management and whose costs are duration dependent and activity specific.

Table 8: Other Costs

Project Costs	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
DIRECT LABOR	\$0	\$0	\$0	\$0	\$0	\$0
DIRECT NON-LABOR	\$116,004	\$190,196	\$538,721	\$223,484	\$130,961	\$1,199,366
TOTAL DIRECT COSTS	\$116,004	\$190,196	\$538,721	\$223,484	\$130,961	\$1,199,366

Assumptions

Other costs assume use of contracted services for certain Engineering, Survey, Project Management, and Design activities. These costs are included to account for the anticipated professional services required to support project planning, design development, execution, and closeout. The major components in this category include:

- Engineering and Design Services.
- Project Management Services.
- Surveying and As-builts.
- Project Support Services.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 3006 REPLACEMENT PROJECT

Table 1: Total Direct Project Costs – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$32,967	\$62,047	\$103,077	\$246,177	\$184,541	\$628,809
DIRECT NON-LABOR	\$186,488	\$198,014	\$566,078	\$2,768,845	\$95,865	\$3,815,290
TOTAL COSTS - CAPITAL	\$219,456	\$260,061	\$669,155	\$3,015,022	\$280,406	\$4,444,100

Project Description

The Gas Transmission Safety Rule (GTSR) Line 3006 Replacement Project will replace approximately 136 feet of pipeline in the city of Needles, San Bernardino County. This project includes two pipeline sections within a SoCalGas Station. The first section originates from Line 3000 East and includes 27 feet of [REDACTED] diameter pipe, four feet of [REDACTED] diameter pipe, and 85 feet of [REDACTED] diameter pipe. The second section is 55 feet downstream from the first section and includes 20 feet of [REDACTED] diameter pipe and one foot of [REDACTED] diameter pipe. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 3006 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 41 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.026
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.026

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

LINE 8045 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost - All Capital

TOTAL PROJECT COSTS	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$14,369	\$50,187	\$79,511	\$170,649	\$172,546	\$487,262
DIRECT NON-LABOR	\$210,532	\$220,344	\$661,551	\$3,936,595	\$109,759	\$5,138,780
TOTAL COSTS - CAPITAL	\$224,902	\$270,531	\$741,062	\$4,107,243	\$282,305	\$5,626,042

Project Description

The Gas Transmission Safety Rule (GTSR) Line 8045 Replacement project will replace approximately 0.13 miles of pipeline laterals in the city of Glendale, Los Angeles County. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology, consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

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LINE 8045 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 61 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.127
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.127

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 30-09A REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$33,132	\$62,015	\$102,816	\$215,415	\$183,925	\$597,303
DIRECT NON-LABOR	\$182,125	\$210,830	\$531,847	\$3,557,850	\$96,661	\$4,579,312
TOTAL COSTS - CAPITAL	\$215,256	\$272,845	\$634,663	\$3,773,265	\$280,587	\$5,176,615

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 30-09A Replacement Project will replace approximately 0.15 miles of [REDACTED] diameter pipe in the city of Commerce, Los Angeles County. This project includes one continuous section. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 30-09A REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 45 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.147
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.147

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 30-58 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$4,357	\$3,085	\$39,813	\$168,731	\$158,808	\$374,794
DIRECT NON-LABOR	\$1,716	\$11,991	\$70,979	\$1,767,882	\$124,546	\$1,977,113
TOTAL COSTS - CAPITAL	\$6,073	\$15,076	\$110,791	\$1,936,613	\$283,354	\$2,351,907

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 30-58-Replacement Project will replace 19 feet of pipeline in the city of Carson, Los Angeles County. The project assumes four replacement sections. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 30-58 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 30 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.004
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.004

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 30-6291 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$12,786	\$25,902	\$34,065	\$54,928	\$37,573	\$165,254
DIRECT NON-LABOR	\$22,580	\$52,594	\$128,174	\$656,530	\$16,424	\$876,302
TOTAL COSTS - CAPITAL	\$35,366	\$78,497	\$162,239	\$711,457	\$53,997	\$1,041,556

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 30-6291 Replacement project will replace approximately two feet of [REDACTED] diameter pipe in the city of Carson, Los Angeles County. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 30-6291 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 14 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.0004
INCIDENTAL	0.0000
REPLACEMENT OFFSET	0.0000
TOTAL MILEAGE	0.0004

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 32-28 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS - CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$29,671	\$59,969	\$98,473	\$289,893	\$181,818	\$659,823
DIRECT NON-LABOR	\$194,704	\$210,250	\$616,490	\$3,771,711	\$100,336	\$4,893,491
TOTAL COSTS - CAPITAL	\$224,376	\$270,219	\$714,963	\$4,061,604	\$282,154	\$5,553,315

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 32-28 Replacement project will replace approximately 0.2 miles of predominately [REDACTED] diameter pipe near the city of Sun Valley, Los Angeles County. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 32-28 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 44 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.174
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.174

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 32-3203BP1 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$721	\$517	\$1,238	\$19,861	\$462	\$22,798
DIRECT NON-LABOR	\$1,628	\$10,400	\$14,004	\$170,252	\$1,521	\$197,806
TOTAL COSTS - CAPITAL	\$2,349	\$10,917	\$15,242	\$190,113	\$1,983	\$220,603

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 32-3203BP1 Replacement Project will replace four feet of [REDACTED] pipe in the city of Glendale, Los Angeles County. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 32-3203BP1 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 6 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.0007
INCIDENTAL	0.0000
REPLACEMENT OFFSET	0.0000
TOTAL MILEAGE	0.0007

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 32-8037BP1 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$721	\$517	\$1,238	\$40,255	\$462	\$43,192
DIRECT NON-LABOR	\$1,628	\$10,400	\$15,864	\$376,692	\$1,521	\$406,105
TOTAL COSTS - CAPITAL	\$2,349	\$10,917	\$17,102	\$416,946	\$1,983	\$449,296

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 32-8037BP1 Replacement Project will replace approximately 39 feet of [REDACTED] diameter pipe within the city of Burbank, Los Angeles County. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 32-8037BP1 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 15 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.007
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.007

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 33-120 HYDROTEST PROJECT

Table 1: Total Direct Project Cost - All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$36,321	\$64,288	\$106,988	\$225,717	\$187,353	\$620,666
DIRECT NON-LABOR	\$198,589	\$230,897	\$1,155,500	\$5,420,901	\$105,909	\$7,111,796
TOTAL COSTS - CAPITAL	\$234,910	\$295,185	\$1,262,487	\$5,646,618	\$293,262	\$7,732,462

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 33-120 Hydrotest project will hydrotest approximately 0.3 miles of [REDACTED] diameter pipe from the city of Van Nuys to the city of Encino, Los Angeles County. This project is separated into two sections that includes 49 feet of laterals originating from Supply Line 33-120. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 33-120 HYDROTEST PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 61 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.307
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.307

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 35-20 HYDROTEST PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$ 46,855	\$ 104,680	\$ 157,674	\$ 397,026	\$ 126,384	\$ 832,618
DIRECT NON-LABOR	\$40,163	\$80,425	\$427,448	\$4,752,772	\$106,392	\$5,407,200
TOTAL COSTS - CAPITAL	\$ 87,018	\$ 185,105	\$ 585,122	\$5,149,798	\$ 232,776	\$6,239,818

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 35-20 Hydrotest will hydrotest 1.9 miles of [REDACTED] diameter pipe located in Orange County. The project includes two hydrotest sections; one [REDACTED] pipe diameter test section measuring 6,356 feet and one [REDACTED] pipe diameter test section measuring 7,394 feet. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 35-20 HYDROTEST PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 52 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	6.757
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	6.757

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 35-22 HYDROTEST PROJECT

Table 1: Total Direct Project Cost - All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$11,956	\$32,048	\$46,949	\$109,195	\$63,806	\$263,955
DIRECT NON-LABOR	\$56,429	\$86,771	\$239,426	\$1,716,606	\$28,053	\$2,127,285
TOTAL COSTS - CAPITAL	\$68,385	\$118,819	\$286,375	\$1,825,801	\$91,860	\$2,391,240

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 35-22-Hydrotest Project will hydrotest approximately 0.3 miles of [REDACTED] diameter pipe in the city of Garden Grove, Orange County. This project includes one continuous test section on Supply Line 35-22 measuring approximately 1,522 feet and includes five feet of laterals. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 35-22 HYDROTEST PROJECT

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 30 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.289
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.289

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 36-6601-I REPLACEMENT PROJECT

Table 1: Total Direct Project Cost - All Capital

TOTAL PROJECT COSTS - CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$5,656	\$24,268	\$58,426	\$49,045	\$97,568	\$234,965
DIRECT NON-LABOR	\$24,849	\$50,717	\$308,358	\$686,940	\$55,098	\$1,142,774
TOTAL COSTS - CAPITAL	\$30,506	\$74,985	\$366,784	\$735,985	\$152,666	\$1,360,925

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 36-6601-I Replacement project will replace approximately 87 feet of [REDACTED] diameter pipe in the city of Oxnard, Ventura County. This project includes two sections that consists of pipe and lateral line that originates from Supply Line 36-6601-I. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 36-6601-I REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 27 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.017
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.017

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 36-6267-REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$12,862	\$25,403	\$52,165	\$115,678	\$88,511	\$294,619
DIRECT NON-LABOR	\$100,334	\$93,077	\$305,722	\$1,429,826	\$39,478	\$1,968,437
TOTAL COSTS - CAPITAL	\$113,196	\$118,480	\$357,887	\$1,545,503	\$127,989	\$2,263,056

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 36-6267 Replacement project will replace approximately 65 feet of pipeline in the city of Oxnard, Ventura County. This project includes two continuous sections and five feet of laterals. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 36-6267-REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 27 Days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.012
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.012

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 36-1001-IBP1 REPLACEMENT PROJECT

Table 1: Total Direct Capital Cost – All Capital

PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total
DIRECT LABOR	\$15,295	\$57,633	\$33,201	\$55,791	\$33,986	\$195,906
DIRECT NON-LABOR	\$92,288	\$74,516	\$147,855	\$661,065	\$13,653	\$989,377
TOTAL DIRECT CAPITAL COSTS	\$107,584	\$132,149	\$181,056	\$716,856	\$47,638	\$1,185,283

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 36-1001-IBP1 Replacement Project will replace four feet of 48" diameter pipe in the city of Piru, Ventura County. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁷ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 36-1001-IBP1 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 13 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.0008
INCIDENTAL	0.0000
REPLACEMENT OFFSET	0.0000
TOTAL MILEAGE	0.0008

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 36-9-06 HYDROTEST PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$37,169	\$68,220	\$113,194	\$266,775	\$201,256	\$686,614
DIRECT NON-LABOR	\$207,344	\$226,329	\$735,301	\$6,277,632	\$106,376	\$7,552,981
TOTAL COSTS - CAPITAL	\$244,513	\$294,549	\$848,495	\$6,544,407	\$307,633	\$8,239,595

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 36-9-06 Hydrotest Project will hydrotest approximately 0.5 miles of [REDACTED] diameter pipe including two lateral lines that runs from the city of Santa Maria, Santa Barbara County, to the city of Morro Bay, San Luis Obispo County. This project includes one test section and three replacement sections. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 36-9-06 HYDROTEST PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 56 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.474
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.474

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 36-9-14 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$12,508	\$44,018	\$84,134	\$60,729	\$117,496	\$318,884
DIRECT NON-LABOR	\$45,427	\$74,775	\$392,534	\$1,048,652	\$50,632	\$1,612,019
TOTAL COSTS - CAPITAL	\$57,935	\$118,793	\$476,668	\$1,109,380	\$168,128	\$1,930,903

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 36-9-14 Replacement Project will replace approximately 124 feet of [REDACTED] diameter pipe in the city of Lompoc, Santa Barbara County. This project includes one continuous test section with five feet of laterals. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 36-9-14 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 25 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.024
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.024

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 36-9-22 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$9,929	\$19,779	\$37,312	\$79,492	\$58,535	\$205,047
DIRECT NON-LABOR	\$49,020	\$55,682	\$158,454	\$1,111,641	\$26,322	\$1,401,119
TOTAL COSTS - CAPITAL	\$58,949	\$75,461	\$195,766	\$1,191,132	\$84,857	\$1,606,166

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 36-9-22-Replacement Project will replace 555 feet of [REDACTED] diameter pipe. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 36-9-22 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 23 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.105
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.105

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 38-576 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost - All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$4,186	\$1,524	\$36,059	\$68,507	\$129,468	\$239,743
DIRECT NON-LABOR	\$1,983	\$13,063	\$71,851	\$815,559	\$142,881	\$1,045,337
TOTAL COSTS - CAPITAL	\$6,169	\$14,587	\$107,909	\$884,066	\$272,349	\$1,285,080

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 38-576 Replacement Project will replace approximately 59 feet of [REDACTED] diameter pipe in the city of Tulare, Tulare County. The project will complete the replacement in two sections. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06**SUPPLY LINE 38-576 REPLACEMENT PROJECT****Schedule**

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 15 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.007
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.007

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 41-11 HYDROTEST PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$19,842	\$52,395	\$84,274	\$319,301	\$169,230	\$645,042
DIRECT NON-LABOR	\$195,807	\$206,966	\$694,537	\$5,007,624	\$101,519	\$6,206,453
TOTAL COSTS - CAPITAL	\$215,649	\$259,361	\$778,811	\$ 5,326,925	\$270,749	\$6,851,495

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 41-11 Hydrotest project will hydrotest approximately 2.1 miles of [REDACTED] and [REDACTED] diameter pipe in the city of Corona, Riverside County. The project will conduct one replacement and three hydrotests in four sections. The project also includes five laterals originating from Supply Line 41-11. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 41-11 HYDROTEST PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 55 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	2.124
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	2.124

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 41-182 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1^{1,2}	Stage 2³	Stage 3⁴	Stage 4⁵	Stage 5⁶	Total⁷
DIRECT LABOR	\$6,585	\$48,743	\$85,479	\$59,100	\$181,116	\$381,025
DIRECT NON-LABOR	\$43,010	\$87,473	\$352,780	\$947,402	\$88,414	\$1,519,079
TOTAL COSTS - CAPITAL	\$49,595	\$136,216	\$438,260	1,006,503	\$269,530	\$1,900,104

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 41-182 Replacement project will replace approximately 16 feet of [REDACTED] diameter pipe in the city of Rancho Cucamonga, San Bernardino County. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 41-182 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 20 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.003
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.003

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 41-59 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$12,480	\$54,098	\$41,737	\$67,093	\$30,506	\$205,914
DIRECT NON-LABOR	\$27,774	\$75,368	\$138,757	\$888,423	\$14,260	\$1,144,583
TOTAL COSTS - CAPITAL	\$40,254	\$129,466	\$180,494	\$955,516	\$44,767	\$1,350,497

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 41-59 Replacement project will replace five feet of [REDACTED] laterals in the city of Indio, Riverside County. This project consists of two sections on laterals originating from Supply Line 41-59. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 41-59 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 18 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.001
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.001

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 41-6501 HYDROTEST PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$34,500	\$63,001	\$104,871	\$159,679	\$185,772	\$547,823
DIRECT NON-LABOR	\$177,943	\$188,763	\$459,571	\$2,181,330	\$89,518	\$3,097,126
TOTAL COSTS - CAPITAL	\$212,444	\$251,765	\$564,442	\$2,341,008	\$275,290	\$3,644,948

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 41-6501 Hydrotest project will hydrotest approximately 0.5 miles in the city of Rancho Cucamonga, San Bernardino County. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 41-6501 HYDROTEST PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 29 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.473
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.473

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 41-6505 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$14,578	\$31,665	\$45,324	\$61,123	\$65,304	\$217,995
DIRECT NON-LABOR	\$93,198	\$47,718	\$161,052	\$733,922	\$35,462	\$1,071,351
TOTAL COSTS - CAPITAL	\$107,777	\$79,384	\$206,376	\$795,045	\$100,765	\$1,289,347

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 41-6505 Replacement project will replace approximately eight feet of [REDACTED] diameter pipe in the city of Fontana, San Bernardino County. This project includes one continuous section on Supply Line 41-6505. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 41-6505 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 13 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.002
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.002

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 41-66 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$3,958	\$1,165	\$35,398	\$79,498	\$125,476	\$245,495
DIRECT NON-LABOR	\$1,981	\$13,511	\$70,233	\$971,531	\$146,045	\$1,203,300
TOTAL COSTS - CAPITAL	\$5,939	\$14,676	\$105,631	\$1,051,029	\$271,521	\$1,448,796

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 41-66-Replacement Project will replace approximately 23 feet of [REDACTED] diameter pipe from the city of Coachella to the city of La Quinta, Riverside County. This project includes two segments; one segment consisting of 22 feet of pipe and one segment of one foot of [REDACTED] lateral that are six miles apart. All MAOP-R segments are considered Post-1970 scope. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 41-66 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 20 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.004
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.004

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 43-1106 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost – All Capital

TOTAL PROJECT COSTS – CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$27,025	\$58,450	\$95,519	\$337,491	\$180,562	\$699,046
DIRECT NON-LABOR	\$198,145	\$212,598	\$627,697	\$5,186,628	\$102,323	\$6,327,391
TOTAL COSTS - CAPITAL	\$225,170	\$271,047	\$723,216	\$5,524,119	\$282,884	\$7,026,437

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 43-1106 Replacement project will replace approximately 0.2 miles of [REDACTED] diameter pipe from Echo Park to Hollywood, Los Angeles County. The project will replace two sections of pipe on Supply Line 43-1106. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 43-1106 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be 66 days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.171
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.171

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 45-8036 REPLACEMENT PROJECT

Table 1: Total Direct Project Cost - All Capital

TOTAL PROJECT COSTS - CAPITAL	Stage 1 ^{1,2}	Stage 2 ³	Stage 3 ⁴	Stage 4 ⁵	Stage 5 ⁶	Total ⁷
DIRECT LABOR	\$721	\$517	\$1,238	\$17,595	\$462	\$20,532
DIRECT NON-LABOR	\$ 1,628	\$ 10,400	\$ 15,692	\$ 165,441	\$ 1,428	\$194,589
TOTAL COSTS - CAPITAL	\$ 2,349	\$ 10,917	\$ 16,930	\$ 183,036	\$ 1,890	\$215,121

Project Description

The Gas Transmission Safety Rule (GTSR) Supply Line 45-8036 Replacement project will replace approximately 36 feet of [REDACTED] diameter pipe in the city of Burbank, Los Angeles County. This project is required to reconfirm Maximum Allowable Operating Pressure (MAOP), in accordance with 49 CFR § 192.624.

Forecast Methodology

SoCalGas developed a project specific Class 4 cost estimate⁸ to support implementation of the proposed project scope. The estimate reflects the early stage of project definition and is intended to support planning, prioritization, and funding determinations consistent with this phase of development. The Class 4 estimate includes direct costs associated with project management, engineering and design, environmental permitting, land and right-of-way acquisition, material and equipment procurement, and construction activities. Project costs were developed using a primary top-down estimating methodology consistent with AACE International Class 4 estimating guidelines. Given the limited level of detailed engineering available at this stage, cost development relied on analogous and parametric estimating techniques derived from recent SoCalGas projects with similar scope, scale, and complexity. Where data was available, a bottoms-up approach was taken.

Major cost elements were informed by historical unit costs and adjusted, as appropriate, to reflect current labor and material market conditions, geographic considerations, land and environmental requirements, constructability considerations, and anticipated execution constraints. Where detailed quantities were not yet defined, assumptions were based on preliminary scope descriptions and conceptual layouts.

The estimate will be further refined as the project progresses through subsequent design and development phases and as additional engineering detail, permitting requirements, and execution strategies are established.

¹ Project Initiation.

² Actual costs incurred associated with planning and engineering design work are included in the project cost estimates.

³ Preliminary Design.

⁴ Detailed Design.

⁵ Construction.

⁶ Closeout.

⁷ Values may not add to a total due to rounding.

⁸ According to AACE International Recommended Practice No. 97R-18, a Class 4 estimate is based on 1-15% project definition and typically results in final project costs that are within +50% to -30% of the estimated cost. In contrast, Class 3 estimates are based on 10-40% project definition and typically result in final project costs that are within +30% to -20% of the estimated amount.

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

SUPPLY LINE 45-8036 REPLACEMENT PROJECT

Schedule

The schedule was developed based on the five stage project life cycle as defined in the Project Delivery Model. The key project deliverables were identified and incorporated into a work breakdown structure. This work breakdown structure was then sequenced, and predecessor and successor tasks were linked to each task. Finally, durations were added to each task to provide a total project duration.

The preliminary Stage 4 Construction Schedule received additional planning and stakeholder input considering that the majority of project costs are expended during the construction phase. The construction schedule is assumed to be five days.

Table 2: Project Mileage

TYPE	MILEAGE
GTSR	0.007
INCIDENTAL	0.000
REPLACEMENT OFFSET	0.000
TOTAL MILEAGE	0.007

GTSR Part 1 Replacements and Hydrotests Workpaper Supporting Exhibit SCG-06

GTSR ALLOWANCE FOR HYDROTEST FAILURES

Table 1: Allowance for Pipeline Failures

PROJECT COSTS – CAPITAL	2024
DIRECT LABOR	\$4,419
DIRECT NON-LABOR	\$216,536
TOTAL DIRECT COSTS	\$220,955

Assumptions

During the hydrotesting of pipelines, there is always a potential for test failures to occur. Therefore, an allowance was added to cover the costs associated with GTSR hydrotest failures for each year in the GRC cycle. These costs may include but are not limited to locating the affected segment, replacing the pipe, associated cleanup, environmental mitigation, and monitoring, and retesting of the pipeline section. The basis for the failure estimate includes historical analysis of the hydrotest failure cost per mile tested from 2021-2025¹.

The calculation is shown below:

$$\text{Hydrotest Failure Cost Per Mile Tested} = \frac{\text{Sum of Historical Hydrotest Failure Associated Costs}}{\text{Total Miles Hydrotested 2021 – 2025}}$$

The costs associated with GTSR hydrotest failures for the upcoming GRC cycle were then forecasted by taking the hydrotest failure cost per mile tested multiplied by the Projected Mileage of GTSR test projects to be completed during the GRC cycle based on the current project forecast:

$$\begin{aligned} \text{Projected Hydrotest Failure Cost} \\ = \text{Hydrotest Failure Cost Per Mile Tested} * \text{Projected Mileage of Test Projects} \end{aligned}$$

The total Hydrotest allowance was then normalized over the GRC cycle for an annual forecasted cost and allocated between labor (2%) and non-labor (98%).

¹ Due to the initiation and ramp-up of the GTSR program, the historical costs and failure events utilized from this period comprise both PSEP and GTSR hydrotests.