

Appendix IX-1-A

SoCalGas Transmission

Cost Estimates for Pipeline Replacements and Pressure Tests

**CHAPTER IX PIPELINE WORKPAPER
APPENDIX IX-1-A**

SoCalGas Transmission

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1003LT2	WP-IX-1-A95	1171LT2	WP-IX-1-A95	3000-261.73-BR	WP-IX-1-A95
1004	WP-IX-1-A31	1172 ID 2313 1	WP-IX-1-A95	4000	WP-IX-1-A85
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**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	235 East	0.620	0.280	0.900
Diameter (in.)	34			

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 7,700
Direct Non Labor	\$ 1,027,100
Total Hydrotest	\$ 1,034,800

Hydrotest Repairs

Direct Labor	\$ 5,000
Direct Non Labor	\$ 45,000
Total Repairs	\$ 50,000

In Line Inspection

Direct Labor	\$ 30,000
Direct Non Labor	\$ 270,000
Total ILI	\$ 300,000

In Line Inspection Repairs

Direct Labor	\$ 483,075
Direct Non Labor	\$ 4,347,675
Total Repairs	\$ 4,830,750



Southern California Gas Company
 Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision	
	Start	Stop				Tree Box	Comments
Cat 4	0	477.83	-	34			
Cat 4	477.83	3049	0.2945	34	Hydrotest	5	open earth
Cat 4	3049	3063.85	0.0028	34	Hydrotest	5	open earth/road crossing
Cat 4	3063.85	3127	0.0120	34	Hydrotest	5	north needles station
Cat 4	3127	3137	0.0019	34	Hydrotest	5	north needles station
Cat 4	3137	5280	0.3093	34	Hydrotest	5	open desert/road crossing

SHEET: **Sheet 1 of 1**
 DATE: **July 26, 2011**
 ESTIMATED BY: **SPEC SERVICES, INC.**
 STATE OF DESIGN: **Conceptual**
 SPEC Project Number: **5057**

DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe 34 Actual OD (in)	5,099		bb/OD							
0.468 Wall Thickness (in)	5,099		bb/Segment							
4892 Length (FT)										
1 QTY										
Hydrotest Test Segment										
Pipe n/a Actual OD (in)	0		bb/OD							
0.000 Wall Thickness (in)	0		bb/Segment							
0 Length (FT)										
0 QTY										
Hydrotest Test Segment										
Pipe n/a Actual OD (in)	0		bb/OD							
0.000 Wall Thickness (in)	0		bb/Segment							
0 Length (FT)										
0 QTY										
Hydrotest Test Segment										
Pipe n/a Actual OD (in)	0		bb/OD							
0.000 Wall Thickness (in)	0		bb/Segment							
0 Length (FT)										
0 QTY										
Total Hydrotest Length										
Total Hydrotest Segment(s)										
0.9 Miles										
1 QTY										
Purging Volume of Nitrogen [to obtain 3 atm (44 psig) on line], minimum 4 miles per test segment	377,747		SCF	\$ 0.19	\$ 71,772			\$ 71,772		
Temporary Pig Launcher/Receiver (one/ OD change)	1		LS	\$ 25,000	\$ 25,000			\$ 25,000		
Water Injection Pump & Filter (capacity 1200 gpm)	1		day(s)	\$ 486	\$ 486			\$ 486		
On-Site Vacuum Truck(s) (minimum one per/ test segment)	1		each	\$ 5,000	\$ 5,000			\$ 5,000		
Baker Tank(s) =X	10		each							
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	70		day(s)	\$ 1,600	\$ 112,000			\$ 112,000		
Total Hydrotest Water (\$19/bbl)	5,099		bbl	\$ 19.00	\$ 96,875			\$ 96,875		
Water Disposal Vacuum Truck(s) =A	10		each							
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	43		loads							
Disposal Time =>C*B/(A*10)	1		day(s)							
Total Vacuum Truck(s) Rental days (\$/day per truck) =>D=C*A	10		day(s)	\$ 5,000	\$ 50,000			\$ 50,000		
Treated Water Disposal (\$55/bbl)	5,099		bbl	\$ 55	\$ 280,429			\$ 280,429		
Miscellaneous Materials	5		%	\$	\$ 32,079			\$ 32,079		
Total Material Cost										
2 CONSTRUCTION										
Construction Labor (25K/ test segment)	1		LS	\$ 25,000	\$ 25,000			\$ 25,000		
Hydrotest Labor (10K/ test segment)	1		day(s)	\$ 10,000	\$ 10,000			\$ 10,000		
Dewater/ Dry Pipeline (\$15,000/ test segment)	1		LS	\$ 15,000	\$ 15,000			\$ 15,000		
Tie-ins Crew Rates (\$25,000/ test segment)	1		Each	\$ 25,000	\$ 25,000			\$ 25,000		
3rd Party Witness (\$2,000/ test segment)	1		Each	\$ 2,000	\$ 2,000			\$ 2,000		
Total Construction Cost										
3 SCG LABOR / INSPECTION										
Projects < \$1 million - company labor is 10%	10		%					\$ 7,700		
\$1 million < Projects < \$10 million - company labor is 5%	5		%					\$ -		
Projects > \$10 million - company labor is 2.5%	2.5		%					\$ -		
Total SCG Labor / Inspection Cost										
4 DESIGN / ENG. / CONST. / ENVIRON.										
Planning / Design / Eng / Coord / Procurement	5		%					\$ 37,535		
ROW Acquisition	0		LS					\$ -		
Construction Permits	0		LS					\$ -		
Environmental Permits	0		LS					\$ -		
Environmental Monitoring	0		LS					\$ -		
Total Design / Engineering / Construction Cost										
5 CONTINGENCY										
Projects < \$2 million - Contingency is 30%	30		%					\$ 238,800		
Projects > \$2 million - Contingency is 20%	20		%					\$ -		
TOTAL PROJECT COST (See Appendix for assumptions/certifications)										

WP-IX-1-A3

Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	235 West	2.744	0.356	3.100
Diameter (in.)	30			

Cost Detail

O&M

Hydrotest

Direct Labor	\$	71,800
Direct Non Labor	\$	1,980,000
Total Hydrotest	\$	2,051,800

Hydrotest Repairs

Direct Labor	\$	5,000
Direct Non Labor	\$	45,000
Total Repairs	\$	50,000

In Line Inspection

Direct Labor	\$	60,000
Direct Non Labor	\$	540,000
Total ILI	\$	600,000

In Line Inspection Repairs

Direct Labor	\$	809,775
Direct Non Labor	\$	7,287,975
Total Repairs	\$	8,097,750



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workshop Supporting Chapter IX**

Existing Segments

Category	Station Start	Station Stop	Criteria Miles	Diameter	Action	Decision Tree Box	Comments
Cat 4	893826.13	894452.2	0.1100	30	Hydrotest	5	river crossing
Cat 1	894452.2	898348.93	0.5009	30			
Cat 4	898348.93	898373.93	-	30			
Cat 4	898373.93	900462	0.2665	30	Hydrotest	5	open desert/wash/victorville base
Cat 1	900462	900483	0.0040	30	Hydrotest		victorville base
Cat 4	900483	900504	0.0040	30	Hydrotest	5	victorville base
Cat 2	900504	900610	0.0201	30			
Cat 1	900610	900633	0.0044	30			
Cat 2	900633	904170.73	0.5600	30			
Cat 2	904170.73	904250.73	0.0152	30			
Cat 2	904250.73	910958	0.4097	30			
Cat 1	910958	91175	-	30			
Cat 1	91175	925584	1.8127	30			
Cat 1	925584	925636.8	0.0100	30			
Cat 1	925636.2	926107.7	0.0893	30			
Cat 1	926107.7	929845	0.4078	30			
Cat 1	929845	929948	0.0195	30			
Cat 1	929948	930113.55	0.0314	30			
Cat 1	930113.55	937264.42	1.3543	30			
Cat 1	937264.42	937196	0.0130	30			
Cat 1	937196	937214	0.0034	30			
Cat 1	937214	937637.2	0.0802	30			
Cat 4	937637.2	937655.2	0.0034	30			
Cat 1	937655.2	937679.8	0.0047	30			
Cat 1	937679.8	937728	0.0091	30			
Cat 1	937728	937750	0.0042	30			
Cat 1	937750	937558.68	0.0016	30			
Cat 1	937558.68	939543	0.3758	30			
Cat 1	939543	958620.43	0.0150	30			

Cat 4	958620.43	954530.13	-	30					
Cat 4	954530.13	954556.85	-	30					
Cat 4	954556.85	958620.43	-	30					
Cat 4	958620.43	958670.13	-	30					
Cat 4	958670.13	958687.13	-	30					
Cat 4	958687.13	958695.73	-	30					
Cat 4	958695.73	1018798.53	-	30					
Cat 4	1018798.53	1018845.73	-	30					
Cat 4	1018845.73	1018850.73	-	30					
Cat 4	1018850.73	1018862.72	-	30					
Cat 4	1018862.72	1018911.03	-	30					
Cat 4	1018911.03	1053669.13	0.5400	30					
Cat 4	1053669.13	1053749.13	-	30					
Cat 4	1053749.13	1077360.13	-	30					
Cat 4	1077360.13	1077440.13	-	30					
Cat 4	1077440.13	1080023.83	0.0316	30	Hydrotest	5	open earth parallel to road		
Cat 4	1080023.83	1080465.46	0.0836	30	Hydrotest	5	open earth parallel to road		
Cat 4	1080465.46	1080468.37	0.0006	30	Hydrotest	5	open earth parallel to road		
Cat 1	1080468.37	1080473.87	0.0010	30	Hydrotest		open earth parallel to road		
Cat 1	1080473.87	1080479.37	0.0010	30	Hydrotest		open earth parallel to road		
Cat 4	1080479.37	1080482.23	0.0006	30	Hydrotest	5	open earth parallel to road		
Cat 2	1080482.23	1090623.33	1.9207	30					
Cat 2	1090623.33	1090699.33	0.0144	30					
Cat 2	1090699.33	1094023.13	0.6295	30					
Cat 2	1094023.13	1094102.93	0.0151	30					
Cat 2	1094102.93	1095677.63	0.2982	30					
Cat 2	1095677.63	1096178.03	0.0948	30					
Cat 1	1096178.03	10975784	0.0043	30					
Cat 2	10975784	1112201.83	1.0316	30					
Cat 2	1112201.83	1120901.33	1.6476	30					
Cat 2	1120901.33	1120980.73	0.0150	30					
Cat 2	1120980.73	1123301.73	0.4396	30					
Cat 2	1123301.73	1126670.93	0.6381	30					
Cat 2	1126670.93	1136369.63	1.8369	30					
Cat 4	1136369.63	1136379.83	0.0019	30	Hydrotest	5	inside reg station		
Cat 4	1136379.83	1136390.13	0.0019	30	Hydrotest	5	inside reg station		

Cat 2	1136390.15	1137287.13	0.1699	30		
Cat 2	1137287.13	1138101.13	0.1542	30		
Cat 2	1138101.13	1138526.4	0.0805	30		
Cat 4	1138526.4	1147747.35	1.7464	30	Hydrotest	5 open earth parallel to road -2 major road/hwy crossings
Cat 1	1147747.35	1147766.4	0.0036	30		
Cat 1	1147766.4	1147936.07	0.0321	30		
Cat 4	1147936.07	1149034	0.2079	30	Hydrotest	5 open earth parallel to road - major road crossing
Cat 1	1149034	1149558	0.0992	30		
Cat 1	1149558	1149564.6	0.0002	30		
Cat 1	1149564.6	1149573.6	-	30		
Cat 1	1149573.6	1149583.5	-	30		
Cat 4	1149583.5	1151175.5	-	30		
Cat 1	1151175.5	1151592	-	30		
Cat 4	1151592	1151612.6	-	30		
Cat 4	1151612.6	1157099.63	-	30		
Cat 4	1157099.63	1157307.63	-	30		
Cat 4	1157307.63	1173165.13	-	30		
Cat 4	1173165.13	1173170.13	-	30		
Cat 1	1173170.13	1173182.13	-	30		
Cat 1	1173182.13	1173190.85	-	30		
Cat 2	1173190.85	1173228.73	-	30		
Cat 2	1173228.73	1178148.13	-	30		
Cat 2	1178148.13	1185773.35	-	30		
Cat 2	1185773.35	1204709.73	0.9564	30		
Cat 1	1204709.73	1209040.53	0.8202	30		
Cat 1	1209040.53	1209120.53	0.0152	30		
Cat 1	1209120.53	1213002.03	0.7351	30		
Cat 1	1213002.03	1213078.03	0.0144	30		
Cat 1	1213078.03	1213811.03	0.1388	30		
Cat 2	1213811.03	1227300	0.7710	30		
Cat 1	1227300	227314.165	-	30		
Cat 1	227314.165	227316.832	-	30		
Cat 1	227316.832	1233165	-	30		
Cat 1	1233165	1233195.25	-	30		
Cat 1	1233195.25	233198.58	-	30		
Cat 1	233198.58	1235027.5	0.2643	30		
Cat 1	1235027.5	1235041.7	0.0027	30		

Cat 1	1235041.7	1235062	0.0038						30
Cat 1	1235062	1236958.3	0.3592						30
Cat 1	1236958.3	1236983.5	0.0048						30
Cat 1	1236983.5	1239067.9	0.3948						30
Cat 1	1239067.9	1239328.2	0.0493						30
Cat 4	1239328.2	1239689.6	0.0684						30
Cat 2	1239689.6	1240760.7	0.2029						30
Cat 1	1240760.7	1245867.0	0.0669						30
Cat 1	1245867.0	1252438.2	0.6391						30
Cat 1	1252438.2	1252516.8	0.0149						30
Cat 1	1252516.8	1254919.7	0.4551						30
Cat 1	1254919.7	1254942.1	0.0042						30
Cat 1	1254942.1	1256330.7	0.2630						30
Cat 1	1256330.7	1257967.9	0.3101						30
Cat 1	1257967.9	1261582.6	0.6846						30
Cat 1	1261582.6	1264223.7	0.5002						30
Cat 1	1264223.7	1266281.1	0.3897						30
Cat 1	1266281.1	1267383	0.2087						30
Cat 1	1267383	1273810.3	1.2173						30
Cat 1	1273810.3	1275220.3	0.2670						30
Cat 1	1275220.3	1277287.7	0.3916						30
Cat 1	1277287.7	1277337.7	0.0095						30
Cat 1	1277337.7	1277417.2	0.0151						30

Hydrotest 5 hwy 14 crossing -OUCH

DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST	COMMENTS
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL		
1 MATERIALS									
INPUT IN ALL BLUE CELLS									
Pipe	13,247		bb/OD						
0.625 Wall Thickness (in)			bb/Segment						
16488 Length (FT)									
Hydrotest Test Segment	0		bb/OD						
n/a Actual OD (in)			bb/Segment						
0.000 Wall Thickness (in)									
0 Length (FT)									
Hydrotest Test Segment	0								
0 QTY									
Pipe	0		bb/OD						
n/a Actual OD (in)			bb/Segment						
0.000 Wall Thickness (in)									
0 Length (FT)									
Hydrotest Test Segment	0								
0 QTY									
Total Hydrotest Length	3.1	Miles							
Total Hydrotest Segment(s)	1	QTY							
Purging Volume of Nitrogen [to obtain 3 atm (44 psig) on line], minimum 4 miles per test segment	285,639	SCF		\$ 0.19	\$ 54,272			\$ 54,272	
Temporary Pig Launcher/Receiver (one/ OD change)	1	LS		\$ 25,000	\$ 25,000			\$ 25,000	
Water Injection Pump & Filter (capacity 1200 gpm)	1	day(s)		\$ 486	\$ 486			\$ 486	
On-Site Vacuum Truck(s) (minimum one per/ test segment)	1	each		\$ 5,000	\$ 5,000			\$ 5,000	
Baker Tank(s) =X	80	each							
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	13,247	day(s)		\$ 1,600	\$ 128,000			\$ 128,000	
Total Hydrotest Water (\$19/bbl)	10	bbl		\$ 19,000	\$ 251,690			\$ 251,690	
Water Disposal Vacuum Truck(s) =A	111	boards							
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	2	day(s)							
Disposal Time =>C*B/(A*10)	20	day(s)		\$ 5,000	\$ 100,000			\$ 100,000	
Total Vacuum Truck(s) Rental days (\$/day per truck) =>D=C*A	13,247	bbl		\$ 55	\$ 728,577			\$ 728,577	
Treated Water Disposal (\$55/bbl)	5	%			\$ 64,652			\$ 64,652	
Miscellaneous Materials									
SCG Post Estimate Changes:									
Additional Baker Tanks:	0	QTY							
Additional Test Segments:	0	QTY							
(due to elevation changes)									
Total Material Cost								\$ 1,357,700	
2 CONSTRUCTION									
Construction Labor (25K/ test segment)	1	LS		\$ 25,000	\$ 25,000			\$ 25,000	
Hydrotest Labor (10K/ test segment)	1	day(s)		\$ 10,000	\$ 10,000			\$ 10,000	
Dewater/ Dry Pipeline (\$15,000/ test segment)	1	LS		\$ 15,000	\$ 15,000			\$ 15,000	
Tie-ins Crew Rates (\$25,000/ test segment)	1	Each		\$ 25,000	\$ 25,000			\$ 25,000	
3rd Party Witness (\$2,000/ test segment)	1	Each		\$ 2,000	\$ 2,000			\$ 2,000	
Total Construction Cost								\$ 77,000	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%	10	%						\$ -	
\$1 million < Projects < \$10 million - company labor is 5%	5	%						\$ 71,735	
Projects > \$10 million - company labor is 2.5%	2.5	%						\$ -	
Total SCG Labor / Inspection Cost								\$ 71,800	
4 DESIGN / ENG. / CONST. / ENVIRON.									
Planning / Design / Eng / Coord / Procurement	5	%						\$ 71,735	
ROW Acquisition	0	LS						\$ -	
Construction Permits	0	LS						\$ -	
Environmental Permits	0	LS						\$ -	
Environmental Monitoring	0	LS						\$ -	
Total Design / Engineering / Construction Cost								\$ 71,800	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%	30	%						\$ 473,480	
Projects > \$2 million - Contingency is 20%	20	%						\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 2,051,800	

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**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	317	1.571	0.529	2.100
Diameter (in.)	12.75			

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 7,700
Direct Non Labor	\$ 433,200
Total Hydrotest	\$ 440,900

Hydrotest Repairs

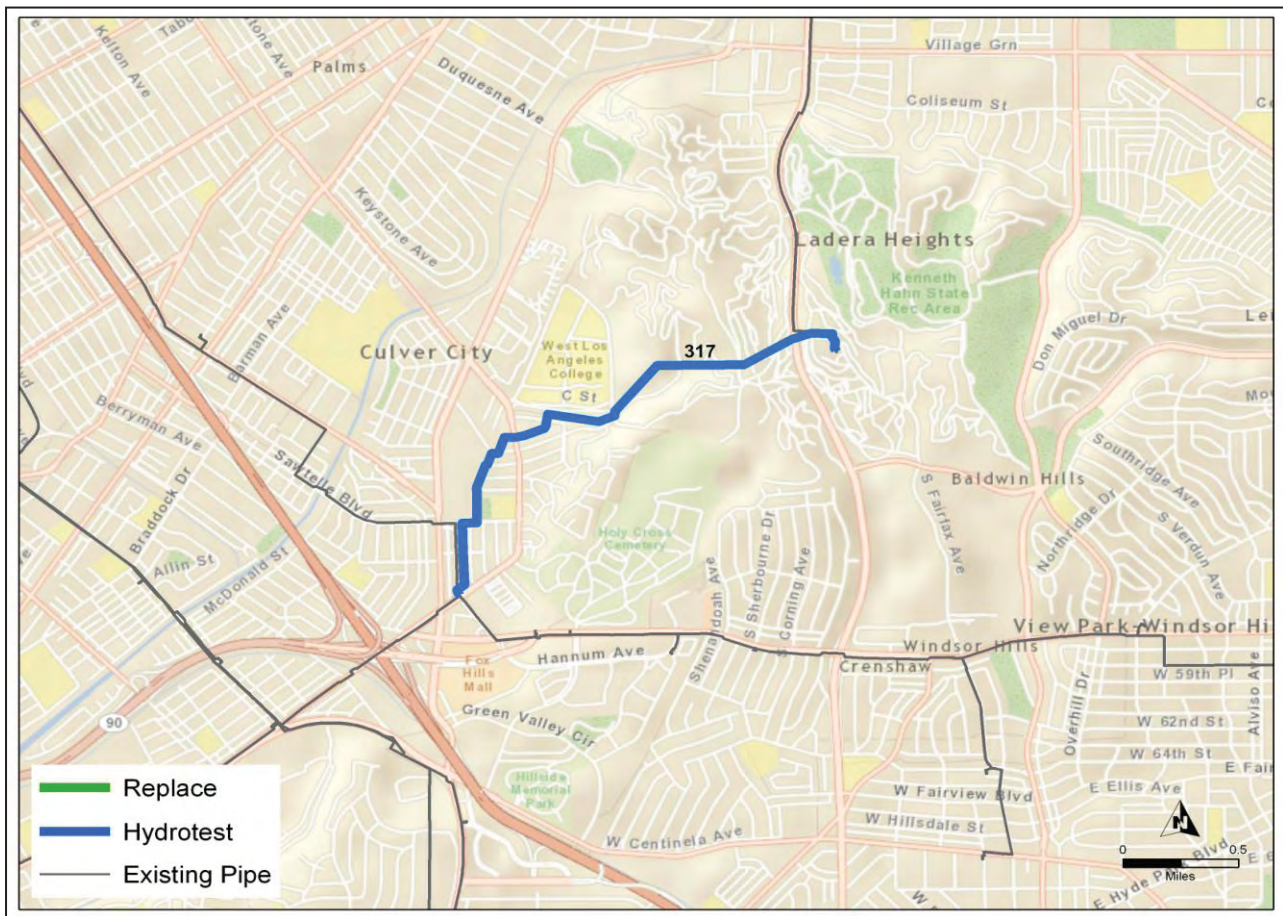
Direct Labor	\$ 5,000
Direct Non Labor	\$ 45,000
Total Repairs	\$ 50,000

In Line Inspection

Direct Labor	\$ 30,000
Direct Non Labor	\$ 270,000
Total ILI	\$ 300,000

In Line Inspection Repairs

Direct Labor	\$ 15,000
Direct Non Labor	\$ 135,000
Total Repairs	\$ 150,000



Southern California Gas Company
 Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision	
	Start	Stop				Tree	Box
Cat 4	0	5010.5	0.3808	12.75	Hydrotest	5	Mostly open land. One road crossing
Cat 4	5010.5	5013.5	0.0006	12.75	Hydrotest	5	Mostly open land. One road crossing
Cat 4	5013.5	11292.4	1.1892	12.75	Hydrotest	5	Mostly open land. One road crossing
Cat 1	11292.4	11315.17	0.0043	12.75	Hydrotest		Mostly open land. One road crossing

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Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	404	24.450	13.350	37.800
Diameter (in.)	18, 20, 22			

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 380,200
Direct Non Labor	\$ 9,655,100
Total Hydrotest	\$ 10,035,300

Hydrotest Repairs

Direct Labor	\$ 65,000
Direct Non Labor	\$ 585,000
Total Repairs	\$ 650,000

In Line Inspection

Direct Labor	\$ 60,000
Direct Non Labor	\$ 540,000
Total ILI	\$ 600,000

In Line Inspection Repairs

Direct Labor	\$ 272,625
Direct Non Labor	\$ 2,453,625
Total Repairs	\$ 2,726,250



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision Tree Box	Comments
	Start	Stop					
Cat 1	0	48	0.0091	18			
Cat 4	48	9714.5	0.9490	18	Hydrotest	5	street work, terrain
Cat 1	9714.5	9733.83	-	18			
Cat 4	9733.83	10976.8	-	18			
Cat 2	10976.8	12642.3	-	18			
Cat 4	12387.8	17679.8	-	18			
Cat 1	17679.8	17694.13	-	18			
Cat 4	17694.13	19460	0.2053	18	Hydrotest	5	terrain
Cat 1	19460	19474	0.0027	18	Hydrotest		road crossing
Cat 4	19474	19650.5	0.0334	18	Hydrotest	5	terrain
Cat 1	19650.5	19664.88	0.0027	18	Hydrotest		terrain
Cat 4	19664.88	23088.80	0.6483	18	Hydrotest	5	street work around residential homes
Cat 4	23088.80	23331.8	0.0460	18	Hydrotest	5	near parking lot
Cat 4	23331.8	25672	0.4432	18	Hydrotest	5	street work; major street crossings
Cat 1	25672	25690.13	0.0034	18	Hydrotest		street work
Cat 4	25690.13	25747.03	0.0108	18	Hydrotest	5	street work
Cat 1	25747.03	25754.78	0.0015	18	Hydrotest		street work
Cat 4	25754.78	27421	0.3156	18	Hydrotest	5	street work
Cat 1	27421	27489	0.0129	18	Hydrotest		street work
Cat 4	27479.72	42781.75	2.8581	18	Hydrotest	5	street work with major street crossing
Cat 1	42781.75	42807	0.0048	18	Hydrotest		street work with major street crossing
Cat 4	42807	48048	0.9926	18	Hydrotest	5	street work with major street crossing. section next to Hwy 128
Cat 1	48048	49652	0.3038	20			
Cat 4	49513.3	51022	0.2857	18	Hydrotest	5	street work
Cat 1	51022	51058.12	0.0089	18	Hydrotest		street work
Cat 4	51069	51155.4	0.0133	18	Hydrotest	5	street work
Cat 2	51155.4	51181.3	0.0049	18	Hydrotest		street work
Cat 4	51178.7	53955	0.5258	18	Hydrotest	5	street work
Cat 1	53955	54527.5	0.1084	18			

Cat 4	54527.5	59608	0.9622	18	Hydrotest	5	street work
Cat 1	59608	59648	0.0076	18	Hydrotest		street work
Cat 4	59648	60919.3	0.2408	18	Hydrotest	5	street work
Cat 1	60919.3	60971.3	0.0098	18	Hydrotest		street work
Cat 4	60971.3	61934	0.0678	18	Hydrotest	5	street work
Cat 1	61934	61987	-	18	Hydrotest		street work
Cat 4	61987	65978.5	0.4400	18	Hydrotest	5	street work & agricultural land
Cat 1	65978.5	65996.75	-	18			
Cat 4	65996.75	67229.22	-	14			
Cat 4	67229.22	69321.22	-	22			
Cat 4	68227.22	71777.9	-	18			
Cat 2	71777.9	73153.6	-	18			
Cat 4	73077.8	77313.00	0.1330	18	Hydrotest	5	agricultural land, golf course crossing and residential area
Cat 4	77313.00	77326.00	0.0025	18	Hydrotest	5	road crossing
Cat 4	77326.00	109824	0.0860	18	Hydrotest	5	street work
Cat 4	109824	115350.2	0.0860	18	Hydrotest	5	street work, residential and agricultural land
Cat 1	115350.2	115837.92	2.0615	18			
Cat 4	115836.3	123045	0.7653	18	Hydrotest	5	railroad and creek crossing, agricultural land
Cat 2	123045	125283	0.4239	18			
Cat 2	125283	126536	0.2373	18			
Cat 2	126336	127199	0.1634	18			
Cat 4	127199	129446.5	0.2117	18	Hydrotest	5	none identified
Cat 1	129446.5	133202.1	0.3600	20			
Cat 4	133202.1	133373.5	-	20			
Cat 1	133373.5	133470.1	-	18			
Cat 4	133458.8	142085	1.6338	18	Hydrotest	5	street work
Cat 4	142085	142117	0.0061	18	Hydrotest	5	street work
Cat 1	142066	142098.34	0.0061	18	Hydrotest		street work
Cat 4	142094.25	152001	1.2563	18	Hydrotest	5	street work, culvert crossing, agricultural land
Cat 1	152001	160948	1.6945	18			
Cat 4	160948	160978	0.0057	18	Hydrotest	5	street work
Cat 1	160978	166839	1.1100	18			
Cat 1	166839	168490.6	0.3128	18			
Cat 1	168215.7	168659.8	0.0841	18			
Cat 1	168659.8	168698	0.0072	18			
Cat 4	168692.7	168747.7	0.0104	18	Hydrotest	5	parking lot
Cat 1	168747.7	169111.6	0.0689	18			

Cat 1	169110.70	171172.00	0.3904	18									
Cat 1	171172.00	183163.00	2.2110	18									
Cat 1	183163.00	183210.1	0.0127	18									
Cat 1	183210.1	183232.75	0.0043	18									
Cat 1	188232.00	194568.00	1.2000	18									
Cat 1	194568.00	196736	0.4578	20									
Cat 1	196736	197766	0.1951	18									
Cat 1	197766.00	200835.00	0.5813	18									
Cat 4	197336.00	202179.5	0.7820	18									
Cat 1	202179.5	202240.92	-	18									
Cat 4	202240.92	207459	-	18									
Cat 4	207459	207469	-	18									
Cat 4	207469	214267.29	-	18									
Cat 1	214267.29	214304.71	-	18									
Cat 4	214304.71	227270.65	0.3410	18									
Cat 1	227270.65	233124	1.1086	18									
Cat 1	233124	232939.00	0.1142	18									
Cat 4	232939.00	233006.92	0.0129	18									
Cat 1	233006.92	233243.21	0.0374	18									
Cat 4	233242.00	236241.00	0.5680	18									
Cat 1	236241.00	238101.00	0.3523	18									
Cat 4	238101.00	239210.00	0.2100	18									
Cat 1	239210.00	239336.5	0.0240	18									
Cat 4	239336.5	244969	1.0668	18									
Cat 1	244969	245319	0.0663	18									
Cat 4	245319	248895.5	0.6774	18									
Cat 1	248895.5	248904.5	0.0017	18									
Cat 4	248904.5	248971	0.0126	18									
Cat 1	248971	248983	0.0023	18									
Cat 4	248983	250563	0.2992	18									
Cat 1	250563	250618	0.0104	18									
Cat 4	250618	250842	0.0424	18									
Cat 1	250842	252365	0.2884	20									
Cat 1	251413.00	251528.00	0.0218	18									
Cat 4	251528.00	257558	1.1420	20									
Cat 1	257558	257630	0.0136	18									
Cat 4	257630	269394	2.2280	18									

						Hydrotest	5	residential street work					
						Hydrotest	5	residential crossings					
						Hydrotest	5	residential area					
						Hydrotest	5	residential crossings, street work					
						Hydrotest	5	street work, bridge crossing					
						Hydrotest	5	street work					
						Hydrotest	5	street work, major street crossing, residential crossings					
						Hydrotest	5	street work					
						Hydrotest	5	street work					
						Hydrotest	5	parking lot					
						Hydrotest	5	parking lot, commercial buildings					
						Hydrotest	5	parking lot					
						Hydrotest	5	parking lot					
						Hydrotest	5	parking lot, street work, residential crossings					
						Hydrotest	5	street work					
						Hydrotest	5	freeway crossing, street work, residential crossings					

Cat 1	269394	270464	0.2027	18						
Cat 4	270464	271713.05	0.2366	18	Hydrotest	5	street work			
Cat 1	271713.05	271733.80	0.0039	18	Hydrotest	5	street work			
Cat 4	271733.80	271895.58	0.0306	18	Hydrotest	5	street work			
Cat 1	271895.58	271903.83	0.0016	18	Hydrotest	5	street work			
Cat 4	271903.83	272413.88	0.0966	18	Hydrotest	5	street work			
Cat 4	272413.88	272658.88	0.0464	18	Hydrotest	5	street work			
Cat 4	272658.88	277150.00	0.8506	18	Hydrotest	5	street work, major road crossings,			
Cat 4	277150.00	277790.00	0.1212	18	Hydrotest	5	street work			
Cat 4	277790.00	278693.35	0.1711	18	Hydrotest	5	street work			
Cat 4	278693.35	278951.35	0.0489	18	Hydrotest	5	101 Freeway crossing, street work			
Cat 4	278951.35	285240.53	1.1911	18	Hydrotest	5	101 Freeway crossing, street work			
Cat 1	285240.53	285318.88	0.0148	18	Hydrotest	5	near rec baseball fields			
Cat 4	285310.72	292532.29	1.3677	18	Hydrotest	5	rec baseball fields crossing, street work with high traffic			
Cat 1	292532.29	292563.62	0.0059	18	Hydrotest	5	station work			
Cat 4	292563.62	292633.33	0.0132	18	Hydrotest	5	station work			

ESTIMATED BY: SPEC SERVICES, INC.
 STATE OF DESIGN: Conceptual

DATE: July 26, 2011
 SPEC Project Number: 5057

SHEET: Sheet 1 of 1



DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe 18 Actual OD (in)	31,719		bb/OD							
0.312 Wall Thickness (in)	4,531		bb/Segment							
108155 Length (FT)										
7 QTY										
Hydrotest Test Segment										
Pipe 18 Actual OD (in)	27,160		bb/OD							
0.250 Wall Thickness (in)	4,527		bb/Segment							
91288 Length (FT)										
6 QTY										
Hydrotest Test Segment										
Pipe n/a Actual OD (in)	0		bb/OD							
0.000 Wall Thickness (in)	0		bb/Segment							
0 Length (FT)										
0 QTY										
Hydrotest Test Segment										
Total Hydrotest Length 37.8 Miles										
Total Hydrotest Segment(s) 13 QTY										
Purging Volume of Nitrogen [to obtain 3 atm (44 psig) on line], minimum 4 miles per test segment	1,365,360		SCF	0.19	\$ 259,418				\$ 259,418	
Temporary Pig Launcher/Receiver (one/ OD change)	1		LS	25,000	\$ 25,000				\$ 25,000	
Water Injection Pump & Filter (capacity 1200 gpm)	5		day(s)	486	\$ 2,430				\$ 2,430	
On-Site Vacuum Truck(s) (minimum one per/ test segment)	13		each	5,000	\$ 65,000				\$ 65,000	
Baker Tank(s) =X	10		each							
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	830		day(s)	1,600	\$ 1,328,000				\$ 1,328,000	
Total Hydrotest Water (\$19/bbl)	58,879		bbl	19,000	\$ 1,118,700				\$ 1,118,700	
Water Disposal Vacuum Truck(s) =A	10		each							
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	481		loads							
Disposal Time =C*B/(A*10)	5		day(s)							
Total Vacuum Truck(s) Rental days (\$/day per truck) =D=C*A	50		day(s)	5,000	\$ 250,000				\$ 250,000	
Treated Water Disposal (\$55/bbl)	58,879		bbl	55	\$ 3,238,343				\$ 3,238,343	
Miscellaneous Materials	5		%		\$ 314,345				\$ 314,345	
SCG Post Estimate Changes										
Additional Baker Tanks: 0 QTY										
Additional Test Segments: (due to elevation changes) 0 QTY										
Total Material Cost									\$ 6,607,300	
2 CONSTRUCTION										
Construction Labor (25K/ test segment)	13		LS		\$ 25,000				\$ 25,000	
Hydrotest Labor (10K/ test segment)	13		day(s)		\$ 130,000				\$ 130,000	
Dewater/ Dry Pipeline (\$15,000/ test segment)	13		LS		\$ 15,000				\$ 15,000	
Tie-ins Crew Rates (\$25,000/ test segment)	13		Each		\$ 25,000				\$ 25,000	
3rd Party Witness (\$2,000/ test segment)	13		Each		\$ 2,000				\$ 2,000	
Total Construction Cost									\$ 380,200	
3 SCG LABOR / INSPECTION										
Projects < \$1 million - company labor is 10%	10		%						\$ -	
\$1 million < Projects < \$10 million - company labor is 5%	5		%						\$ 380,115	
Projects > \$10 million - company labor is 2.5%	2.5		%						\$ -	
Total SCG Labor / Inspection Cost									\$ 380,200	
4 DESIGN / ENG. / CONST. / ENVIRON.										
Planning / Design / Eng / Coord / Procurement	5		%						\$ 380,115	
ROW Acquisition	0		LS						\$ -	
Construction Permits	0		LS						\$ -	
Environmental Permits	0		LS						\$ -	
Environmental Monitoring	0		LS						\$ -	
Total Design / Engineering / Construction Cost									\$ 380,200	
5 CONTINGENCY										
Projects < \$2 million - Contingency is 30%	30		%						\$ -	
Projects > \$2 million - Contingency is 20%	20		%						\$ 1,672,540	
TOTAL PROJECT COST (See Appendix for assumptions/certifications)									\$ 10,955,300	

WP-IX-1-A18

Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	406	7.8625	12.8375	20.7000
Diameter (in.)	20, 22			

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 285,600
Direct Non Labor	\$ 7,253,000
Total Hydrotest	\$ 7,538,600

Hydrotest Repairs

Direct Labor	\$ 45,000
Direct Non Labor	\$ 405,000
Total Repairs	\$ 450,000

In Line Inspection

Direct Labor	\$ 30,000
Direct Non Labor	\$ 270,000
Total ILI	\$ 300,000

In Line Inspection Repairs

Direct Labor	\$ 385,950
Direct Non Labor	\$ 3,473,550
Total Repairs	\$ 3,859,500



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision Tree Box	Comments
	Start	Stop					
Cat 4	0	6	0.0011	22	Hydrotest	5	in olive street station
Cat 1	6	1795	0.3388	22	Keep As Is		
Cat 4	1795.00	1848.00	0.0100	22	Hydrotest	5	street work
Cat 4	1848	2059	0.0400	22	Hydrotest	5	street work
Cat 4	2059.00	2112.00	0.0100	22	Hydrotest	5	street work
Cat 4	2112	24650	0.5286	22	Hydrotest	5	mountain terrain
Cat 1	24649.8	26881.4	0.4227	22	Keep As Is		
Cat 1	26881.4	27998.6	-	22	Keep As Is		
Cat 1	27763.4	29181.9	0.1887	22	Keep As Is		
Cat 4	29182	29198.35	0.0031	22	Hydrotest	5	residential street/backyard
Cat 1	29198.35	29236.35	0.0072	22	Hydrotest		residential street
Cat 1	29235.7	29249.2	0.0026	22	Hydrotest		residential street
Cat 1	29249	29298.92	0.0095	22	Hydrotest		residential street
Cat 1	29298.92	30598.32	0.2461	22	Hydrotest		residential street
Cat 1	30374.92	30596.56	0.0420	22	Hydrotest		residential street
Cat 1	30596.56	31781.00	0.2243	22	Keep As Is		residential street
Cat 1	31781.00	32077.13	0.0561	22	Keep As Is		residential street
Cat 2	32077.13	32079.21	0.0004	22	Keep As Is		residential street
Cat 4	32079	32639	0.1061	22	Hydrotest	5	residential street
Cat 2	32639	32644.7	0.0011	22	Hydrotest		residential street /small creek crossing
Cat 4	32645	32910	0.0502	22	Hydrotest	5	residential street
Cat 1	32909.5	33234	0.0615	22	Keep As Is		
Cat 1	33234	35108	0.3549	22	Keep As Is		
Cat 1	35108	35126.2	-	22	Keep As Is		
Cat 4	35126	40625	-	22	Keep As Is		
Cat 1	40624.5	56630.8	2.2700	22	Keep As Is		
Cat 4	56631	60677.94	0.5000	22	Hydrotest	5	open earth
Cat 4	60667.00	61723	-	22	Keep As Is		
Cat 4	61723.00	65930.00	-	22	Keep As Is		

Cat 4	65930.00	66603	-	22	Keep As Is	
Cat 2	66603.3	67900.8	-	22	Keep As Is	
Cat 4	67980.8	70721	-	22	Keep As Is	
Cat 1	70721.3	74051.3	0.4000	22	Keep As Is	
Cat 4	74051.3	98171	-	22	Keep As Is	
Cat 1	98171.4	102229.3	0.7685	22	Keep As Is	5 tank farm/station
Cat 4	102229	102468	0.0453	22	Hydrotest	
Cat 1	102468.3	109261.8	1.2866	22	Keep As Is	5 open earth/mountain terrain
Cat 4	109262	124046.8	0.3002	22	Hydrotest	
Cat 1	124046.80	124543	0.0940	22	Keep As Is	
Cat 1	124543.2	125392.2	0.1608	22	Keep As Is	
Cat 4	125333	130252	0.4316	22	Hydrotest	5 open earth -crosses Edison ROW
Cat 1	130252.1	130431.2	0.0339	22	Keep As Is	
Cat 4	130376.4	136825	0.0554	22	Hydrotest	5 open earth with creek crossing
Cat 1	136824.7	138142	-	22	Keep As Is	
Cat 1	138142	162304.8	3.9691	22	Keep As Is	
Cat 4	162305	162319.6	0.0028	22	Hydrotest	5 open earth
Cat 1	162319.6	174412	2.2202	22	Keep As Is	
Cat 4	174412.00	174428.00	0.0030	22	Hydrotest	5 open earth
Cat 1	174428.00	174463.00	0.0066	22	Hydrotest	5 open earth
Cat 1	174463.00	180470.00	1.1377	22	Keep As Is	
Cat 1	180470.00	186053.5	1.0575	20	Keep As Is	
Cat 2	186053.5	188216	0.4096	20	Keep As Is	5 residential street
Cat 4	187974	189640	0.3155	20	Hydrotest	
Cat 1	189640	192693	0.5782	20	Keep As Is	
Cat 4	192237	214262.4	0.4477	20	Hydrotest	5 rolling hills -1 street crossing
Cat 1	214262.4	235329.6	2.7970	20	Keep As Is	
Cat 4	235329.6	236542	0.2296	20	Hydrotest	5 westside station -residential street & major street crossing
Cat 1	236542	238140	0.3027	20	Keep As Is	
Cat 4	238140	239043.23	0.1711	20	Hydrotest	5 arterial street
Cat 1	239043.23	239195.23	0.0288	20	Hydrotest	5 arterial street
Cat 4	239179.23	244969	1.0965	20	Hydrotest	5 arterial street/wash crossing/major street crossing
Cat 1	244969	245749	0.1477	20	Keep As Is	
Cat 4	245749	250583	0.9155	20	Hydrotest	5 major street crossings
Cat 2	250583	250613	0.0057	20	Hydrotest	5 major street crossings
Cat 4	250613	250840	0.0430	20	Hydrotest	5 mall parking lot and buildings
Cat 1	250840	252358	0.2875	20	Keep As Is	

Cat 1	251407	252561	0.2186	20	Keep As Is	5	arterial street/major street crossing
Cat 4	252561	257543	0.9436	20	Hydrotest	5	arterial street/major street crossing
Cat 2	257543	257636	0.0176	20	Hydrotest	5	arterial street/major street crossing
Cat 4	257631	269389	2.2269	20	Hydrotest	5	arterial street/major street crossing
Cat 1	269389	270529	0.2159	20	Keep As Is		

SHEET: Sheet 1 of 1
 DATE: July 26, 2011
 SPEC Project Number: 5057
 SPEC SERVICES, INC.
 ESTIMATED BY: SPEC SERVICES, INC.
 STATE OF DESIGN: Conceptual

DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe 22 Actual OD (in)	25,070		bb/OD							
0.250 Wall Thickness (in)	5,014		bb/Segment							
56834 Length (FT)										
5 QTY										
Hydrotest Test Segment										
Pipe 20 Actual OD (in)	19,573		bb/OD							
0.312 Wall Thickness (in)	4,893		bb/Segment							
53673 Length (FT)										
4 QTY										
Hydrotest Test Segment										
Pipe n/a Actual OD (in)	0		bb/OD							
0.000 Wall Thickness (in)	0		bb/Segment							
Length (FT)										
0 QTY										
Hydrotest Test Segment										
Total Hydrotest Length 20.7 Miles										
Total Hydrotest Segment(s) 9 QTY										
Purging Volume of Nitrogen [to obtain 3 atm (44 psig) on line], minimum 4 miles per test segment	1,317,667		SCF	0.19	\$ 250,357				\$ 250,357	
Temporary Pig Launcher/Receiver (one/ OD change)	2		LS	25,000	\$ 50,000				\$ 50,000	
Water Injection Pump & Filter (capacity 1200 gpm)	4		day(s)	486	\$ 1,944				\$ 1,944	
On-Site Vacuum Truck(s) (minimum one per/ test segment)	9		each	5,000	\$ 45,000				\$ 45,000	
Baker Tank(s) =X	10		each							
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	580		day(s)	1,600	\$ 928,000				\$ 928,000	
Total Hydrotest Water (\$190/bbl)	44,643		bbl	19.00	\$ 846,224				\$ 846,224	
Water Disposal Vacuum Truck(s) =A	10		each							
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	373		loads							
Disposal Time =C*B/(A*10)	4		day(s)							
Total Vacuum Truck(s) Rental days (\$/day per truck) =D=C*A	40		day(s)	5,000	\$ 200,000				\$ 200,000	
Treated Water Disposal (\$55/bbl)	44,643		bbl	55	\$ 2,455,384				\$ 2,455,384	
Miscellaneous Materials	5		%		\$ 238,946				\$ 238,946	
SCG Post Estimate Changes										
Additional Baker Tanks:	0		QTY							
Additional Test Segments:										
(due to elevation changes)	0		QTY							
2 CONSTRUCTION										
Construction Labor (25K/ test segment)	9		LS			25,000	\$ 225,000		\$ 225,000	
Hydrotest Labor (10K/ test segment)	9		day(s)			10,000	\$ 90,000		\$ 90,000	
Dewater/ Dry Pipeline (\$15,000/ test segment)	9		LS			15,000	\$ 135,000		\$ 135,000	
Tie-ins Crew Rates (\$25,000/ test segment)	9		Each			25,000	\$ 225,000		\$ 225,000	
3rd Party Witness (\$2,000/ test segment)	9		Each			2,000	\$ 18,000		\$ 18,000	
Test/Construction period (6 days per test segment+ Hydrotest Labor+ Disposal Time) =Z	58		day(s)							
Total Construction Cost							\$ 683,000		\$ 683,000	
3 SCG LABOR / INSPECTION										
Projects < \$1 million - company labor is 10%	10		%				\$ -		\$ -	
\$1 million < Projects < \$10 million - company labor is 5%	5		%				\$ 285,545		\$ 285,545	
Projects > \$10 million - company labor is 2.5%	2.5		%				\$ -		\$ -	
Total SCG Labor / Inspection Cost							\$ 285,545		\$ 285,545	
4 DESIGN / ENG. / CONST. / ENVIRON.										
Planning / Design / Eng / Coord / Procurement	5		%				\$ 285,545		\$ 285,545	
ROW Acquisition	0		LS				\$ -		\$ -	
Construction Permits	0		LS				\$ -		\$ -	
Environmental Permits	0		LS				\$ -		\$ -	
Environmental Monitoring	0		LS				\$ -		\$ -	
Total Design / Engineering / Construction Cost							\$ 285,545		\$ 285,545	
5 CONTINGENCY										
Projects < \$2 million - Contingency is 30%	30		%				\$ -		\$ -	
Projects > \$2 million - Contingency is 20%	20		%				\$ 1,256,420		\$ 1,256,420	
TOTAL PROJECT COST (See Appendix for assumptions/certifications)							\$ 1,256,420		\$ 1,256,420	
							\$ 7,536,600		\$ 7,536,600	

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Southern California Gas Company Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4 Criteria	Accelerated	Total
Line Number	407	6.251	0.049	6.300
Diameter (in.)	30			

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 143,500
Direct Non Labor	\$ 3,644,100
Total Hydrotest	\$ 3,787,600

Hydrotest Repairs

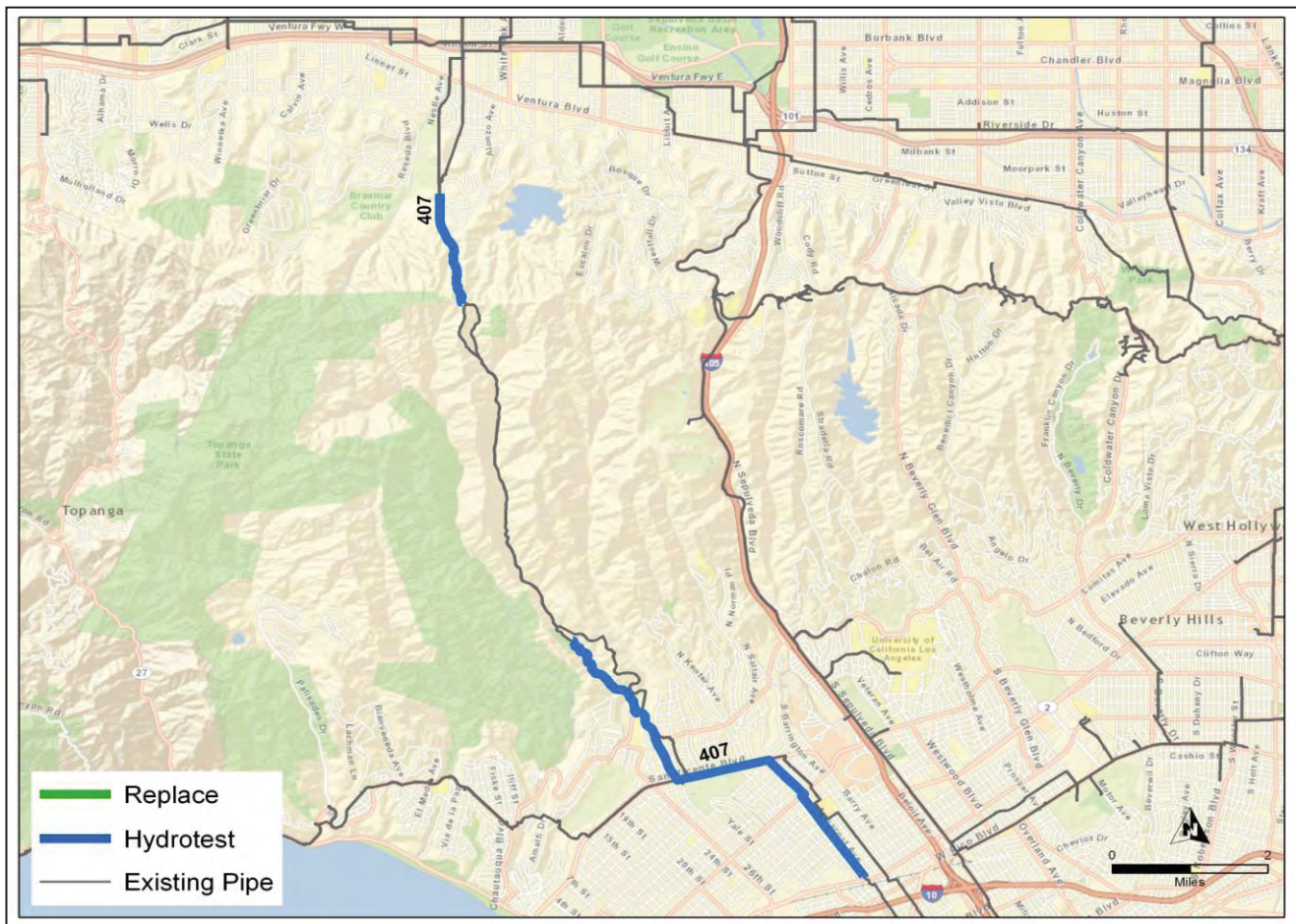
Direct Labor	\$ 10,000
Direct Non Labor	\$ 90,000
Total Repairs	\$ 100,000

In Line Inspection

Direct Labor	\$ 30,000
Direct Non Labor	\$ 270,000
Total ILI	\$ 300,000

In Line Inspection Repairs

Direct Labor	\$ 93,825
Direct Non Labor	\$ 844,425
Total Repairs	\$ 938,250



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Existing Segments

Category	Station		Station Stop	Criteria Miles	Diameter	Action	Decision	
	Start	Stop					Tree Box	Comments
Cat 1	-134.22	83.2	83.2	0.0412	30			
Cat 1	83.2	97.5	97.5	0.0027	30			
Cat 1	97.5	162.97	162.97	0.0124	30			
Cat 1	162.97	171.63	171.63	0.0016	30			
Cat 1	171.63	1046.87	1046.87	0.1658	30			
Cat 4	1046.87	1057.56	1057.56	0.0020	30	Hydrotest	5	none determined
Cat 1	1057.56	7394.5	7394.5	1.2002	30			
Cat 1	7394.5	8212.76	8212.76	0.1550	30			
Cat 1	8212.76	9110.18	9110.18	0.1700	30			
Cat 4	9029.85	9635.2	9635.2	0.1146	30	Hydrotest	5	Between golf course and backyards of upscale homes, relocation
Cat 1	9635.2	9789.2	9789.2	0.0292	30	Hydrotest		Inbetween residential homes
Cat 4	9785.7	16674.42	16674.42	1.3047	30	Hydrotest	5	none determined
Cat 1	16674.42	16696.59	16696.59	-	30			
Cat 4	16696.59	37847.45	37847.45	-	30			
Cat 1	37667.2	37720.2	37720.2	-	30			
Cat 4	37720.2	37847.45	37847.45	-	30			
Cat 1	37847.45	37867.75	37867.75	-	30			
Cat 4	37867.75	39223.03	39223.03	-	30			
Cat 4	39223.03	39230.03	39230.03	-	30			
Cat 4	39230.03	39300.03	39300.03	-	30			
Cat 1	39300.03	39320.33	39320.33	-	30			
Cat 1	39320.33	39332.425	39332.425	-	30			
Cat 1	39332.425	40439.8	40439.8	-	30			
Cat 4	40439.8	40687.45	40687.45	0.0506	30	Hydrotest	5	terrain
Cat 1	40687.45	40925.92	40925.92	0.0452	30			
Cat 4	40925.92	42970.45	42970.45	0.3949	30	Hydrotest	5	upscale homes, terrain
Cat 1	42970.45	43055.15	43055.15	0.0160	30	Hydrotest		upscale homes
Cat 4	43055.15	44410	44410	0.2607	30	Hydrotest	5	upscale homes

Cat 1	44410	44503	0.0176	30	Hydrotest	5	upscale homes
Cat 4	44503	52305.2	1.4821	30	Hydrotest	5	upscale homes
Cat 1	52305.2	52337.4	0.0061	30	Hydrotest	5	upscale homes
Cat 4	52337.4	62231.09	1.8738	30	Hydrotest	5	Major street crossings
Cat 1	62231.09	62245.09	0.0027	30	Hydrotest	5	Major street crossings
Cat 4	62245.09	66307.65	0.7694	30	Hydrotest	5	Major street crossings
Cat 1	66307.65	66327.17	0.0037	30	Hydrotest		
Cat 1	66327.17	66379.17	0.0098	30			

ESTIMATED BY: SPEC SERVICES, INC.
 DATE: July 26, 2011
 SPEC Project Number: 5057

STATE OF DESIGN: Conceptual

WE FIRM NAME: SPEC SERVICES

DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe	30	Actual OD (in)								
	0.375	Wall Thickness (in)								
	33288	Length (FT)	bb/OD							
	2	QTY	bb/Segment							
Hydrotest Test Segment										
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)	bb/OD							
	0	QTY	bb/Segment							
Hydrotest Test Segment										
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)	bb/OD							
	0	QTY	bb/Segment							
Hydrotest Test Segment										
Total Hydrotest Length	6.3	Miles								
Total Hydrotest Segment(s)	2	QTY								
Purging - Volume of Nitrogen [to obtain 3 atm (44 psig) on line], minimum 4 miles per test segment	591,322	SCF		\$ 0.19	\$ 112,351			\$ 112,351		
Temporary Pig Launcher/Receiver (one/ OD change)	1	LS		\$ 25,000	\$ 25,000			\$ 25,000		
Water Injection Pump & Filter (capacity 1200 gpm)	3	day(s)		\$ 486	\$ 1,458			\$ 1,458		
On-Site Vacuum Truck(s) (minimum one per/ test segment)	2	each		\$ 5,000	\$ 10,000			\$ 10,000		
Baker Tank(s) =X	150	each								
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	150	day(s)		\$ 1,600	\$ 240,000			\$ 240,000		
Total Hydrotest Water (\$19/bbl)	27,664	bbl		\$ 19.00	\$ 525,621			\$ 525,621		
Water Disposal Vacuum Truck(s) =A	10	each								
Water Disposal Vacuum Truck(s) =A	231	boards								
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	3	day(s)								
Disposal Time =>C*B/(A*10)	30	day(s)		\$ 5,000	\$ 150,000			\$ 150,000		
Total Vacuum Truck(s) Rental days (\$/day per truck) =>D=C*A	27,664	bbl		\$ 55	\$ 1,521,535			\$ 1,521,535		
Treated Water Disposal (\$55/bbl)	5	%						\$ 129,299		
Miscellaneous Materials										
SCG Post Estimate Changes:										
Additional Baker Tanks:	0	QTY								
Additional Test Segments:	0	QTY								
(due to elevation changes)										
2 CONSTRUCTION										
Construction Labor (25K/ test segment)	2	LS		\$ 25,000	\$ 50,000			\$ 50,000		
Hydrotest Labor (10K/ test segment)	2	day(s)		\$ 10,000	\$ 20,000			\$ 20,000		
Dewater/ Dry Pipeline (\$15,000/ test segment)	2	LS		\$ 15,000	\$ 30,000			\$ 30,000		
Tie-ins Crew Rates (\$25,000/ test segment)	2	Each		\$ 25,000	\$ 50,000			\$ 50,000		
3rd Party Witness (\$2,000/ test segment)	2	Each		\$ 2,000	\$ 4,000			\$ 4,000		
Test/Construction period (6 days per test segment+ Hydrotest Labor+ Disposal Time) =Z	15	day(s)								
Total Construction Cost								\$ 154,000		
3 SCG LABOR / INSPECTION										
Projects <\$1 million - company labor is 10%	10	%						\$ -		
\$1 million < Projects <\$10 million - company labor is 5%	5	%						\$ 143,465		
Projects >\$10 million - company labor is 2.5%	2.5	%						\$ -		
Total SCG Labor / Inspection Cost								\$ 143,465		
4 DESIGN / ENG. / CONST. / ENVIRON.										
Planning / Design / Eng / Coord / Procurement	5	%						\$ 143,465		
ROW Acquisition	0	LS						\$ -		
Construction Permits	0	LS						\$ -		
Environmental Permits	0	LS						\$ -		
Environmental Monitoring	0	LS						\$ -		
Total Design / Engineering / Construction Cost								\$ 143,500		
5 CONTINGENCY										
Projects <\$2 million - Contingency is 30%	30	%						\$ -		
Projects >\$2 million - Contingency is 20%	20	%						\$ 631,260		
TOTAL PROJECT COST (See Appendix for assumptions/certifications)								\$ 3,787,600		

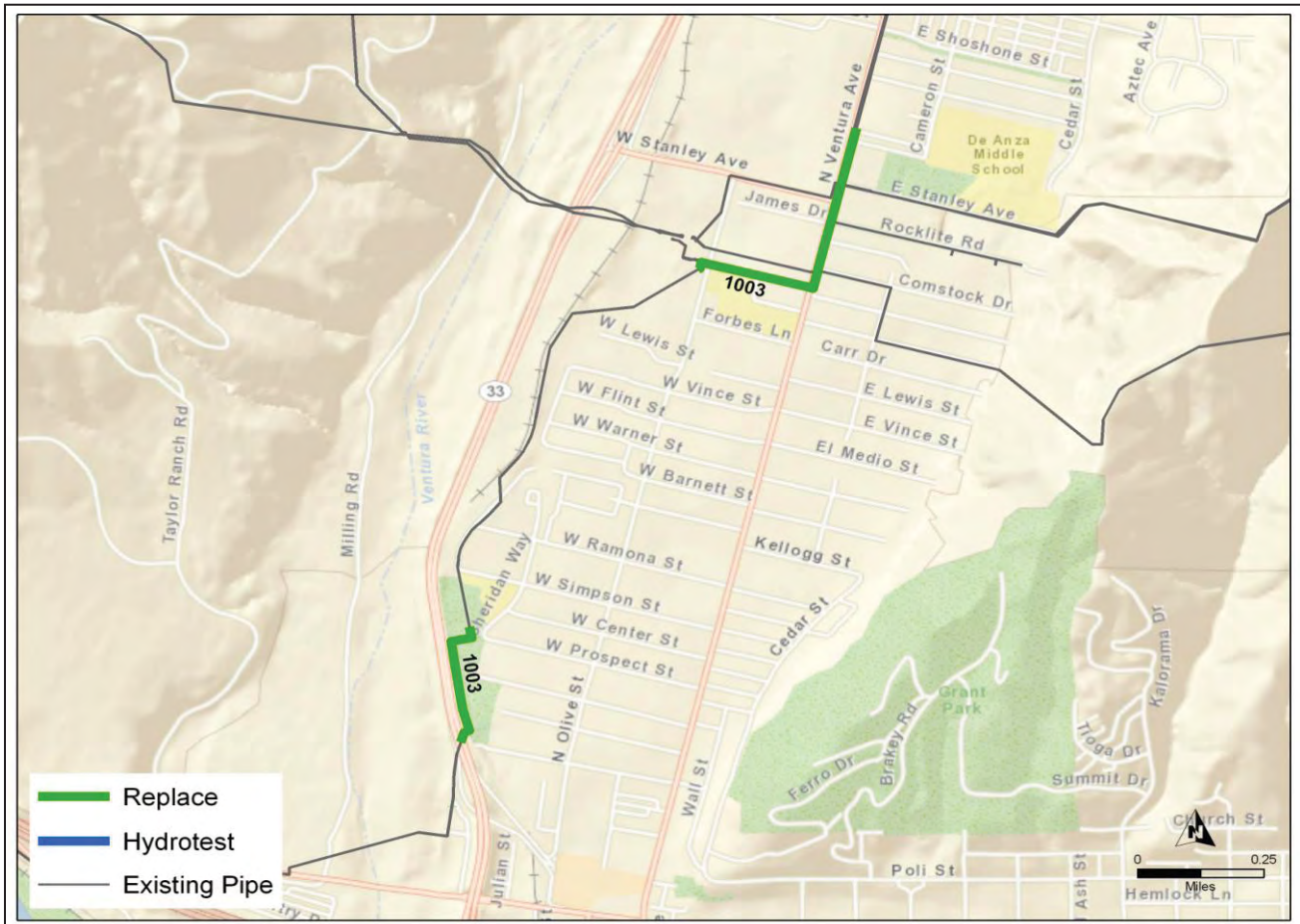
WP-IX-1-A27

Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Replacement Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	1003	1.291	0.117	1.408
Diameter (in.)	12.75, 16, 20			

Cost Detail

Capital		O&M	
Direct Labor	\$ 105,100	Direct Labor	\$ -
Direct Non Labor	\$ 2,818,500	Direct Non Labor	\$ -
Total Direct Capital	\$ 2,923,600	Total Direct O&M	\$ -



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision	
	Start	Stop				Tree Box	Comments
Cat 1	193229	193587	0.0678	12.75			
Cat 4	193587	193596	0.0017	12.75	Replace	2	none
Cat 4	193596	194005	0.0775	16	Replace	2	parallels 33 fwy off ramp
Cat 1	194005	194010.42	0.0010	16			
Cat 1	194010.42	198787	0.9047	12.75			
Cat 1	198787	198790	0.0006	12.75			
Cat 4	198790	198989	0.0377	12.75	Replace	2	Olive compressor station
Cat 1	198989	199469	0.0909	12.75			
Cat 2	199469	200462	0.1881	12.75			
Cat 4	200462	204647.67	0.7928	16	Replace	2	none
Cat 4	204647.67	204667.67	0.0038	12.75	Replace	2	none
Cat 4	204668	207277	0.4941	20	Replace	2	none

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
193587	193596	12.75	0.375	X-52	
193596	194005	12.75	0.375	X-52	
198790	198989	12.75	0.375	X-52	
200462	204647.67	12.75	0.375	X-52	
204647.67	204667.67	12.75	0.375	X-52	
204668	207277	12.75	0.375	X-52	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET						
Line L-1003			SP&C SERVICES	Sheet 1 of 1						
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:							
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 8, 2011							
		STATUS OF DESIGN	SPEC Project Number							
		Complete	5057							
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments	
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL		
INPUT IN ALL GREEN CELLS										
1 MATERIALS										
Pipe 12 inch, STD. WT X-52										
		608	Feet	\$ 44	\$ 26,922			\$ 26,922	Replaced all segments pipe OD per Remediation Plan	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	6	Each	\$ 1,833	\$ 11,000			\$ 11,000		
	Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 31,190	\$ -			\$ -		
	FBE Coating (5/ft)	0	\$	\$ 3.26	\$ 1,982			\$ 1,982		
	Miscellaneous Materials (5%)	1	Lot					\$ 1,896		
	Freight / Tax	12.5	%					\$ 5,229		
12 inch, STD. WT X-52										
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	6824	Feet	\$ 44	\$ 302,167			\$ 302,167		
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	31	Each	\$ 1,833	\$ 56,834			\$ 56,834		
	FBE Coating (5/ft)	0	Each	\$ 36,010	\$ -			\$ -		
	Miscellaneous Materials (5%)	1	Lot	\$ 3.26	\$ 22,246			\$ 22,246		
	Freight / Tax	12.5	%					\$ 17,950		
								\$ 49,900		
n/a										
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	0	Feet	\$ -	\$ -			\$ -		
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	4	Each	\$ -	\$ -			\$ -		
	FBE Coating (5/ft)	0	Each	\$ -	\$ -			\$ -		
	Miscellaneous Materials (5%)	1	Lot	\$ -	\$ -			\$ -		
	Freight / Tax	12.5	%					\$ -		
Casing n/a										
	Miscellaneous Materials (5%)	0	Feet	\$ -	\$ -			\$ -		
	Freight / Tax	1	Lot					\$ -		
		12.5	%					\$ -		
Total length		1.4	Miles							
Total Material Cost								\$ 496,200		
2 CONSTRUCTION (See Appendix for construction type definitions)										
12 inch pipe										
	Pipe Install - Type 1	0	Feet			\$ 175	\$ -	\$ -		
	Pipe Install - Type 2	608	Feet			\$ 280	\$ 170,240	\$ 170,240		
	Pipe Install - Type 3	0	Feet			\$ 450	\$ -	\$ -		
	Pipe Install - Type 4	0	Feet			\$ 600	\$ -	\$ -		
	Pipe Install - Type 5	0	Feet			\$ 400	\$ -	\$ -		
	Pipe Install - Type 6	0	Feet			\$ 400	\$ -	\$ -		
	Pipe Install - Type 7	0	Feet			\$ 585	\$ -	\$ -		
12 inch pipe										
	Pipe Install - Type 1	6824	Feet			\$ 175	\$ 1,194,200	\$ 1,194,200		
	Pipe Install - Type 2	0	Feet			\$ 280	\$ -	\$ -		
	Pipe Install - Type 3	0	Feet			\$ 450	\$ -	\$ -		
	Pipe Install - Type 4	0	Feet			\$ 600	\$ -	\$ -		
	Pipe Install - Type 5	0	Feet			\$ 400	\$ -	\$ -		
	Pipe Install - Type 6	0	Feet			\$ 400	\$ -	\$ -		
	Pipe Install - Type 7	0	Feet			\$ 585	\$ -	\$ -		
n/a										
	Pipe Install - Type 1	0	Feet			\$ -	\$ -	\$ -		
	Pipe Install - Type 2	0	Feet			\$ -	\$ -	\$ -		
	Pipe Install - Type 3	0	Feet			\$ -	\$ -	\$ -		
	Pipe Install - Type 4	0	Feet			\$ -	\$ -	\$ -		
	Pipe Install - Type 5	0	Feet			\$ -	\$ -	\$ -		
	Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -		
	Pipe Install - Type 7	0	Feet			\$ -	\$ -	\$ -		
	Tie-ins Crew Rates	3	Each			\$ 25,000	\$ 75,000	\$ 75,000		
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	23352	SCF	\$ 0.19	\$ 4,437			\$ 4,437		
	Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000		
	95% Abandonment of Existing Pipeline (\$50/CY)	206	CY			\$ 95	\$ 19,570	\$ 19,570		
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 51,167		
	Mobilization / Demobilization	2	Each			\$ 30,000	\$ 60,000	\$ 60,000		
	Contaminated Soil	0	CY			\$ -	\$ -	\$ -		
	Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -		
	Radiographic Inspection	7	Days	\$ 150	\$ 1,050	\$ 600	\$ 4,200	\$ 5,250		
Construction period		15	days							
Total Construction Cost								\$ 1,604,900		
3 SCG LABOR / INSPECTION										
	Projects < \$1 million - company labor is 10%	10	%				\$ -	\$ -		
	\$1 million < Projects < \$10 million - company labor is 5%	5	%				\$ 105,055	\$ 105,055		
	Projects > \$10 million - company labor is 2.5%	2.5	%				\$ -	\$ -		
Total SCG Labor / Inspection Cost								\$ 105,100		
4 DESIGN / ENG. / CONST / ENVIRON.										
	Planning / Design / Eng / Coord / Procurement	10	%				\$ 210,110	\$ 210,110		
	Construction Stake, As-Built Survey (2 man crew)	7	Days	\$ 100	\$ 700	\$ 1,400	\$ 9,800	\$ 10,500		
	ROW Acquisition	0	LS				\$ -	\$ -		
	Construction Permits	0	LS				\$ -	\$ -		
	Environmental Permits	0	LS				\$ -	\$ -		
	Environmental Monitoring	0	LS				\$ -	\$ -		
	As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 9,432	\$ 9,432		
Total Design / Engineering / Construction Cost								\$ 230,100		
5 CONTINGENCY										
	Projects < \$2 million - Contingency is 30%	30	%				\$ -	\$ -		
	Projects > \$2 million - Contingency is 20%	20	%				\$ 487,260	\$ 487,260		
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 2,923,600		

**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4 Criteria	Accelerated	Total
Line Number	1004	12.718	6.983	19.700
Diameter (in.)	16			

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 159,200
Direct Non Labor	\$ 4,043,200
Total Hydrotest	\$ 4,202,400

Hydrotest Repairs

Direct Labor	\$ 35,000
Direct Non Labor	\$ 315,000
Total Repairs	\$ 350,000

In Line Inspection

Direct Labor	\$ 60,000
Direct Non Labor	\$ 540,000
Total ILI	\$ 600,000

In Line Inspection Repairs

Direct Labor	\$ 193,500
Direct Non Labor	\$ 1,741,500
Total Repairs	\$ 1,935,000



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workshop Supporting Chapter IX**

Existing Segments

Category	Station		Station Stop	Criteria Miles	Diameter	Action	Decision		Comments
	Start	Stop					Tree	Box	
Cat 4	0	1671.6	1671.6	0.3166	16	Hydrotest	5	5	residential street
Cat 1	1671.6	1731.8	1731.8	0.0114	16	Hydrotest			residential street
Cat 4	1731.8	2877	2877	0.2169	16	Hydrotest	5	5	residential street
Cat 1	2877	2883	2883	0.0011	16	Hydrotest			residential street
Cat 4	2883	2958	2958	0.0142	16	Hydrotest	5	5	residential street
Cat 1	2958	2964	2964	0.0011	16	Hydrotest			residential street
Cat 4	2964	4322	4322	0.2572	16	Hydrotest	5	5	residential street
Cat 2	4322	5600	5600	0.2420	16				
Cat 4	5600	15476	15476	1.8705	16	Hydrotest	5	5	residential street
Cat 1	15476	15778	15778	0.0572	16				
Cat 4	15778	17804	17804	0.3837	16	Hydrotest	5	5	residential street
Cat 4	17804	18006	18006	0.0383	16	Hydrotest	5	5	residential street
Cat 4	18006	18063	18063	0.0108	16	Hydrotest	5	5	residential street -major hwy
Cat 1	18063	18077	18077	0.0027	16				
Cat 1	18077.00	18091	18091	0.0027	16				
Cat 1	18091.00	19652.7	19652.7	0.2958	16				
Cat 1	19652.7	20949.8	20949.8	0.2457	16				
Cat 1	20913.70	21962	21962	0.1985	16				
Cat 4	21295.00	25773.5	25773.5	0.8482	16	Hydrotest	5	5	arterial street w/ major hwy crossing
Cat 1	25773.5	26515	26515	0.1404	16				
Cat 2	26515	32209	32209	1.0784	16				
Cat 4	32209	32222	32222	0.0025	16	Hydrotest	5	5	arterial street -possible night work
Cat 4	32222	37994	37994	1.0932	16	Hydrotest	5	5	arterial street -possible night work
Cat 1	37994	37987.9	37987.9	0.0083	16	Hydrotest			arterial street -possible night work
Cat 4	37984.60	38291.4	38291.4	0.0581	16	Hydrotest	5	5	arterial street -possible night work
Cat 1	38291.4	38406.26	38406.26	0.0218	16				
Cat 2	38400.40	44032	44032	1.0666	16				
Cat 1	44032	44141.7	44141.7	0.0208	16				
Cat 4	44135.00	45123.9	45123.9	0.1873	16	Hydrotest	5	5	arterial street -possible night work

Cat 1	45123.9	45175.5	0.0098	16	Hydrotest	arterial street -possible night work
Cat 4	45175.5	49281	0.7776	16	Hydrotest	HWY 101 crossing
Cat 4	49281	49702	0.0797	16	Hydrotest	arterial street -possible night work
Cat 4	49702	50604.5	0.1709	16	Hydrotest	arterial street -possible night work
Cat 1	50604.5	50814.5	0.0398	16	Hydrotest	arterial street parallel to hwy
Cat 4	50814.5	51941.5	0.2134	16	Hydrotest	arterial street -hwy 101 crossing
Cat 1	51941.5	52263.5	0.0610	16	Hydrotest	arterial street -night work with off ramps
Cat 4	52263.5	54868	0.4933	16	Hydrotest	arterial street -night work with off ramps
Cat 2	54868	55726	0.1625	16	Hydrotest	street work with road crossings
Cat 4	55726	55968	0.0458	16	Hydrotest	street work with road crossings
Cat 2	55968	56084	0.0220	16	Hydrotest	street work with road crossings
Cat 4	56084	56119	0.0066	16	Hydrotest	street work with road crossings
Cat 1	56119	56129	0.0019	16	Hydrotest	street work with road crossings
Cat 4	56129	56392	0.0498	16	Hydrotest	street work with road crossings
Cat 1	56392	56423	0.0059	16	Hydrotest	street work with road crossings
Cat 4	56423	56690	0.0506	16	Hydrotest	street work with road crossings
Cat 1	56690	56700	0.0019	16	Hydrotest	street work with road crossings
Cat 4	56700	58296	0.3023	16	Hydrotest	street work with road crossings
Cat 1	58296	58327.5	0.0060	16	Hydrotest	street work with road crossings
Cat 4	58327.5	58973	0.1223	16	Hydrotest	street work with road crossings
Cat 1	58973	58984	0.0021	16	Hydrotest	street work with road crossings
Cat 4	58984	60510.5	0.2891	16	Hydrotest	street work with road crossings
Cat 1	60510.5	60679.5	0.0320	16	Hydrotest	street work with road crossings
Cat 4	60679.5	64658	0.7535	16	Hydrotest	street work -1 road crossing
Cat 1	64658	64674	0.0030	16	Hydrotest	
Cat 1	64674	64687	0.0025	16	Hydrotest	
Cat 1	64687	64699	0.0023	16	Hydrotest	
Cat 1	64699	66415	0.3250	16	Hydrotest	
Cat 1	66415	69090	0.5066	16	Hydrotest	
Cat 4	69090	69653	0.1066	16	Hydrotest	frontage road parallel to frwy
Cat 4	69653	70303.5	0.1232	16	Hydrotest	frontage road parallel to frwy
Cat 1	70303.5	70380.5	0.0146	16	Hydrotest	frontage road parallel to frwy
Cat 4	70380.5	71976.5	0.3023	16	Hydrotest	frontage road parallel to frwy
Cat 1	71976.5	72657.5	0.1290	16	Hydrotest	
Cat 4	72657.5	75126.5	0.4676	16	Hydrotest	night work frwy crossing
Cat 1	75226.5	75243	0.0031	16	Hydrotest	pig launcher/receiver
Cat 4	75243	80598.25	1.0143	16	Hydrotest	frontage road parallel to frwy

Cat 1	80598.25	80630.42	0.0061	16							
Cat 2	80630.42	88541	1.4955	16							
Cat 1	88541	88715.06	0.0330	16							
Cat 1	88704.00	91219.8	0.4765	16							
Cat 1	91219.8	91315.4	0.0181	16							
Cat 1	91306.30	92323.9	0.1927	16							
Cat 4	92323.9	92332.1	0.0016	16					5	arterial street	
Cat 1	92332.1	92427.5	0.0181	16							
Cat 1	92427.5	92476.7	0.0093	16							
Cat 1	92471.50	92950.7	0.0908	16							
Cat 1	92950.7	93105.4	0.0293	16							
Cat 1	93062.10	96955.5	0.7563	16							
Cat 1	96955.5	97127.5	0.0326	16							
Cat 1	97127.5	97334.5	0.0392	16							
Cat 1	97334.5	97888.5	0.1049	16							
Cat 1	97839.5	98838.6	0.1892	16							
Cat 1	98838.6	98844.6	0.0011	16							
Cat 4	98844.6	99165.5	0.0608	16					5	residential st	
Cat 1	99165.5	104890.5	1.0843	16							
Cat 1	104890.5	108641.5	0.7104	16							
Cat 4	108641.5	109983.68	0.2542	16					5	road crossing	
Cat 1	109983.68	110001.08	0.0033	16					5	pig launcher/receiver	
Cat 4	110001.08	110048	0.0089	16					5	open country	
Cat 1	110048	110114.12	0.0125	16							
Cat 4	110114.12	111025.5	0.1726	16					5	open country w/ road crossing	
Cat 1	111025.5	111208.5	-	14						river	
Cat 4	111208.5	113058	-	16					5	open country w/ 2 road crossings	
Cat 1	113058	116907	-	16							
Cat 4	115660.00	129316	-	16					5	mountain terrain w/ canyon crossing.	
Cat 1	129316.00	131102	-	16							
Cat 1	131102.00	133230.5	-	16							
Cat 1	133230.5	133850.5	0.0798	16							
Cat 4	133850.5	136441.5	0.4907	16					5	open country w/ hwy 101 crossing	
Cat 1	136441.5	137342.5	0.1706	16							
Cat 4	137342.5	148520.5	2.1170	16					5	open country parallel to frwy	
Cat 1	148520.5	149040.5	0.0967	16							
Cat 4	149040.5	155076.67	1.0702	16					5	open country parallel to frwy	

Cat 1	155076.67	155212	0.0256	16		
Cat 2	155212	158029.5	0.5336	16		
Cat 1	158029.5	161456	0.6490	16		
Cat 4	161456	161865	0.0775	16	Hydrotest	5 open country parallel to frwy
Cat 1	161865	165455	0.6799	16		
Cat 4	165455	165641.4	0.0353	16	Hydrotest	5 major frwy crossing. 101
Cat 2	165641.4	166930.3	0.1665	16		
Cat 2	166928.00	168411.39	-	16		
Cat 4	168492.70	170796.5	-	16	Hydrotest	5 mountain terrain
Cat 1	170796.5	171624.5	-	16		
Cat 4	171624.5	173495	-	16	Hydrotest	5 mountain terrain
Cat 2	173495	175733.5	-	16		
Cat 4	175733.5	180239	-	16	Hydrotest	5 steep mountain terrain. Frwy crossing and night work
Cat 1	180239	180470	-	16		

SHEET: Sheet 1 of 1
 DATE: July 26, 2011
 SPEC Project Number: 5057
 SPEC SERVICES, INC.
 ESTIMATED BY: SPEC SERVICES, INC.
 STATE OF DESIGN: Conceptual

DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe 16 Actual OD (in)	23,537		bb/OD							
0.375 Wall Thickness (in)	3,362		bb/Segment							
104182 Length (FT)										
7 QTY										
Hydrotest Test Segment										
Pipe n/a Actual OD (in)	0		bb/OD							
0.000 Wall Thickness (in)	0		bb/Segment							
0 Length (FT)										
0 QTY										
Hydrotest Test Segment										
Pipe n/a Actual OD (in)	0		bb/OD							
0.000 Wall Thickness (in)	0		bb/Segment							
0 Length (FT)										
0 QTY										
Hydrotest Test Segment										
Total Hydrotest Length 19.7 Miles										
Total Hydrotest Segment(s) 7 QTY										
Purging Volume of Nitrogen [to obtain 3 atm (44 psig) on line], minimum 4 miles per test segment	562,575		SCF	\$ 0.19	\$ 106,889			\$ 106,889		
Temporary Pig Launcher/Receiver (one/ OD change)	1		LS	\$ 25,000	\$ 25,000			\$ 25,000		
Water Injection Pump & Filter (capacity 1200 gpm)	2		day(s)	\$ 486	\$ 972			\$ 972		
On-Site Vacuum Truck(s) (minimum one per/ test segment)	7		each	\$ 5,000	\$ 35,000			\$ 35,000		
Baker Tank(s) =X	7		each							
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	315		day(s)	\$ 1,600	\$ 504,000			\$ 504,000		
Total Hydrotest Water (\$19/bbl)	23,537		bbl	\$ 19.00	\$ 447,206			\$ 447,206		
Water Disposal Vacuum Truck(s) =A	7		each							
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	197		loads							
Disposal Time =>C/(A*10)	3		day(s)							
Total Vacuum Truck(s) Rental days (\$/day per truck) =>D=C*A	21		day(s)	\$ 5,000	\$ 105,000			\$ 105,000		
Treated Water Disposal (\$55/bbl)	23,537		bbl	\$ 55	\$ 1,294,543			\$ 1,294,543		
Miscellaneous Materials	5		%		\$ 125,931			\$ 125,931		
SCG Post Estimate Changes										
Additional Baker Tanks:	0		QTY							
Additional Test Segments:	0		QTY							
(due to elevation changes)										
2 CONSTRUCTION										
Construction Labor (25K/ test segment)	7		LS	\$ 25,000	\$ 175,000			\$ 175,000		
Hydrotest Labor (10K/ test segment)	7		day(s)	\$ 10,000	\$ 70,000			\$ 70,000		
Dewater/ Dry Pipeline (\$15,000/ test segment)	7		LS	\$ 15,000	\$ 105,000			\$ 105,000		
Tie-ins Crew Rates (\$25,000/ test segment)	7		Each	\$ 25,000	\$ 175,000			\$ 175,000		
3rd Party Witness (\$2,000/ test segment)	7		Each	\$ 2,000	\$ 14,000			\$ 14,000		
Test/Construction period (6 days per test segment+ Hydrotest Labor+ Disposal Time) =Z	45		day(s)							
Total Construction Cost								\$ 839,000		
3 SCG LABOR / INSPECTION										
Projects < \$1 million - company labor is 10%	10		%					\$ -		
\$1 million < Projects < \$10 million - company labor is 5%	5		%					\$ 159,180		
Projects > \$10 million - company labor is 2.5%	2.5		%					\$ -		
Total SCG Labor / Inspection Cost								\$ 159,200		
4 DESIGN / ENG. / CONST. / ENVIRON.										
Planning / Design / Eng / Coord / Procurement	5		%					\$ 159,180		
ROW Acquisition	0		LS					\$ -		
Construction Permits	0		LS					\$ -		
Environmental Permits	0		LS					\$ -		
Environmental Monitoring	0		LS					\$ -		
Total Design / Engineering / Construction Cost								\$ 159,200		
5 CONTINGENCY										
Projects < \$2 million - Contingency is 30%	30		%					\$ -		
Projects > \$2 million - Contingency is 20%	20		%					\$ 700,400		
TOTAL PROJECT COST (See Appendix for assumptions/certifications)								\$ 4,202,400		

WP-IX-1-A36

Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	1005	1.307	2.193	3.500
Diameter (in.)	20, 22			

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 63,800
Direct Non Labor	\$ 1,758,700
Total Hydrotest	\$ 1,822,500

Hydrotest Repairs

Direct Labor	\$ 65,000
Direct Non Labor	\$ 585,000
Total Repairs	\$ 650,000

In Line Inspection

Direct Labor	\$ 30,000
Direct Non Labor	\$ 270,000
Total ILI	\$ 300,000

In Line Inspection Repairs

Direct Labor	\$ 75,825
Direct Non Labor	\$ 682,425
Total Repairs	\$ 758,250



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Existing Segments

Category	Station		Station Stop	Criteria Miles	Diameter	Action	Decision Tree Box	Comments
	Start	Stop						
Cat 1	0	7884.5		1.4933	22			
Cat 1	7884.5	8547.8		0.1256	22			
Cat 1	8517.5	22607		2.6685	22			
Cat 1	22607	23564.5		0.1813	22			
Cat 1	23564.5	23574.5		0.0019	22			
Cat 1	23574.5	32295		1.6516	22			
Cat 1	32295	38939		1.2583	22			
Cat 1	38939	46042		1.5072	22			
Cat 4	46042	48908		0.5428	22	Hydrotest	5	rollings hills/farmland
Cat 1	48907.75	48915.25		0.0014	22	Hydrotest		rollings hills/farmland
Cat 4	48915	48924		0.0017	22	Hydrotest	5	rollings hills/farmland
Cat 1	48924	59732		2.0470	22			
Cat 1	59732	65155		1.0271	22			
Cat 1	65155	66211		0.2000	22			
Cat 1	66211	69710		0.6627	22			
Cat 1	69710.25	69717.75		0.0014	22			
Cat 4	74924	77093.4		-	22			
Cat 1	77093.4	77246.7		-	22			
Cat 4	77229.4	80663		0.3593	22	Hydrotest	5	rollings hills/farmland -creek crossing
Cat 1	80663	82043.5		0.2615	22			
Cat 1	82010.5	95150		2.4885	22			
Cat 1	95150	95192		0.0080	22			
Cat 4	95192	95250.66		0.0111	22	Hydrotest	5	segment in the frontage parallel to HWY101 and is entering a station
Cat 1	95250.66	95251		0.0013	22	Hydrotest		segment in the frontage parallel to HWY101 and is entering a station
Cat 1	95250.66	95257.34		0.0013	22	Hydrotest		segment in the frontage parallel to HWY101 and is entering a station
Cat 4	95257.34	95263		0.0011	20	Hydrotest	5	segment in the frontage parallel to HWY101 and is entering a station

Cat	95263	95276	0.0111	22	Hydrotest	5	station segment in the frontage parallel to HWY101 and is entering a station
Cat 4	95263	95276	0.0111	22	Hydrotest	5	
Cat 1	95276	95344	0.0129	22			
Cat 1	95344	95918	0.1087	20			
Cat 1	95918	96293.15	0.0428	20			
Cat 1	96246.5	110002	2.6052	20			
Cat 1	110002.4	110066.9	0.0122	20			
Cat 1	110061.5	111238.5	0.2229	20			
Cat 1	111238.5	111275	0.0068	20			
Cat 1	111272.4	117850	1.2223	20			
Cat 1	117850	118053	-	20			
Cat 4	118045.25	130261.23	0.3800	20	Hydrotest	5	creek crossing/rolling hills/farmland. One large segment is parallel to a paved road with road crossings
Cat 1	130261.225	130266.775	-	20			
Cat 4	130266.775	131462.25	-	20			
Cat 4	131462.25	131489.75	-	20			
Cat 4	131489.75	134986.4	-	20			
Cat 1	134986.4	140262.8	-	20			
Cat 4	138659.5	144116	-	20			
Cat 4	144116	149329	-	20			
Cat 4	149329	149347.25	-	20			
Cat 4	149347.25	149727.165	-	20			
Cat 1	149727.165	149733.835	-	20			
Cat 4	149733.835	151490.5	-	20			
Cat 4	151490.5	154090.5	-	20			
Cat 4	154090.5	162701.5	-	20			
Cat 4	162701.5	166715	-	20			
Cat 4	166715	169260.5	-	20			
Cat 4	169236.59	177091	-	20			
Cat 4	177091	177132	-	20			
Cat 4	177132	178072.085	-	20			
Cat 4	178072.085	181479.5	-	20			
Cat 2	181479.5	182599.2	-	20			
Cat 4	182646.8	183081	-	20			
Cat 2	183081	183705	-	20			

Cat 4	183689	187402.5	-	20
Cat 4	187402.5	187427.5	-	20
Cat 4	187427.5	187798	-	20
Cat 4	187798	200716.75	-	20
Cat 1	200716.75	200723.25	-	20
Cat 4	200723.25	200728	-	20
Cat 4	200728	200741	-	22
Cat 1	200741	200762	-	22
Cat 4	200762	201512	-	22
Cat 1	201512	201947	0.0706	22
Cat 1	201947	202252	0.0578	22
Cat 2	202252	202696.66	0.0842	20
Cat 1	202282	202313	0.0059	20
Cat 1	202313.00	202457.00	0.0273	20
Cat 2	202457.00	202697	0.0078	20
Cat 2	202696.662	202698.345	0.0003	20
Cat 1	202698.35	203277.00	0.1097	22
Cat 2	203277	203288	0.0021	22
Cat 1	203288	203461.83	0.0329	22
Cat 1	203461.83	203514.67	0.0100	22

SHEET: Sheet 1 of 1
 DATE: July 26, 2011
 SPEC Project Number: 5057
 SPEC SERVICES, INC.
 ESTIMATED BY: SPEC SERVICES, INC.
 STATE OF DESIGN: Conceptual

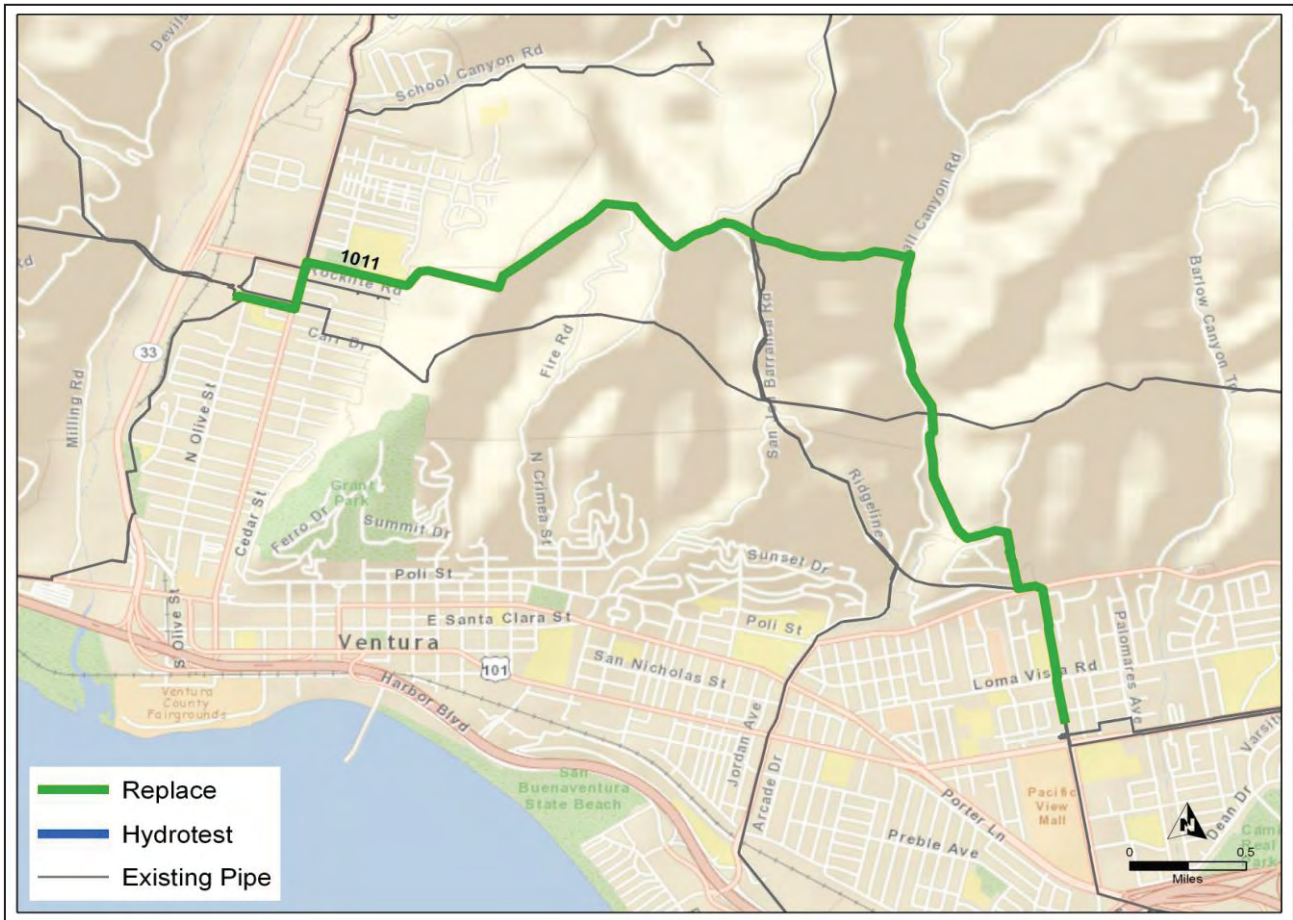
DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe	22	Actual OD (in)								
	0.438	Wall Thickness (in)								
	6400	Length (FT)	Water Volume							
	2	QTY	Baker Tank Volume							
Hydrotest Test Segment										
Pipe	20	Actual OD (in)								
	0.438	Wall Thickness (in)								
	12216	Length (FT)	Water Volume							
	1	QTY	Baker Tank Volume							
Hydrotest Test Segment										
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)	Water Volume							
	0	QTY	Baker Tank Volume							
Hydrotest Test Segment										
Total Hydrotest Length	3.5	Miles								
Total Hydrotest Segment(s)	3	QTY								
Purging Volume of Nitrogen [to obtain 3 atm (44 psig) on line], minimum 4 miles per test segment	434,794	SCF								
Temporary Pig Launcher/Receiver (one/ OD change)	2	LS								
Water Injection Pump & Filter (capacity 1200 gpm)	2	day(s)								
On-Site Vacuum Truck(s) (minimum one per/ test segment)	3	each								
Baker Tank(s) =X	9	each								
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	171	day(s)								
Total Hydrotest Water (\$19/bbl)	7,114	bbl								
Water Disposal Vacuum Truck(s) =A	9	each								
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	60	loads								
Disposal Time =>C*B/(A*10)	1	day(s)								
Total Vacuum Truck(s) Rental days (\$/day per truck) =>D=C*A	9	day(s)								
Treated Water Disposal (\$55/bbl)	7,114	bbl								
Miscellaneous Materials	5	%								
SCG Post Estimate Changes										
Additional Baker Tanks:	0	QTY								
Additional Test Segments:	0	QTY								
(due to elevation changes)										
2 CONSTRUCTION										
Construction Labor (25K/ test segment)	3	LS								
Hydrotest Labor (10K/ test segment)	3	day(s)								
Dewater/ Dry Pipeline (\$15,000/ test segment)	3	LS								
Tie-ins Crew Rates (\$25,000/ test segment)	3	Each								
3rd Party Witness (\$2,000/ test segment)	3	Each								
Test/Construction period (6 days per test segment+ Hydrotest Labor+ Disposal Time) =>Z	19	day(s)								
Total Construction Cost										
Projects <\$1 million - company labor is 10%	10	%								
\$1 million < Projects < \$10 million - company labor is 5%	5	%								
Projects >\$10 million - company labor is 2.5%	2.5	%								
Total SCG Labor / Inspection Cost										
4 DESIGN / ENG. / CONST. / ENVIRON.										
Planning / Design / Eng / Coord / Procurement	5	%								
ROW Acquisition	0	LS								
Construction Permits	0	LS								
Environmental Permits	0	LS								
Environmental Monitoring	0	LS								
Total Design / Engineering / Construction Cost										
Projects <\$2 million - Contingency is 30%	30	%								
Projects >\$2 million - Contingency is 20%	20	%								
5 CONTINGENCY										
TOTAL PROJECT COST (See Appendix for assumptions/certifications)										

Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Replacement Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	1011	1.832	3.303	5.135
Diameter (in.)	12.75, 16, 20			

Cost Detail

Capital		O&M	
Direct Labor	\$ 288,800	Direct Labor	\$ -
Direct Non Labor	\$ 15,437,700	Direct Non Labor	\$ -
Total Direct Capital	\$ 15,726,500	Total Direct O&M	\$ -



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision		Comments
	Start	Stop				Tree Box		
Cat 4	0	10373	0.9100	12.75	Replace	2		Mtns approx. start at 38+02 & end at 57+76. 57+76 to 103+73 is at the base of the mtns (almost flat desert)
Cat 2	10373	10607.08	-	12.75	Replace			
Cat 2	10607.08	11182.1	-	12.75	Replace			
Cat 2	11182.1	11242.5	-	12.75	Replace			
Cat 4	11242.5	11832	-	12.75	Replace	2		
Cat 1	11832	12681.1	-	12.75	Replace			
Cat 4	12681.1	13502.8	-	12.75	Replace	2		
Cat 2	13502.8	13530	-	12.75	Replace			
Cat 4	13530	15176.7	-	12.75	Replace	2		
Cat 2	15176.7	15445.38	-	20	Replace			
Cat 2	15445.38	15974.25	-	20	Replace			
Cat 2	15974.25	15981.4	-	20	Replace			
Cat 4	15981.4	16540.5	-	20	Replace	2		
Cat 2	16540.5	16548	-	20	Replace			
Cat 4	16548	17140	-	20	Replace	2		
Cat 4	17140	21436	-	20	Replace	2		
Cat 4	21436	23976	0.4811	20	Replace	2		Mtns from 214+36 to approx. 223+43. 223+43 to 239+76 appears to be relatively flat.
Cat 4	23976	25944	0.4409	20	Replace	2		Relatively flat residential area from 239+76 to 259+44
Cat 1	25944	27115	0.2218	16	Replace			
Cat 4	27115	27115	-	16	Replace	2		

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
0	10373	12.75	0.375	X-52	
10373	10607.08	12.75	0.375	X-52	
10607.08	11182.1	12.75	0.375	X-52	
11182.1	11242.5	12.75	0.375	X-52	
11242.5	11832	12.75	0.375	X-52	
11832	12681.1	12.75	0.375	X-52	
12681.1	13502.8	12.75	0.375	X-52	
13502.8	13530	12.75	0.375	X-52	
13530	15176.7	12.75	0.375	X-52	
15176.7	15445.38	20	0.312	X-65	
15445.38	15974.25	20	0.312	X-65	
15974.25	15981.4	20	0.312	X-65	
15981.4	16540.5	20	0.312	X-65	
16540.5	16548	20	0.312	X-65	
16548	17140	20	0.312	X-65	
17140	21436	20	0.312	X-65	
21436	23976	20	0.312	X-65	
23976	25944	20	0.312	X-65	
25944	27115	16	0.312	X-65	
27115	27115	16	0.312	X-65	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line L-1011			SPEC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		July 8, 2011					
		STATUS OF DESIGN		SPEC Project Number					
		Complete		5057					
DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments	
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL		
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe	20	inch, .312 WT X-65	10767	Feet	\$ 76	\$ 818,723			
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	47	Each	\$ 5,679	\$ 266,897			
Pressure Rating	300	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 129,536	\$ -			
		FBE Coating (5/ft)			\$ 5.32	\$ 57,280			
		Miscellaneous Materials (5%)	1	Lot			\$ 54,281		
		Freight / Tax	12.5	%			\$ 149,648		
Pipe	16	inch, .312 WT X-65	1171	Feet	\$ 57	\$ 67,169			
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	8	Each	\$ 3,339	\$ 26,709			
Pressure Rating	300	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 94,320	\$ -			
		FBE Coating (5/ft)			\$ 4.14	\$ 4,848			
		Miscellaneous Materials (5%)	1	Lot			\$ 4,694		
		Freight / Tax	12.5	%			\$ 12,927		
Pipe	12	inch, STD, WT X-52	15176	Feet	\$ 44	\$ 671,993			
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	64	Each	\$ 1,833	\$ 117,334			
Pressure Rating	300	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 36,010	\$ -			
		FBE Coating (5/ft)			\$ 3.26	\$ 49,474			
		Miscellaneous Materials (5%)	1	Lot			\$ 39,466		
		Freight / Tax	12.5	%			\$ 109,783		
Casing	N/A		0	Feet	\$ -	\$ -			
		Miscellaneous Materials (5%)	1	Lot			\$ -		
		Freight / Tax	12.5	%			\$ -		
		Total length	5.1	Miles					
		Total Material Cost					\$ 2,451,300		
2 CONSTRUCTION (See Appendix for construction type definitions)									
		20 inch pipe							
		Pipe Install - Type 1	0	Feet		\$ 225	\$ -	\$ -	
		Pipe Install - Type 2	10767	Feet		\$ 360	\$ 3,876,120	\$ 3,876,120	
		Pipe Install - Type 3	0	Feet		\$ 540	\$ -	\$ -	
		Pipe Install - Type 4	0	Feet		\$ 850	\$ -	\$ -	
		Pipe Install - Type 5	0	Feet		\$ 800	\$ -	\$ -	
		Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	
		Pipe Install - Type 7	0	Feet		\$ 702	\$ -	\$ -	
		16 inch pipe							
		Pipe Install - Type 1	0	Feet		\$ 200	\$ -	\$ -	
		Pipe Install - Type 2	1171	Feet		\$ 320	\$ 374,720	\$ 374,720	
		Pipe Install - Type 3	0	Feet		\$ 500	\$ -	\$ -	
		Pipe Install - Type 4	0	Feet		\$ 750	\$ -	\$ -	
		Pipe Install - Type 5	0	Feet		\$ 600	\$ -	\$ -	
		Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	
		Pipe Install - Type 7	0	Feet		\$ 650	\$ -	\$ -	
		12 inch pipe							
		Pipe Install - Type 1	0	Feet		\$ 175	\$ -	\$ -	
		Pipe Install - Type 2	15176	Feet		\$ 280	\$ 4,249,280	\$ 4,249,280	
		Pipe Install - Type 3	0	Feet		\$ 450	\$ -	\$ -	
		Pipe Install - Type 4	0	Feet		\$ 600	\$ -	\$ -	
		Pipe Install - Type 5	0	Feet		\$ 400	\$ -	\$ -	
		Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	
		Pipe Install - Type 6	0	Feet		\$ 585	\$ -	\$ -	
		Tie-ins Crew Rates	1	Each		\$ 29,403	\$ 29,403	\$ 29,403	
		Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	148180	SCF	\$ 0.19	\$ 28,154		\$ 28,154	
		Purging Labor	1	LS		\$ 25,000	\$ 25,000	\$ 25,000	
		95% Abandonment of Existing Pipeline (\$50/CY)	1303	CY		\$ 95	\$ 123,785	\$ 123,785	
		5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%				\$ 318,755	
		Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000	\$ 30,000	
		Contaminated Soil	0	CY		\$ -	\$ -	\$ -	
		Asbestos Abatement	0	Feet		\$ -	\$ -	\$ -	
		Radiographic Inspection	56	Days	\$ 150	\$ 8,400	\$ 600	\$ 33,600	\$ 42,000
		Construction period	64	days					
		Total Construction Cost						\$ 9,097,300	
3 SCG LABOR / INSPECTION									
		Projects < \$1 million - company labor is 10%	10	%			\$ -	\$ -	
		\$1 million < Projects < \$10 million - company labor is 5%	5	%			\$ -	\$ -	
		Projects > \$10 million - company labor is 2.5%	2.5	%			\$ 288,715	\$ 288,715	
		Total SCG Labor / Inspection Cost						\$ 288,800	
4 DESIGN / ENG. / CONST / ENVIRON.									
		Planning / Design / Eng / Coord / Procurement	10	%			\$ 1,154,860	\$ 1,154,860	
		Construction Stake, As-Built Survey (2 man crew)	56	Days	\$ 100	\$ 5,600	\$ 1,400	\$ 78,400	\$ 84,000
		ROW Acquisition	0	LS			\$ -	\$ -	
		Construction Permits	0	LS			\$ -	\$ -	
		Environmental Permits	0	LS			\$ -	\$ -	
		Environmental Monitoring	0	LS			\$ -	\$ -	
		As-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 29,114	\$ 29,114	
		Total Design / Engineering / Construction Cost						\$ 1,268,000	
5 CONTINGENCY									
		Projects < \$2 million - Contingency is 30%	30	%			\$ -	\$ -	
		Projects > \$2 million - Contingency is 20%	20	%			\$ 2,621,080	\$ 2,621,080	
		TOTAL PROJECT COST (See Appendix for assumptions/clarifications)						\$ 15,726,500	

Southern California Gas Company Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	1013	3.456	0.044	3.500
Diameter (in.)	24, 30			

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 68,000
Direct Non Labor	\$ 1,874,600
Total Hydrotest	\$ 1,942,600

Hydrotest Repairs

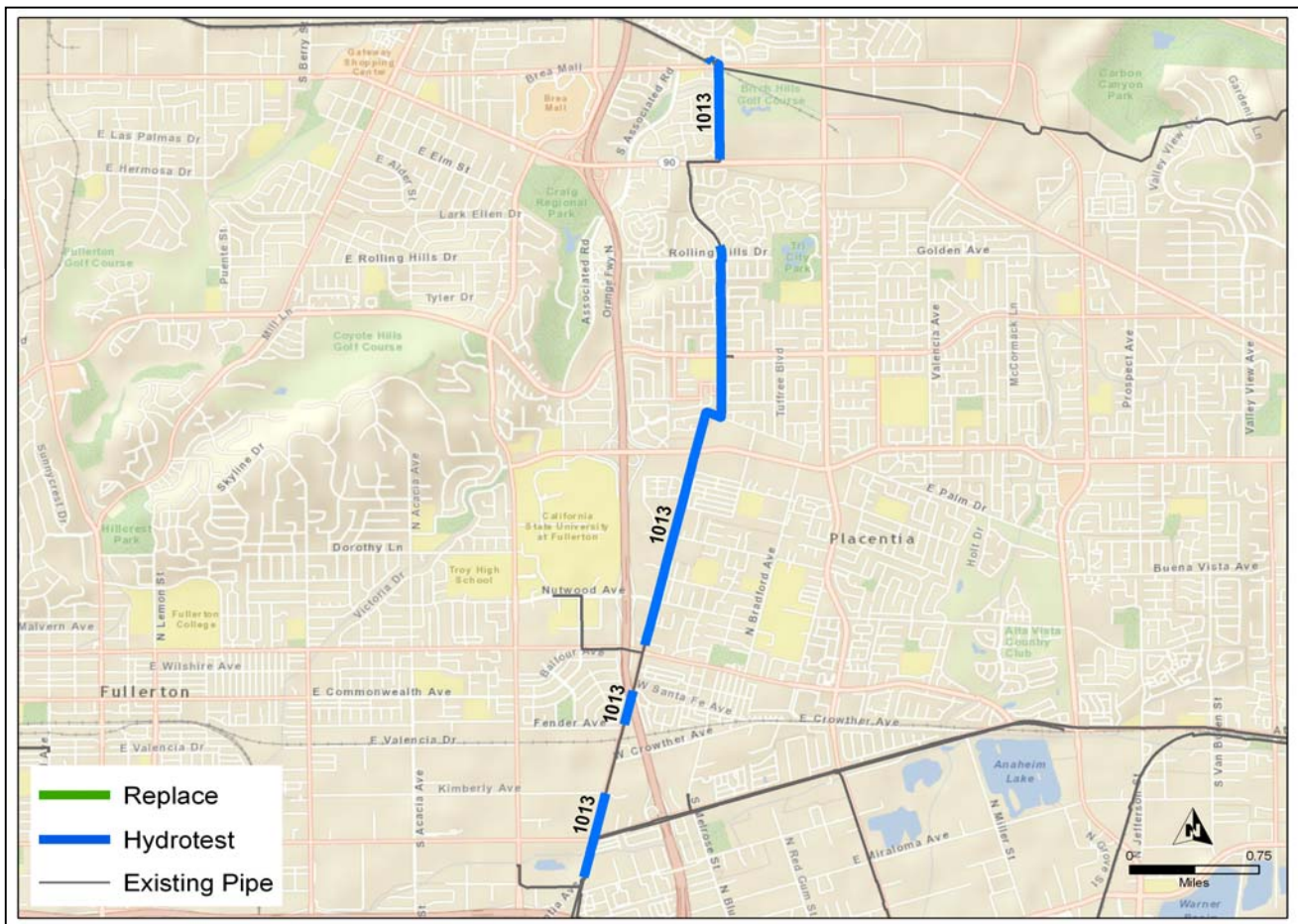
Direct Labor	\$ 10,000
Direct Non Labor	\$ 90,000
Total Repairs	\$ 100,000

In Line Inspection

Direct Labor	\$ 30,000
Direct Non Labor	\$ 270,000
Total ILI	\$ 300,000

In Line Inspection Repairs

Direct Labor	\$ 33,675
Direct Non Labor	\$ 303,075
Total Repairs	\$ 336,750



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision		Comments
	Start	Stop				Tree box	5	
Cat 4	0	94	0.0180	30	Hydrotest	5		no issues
Cat 1	94	189.08	0.0180	24				
Cat 4	189.08	2810	0.4960	24	Hydrotest	5		limited access near golf course, channel crossing
Cat 1	2810	6656.58	0.7280	24				
Cat 1	5530.6	6257	0.1380	24				
Cat 4	6242.90	11553.9	1.0060	24	Hydrotest	5		street work; major street crossing
Cat 1	11553.9	11633	0.0150	24	Hydrotest	5		street work
Cat 4	11633	18004	1.2070	24	Hydrotest	5		street work; major street crossing
Cat 1	18004	18131	0.0260	24				
Cat 4	18131	19069.5	0.1780	24	Hydrotest	5		street work; crossing under Hwy 57
Cat 1	19069.5	21013.45	0.3680	24				
Cat 4	20476.27	22876	0.4550	24	Hydrotest	5		street work; possible substructures
Cat 1	22876	22937.5	0.0120	24	Hydrotest	5		street work
Cat 4	22937.5	23444	0.0960	24	Hydrotest	5		street work
Cat 1	23444	23516	0.0140	24				

PROJECT TITLE AND CLIENT: SOUTHERN CALIFORNIA GAS COMPANY
 PIPE HYDROTEST COST ESTIMATE

ESTIMATED BY: SPEC SERVICES, INC.
 STATE OF DESIGN: CONCEPT

AT FIRM NAME: SPEC SERVICES

DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe	30	Actual OD (in)								
	0.375	Wall Thickness (in)								
	84	Length (FT)								
	1	QTY								
Hydrotest Test Segment										
Pipe	24	Actual OD (in)								
	0.250	Wall Thickness (in)								
	18382	Length (FT)								
	1	QTY								
Hydrotest Test Segment										
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)								
	0	QTY								
Hydrotest Test Segment										
Total Hydrotest Length	3.5	Miles								
Total Hydrotest Segment(s)	2	QTY								
Purging - Volume of Nitrogen [to obtain 3 atm (44 psig) on line], minimum 4 miles per test segment	486,505	SCF			\$ 0.19	\$ 92,436			\$ 92,436	
Temporary Pig Launcher/Receiver (one/ OD change)	2	LS			\$ 25,000	\$ 50,000			\$ 50,000	
Water Injection Pump & Filter (capacity 1200 gpm)	2	day(s)			\$ 486	\$ 972			\$ 972	
On-Site Vacuum Truck(s) (minimum one per/ test segment)	2	each			\$ 5,000	\$ 10,000			\$ 10,000	
Baker Tank(s) =X	10	each								
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	130	day(s)			\$ 1,600	\$ 208,000			\$ 208,000	
Total Hydrotest Water (\$19/bbl)	9,939	bbl			\$ 19,000	\$ 188,838			\$ 188,838	
Water Disposal Vacuum Truck(s) =A	10	each								
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	83	loads								
Disposal Time =C-B/(A*10)	1	day(s)								
Total Vacuum Truck(s) Rental days (\$/day per truck) =D=C*A	10	day(s)			\$ 5,000	\$ 50,000			\$ 50,000	
Treated Water Disposal (\$55/bbl)	9,939	bbl			\$ 55	\$ 546,636			\$ 546,636	
Miscellaneous Materials	5	%				\$ 57,345			\$ 57,345	
SCG Post Estimate Changes										
Additional Baker Tanks:	0	QTY								
Additional Test Segments:	0	QTY								
(due to elevation changes)										
2 CONSTRUCTION										
Construction Labor (25K/ test segment)	2	LS				\$ 25,000	\$ 50,000		\$ 50,000	
Hydrotest Labor (10K/ test segment)	2	day(s)				\$ 10,000	\$ 20,000		\$ 20,000	
Dewater/ Dry Pipeline (\$15,000/ test segment)	2	LS				\$ 15,000	\$ 30,000		\$ 30,000	
Tie-ins Crew Rates (\$25,000/ test segment)	2	Each				\$ 25,000	\$ 50,000		\$ 50,000	
3rd Party Witness (\$2,000/ test segment)	2	Each				\$ 2,000	\$ 4,000		\$ 4,000	
Test/Construction period (6 days per test segment+ Hydrotest Labor+ Disposal Time) =Z	13	day(s)								
Total Construction Cost									\$ 154,000	
Projects < \$1 million - company labor is 10%	10	%							\$ -	
\$1 million < Projects < \$10 million - company labor is 5%	5	%							\$ 67,915	
Projects > \$10 million - company labor is 2.5%	2.5	%							\$ -	
Total SCG Labor / Inspection Cost									\$ 68,000	
4 DESIGN / ENG. / CONST. / ENVIRON.										
Planning / Design / Eng / Coord / Procurement	5	%							\$ 67,915	
ROW Acquisition	0	LS							\$ -	
Construction Permits	0	LS							\$ -	
Environmental Permits	0	LS							\$ -	
Environmental Monitoring	0	LS							\$ -	
Total Design / Engineering / Construction Cost									\$ 68,000	
Projects < \$2 million - Contingency is 30%	30	%							\$ 448,230	
Projects > \$2 million - Contingency is 20%	20	%							\$ -	
5 CONTINGENCY										
TOTAL PROJECT COST (See Appendix for assumptions/certifications)									\$ 1,942,600	

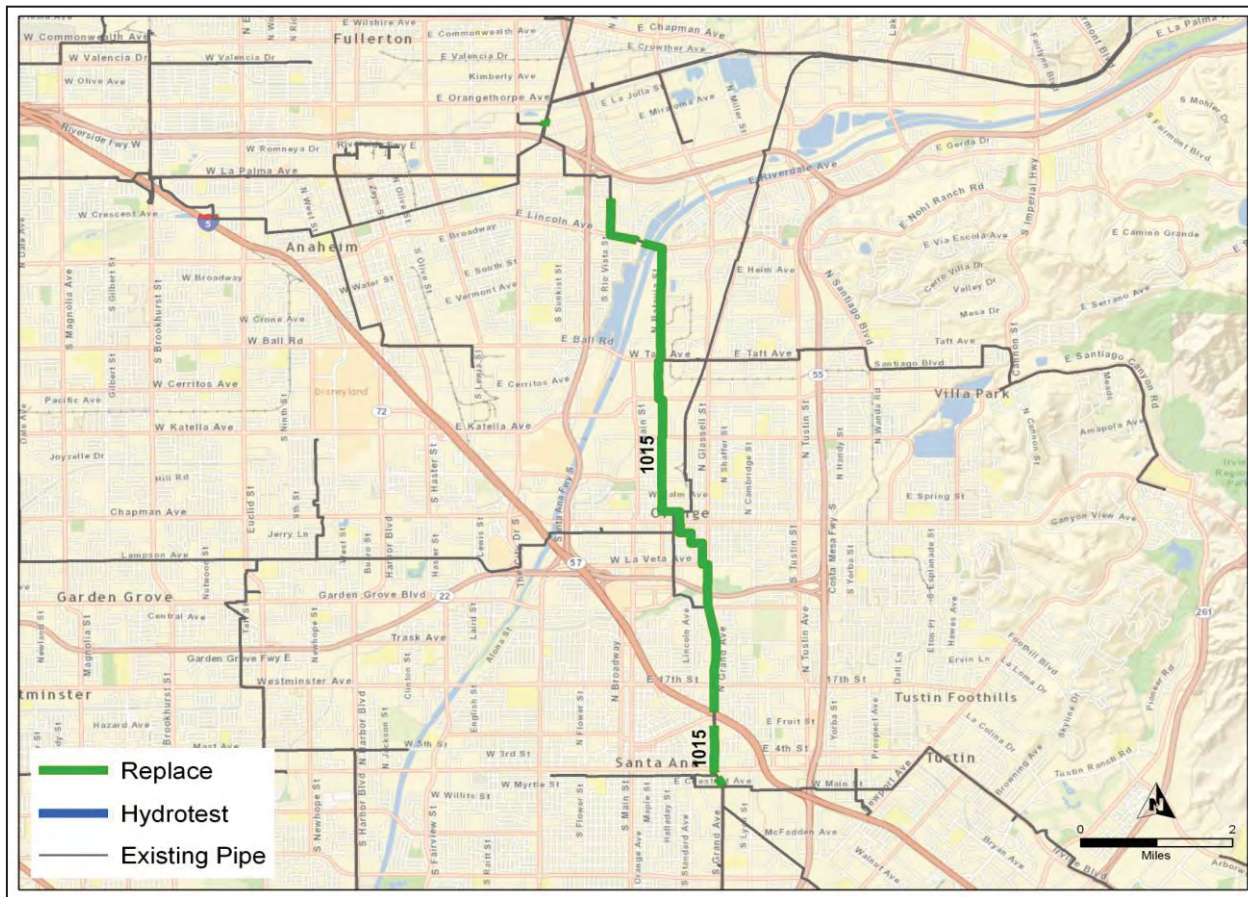
WP-IX-1-A48

Southern California Gas Company Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Replacement Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	1015	7.821	0.024	7.845
Diameter (in.)	22, 24			

Cost Detail

Capital		O&M	
Direct Labor	\$ 794,500	Direct Labor	\$ -
Direct Non Labor	\$ 42,456,800	Direct Non Labor	\$ -
Total Direct Capital	\$ 43,251,300	Total Direct O&M	\$ -



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workbook Supporting Chapter IX**

Existing Segments

Category	Station		Station Stop	Criteria Miles	Diameter	Action	Decision		Comments
	Start	Stop					Tree Box	Box	
Cat 1	-37.5	75.5	75.5	0.0214	24				
Cat 4	75.5		409	0.0632	24	Replace	2		Runs along Placentia crosses two intersections Burton and La Jolla
Cat 1	409		1932.5	0.2885	24				
Cat 1	1932.5		3196.58	0.2394	24				
Cat 1	3196.58		3227.29	0.0058	24				
Cat 1	3227.29		6202	0.5634	24				
Cat 1	6202		6259	0.0108	24				
Cat 1	6259		6312	0.0114	24				
Cat 1	6312		6950	0.1208	24				
Cat 1	6950		8314	0.2583	24				
Cat 1	8314		8376	0.0117	24				
Cat 4	8376		11920	0.6712	24	Replace	2		Tap 1015-1.99-0 at ID 2609 Casing at Lincoln and Rio Vista Intersection
Cat 1	11920		12284	0.0689	24				
Cat 1	12284		12287	0.0006	24				
Cat 4	12287		12366	0.0157	24	Replace	2		
Cat 4	12366		12382.5	0.0031	24	Replace	2		
Cat 4	12382.5		13244	0.1632	24	Replace	2		Crossing Santa Ana River
Cat 4	13244		13321.5	0.0147	22	Replace	2		
Cat 4	13321.5		13394	0.0137	22	Replace	2		
Cat 4	13394		16546	0.5970	22	Replace	2		
Cat 1	16546		16627	0.0153	24	Replace	2		
Cat 4	16627		18939	0.4394	24	Replace	2		
Cat 1	18939		18976.3	0.0071	24	Replace	2		
Cat 4	18976.3		23045	0.7722	24	Replace	2		RR Crossing Flood Control Crossing
Cat 4	23045		23121	0.0144	24	Replace	2		
Cat 4	23121		25538	0.4587	24	Replace	2		
Cat 1	25538		25585.18	0.0089	24	Keep As Is			

Cat 4	25585.18	28178	0.4928	24	Replace	2	RR Crossing
Cat 1	28178	28228.7	0.0096	24	Replace		
Cat 4	28228.7	30770	0.4824	24	Replace	2	
Cat 4	30770	31186	0.0788	24	Replace	2	
Cat 4	31186	31194	0.0015	24	Replace	2	
Cat 4	31194	32153	0.1816	24	Replace	2	
Cat 4	31863	33460	0.3025	24	Replace	2	RR Crossing
Cat 4	33460	37400	0.7462	24	Replace	2	Bridge over Santiago Creek - Under 22 FWY
Cat 4	37400	37590	0.0360	24	Replace	2	
Cat 4	37590	45134	1.4288	24	Replace	2	5 Fwy
Cat 1	45134	45966	0.1576	24			
Cat 4	45956	49012	0.5788	24	Replace	2	5 Fwy Off Ramps
Cat 4	49012	49024	0.0023	24	Replace	2	
Cat 4	49024	49372	0.0659	24	Replace	2	
Cat 2	49372	49376	0.0008	24			
Cat 2	49376	49386	0.0019	24			
Cat 2	49386	49392	0.0011	24			
Cat 4	49392	50329.38	0.1775	24	Replace	2	
Cat 4	50329.38	50342.63	0.0025	24	Replace	2	Cross over valving 1016, 1017, 1018
Cat 4	50342.63	50430.63	0.0167	24	Replace	2	Cross over valving 1016, 1017, 1018

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
75.5	409	24	0.375	X-65	
8376	11920	24	0.375	X-65	
12287	12366	24	0.375	X-65	
12366	12382.5	24	0.375	X-65	
12382.5	13244	24	0.375	X-65	
13244	13321.5	22	0.375	X-65	
13321.5	13394	22	0.375	X-65	
13394	16546	22	0.375	X-65	
16546	16627	24	0.375	X-65	
16627	18939	24	0.375	X-65	

18939	18976.3	24	0.375	X-65
18976.3	23045	24	0.375	X-65
23045	23121	24	0.375	X-65
23121	25538	24	0.375	X-65
25538	25585.18	24	0.375	X-65
25585.18	28178	24	0.375	X-65
28178	28228.7	24	0.375	X-65
28228.7	30770	24	0.375	X-65
30770	31186	24	0.375	X-65
31186	31194	24	0.375	X-65
31194	32153	24	0.375	X-65
31863	33460	24	0.375	X-65
33460	37400	24	0.375	X-65
37400	37590	24	0.375	X-65
37590	45134	24	0.375	X-65
45956	49012	24	0.375	X-65
49392	50329.38	24	0.375	X-65
50329.38	50342.63	24	0.375	X-65
50342.63	50430.63	24	0.375	X-65

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line L-1015			SPEC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		July 8, 2011					
		STATUS OF DESIGN		SPEC Project Number					
		Conceptual		5057					
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 24 inch, .375 WT X-65									
		41423	Feet	\$ 92	\$ 3,796,903			\$ 3,796,903	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	169	Each	\$ 7,229	\$ 1,221,758			\$ 1,221,758	
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	1	Each	\$ 179,283	\$ 179,283			\$ 179,283	
	FBE Coating (5/ft)			\$ 6.58	\$ 272,563			\$ 272,563	
	Miscellaneous Materials (5%)	1	Lot					\$ 259,997	
	Freight / Tax	12.5	%					\$ 716,563	
Pipe n/a									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Pipe n/a									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	0	Feet	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Casing 26 inch, .344 WT X-65									
	Miscellaneous Materials (5%)	1	Lot	\$ 30	\$ 24,216			\$ 24,216	Casing under RR and Flood Control Channel
	Freight / Tax	12.5	%					\$ 1,210.80	
								\$ 3,178	
	Total length	7.8	Miles						
	Total Material Cost							\$ 6,477,700	
2 CONSTRUCTION (See Appendix for construction type definitions)									
24 inch pipe									
	Pipe Install - Type 1	0	Feet			\$ 225	\$ -	\$ -	
	Pipe Install - Type 2	101	Feet			\$ 360	\$ 36,360	\$ 36,360	
	Pipe Install - Type 3	37526	Feet			\$ 540	\$ 20,264,040	\$ 20,264,040	
	Pipe Install - Type 4	862	Feet			\$ 850	\$ 732,700	\$ 732,700	
	Pipe Install - Type 5	2634	Feet			\$ 800	\$ 2,107,200	\$ 2,107,200	
	Pipe Install - Type 6	300	Feet			\$ 1,000	\$ 300,000	\$ 300,000	Bridge Crossing
	Pipe Install - Type 7	0	Feet			\$ 702	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet			\$ -	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -	
Tie-ins Crew Rates									
		6	Each			\$ 35,000	\$ 210,000	\$ 210,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
		520540	SCF	\$ 0.19	\$ 98,903			\$ 98,903	
Purging Labor									
		1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
		4575	CY			\$ 95	\$ 434,625	\$ 434,625	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
		75	%					\$ 879,011	
Mobilization / Demobilization									
		3	Each			\$ 30,000	\$ 90,000	\$ 90,000	
Contaminated Soil									
		0	CY			\$ -	\$ -	\$ -	
Asbestos Abatement									
		0	Feet			\$ -	\$ -	\$ -	
Radiographic Inspection									
		165	Days	\$ 150	\$ 24,750	\$ 600	\$ 99,000	\$ 123,750	
Construction period									
		173	days						
	Total Construction Cost							\$ 25,301,600	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%					\$ -	
	\$1 million < Projects < \$10 million - company labor is 5%	5	%					\$ -	
	Projects > \$10 million - company labor is 2.5%	2.5	%					\$ 794,483	
	Total SCG Labor / Inspection Cost							\$ 794,500	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%					\$ 3,177,930	\$ 3,177,930
	Construction Stake, As-Built Survey (2 man crew)	165	Days	\$ 100	\$ 16,500	\$ 1,400	\$ 231,000	\$ 247,500	
	ROW Acquisition	0	LS					\$ -	
	Construction Permits	0	LS					\$ -	
	Environmental Permits	0	LS					\$ -	
	Environmental Monitoring	0	LS					\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS					\$ 43,423	\$ 43,423
	Total Design / Engineering / Construction Cost							\$ 3,468,900	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%					\$ -	
	Projects > \$2 million - Contingency is 20%	20	%					\$ 7,208,540	\$ 7,208,540
	TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 43,251,300	

Southern California Gas Company Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	1020	4.056	1.644	5.700
Diameter (in.)	30			

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 134,100
Direct Non Labor	\$ 3,405,800
Total Hydrotest	\$ 3,539,900

Hydrotest Repairs

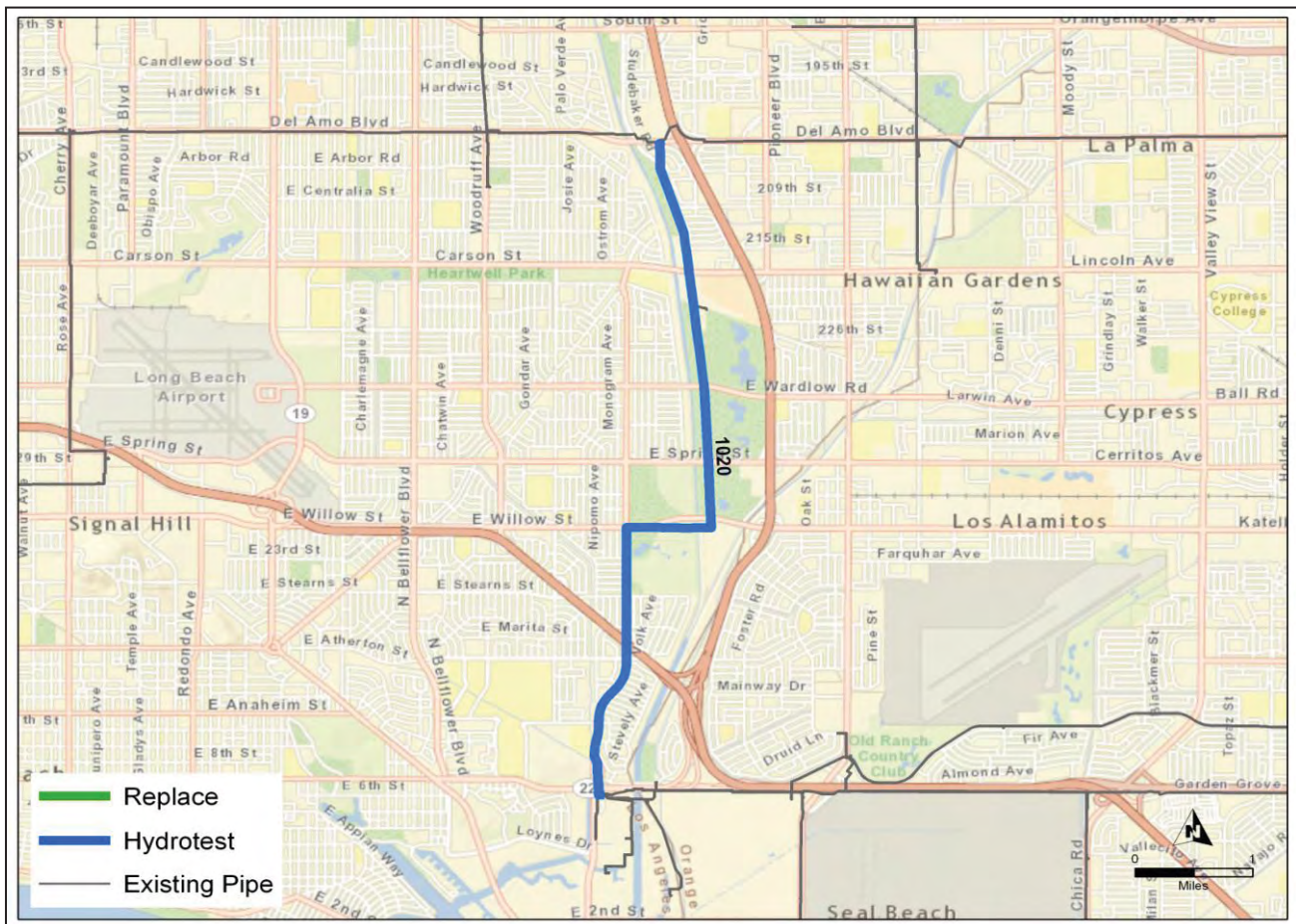
Direct Labor	\$ 10,000
Direct Non Labor	\$ 90,000
Total Repairs	\$ 100,000

In Line Inspection

Direct Labor	\$ 30,000
Direct Non Labor	\$ 270,000
Total ILI	\$ 300,000

In Line Inspection Repairs

Direct Labor	\$ 43,500
Direct Non Labor	\$ 391,500
Total Repairs	\$ 435,000



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision	
	Start	Stop				Tree Box	Comments
Cat 4	0	30254.4	4.0560	30	Hydrotest	5	Street work. Residential street. Crosses 405 FWY
Cat 1	0000.00	75.5	0.0144	30			
Cat 1	4412.3	4461.3	0.0110	30			
Cat 1	28754.00	28856	0.0193	30			
Cat 2	24103.40	29804.4	1.0797	30			
Cat 2	30254.4	30691.4	0.0828	30			
Cat 1	31191.4	31271.4	0.0152	30			
Cat 1	31271.4	31471.4	0.0379	30			
Cat 1	33064	33264	-	30			

ESTIMATED BY: SPEC SERVICES, INC.
 STATE OF DESIGN: Conceptual
 SHEET: Sheet 1 of 1
 DATE: July 26, 2011
 SPEC Project Number: 5057

DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe	30	Actual OD (in)								
	0.344	Wall Thickness (in)								
	30254	Length (FT)								
	2	QTY								
Hydrotest Test Segment										
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)								
	0	QTY								
Hydrotest Test Segment										
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)								
	0	QTY								
Hydrotest Test Segment										
Total Hydrotest Length	5.7	Miles								
Total Hydrotest Segment(s)	2	QTY								
Purging - Volume of Nitrogen [to obtain 3 atm (44 psig) on line], minimum 4 miles per test segment	593,832	SCF			\$ 0.19	\$ 112,828			\$ 112,828	
Temporary Pig Launcher/Receiver (one/ OD change)	1	LS			\$ 25,000	\$ 25,000			\$ 25,000	
Water Injection Pump & Filter (capacity 1200 gpm)	2	day(s)			\$ 486	\$ 972			\$ 972	
On-Site Vacuum Truck(s) (minimum one per/ test segment)	2	each			\$ 5,000	\$ 10,000			\$ 10,000	
Baker Tank(s) =X	10	each								
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	150	day(s)			\$ 1,600	\$ 240,000			\$ 240,000	
Total Hydrotest Water (\$19/bbl)	25,250	bbl			\$ 19.00	\$ 479,741			\$ 479,741	
Water Disposal Vacuum Truck(s) =A	10	each								
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	211	loads								
Disposal Time =>C*B/(A*10)	3	day(s)								
Total Vacuum Truck(s) Rental days (\$/day per truck) =>D=C*A	30	day(s)			\$ 5,000	\$ 150,000			\$ 150,000	
Treated Water Disposal (\$55/bbl)	25,250	bbl			\$ 55	\$ 1,388,724			\$ 1,388,724	
Miscellaneous Materials	5	%				\$ 120,364			\$ 120,364	
SCG Post Estimate Changes:										
Additional Baker Tanks:	0	QTY								
Additional Test Segments:	0	QTY								
(due to elevation changes)										
2 CONSTRUCTION										
Construction Labor (25K/ test segment)	2	LS			\$ 25,000	\$ 50,000			\$ 50,000	
Hydrotest Labor (10K/ test segment)	2	day(s)			\$ 10,000	\$ 20,000			\$ 20,000	
Dewater/ Dry Pipeline (\$15,000/ test segment)	2	LS			\$ 15,000	\$ 30,000			\$ 30,000	
Tie-ins Crew Rates (\$25,000/ test segment)	2	Each			\$ 25,000	\$ 50,000			\$ 50,000	
3rd Party Witness (\$2,000/ test segment)	2	Each			\$ 2,000	\$ 4,000			\$ 4,000	
Test/Construction period (6 days per test segment+ Hydrotest Labor+ Disposal Time) =>Z	15	day(s)								
Total Construction Cost						\$ 154,000			\$ 154,000	
Projects < \$1 million - company labor is 10%	10	%				\$ -			\$ -	
\$1 million < Projects < \$10 million - company labor is 5%	5	%				\$ 134,085			\$ 134,085	
Projects > \$10 million - company labor is 2.5%	2.5	%				\$ -			\$ -	
Total SCG Labor / Inspection Cost						\$ 134,100			\$ 134,100	
4 DESIGN / ENG. / CONST. / ENVIRON.										
Planning / Design / Eng / Coord / Procurement	5	%				\$ 134,085			\$ 134,085	
ROW Acquisition	0	LS				\$ -			\$ -	
Construction Permits	0	LS				\$ -			\$ -	
Environmental Permits	0	LS				\$ -			\$ -	
Environmental Monitoring	0	LS				\$ -			\$ -	
Total Design / Engineering / Construction Cost						\$ 134,100			\$ 134,100	
Projects < \$2 million - Contingency is 30%	30	%				\$ -			\$ -	
Projects > \$2 million - Contingency is 20%	20	%				\$ 589,980			\$ 589,980	
5 CONTINGENCY										
TOTAL PROJECT COST (See Appendix for assumptions/certifications)						\$ 3,536,900			\$ 3,536,900	

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Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	1024	1.154	0.046	1.200
Diameter (in.)	30			

Cost Detail

O&M

Hydrotest

Direct Labor	\$	7,700
Direct Non Labor	\$	1,005,200
Total Hydrotest	\$	1,012,900

Hydrotest Repairs

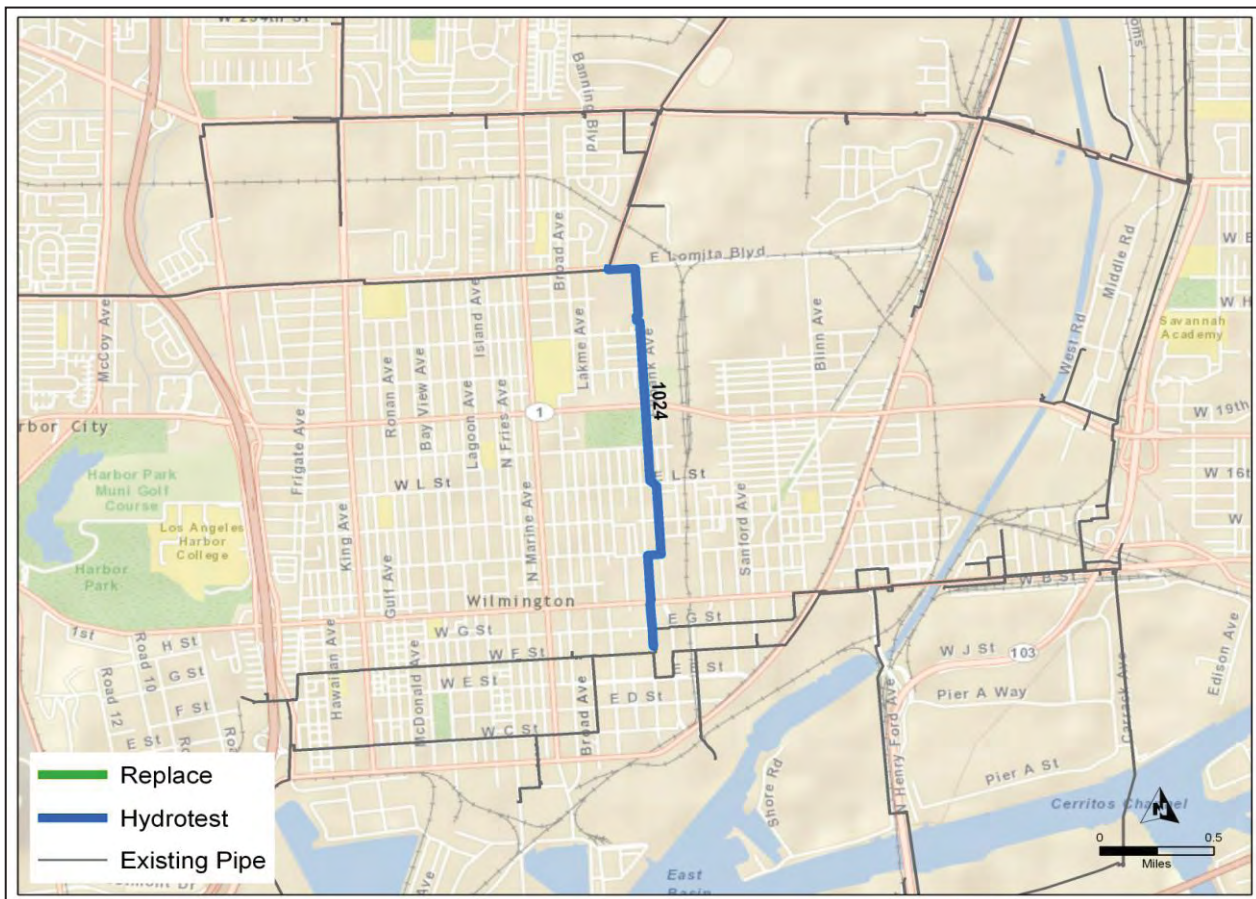
Direct Labor	\$	5,000
Direct Non Labor	\$	45,000
Total Repairs	\$	50,000

In Line Inspection

Direct Labor	\$	30,000
Direct Non Labor	\$	270,000
Total ILI	\$	300,000

In Line Inspection Repairs

Direct Labor	\$	12,375
Direct Non Labor	\$	111,375
Total Repairs	\$	123,750



Southern California Gas Company
 Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision	
	Start	Stop				Tree	Box
Cat 1	0	1630.00	0.3087	30	Hydrotest		
Cat 4	1630.00	1645.00	-	30	Hydrotest	5	
Cat 1	1645.00	1659	0.0027	30	Hydrotest		
Cat 1	1659	2617	0.1814	30	Hydrotest		
Cat 4	2617	8550.00	1.1237	30	Hydrotest	5	Street work, Under PCH at one location.
Cat 2	8550.00	8553.0	0.0006	30	Hydrotest		street work
Cat 4	8553.0	8586	0.0063	30	Hydrotest	5	street work
Cat 3	8586	8712.00	0.0239	30	Hydrotest		street work

PROJECT TITLE AND CLIENT: SOUTHERN CALIFORNIA GAS COMPANY
 PIPE HYDROTEST COST ESTIMATE



DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER	QTY		UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe 30 Actual OD (in)	5,098		bb/OD							
0.328 Wall Thickness (in)	5,098		bb/Segment							
6095 Length (FT)										
1 QTY										
Hydrotest Test Segment										
Pipe n/a Actual OD (in)	0		bb/OD							
0.000 Wall Thickness (in)	0		bb/Segment							
0 Length (FT)										
0 QTY										
Hydrotest Test Segment										
Pipe n/a Actual OD (in)	0		bb/OD							
0.000 Wall Thickness (in)	0		bb/Segment							
0 Length (FT)										
0 QTY										
Hydrotest Test Segment										
Total Hydrotest Length		1.2	Miles							
Total Hydrotest Segment(s)	1	QTY								
Purging Volume of Nitrogen [to obtain 3 atm (44 psig) on line], minimum 4 miles per test segment	297,565		SCF	\$ 0.19	\$ 56,537			\$ 56,537		
Temporary Pig Launcher/Receiver (one/ OD change)	1		LS	\$ 25,000	\$ 25,000			\$ 25,000		
Water Injection Pump & Filter (capacity 1200 gpm)	1		day(s)	\$ 486	\$ 486			\$ 486		
On-Site Vacuum Truck(s) (minimum one per/ test segment)	1		each	\$ 5,000	\$ 5,000			\$ 5,000		
Baker Tank(s) =X	10		each							
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	70		day(s)	\$ 1,600	\$ 112,000			\$ 112,000		
Total Hydrotest Water (\$19/bbl)	5,098		bbl	\$ 19.00	\$ 96,860			\$ 96,860		
Water Disposal Vacuum Truck(s) =A	10		each							
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	43		loads							
Disposal Time =C-B/(A*10)	1		day(s)							
Total Vacuum Truck(s) Rental days (\$/day per truck) =D=C*A	10		day(s)	\$ 5,000	\$ 50,000			\$ 50,000		
Treated Water Disposal (\$55/bbl)	5,098		bbl	\$ 55	\$ 280,385			\$ 280,385		
Miscellaneous Materials	5		%		\$ 31,314			\$ 31,314		
SCG Post Estimate Changes										
Additional Baker Tanks:	0		QTY							
Additional Test Segments:	0		QTY							
(due to elevation changes)										
2 CONSTRUCTION										
Construction Labor (25K/ test segment)	1		LS			\$ 25,000	\$ 25,000	\$ 25,000		
Hydrotest Labor (10K/ test segment)	1		day(s)			\$ 10,000	\$ 10,000	\$ 10,000		
Dewater/ Dry Pipeline (\$15,000/ test segment)	1		LS			\$ 15,000	\$ 15,000	\$ 15,000		
Tie-ins Crew Rates (\$25,000/ test segment)	1		Each			\$ 25,000	\$ 25,000	\$ 25,000		
3rd Party Witness (\$2,000/ test segment)	1		Each			\$ 2,000	\$ 2,000	\$ 2,000		
Test/Construction period (6 days per test segment+ Hydrotest Labor+ Disposal Time) =Z	7		day(s)							
Total Construction Cost								\$ 77,000		
3 SCG LABOR / INSPECTION										
Projects <\$1 million - company labor is 10%	10		%				\$ 7,700	\$ 7,700		
\$1 million < Projects <\$10 million - company labor is 5%	5		%				\$ -	\$ -		
Projects >\$10 million - company labor is 2.5%	2.5		%				\$ -	\$ -		
Total SCG Labor / Inspection Cost								\$ 7,700		
4 DESIGN / ENG. / CONST. / ENVIRON.										
Planning / Design / Eng / Coord / Procurement	5		%				\$ 36,730	\$ 36,730		
ROW Acquisition	0		LS				\$ -	\$ -		
Construction Permits	0		LS				\$ -	\$ -		
Environmental Permits	0		LS				\$ -	\$ -		
Environmental Monitoring	0		LS				\$ -	\$ -		
Total Design / Engineering / Construction Cost								\$ 36,800		
5 CONTINGENCY										
Projects <\$2 million - Contingency is 30%	30		%				\$ 233,730	\$ 233,730		
Projects >\$2 million - Contingency is 20%	20		%				\$ -	\$ -		
TOTAL PROJECT COST (See Appendix for assumptions/certifications)								\$ 1,072,900		

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**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	2000	55.027	62.574	117.600
Diameter (in.)	18, 26, 30			

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 1,263,700
Direct Non Labor	\$ 63,940,600
Total Hydrotest	\$ 65,204,300

Hydrotest Repairs

Direct Labor	\$ 185,000
Direct Non Labor	\$ 1,665,000
Total Repairs	\$ 1,850,000

In Line Inspection

Direct Labor	\$ 120,000
Direct Non Labor	\$ 1,080,000
Total ILI	\$ 1,200,000

In Line Inspection Repairs

Direct Labor	\$ 972,600
Direct Non Labor	\$ 8,753,400
Total Repairs	\$ 9,726,000



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Existing Segments

Category	Station		Station Stop	Criteria Miles	Diameter	Action	Decision	
	Start	Stop					Tree Box	Comments
Cat 1	-650.39	50	50	0.1326	30			
Cat 1	50	278.1	278.1	0.0432	30			
Cat 1	278.1	328.22	328.22	0.0095	30			
Cat 4	328.22	372	372	0.0083	30	Hydrotest	5	possible RV lot
Cat 4	372	7368	7368	0.2587	30	Hydrotest	5	possible RV lot, channel crossing
Cat 4	7368	7392	7392	-	30			
Cat 1	7392	11754	11754	0.5100	30			
Cat 4	11754	11784	11784	-	30			
Cat 4	11784	14574	14574	0.5000	30	Hydrotest	5	street work
Cat 4	14574	14594	14594	0.0038	30	Hydrotest	5	street work
Cat 1	14594	19080	19080	0.8496	30			
Cat 1	19080	19728	19728	0.1227	30			
Cat 1	19120	33001	33001	2.2000	30			
Cat 4	33001	33200	33200	0.0377	30	Hydrotest	5	none
Cat 4	33200	33314.5	33314.5	0.0217	30	Hydrotest	5	none
Cat 1	33314.5	33341.9	33341.9	0.0052	30	Hydrotest	5	none
Cat 4	33341.9	33607	33607	0.0502	30	Hydrotest	5	none
Cat 4	33607	33798.9	33798.9	0.0363	30	Hydrotest	5	none
Cat 4	33798.9	55450	55450	0.2000	30	Hydrotest	5	residential crossings
Cat 1	55450	62341	62341	1.3051	30			
Cat 4	62341	70198	70198	0.2424	30	Hydrotest	5	none
Cat 1	70198	70415.8	70415.8	-	30			
Cat 4	70338	112489.25	112489.25	-	30			
Cat 1	112489.25	113592.1	113592.1	-	30			
Cat 4	113593.20	130487.4	130487.4	-	30			
Cat 1	130487.4	131948.6	131948.6	-	30			
Cat 1	131948.6	132675	132675	-	30			
Cat 4	132675	133020.6	133020.6	-	30			
Cat 1	133020.6	134469.2	134469.2	-	30			

Cat 4	134469.2	275881.92	-	30	
Cat 1	275881.92	277060.78	-	30	
Cat 4	277060.78	392802	-	30	
Cat 1	392802	393778	-	30	
Cat 4	393778	426905.63	-	30	
Cat 1	426905.63	426930.9	-	30	
Cat 4	426930.9	427076.4	-	30	
Cat 1	427076.4	427103.9	-	30	
Cat 4	427103.9	451283	-	30	
Cat 4	451283	451694	-	30	
Cat 4	451694	451927	-	30	
Cat 4	451927	452595	-	30	
Cat 4	452554.00	539611.96	-	30	
Cat 1	473964.3	473991.86	-	30	
Cat 4	473991.86	476904	-	30	
Cat 1	476904	476930.63	-	30	
Cat 4	476930.63	493931	-	30	
Cat 4	493931	527812.4	-	30	
Cat 1	527812.4	527857.5	-	30	
Cat 4	527857.5	532674.3	-	30	
Cat 1	532674.3	532694.8	-	30	
Cat 4	532694.8	539612	-	30	
Cat 1	539611.96	539629	-	30	
Cat 4	539629	556091	-	30	
Cat 4	556091	559882.4	0.6800	30	Hydrotest 5 none
Cat 4	559859.35	571031.3	-	30	
Cat 1	571031.3	571054.8	-	30	
Cat 4	571054.8	618583.6	0.2100	30	Hydrotest 5 none, remote area
Cat 1	618583.6	618624.1	-	30	Hydrotest none, remote area
Cat 4	618624.1	649146	0.4400	30	Hydrotest 5 none, remote area
Cat 1	649146	649154	-	30	
Cat 4	649154	655113	-	30	
Cat 1	655113	655149	-	30	
Cat 4	655149	666033.33	0.3300	30	Hydrotest 5 none, remote area
Cat 1	666033.33	666116.83	-	30	
Cat 4	666116.83	689891	0.5600	30	Hydrotest 5 none

Cat 1	689891	691384.5	0.2800	30	Hydrotest	5	none	
Cat 4	691281.00	719723.96	0.2000	30				
Cat 1	719723.96	719747.55	-	30				
Cat 4	719747.55	723936.06	-	30				
Cat 1	723936.06	726755	0.5339	30				
Cat 1	726755	727513.55	0.1438	30				
Cat 1	727513.55	728503.63	0.1875	30				
Cat 4	728297.55	729714	0.2683	30	Hydrotest		railroad crossing	
Cat 1	729714	730849.5	-	30				
Cat 4	730838.00	737752.21	-	30				
Cat 1	737752.21	737762.71	-	30				
Cat 4	737762.71	759019.5	4.0259	30	Hydrotest	5	street work	
Cat 1	759019.5	759044.5	0.0047	30	Hydrotest		none	
Cat 4	759044.5	771882.74	1.6915	30	Hydrotest	5	street work, residential crossing, parking lot	
Cat 4	771882.74	772549.45	0.1263	30	Hydrotest	5	street work	
Cat 4	772548.95	773093.26	0.1031	30	Hydrotest	5	street work	
Cat 4	773093.26	773195.01	0.0193	30	Hydrotest	5	street work	
Cat 4	773178.43	773541.29	0.0687	30	Hydrotest	5	street work	
Cat 4	773541.29	773628.71	0.0166	30	Hydrotest	5	street work	
Cat 4	773625.69	774724.15	0.2080	30	Hydrotest	5	street work	
Cat 1	774724.15	774749.15	0.0047	30	Hydrotest			
Cat 4	774749.15	774982.4	0.0442	30	Hydrotest	5	street work	
Cat 4	774982.4	775375.94	0.0745	30	Hydrotest	5	street work	
Cat 4	775371.28	776077	0.1337	30	Hydrotest	5	street work	
Cat 1	775610.1	776226.83	0.1168	30				
Cat 4	776215.66	777122.75	0.1718	30	Hydrotest	5	street work	
Cat 1	777122.75	777860.76	0.1398	30				
Cat 4	777849.05	779062.34	0.2298	30	Hydrotest	5	street work	
Cat 1	779529.2	779552.7	0.0045	30	Hydrotest		street work	
Cat 4	779552.7	822527.26	0.7932	30	Hydrotest	5	street work	
Cat 1	822527.26	822552.76	-	30				
Cat 4	822552.76	822920.67	-	30				
Cat 1	822920.67	822929	-	30				
Cat 4	822867	836328	2.5494	30	Hydrotest	5	street & dirt work	
Cat 1	836328	836410	0.0155	30	Hydrotest		dirt work	
Cat 4	836410	849478.35	2.4751	30	Hydrotest	5	street & dirt work	
Cat 1	849478.35	849678.04	0.0378	30				

Cat 4	849654.87	860083	1.7150	30	Hydrotest	5	street work
Cat 1	860083	860364	0.0532	30	Hydrotest	5	street work, commerial property crossings
Cat 4	860364	871633	2.1343	30	Hydrotest	5	street work
Cat 1	871633	871733	0.0189	30	Hydrotest	5	commercial parking
Cat 4	871733	872142	0.0775	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 1	872142	872252	0.0208	30	Hydrotest	5	street work
Cat 4	872252	873024	0.1462	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 1	873024	873329	0.0578	30	Hydrotest	5	street work
Cat 4	873329	873910	0.1100	30	Hydrotest	5	commercial parking
Cat 1	873910	874108	0.0375	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 4	874108	886226	2.2936	30	Hydrotest	5	street work
Cat 1	886226	886241	0.0028	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 4	886241	896398	1.2437	30	Hydrotest	5	street work
Cat 1	896398	896423	0.0047	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 4	896423	897195	0.1462	30	Hydrotest	5	street work
Cat 1	897195	897565	0.0701	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 4	897565	909248	1.2261	30	Hydrotest	5	street work
Cat 1	909248	909260	-	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 4	909260	918731	-	30	Hydrotest	5	street work
Cat 1	918731	922435	-	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 4	922435	932703	1.4161	30	Hydrotest	5	street work
Cat 1	931922	932044	0.0231	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 4	932044	932703	0.1248	30	Hydrotest	5	street work
Cat 1	932703	932809	0.0201	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 4	932809	941105	1.5712	30	Hydrotest	5	street work
Cat 1	941105	941197	0.0174	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 4	941197	943385	0.4144	30	Hydrotest	5	street work
Cat 1	943385	944143	0.1436	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 4	944143	956351	2.3121	30	Hydrotest	5	street work
Cat 1	956351	956618	0.0506	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 4	956618	957420	0.1519	30	Hydrotest	5	street work
Cat 4	957420	957983	0.1066	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 4	957983	959986	0.3676	30	Hydrotest	5	street work
Cat 1	959986	960294	0.0110	30	Hydrotest	5	commercial parking, some street work, dirt
Cat 4	960294	963485	0.6044	30	Hydrotest	5	street work
Cat 1	963485	963615	0.0246	30	Hydrotest	5	commercial parking, some street work, dirt

Cat 4	963615	965462	0.3498	30	Hydrotest	5	street work, commercial parking
Cat 1	965462	965617	0.0294	30			
Cat 4	965617	966210	0.1123	30	Hydrotest	5	dirt work
Cat 4	966210	966251	0.0078	30	Hydrotest	5	dirt work
Cat 4	966251	968095	0.3492	30	Hydrotest	5	bridge crossing, aligned next to RR
Cat 4	968095	968099	0.0008	30	Hydrotest	5	aligned next to RR tracks
Cat 4	968099	968143	0.0083	30	Hydrotest	5	aligned next to RR tracks
Cat 1	968143	968156	0.0025	30	Hydrotest		
Cat 4	968156	969667	0.2862	30	Hydrotest	5	aligned next to RR tracks
Cat 1	969667	969683	0.0030	30	Hydrotest		
Cat 4	969683	976708	1.3305	30	Hydrotest	5	commercial property crossings, street work
Cat 1	976708	976865	0.0297	30			
Cat 4	976865	977562	0.1320	30	Hydrotest	5	dirt work
Cat 4	977562	983010.78	-	30			
Cat 1	983010.78	984909.05	-	30			
Cat 4	984909.05	986696	-	30			
Cat 1	986696	986777	-	30			
Cat 1	986777	986946	-	30			
Cat 4	986946	987046	-	30			
Cat 1	987046	988786	-	30			
Cat 4	988786	1019990	-	30			
Cat 4	1019990	1020020	-	30			
Cat 4	1020020	1023581	-	30			
Cat 1	1023581	1023593	-	30			
Cat 4	1023593	1042666	0.3600	30	Hydrotest	5	none
Cat 4	1042666	1042694	-	30			
Cat 1	1042694	1044348	-	30			
Cat 4	1044348	1048356	0.0068	30	Hydrotest	5	none
Cat 4	1048356	1048923.8	0.1075	30	Hydrotest	5	none
Cat 1	1048923.8	1050555.4	0.3090	30			
Cat 4	1050612.05	1051255	0.1218	30	Hydrotest	5	none
Cat 2	1051255	1053914	0.5036	30			
Cat 4	1053914	1054363.2	0.0851	30	Hydrotest	5	none
Cat 1	1054363.2	1055472	0.2100	30			
Cat 4	1055472	1065133	1.5397	30	Hydrotest	5	commercial property crossings, street work, adjacent to residential homes
Cat 1	1065133	1065540	0.0771	30			

Cat 4	1065540	1071946	1.2133	30	Hydrotest	5	aligned between RR tracks & commercial property
Cat 2	1071946	1072070	0.0235	30	Hydrotest		
Cat 4	1072070	1090112	3.4170	30	Hydrotest	5	aligned between RR tracks, commercial property and residential homes. Two RR crossings
Cat 1	1090112	1090191	0.0150	30	Hydrotest		aligned between RR tracks and residential homes
Cat 4	1090191	1104725	2.7527	30	Hydrotest	5	aligned between RR tracks and residential homes, culvert crossing, street work
Cat 4	1104725	1104802	0.0146	30	Hydrotest	5	aligned between RR tracks and residential homes
Cat 4	1104802	1119539	2.7911	30	Hydrotest	5	aligned between RR tracks and residential homes, street work
Cat 4	1119539	1120486	0.1794	30	Hydrotest	5	aligned between RR tracks & commercial property
Cat 4	1120486	1126545	1.1475	30	Hydrotest	5	aligned between RR tracks & commercial property, multiple RR crossings, aligned near train hub
Cat 4	1126545	1200000	0.0053	26	Hydrotest	5	None, stationing change
Cat 4	1200000	1200068.75	0.0130	26	Hydrotest	5	commercial property
Cat 1	1200068.75	1200134.95	0.0125	26			
Cat 1	1200138.42	1201086.5	0.1796	26			
Cat 4	1201697.85	1202780	0.2050	26	Hydrotest	5	commercial property next to RR tracks
Cat 4	1202780	1203675	0.1695	26	Hydrotest	5	aligned inbetween RR tracks and commercial property, train hub
Cat 4	1203675	1205799	0.4023	26	Hydrotest	5	aligned inbetween RR tracks and commercial property, train hub. RR crossings
Cat 1	1205799	1209419	0.6856	26			
Cat 1	1209419	1209960	0.1025	26			
Cat 4	1209960	1219576.1	1.8212	26	Hydrotest	5	aligned between RR tracks, commercial property and residential homes
Cat 1	1219576	1220618	0.1973	18			
Cat 4	1220618	1225918	1.0038	26	Hydrotest	5	aligned next to commercial property. Near Hwy 5. street work
Cat 4	1225918	1227503	0.3002	26	Hydrotest	5	aligned next to commercial property. Near Hwy 5. street work, parking lot
Cat 2	1227503	1228993	0.2822	30			
Cat 4	1228993	1234940	1.1263	26	Hydrotest	5	aligned next to RR tracks. RR crossing
Cat 2	1234940	1235944	0.1902	26			
Cat 4	1235944	1241122	0.9807	26	Hydrotest	5	street work, hwy 710 crossing
Cat 4	1241122	1241203	0.0153	26	Hydrotest	5	street work
Cat 4	1241203	1252765	2.1898	26	Hydrotest	5	multiple RR crossings, commercial crossings, critical primary train hub, street work

ESTIMATED BY: SPEC SERVICES, INC.
 STATE OF DESIGN: Conceptual
 SHEET: Sheet 1 of 1
 DATE: July 26, 2011
 SPEC Project Number: 5057

DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe	30	Actual OD (in)								
	0.281	Wall Thickness (in)								
	503950	Length (FT)	Water Volume							
	30	QTY	Baker Tank Volume							
Hydrotest Test Segment										
Pipe	26	Actual OD (in)								
	0.264	Wall Thickness (in)								
	116894	Length (FT)	Water Volume							
	7	QTY	Baker Tank Volume							
Hydrotest Test Segment										
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)	Water Volume							
	0	QTY	Baker Tank Volume							
Hydrotest Test Segment										
Total Hydrotest Length	117.6	Miles								
Total Hydrotest Segment(s)	37	QTY								
Purging - Volume of Nitrogen [to obtain 3 atm (44 psig) on line], minimum 4 miles per test segment	10,553,740	SCF								
Temporary Pig Launcher/Receiver (one/ OD change)	2	LS								
Water Injection Pump & Filter (capacity 1200 gpm)	37	day(s)								
On-Site Vacuum Truck(s) (minimum one per/ test segment)	37	each								
Baker Tank(s) =X	10	each								
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	2,640	day(s)								
Total Hydrotest Water (\$19/bbl)	497,884	bbl								
Water Disposal Vacuum Truck(s) =A	10	each								
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	4,150	loads								
Disposal Time =>C/(A*10)	42	day(s)								
Total Vacuum Truck(s) Rental days (\$/day per truck) =>D=C*A	420	day(s)								
Treated Water Disposal (\$55/bbl)	497,884	bbl								
Miscellaneous Materials	5	%								
SCG Post Estimate Changes:										
Additional Baker Tanks:	0	QTY								
Additional Test Segments:	0	QTY								
(due to elevation changes)										
2 CONSTRUCTION										
Construction Labor (25K/ test segment)	37	LS								
Hydrotest Labor (10K/ test segment)	37	day(s)								
Dewater/ Dry Pipeline (\$15,000/ test segment)	37	LS								
Tie-ins Crew Rates (\$25,000/ test segment)	37	Each								
3rd Party Witness (\$2,000/ test segment)	37	Each								
Test/Construction period (6 days per test segment+ Hydrotest Labor+ Disposal Time) =>Z	264	day(s)								
Total Construction Cost										
Projects <\$1 million - company labor is 10%	10	%								
\$1 million < Projects < \$10 million - company labor is 5%	5	%								
Projects >\$10 million - company labor is 2.5%	2.5	%								
Total SCG Labor / Inspection Cost										
3 SCG LABOR / INSPECTION										
Planning / Design / Eng / Coord / Procurement	5	%								
ROW Acquisition	0	LS								
Construction Permits	0	LS								
Environmental Permits	0	LS								
Environmental Monitoring	0	LS								
Total Design / Engineering / Construction Cost										
Projects <\$2 million - Contingency is 30%	30	%								
Projects >\$2 million - Contingency is 20%	20	%								
5 CONTINGENCY										
TOTAL PROJECT COST (See Appendix for assumptions/certifications)										

Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	2001 East	0.760	6.341	7.100
Diameter (in.)	30			

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 171,300
Direct Non Labor	\$ 4,350,300
Total Hydrotest	\$ 4,521,600

Hydrotest Repairs

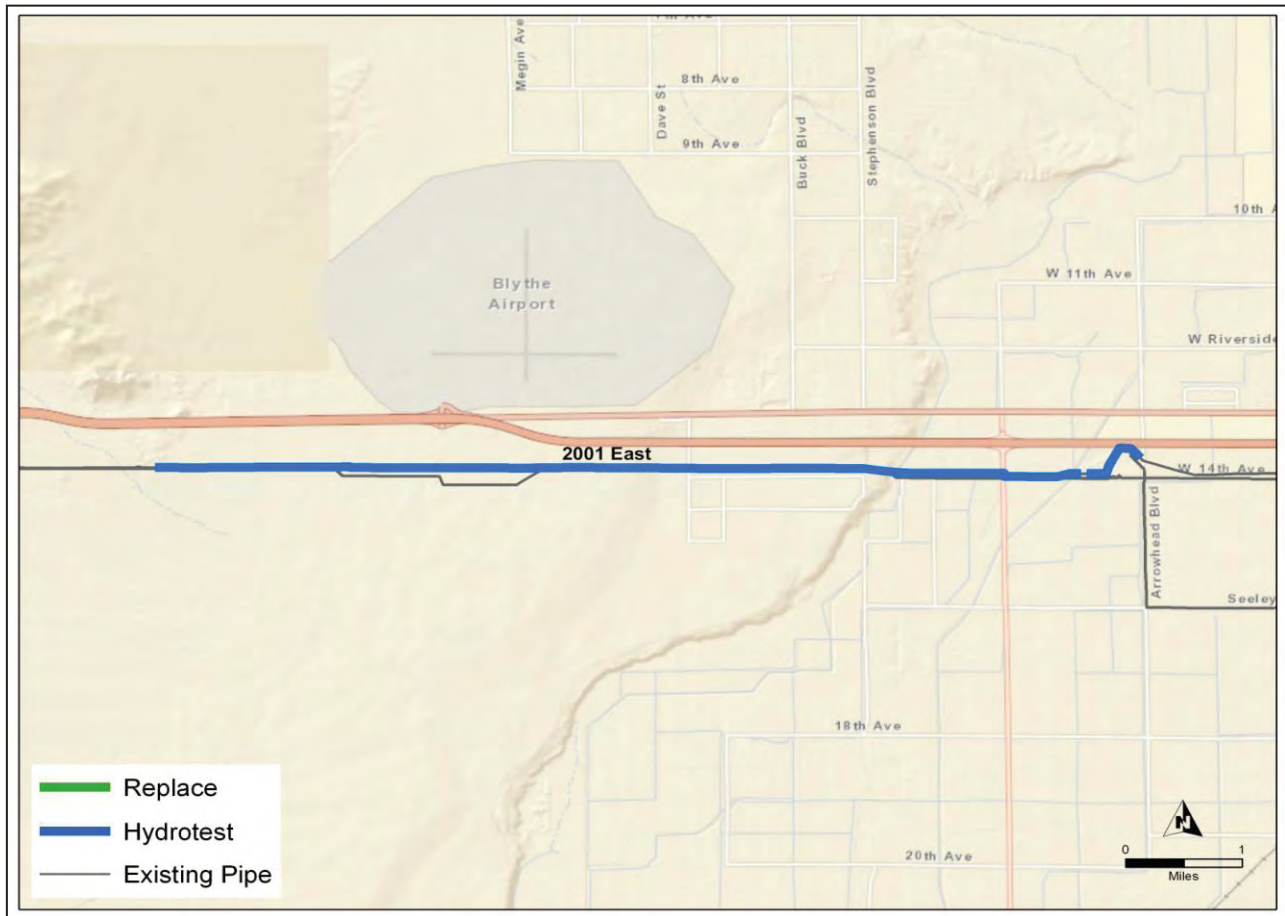
Direct Labor	\$ 15,000
Direct Non Labor	\$ 135,000
Total Repairs	\$ 150,000

In Line Inspection

Direct Labor	\$ 30,000
Direct Non Labor	\$ 270,000
Total ILI	\$ 300,000

In Line Inspection Repairs

Direct Labor	\$ 323,925
Direct Non Labor	\$ 2,915,325
Total Repairs	\$ 3,239,250



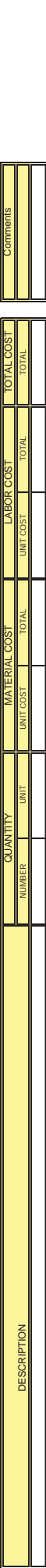
**Southern California Gas Company
Pipeline Safety Enhancement Program - Workshop Supporting Chapter IX**

Existing Segments

Category	Station Start	Station Stop	Criteria Miles	Diameter	Action	Decision Tree Box	Comments
Cat 1	0	25.12	0.0048	30			
Cat 1	25.12	146.56	0.0230	30			
Cat 1	146.56	389.9	0.0461	30			
Cat 1	389.9	505.49	0.0219	30			
Cat 1	505.49	1652.85	0.1851	30			
Cat 1	1652.85	7071	0.0074	30			
Cat 1	7071	8135	0.2015	30			
Cat 1	8135	8432.5	0.0563	30			
Cat 1	8432.5	14915.4	0.9595	30			
Cat 1	14915.4	15017.4	0.0193	30			
Cat 1	15017.4	16172.2	0.2187	30			
Cat 1	16172.2	16295.45	0.0233	30			
Cat 1	16295.45	18968.37	0.5062	30			
Cat 1	18968.37	24184.65	0.9879	30			
Cat 1	24184.65	24333.43	0.0282	30			
Cat 1	24333.43	26924.99	0.4190	30			
Cat 1	26924.99	27074.54	0.0283	30			
Cat 1	27074.54	29668.24	0.4912	30			
Cat 1	29668.24	32843.38	0.2237	30			
Cat 1	32843.38	32875.47	0.0061	30			
Cat 1	32875.47	33434.25	0.1058	30	Hydrotest	5	Pig launcher/receiver desert
Cat 4	33435.81	34031.63	0.1128	30	Hydrotest	5	Crossover with 2000
Cat 1	34031.63	34072.35	0.0077	30	Hydrotest	5	
Cat 4	34072.35	35810.52	0.3292	30	Hydrotest	5	
Cat 1	35810.52	36028.92	0.0108	30	Hydrotest	5	
Cat 4	36028.92	71285.14	1.5831	30	Hydrotest	5	4600ft through desert town Cross a few water canals
Cat 1	71285.14	71488.14	-	30			
Cat 4	71488.14	114598.02	-	30			
Cat 4	114598.02	168204	-	30			
Cat 4	168204	168310	-	30			
Cat 4	168310	231838	-	30			

SHEET: Sheet 1 of 1
 DATE: July 26, 2011
 SPEC Project Number: 5057

ESTIMATED BY: SPEC SERVICES, INC.
 STATE OF DESIGN: Conceptual



DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST	Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL		
1 MATERIALS									
INPUT IN ALL BLUE CELLS									
Pipe	30	Actual OD (in)							
	0.281	Wall Thickness (in)							
	37631	Length (FT)	bb/OD						
	3	QTY	bb/Segment						
Hydrotest Test Segment									
Pipe	n/a	Actual OD (in)							
	0.000	Wall Thickness (in)							
	0	Length (FT)	bb/OD						
	0	QTY	bb/Segment						
Hydrotest Test Segment									
Pipe	n/a	Actual OD (in)							
	0.000	Wall Thickness (in)							
	0	Length (FT)	bb/OD						
	0	QTY	bb/Segment						
Hydrotest Test Segment									
Total Hydrotest Length	7.1	Miles							
Total Hydrotest Segment(s)	3	QTY							
Purging - Volume of Nitrogen [to obtain 3 atm (44 psig) on line], minimum 4 miles per test segment	898,422	SCF		0.19	\$	170,700		\$	170,700
Temporary Pig Launcher/Receiver (one/ OD change)	1	LS		25,000	\$	25,000		\$	25,000
Water Injection Pump & Filter (capacity 1200 gpm)	3	day(s)		486	\$	1,458		\$	1,458
On-Site Vacuum Truck(s) (minimum one per/ test segment)	3	each		5,000	\$	15,000		\$	15,000
Baker Tank(s) =X	10	each							
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	210	day(s)		1,600	\$	336,000		\$	336,000
Total Hydrotest Water (\$19/bbl)	31,677	bbl		19,000	\$	601,860		\$	601,860
Water Disposal Vacuum Truck(s) =A	10	each							
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	264	loads							
Disposal Time =C*B/(A*10)	3	day(s)							
Total Vacuum Truck(s) Rental days (\$/day per truck) =D=C*A	30	day(s)		5,000	\$	150,000		\$	150,000
Treated Water Disposal (\$55/bbl)	31,677	bbl		55	\$	1,742,227		\$	1,742,227
Miscellaneous Materials	5	%				152,113		\$	152,113
SCG Post Estimate Changes:									
Additional Baker Tanks:	0	QTY							
Additional Test Segments:	0	QTY							
(due to elevation changes)									
2 CONSTRUCTION									
Construction Labor (25K/ test segment)	3	LS				25,000		\$	75,000
Hydrotest Labor (10K/ test segment)	3	day(s)				10,000		\$	30,000
Dewater/ Dry Pipeline (\$15,000/ test segment)	3	LS				15,000		\$	45,000
Tie-ins Crew Rates (\$25,000/ test segment)	3	Each				25,000		\$	75,000
3rd Party Witness (\$2,000/ test segment)	3	Each				2,000		\$	6,000
Total Construction period (6 days per test segment+ Hydrotest Labor+ Disposal Time) =Z	21	day(s)							
Total Construction Cost								\$	231,000
3 SCG LABOR / INSPECTION									
Projects <\$1 million - company labor is 10%	10	%						\$	-
\$1 million < Projects < \$10 million - company labor is 5%	5	%						\$	171,270
Projects >\$10 million - company labor is 2.5%	2.5	%						\$	-
Total SCG Labor / Inspection Cost								\$	171,270
4 DESIGN / ENG. / CONST. / ENVIRON.									
Planning / Design / Eng / Coord / Procurement	5	%						\$	171,270
ROW Acquisition	0	LS						\$	-
Construction Permits	0	LS						\$	-
Environmental Permits	0	LS						\$	-
Environmental Monitoring	0	LS						\$	-
Total Design / Engineering / Construction Cost								\$	171,270
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%	30	%						\$	-
Projects > \$2 million - Contingency is 20%	20	%						\$	753,600
TOTAL PROJECT COST (See Appendix for assumptions/certifications)								\$	4,521,600

WP-IX-1-A70

**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	2001 West	15.809	48.291	64.100
Diameter (in.)	30			

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 738,200
Direct Non Labor	\$ 37,351,900
Total Hydrotest	\$ 38,090,100

Hydrotest Repairs

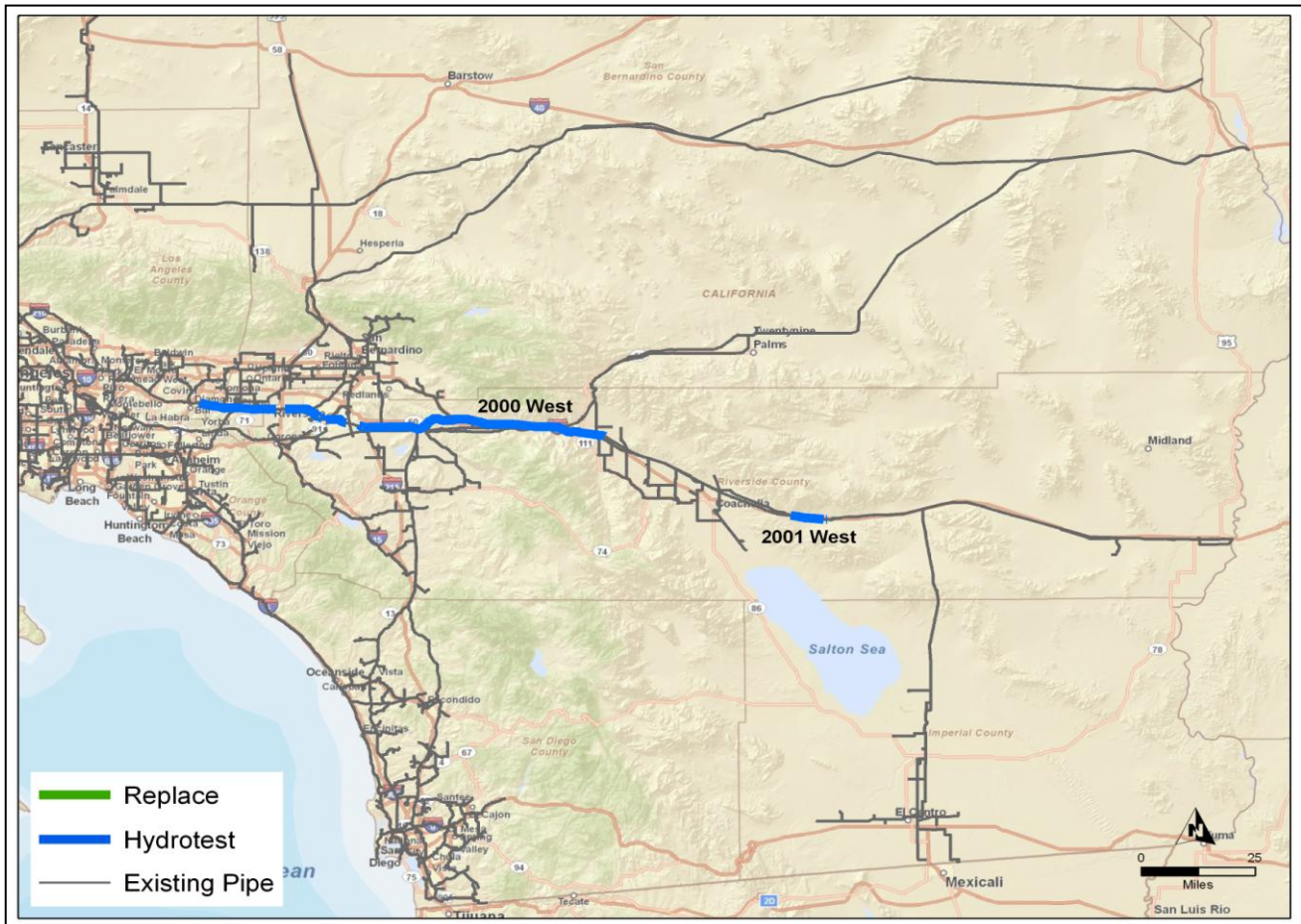
Direct Labor	\$ 125,000
Direct Non Labor	\$ 1,125,000
Total Repairs	\$ 1,250,000

In Line Inspection

Direct Labor	\$ 90,000
Direct Non Labor	\$ 810,000
Total ILI	\$ 900,000

In Line Inspection Repairs

Direct Labor	\$ 770,100
Direct Non Labor	\$ 6,930,900
Total Repairs	\$ 7,701,000



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision		Comments
	Start	Stop				Tree	Box	
Cat 4	0000	60	0.0114	30	Hydrotest	5	5	Will include valve station ID-465 T
Cat 4	60	170	0.0208	30	Hydrotest	5	5	
Cat 1	170	2756.08	0.4898	30				
Cat 4	2756.08	3614.84	0.1626	30	Hydrotest	5	5	Rio Hondo flood control channel
Cat 1	3607.72	5534	0.3648	30				
Cat 4	5534.08	9870.3	0.8213	30	Hydrotest	5	5	casing across Rosemead Ave
Cat 4	9870.3	9931.3	0.0116	30	Hydrotest	5	5	
Cat 4	9931.3	13121.9	0.6043	30	Hydrotest	5	5	MLV 24 - past Santa Anita
Cat 1	13121.9	13169.8	0.0091	30	Hydrotest	5	5	
Cat 4	13169.8	25826.5	2.3978	30	Hydrotest	5	5	multi casing crossings / San Gabriel River crossing / 605 FWY crossing / golf course crossing
Cat 1	25826.5	25840.5	0.0027	30	Hydrotest			residential road
Cat 4	25840.5	28000	0.4090	30	Hydrotest	5	5	residential road
Cat 4	28000	28200	0.0379	30	Hydrotest	5	5	residential road
Cat 4	28200	32448	0.8045	30	Hydrotest	5	5	residential road
Cat 4	32448	33248	0.1515	30	Hydrotest	5	5	
Cat 4	33248	36368.67	0.5910	30	Hydrotest	5	5	
Cat 4	36368.67	36525.17	0.0296	30	Hydrotest	5	5	
Cat 4	36512.67	37900	0.2628	30	Hydrotest	5	5	L&G Pig Site
Cat 1	37900	37949	0.0093	30				
Cat 4	231792	381004.8	-	30				
Cat 1	432273	432298	-	30				
Cat 4	381004.8	432359	-	30				
Cat 4	432359	666266.63	1.3000	30	Hydrotest	5	5	San Jose Creek Crossing - Flood Control Channel
Cat 4	457240	457952	-	30				
Cat 1	479334.85	479355.85	-	30				
Cat 1	533253.72	533274.72	-	30				
Cat 1	538497.25	539836.3	0.2536	30				
Cat 1	539831.6	540916.6	0.2055	30				

Cat 4	544973	545073	0.6881	30	Hydrotest	5	
Cat 4	555962	559770.2	0.6799	30	Hydrotest	5	
Cat 1	570909.87	570931.37	-	30			
Cat 1	618595.22	618615.22	-	30			
Cat 1	648798	648806	-	30			
Cat 1	666206.29	666266.63	-	30			
Cat 4	432359	666266.63	-	30			
Cat 4	16407	18617	0.4185	30	Hydrotest	5	desert - offset a rail road
Cat 1	20048	20810.2	-	30			
Cat 4	23396	26374	0.1878	30	Hydrotest	5	West of Cottonwood - paralleling I-10
Cat 1	23939.17	25349.7	0.2671	30			
Cat 1	25349.7	25994.4	0.1220	30			
Cat 1	26778.7	27480.88	-	30			
Cat 1	38725.9	40580.5	-	30			
Cat 4	63436	69497	-	30			
Cat 1	63436	66581.6	0.0120	30			
Cat 4	66546	72423	0.7560	30	Hydrotest	5	San Grogornio river x-ing
Cat 4	77455	92463	2.2129	30	Hydrotest	5	Park, Montgomery River, and ravine x-ings
Cat 1	87966.5	91144.1	0.6018	30			
Cat 1	90542.28	90642.16	0.0189	30			
Cat 1	90871.3	92462.68	0.3015	30			
Cat 4	96146	98020	0.4755	30	Hydrotest	5	
Cat 1	96102.3	97714.6	0.2970	30			
Cat 1	97500	99651.53	0.0985	30			
Cat 4	103821	138490	1.7125	30	Hydrotest	5	Noble Creek Flood Control x-ing, I-10 Fwy crossing, casing under RailRoad, San Timoteo Wash x-ing
Cat 1	109506	109933.2	0.0809	30			
Cat 1	114192.5	115600.4	0.1239	30			
Cat 1	122221.3	122614	0.0744	30			
Cat 1	122559	138490.3	3.0173	30			
Cat 4	162693	435679	-	30			
Cat 1	162665	193785	3.3331	30			
Cat 1	162648.4	162670	0.0041	30			
Cat 1	162670	162694	0.0078	30			
Cat 1	193785	228874.7	5.6622	30			
Cat 1	193773.9	193795.9	0.0042	30			
Cat 1	213896.72	214390.98	0.0936	30			

Cat 1	228863.2	228883.9	0.0039	30		
Cat 4	228883.9	228888	0.0008	30	Hydrotest	5 station valving ID 249
Cat 1	228888	238248	1.7727	30		
Cat 4	238248	238258	0.0019	30	Hydrotest	5 residential canyon
Cat 1	238258	259400	3.8183	30		
Cat 1	245404.81	246386.29	0.1859	30		
Cat 1	259400	270199	1.3618	30		
Cat 1	270199	270219	0.0038	30		
Cat 4	270219	270520.8	0.0572	30	Hydrotest	5 Santa Ana River
Cat 4	270520.8	270527.8	0.0013	30	Hydrotest	5 Santa Ana River
Cat 4	270527.8	271361.3	0.1579	30	Hydrotest	5 Santa Ana Suspended Span
Cat 1	271361.3	271373.3	0.0023	30		
Cat 1	271373.3	287819	2.7538	30		
Cat 1	271537	271557.6	0.0039	30		
Cat 1	278166.4	279604.06	0.2723	30		
Cat 1	287819	325062.5	4.3821	30		
Cat 1	287810	287828	0.0034	30		
Cat 1	299828.6	300111.8	0.0536	30		
Cat 1	300367.6	302053.8	0.3194	30		
Cat 1	316229.01	316355.12	0.0239	30		
Cat 1	316799.86	317058.54	0.0490	30		
Cat 1	325053.5	325071.5	0.0034	30		
Cat 1	325062.5	348753.5	1.8621	30		
Cat 1	348753.5	359895.6	1.2847	30		
Cat 1	325218.6	325309.25	0.0172	30		
Cat 4	325225	328575	0.6345	30	Keep As Is	2112 submitted on 5/4/2011 clearing this section - work at Chino Airport never completed for this segment under WO
Cat 1	332126.8	332415.7	0.0547	30		
Cat 1	343876.6	343957.7	0.0154	30		
Cat 1	348044.77	348959.78	0.1733	30		
Cat 1	348743	348763	0.0038	30		
Cat 4	348778.48	348795.48	0.0032	30	Hydrotest	5 Chino State prison property
Cat 4	359895.6	359913	0.0033	30	Hydrotest	5 Casing - Chino State Prison property
Cat 1	359915	359931	0.0030	30		
Cat 1	359913	359942	0.0051	30		
Cat 1	360122	365162	0.9492	30		
Cat 1	365162	378434	2.5136	30		

Cat 1	378434	379244.7	0.1509	30			
Cat 1	379244.7	379441.5	0.0373	30			
Cat 1	379423.7	380010	0.1110	30			
Cat 1	380010	391378.58	1.9798	30			
Cat 1	391378.58	392334.78	0.1731	30			
Cat 1	392055.1	399200	1.3532	30			
Cat 1	399200	416694	3.2077	30			
Cat 1	416694	416749.08	0.0104	30			
Cat 1	416740.52	419993	0.6160	30			
Cat 1	419993	420021.7	0.0054	30			
Cat 1	420021.7	421399.1	0.2609	30			
Cat 1	420255.8	435659.4	2.8692	30			
Cat 1		55.2	-	30			
Cat 1	55823	55846.73	-	30			
Cat 1	92497.34	92678	-	30			
Cat 1	93425.3	96145.5	-	30			
Cat 1	103254.45	104529.8	0.1342	30			
Cat 1	104529.8	104579.8	0.0095	30			
Cat 1	104579.8	110206.45	1.0657	30			
Cat 4	110032.75	114048.85	0.7606	30			
Cat 1	114048.85	114802.41	0.1427	30			
Cat 1	115611	116482.95	0.5545	30			
Cat 1	116482.95	116926.11	0.0839	30			
Cat 1	116925.5	122506.11	0.7582	30			
Cat 1	122950	122974	0.0045	30			
Cat 4	145119.8	145521.2	-	30			
Cat 4	151009	151702	-	30			
Cat 1	270076.9	270114.2	0.0072	30			
Cat 1	281875.1	281922.37	0.0090	30			
Cat 4	365168.2	365196.6	0.0054	30			
Cat 4	378348.2	378362.2	0.0027	30			
Cat 1	379594.5	380157.9	0.1067	30			
Cat 1	384856.28	385208.2	0.0667	30			
Cat 1	392067	392109	0.0080	30			
Cat 1	409125	409228	0.0195	30			
Cat 1	414825	415030	0.0388	30			
Cat 1	415329.6	415524.1	0.0368	30			
					Hydrotest	5	Oak Valley Parkway
					Hydrotest	5	Service Tap - w/o Carbon Canyon Rd

Cat 4	416695	416749.08	0.0104	30	Hydrotest	5	drop section in Rail Road ROW
Cat 4	419959	419974	0.0028	30	Hydrotest	5	
Cat 1	419981.5	420004.5	0.0044	30	Hydrotest		
Cat 4	433290.5	433521.5	0.0438	30	Hydrotest	5	San Jose creek - flood control crossing

ACTIVITY AND LOCATION		PROJECT TITLE AND CLIENT		SHEET		DATE		REV.	
Line 2001 West		SOUTHERN CALIFORNIA GAS COMPANY PIPE HYDROTEST COST ESTIMATE		SHEET 1 of 1		October 5, 2011		Rev. 2	
DESCRIPTION		QUANTITY	UNIT	MATERIAL COST	LABOR COST	TOTAL COST	COMMENTS		
		NUMBER		UNIT COST	UNIT COST	TOTAL			
1 MATERIALS									
INPUT IN ALL BLUE CELLS									
Pipe	30' Actual OD (in)	280,012	lin						
	0.000 Wall Thickness (in)								
	3.2445 Pipe (ft)	1,200	lin						
	26' CTY								
Hydrotest Test Segment									
Pipe	0.000 Actual OD (in)	0	lin						
	0.000 Wall Thickness (in)	0	lin						
	0 Length (ft)								
Hydrotest Test Segment									
Pipe	0.000 Actual OD (in)	0	lin						
	0.000 Wall Thickness (in)	0	lin						
	0 Length (ft)								
Hydrotest Test Segment									
Pipe	0.000 Actual OD (in)	0	lin						
	0.000 Wall Thickness (in)	0	lin						
	0 Length (ft)								
Total Hydrotest Length 65.0 Miles									
Total Hydrotest Segment(s) 26 CTY									
Pumping Volume of Nitrogen (to obtain 3 atm (4.4 psig) on line), minimum 4 miles per test segment									
Temporary Pig Launcher/Receiver (over OD change)									
Water Injection Pump & Filter (capacity 1200 gpm)									
On-Site Vacuum Truck(s) (minimum one per test segment)									
Baker Tank(s) - X									
10 each									
Total Hydrotest Water (519,000)									
280,012 day(s)									
Water Disposal Vacuum Truck(s) - A									
10 each									
Vacuum Truck Water Disposal loads (capacity 120 bbl) - B									
2,334 loads									
Disposal Time -C-B/(A*10)									
24 day(s)									
Total Vacuum Truck(s) Rental days (5 day per truck) -D-C*A									
280,012 day(s)									
Treated Water Disposal (655 bbl)									
5 day(s)									
Miscellaneous Materials									
5 %									
1,314,382									
Total Material Cost \$ 27,609,100									
2 CONSTRUCTION									
Construction Labor (28K test segment)									
28 day(s)									
Hydrotest Labor (10K test segment)									
10 day(s)									
Baker/Dry Packer (\$15,000 test segment)									
25 day(s)									
Trains Draw Raiser (\$25,000 test segment)									
25 day(s)									
3rd Party Witness (\$2,000 test segment)									
25 day(s)									
Total Construction period (6 days per test segment + hydrotest + hydrotest + disposal time) -Z									
174 day(s)									
Total Construction Cost \$ 1,926,000									
3. SGC LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
\$1 million < Projects < \$10 million - company labor is 5%									
Projects > \$10 million - company labor is 2.5%									
Total SGC Labor / Inspection Cost \$ 736,200									
4. DESIGN / ENG. / CONST / ENVIRON.									
Planning/Design/Eng/Coord/Procurement									
ROW Acquisition									
Construction Permits									
Environmental Permits									
Environmental Monitoring									
Total Design/Engineering/Construction Cost \$ 1,476,305									
5. CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
Projects > \$2 million - Contingency is 20%									
Total Project Cost (See Appendix for assumptions/clarifications) \$ 38,090,100									

**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Company	SCG
Plant Category	Trans
Line Number	2003
Diameter (in.)	30

Hydrotest Mileage		
Category 4 Criteria	Accelerated	Total
26.225	0.275	26.500

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 303,300
Direct Non Labor	\$ 15,345,300
Total Hydrotest	\$ 15,648,600

Hydrotest Repairs

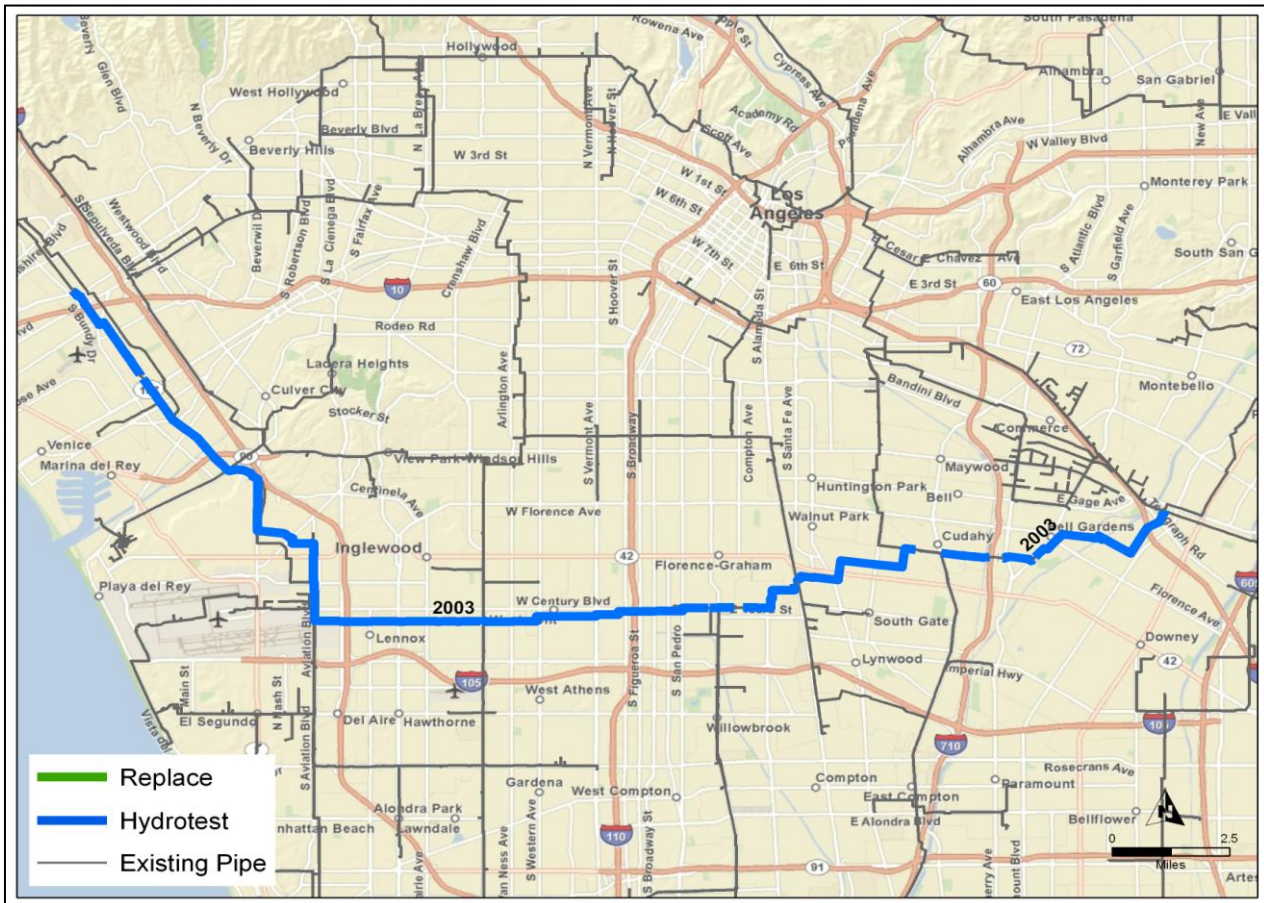
Direct Labor	\$ 50,000
Direct Non Labor	\$ 450,000
Total Repairs	\$ 500,000

In Line Inspection

Direct Labor	\$ 60,000
Direct Non Labor	\$ 540,000
Total ILI	\$ 600,000

In Line Inspection Repairs

Direct Labor	\$ 202,200
Direct Non Labor	\$ 1,819,800
Total Repairs	\$ 2,022,000



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision		
	Start	Stop				Tree	Box	Comments
Cat 1	0	21.18	0.0040	30				
Cat 4	21.18	41	0.0038	30	Hydrotest		5	
Cat 4	41	1709	0.3159	30	Hydrotest		5	
Cat 4	1709	2462	0.1237	30	Hydrotest		5	
Cat 4	2438.01	4061.8	0.3075	30	Hydrotest		5	
Cat 1	4061.8	4108.8	0.0089	30	Keep As Is			
Cat 4	4108.8	12517.09	1.5925	30	Hydrotest		5	Crosses I-5 fwy
Cat 4	12517.09	13062.39	0.1033	30	Hydrotest		5	Crosses Rio Hondo River
Cat 4	12913.39	19371.02	1.2230	30	Hydrotest		5	
Cat 1	19371.02	19471.72	0.0191	30				
Cat 4	19471.8	20603.5	0.2143	30	Hydrotest		5	
Cat 4	20603.5	23500.5	0.5487	30	Hydrotest		5	
Cat 1	23500.50	24050.5	0.1042	30				
Cat 4	24050.50	24060.95	0.0020	30	Hydrotest		5	
Cat 4	24060.95	24060.95	0.1117	30	Hydrotest		5	
Cat 1	24650.70	24842.7	0.0364	30				Crosses 710 Fwy
Cat 4	24842.70	29350.32	0.8537	30	Hydrotest		5	Crosses L.A. River
Cat 1	29350.32	29404.9	0.0104	30	Hydrotest			
Cat 4	29404.90	31634	0.4222	30	Hydrotest		5	
Cat 1	31634.00	31881	0.0222	30				
Cat 4	31781.00	46556.8	2.6280	30	Hydrotest		5	Parallels RR ROW
Cat 1	46556.80	46568.8	0.0023	30	Hydrotest		5	Alameda Corridor crossing
Cat 4	46568.80	46952.2	0.0726	30	Hydrotest		5	Alameda Corridor
Cat 1	46952.2	47166.7	0.0407	30				Alameda Corridor
Cat 4	47146.2	47187.2	0.0078	30	Hydrotest		5	Alameda Corridor
Cat 1	47187.20	47228.2	0.0078	30				Alameda Corridor
Cat 4	47228.20	54474.4	1.3724	30	Hydrotest		5	RR xing
Cat 1	54474.4	55349.4	0.1657	30				
Cat 4	55349.40	57918.9	0.4866	30	Hydrotest		5	

Cat 1	57918.90	58028.4	0.0207	30	Hydrotest	5	Crosses 110 fwy
Cat 4	58028.40	69119.1	2.1005	30	Hydrotest		
Cat 1	69119.10	69153.1	0.0064	30	Hydrotest		
Cat 4	69153.10	69240.15	0.0165	30	Hydrotest		
Cat 1	69240.15	69264.65	0.0046	30	Hydrotest		
Cat 4	69264.65	80420	2.1128	30	Hydrotest		
Cat 1	80396.37	80721	0.0616	30	Hydrotest		
Cat 4	80512.57	93798.56	2.5163	30	Hydrotest	5	Crosses 405 fwy and Hawthorne Bl
Cat 4	93798.56	93855.36	0.0108	30	Hydrotest	5	Near LAX, Aviation Bl, RR xing
Cat 4	93855.36	96344.4	0.4714	30	Hydrotest	5	parallel RR ROW
Cat 1	96344.40	96352.4	0.0015	30	Hydrotest		
Cat 4	96352.40	99069.31	0.5146	30	Hydrotest		
Cat 1	99069.31	99097.81	0.0054	30	Hydrotest		
Cat 4	99097.81	115356.06	3.0792	30	Hydrotest	5	follows RR ROW, crosses manchester bl., La Tijera, Sepulveda
Cat 1	115356.06	115418.06	0.0117	30	Hydrotest		
Cat 4	115418.06	116077.41	0.1249	30	Hydrotest	5	
Cat 1	116077.41	116140.25	0.0119	30	Hydrotest		
Cat 4	116140.25	118747.9	0.4939	30	Hydrotest		
Cat 1	118747.90	118777.9	0.0057	30	Hydrotest	5	Jefferson Bl. Crossing
Cat 4	118777.90	118824.6	0.0088	30	Hydrotest	5	Jefferson Bl. Crossing
Cat 1	118824.60	118867.3	0.0081	30	Hydrotest	5	Jefferson Bl. Crossing
Cat 4	118867.30	120489.58	0.3073	30	Hydrotest		
Cat 4	120489.58	120649.58	0.0303	30	Hydrotest	5	crosses 90 fwy
Cat 4	120649.58	130617.84	1.8879	30	Hydrotest	5	crosses Ballona Creek, culver Bl., Washington Bl, and Venice Bl
Cat 4	130617.84	130712.44	0.0179	30	Hydrotest	5	
Cat 1	130712.44	131177.74	0.0881	30	Hydrotest		
Cat 4	131177.74	142487.23	2.1419	30	Hydrotest	5	Crosses 10 fwy, Pico Bl., Olympic Bl
Cat 1	142487.23	142572.23	0.0347	30	Hydrotest		

ACTIVITY AND LOCATION		DESCRIPTION	QUANTITY	UNIT	MATERIAL COST	LABOR COST	TOTAL COST	Comments
PROJECT TITLE AND CLIENT			NUMBER		UNIT COST	UNIT COST	TOTAL	
Line 2003 SOUTHERN CALIFORNIA GAS COMPANY PIPE HYDROTEST COST ESTIMATE								
1 MATERIALS		INPUT IN ALL BLUE CELLS						
	Pipe	30' Actual OD (in) 0.375 Wall Thickness (in) 1.3174 Segment Length (ft)	115,654	ft / Segment				
	Hydrotest Test Segment	0 QTY	0	ft / Segment				
	Pipe	0.000 Actual OD (in) 0.000 Wall Thickness (in) 0 Length (ft)	0	ft / Segment				
	Hydrotest Test Segment	0 QTY	0	ft / Segment				
	Pipe	160' Actual OD (in) 0.0000 Wall Thickness (in) 0 Length (ft)	0	ft / Segment				
	Hydrotest Test Segment	0 QTY	0	ft / Segment				
	Total Hydrotest Length	26.4 Miles						
	Total Hydrotest Segment(s)	10 QTY						
		Pumping Volume of Nitrogen (to obtain 3 atm (4.4 psig) on line), minimum 4 miles per test segment	2,956,412	SCF	\$ 0.19	\$ 561,756	\$ 561,756	
		Temporary Pig Launcher/Receiver (over OD change)	1	LS	\$ 25,000	\$ 25,000	\$ 25,000	
		Water Injection Pump & Filter (capacity 1200 gpm)	9	day(s)	\$ 486	\$ 4,374	\$ 4,374	
		On-Site Vacuum Truck(s) (minimum one per test segment)	10	each	\$ 5,000	\$ 50,000	\$ 50,000	
		Baker Tank(s) -X	10	each	\$ 1,400	\$ 14,000	\$ 14,000	
		Total Hydrotest Water (519,949)	115,654	each	\$ 18.00	\$ 2,117,480	\$ 2,117,480	
		Water Disposal Vacuum Truck(s) -A	984	loads				
		Vacuum Truck Water Disposal loads (capacity 120 bbl) -B	10	day(s)	\$ 5,000	\$ 50,000	\$ 50,000	
		Disposal Time -C/(A*10)	100	day(s)	\$ 55	\$ 5,500	\$ 5,500	
		Total Vacuum Truck(s) Rental days (\$4.00/day per truck) -D/(C*A)	115,654	day(s)	\$ 55	\$ 6,360,982	\$ 6,360,982	
		Treated Water Disposal (655,989)	5	%	\$ 540,978	\$ 540,978	\$ 540,978	
		Miscellaneous Materials						
		SGS Post Estimate Changes						
		Additional Baker Tanks:						
		Additional Test Segments:						
		(due to elevation changes)						
		Total Material Cost					\$ 11,360,000	
		2 CONSTRUCTION						
		Construction Labor (78K test segment)	10	LS		\$ 95,000	\$ 95,000	
		Hydrotest Labor (10K test segment)	10	day(s)		\$ 10,000	\$ 100,000	
		Dewater/Dry Pile(s) (\$15,000 test segment)	10	LS		\$ 15,000	\$ 150,000	
		Trms Draw Rates (\$25,000 test segment)	10	Each		\$ 25,000	\$ 250,000	
		3rd Party Witness (\$2,000 test segment)	10	Each		\$ 2,000	\$ 20,000	
		Test/Construction period (6 days per test segment + hydrotest Labor + Disposal Time) -Z	70	day(s)				
		Total Construction Cost					\$ 770,000	
		3 SGS LABOR/INSPECTION						
		Projects < \$1 million - company labor is 10%	10	%				
		\$1 million < Projects < \$10 million - company labor is 5%	5	%				
		Projects > \$10 million - company labor is 2.5%	2.5	%				
		Total SGS Labor / Inspection Cost					\$ 305,300	
		4 DESIGN/ENG./CONST/ENVISON						
		Planning/Design/Eng/Coord/Procurement	5	%				
		ROW Acquisition	0	LS				
		Construction Permits	0	LS				
		Environmental Permits	0	LS				
		Environmental Monitoring	0	LS				
		Total Design/Engineering/Construction Cost					\$ 665,600	
		5 CONTINGENCY						
		Projects < \$2 million - Contingency is 30%	30	%				
		Projects > \$2 million - Contingency is 20%	20	%				
		TOTAL PROJECT COST (See Appendix for assumptions/clarifications)					\$ 16,448,600	

Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	3000 East	0.260	11.640	11.900
Diameter (in.)	30			

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 270,000
Direct Non Labor	\$ 6,856,200
Total Hydrotest	\$ 7,126,200

Hydrotest Repairs

Direct Labor	\$ 20,000
Direct Non Labor	\$ 180,000
Total Repairs	\$ 200,000

In Line Inspection

Direct Labor	\$ 30,000
Direct Non Labor	\$ 270,000
Total ILI	\$ 300,000

In Line Inspection Repairs

Direct Labor	\$ 58,500
Direct Non Labor	\$ 526,500
Total Repairs	\$ 585,000



Southern California Gas Company
 Pipeline Safety Enhancement Program - Workshop Supporting Chapter IX

Existing Segments

Category	Station		Station Stop	Criteria Miles	Diameter	Action	Decision	
	Start	Stop					Tree Box	Comments
Cat 1	0	567		0.1100	30			
Cat 1	567	2955.39		0.1700	30			
Cat 2	2955.39	2958.39		-	30			
Cat 2	2958.39	2992.26		-	30			
Cat 2	2992.26	2995.26		-	30			
Cat 2	2995.26	4684.83		-	30			
Cat 2	4684.83	13744.12		0.3200	30			
Cat 1	13744.12	14421.58		-	30			
Cat 2	14412.88	18525.93		-	30			
Cat 2	18525.93	26748.83		-	30			
Cat 2	26748.83	26877.03		-	30			
Cat 2	26877.03	42184.53		0.1853	30			
Cat 2	42184.53	42270.94		0.0164	30			
Cat 4	42270.94	42370.94		0.0189	30	Hydrotest	5	none, remote area
Cat 4	42379.28	42472.01		0.0176	30	Hydrotest	5	none, remote area
Cat 4	42472.01	42507.55		0.0067	30	Hydrotest	5	none, remote area
Cat 4	42507.55	42591.28		0.0159	30	Hydrotest	5	none, remote area
Cat 4	42591.28	42724.28		0.0252	30	Hydrotest	5	none, remote area
Cat 4	42727.28	42818.13		0.0172	30	Hydrotest	5	none, remote area
Cat 4	42818.13	105087.53		0.1651	30	Hydrotest	5	none, remote area

SHEET: Sheet 1 of 1
 DATE: July 26, 2011
 SPEC Project Number: 5057
 SPEC SERVICES, INC.
 ESTIMATED BY: SPEC SERVICES, INC.
 STATE OF DESIGN: Conceptual

DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe	30	Actual OD (in)								
	0.375	Wall Thickness (in)								
	62,865	Length (FT)								
	4	QTY								
Hydrotest Test Segment										
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)								
	0	QTY								
Hydrotest Test Segment										
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)								
	0	QTY								
Hydrotest Test Segment										
Total Hydrotest Length	11.9	Miles								
Total Hydrotest Segment(s)	4	QTY								
Purging - Volume of Nitrogen [to obtain 3 atm (44 psig) on line], minimum 4 miles per test segment	1,182,645	SCF			0.19	\$	224,702		\$	224,702
Temporary Pig Launcher/Receiver (one/ OD change)	1	LS				\$	25,000		\$	25,000
Water Injection Pump & Filter (capacity 1200 gpm)	4	day(s)				\$	486		\$	1,944
On-Site Vacuum Truck(s) (minimum one per/ test segment)	4	each				\$	5,000		\$	20,000
Baker Tank(s) =X	10	each				\$	1,600		\$	16,000
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	280	day(s)				\$	19,000		\$	991,688
Total Hydrotest Water (\$19/bbl)	52,195	bbl				\$	19,000		\$	991,688
Water Disposal Vacuum Truck(s) =A	10	each								
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	435	loads								
Disposal Time =>C/(A*10)	5	day(s)								
Total Vacuum Truck(s) Rental days (\$/day per truck) =>D=C*A	50	day(s)				\$	5,000		\$	250,000
Treated Water Disposal (\$55/bbl)	52,195	bbl				\$	55		\$	2,870,704
Miscellaneous Materials	5	%				\$	242,403		\$	242,403
SCG Post Estimate Changes										
Additional Baker Tanks:	0	QTY								
Additional Test Segments:	0	QTY								
(due to elevation changes)	0	QTY								
2 CONSTRUCTION										
Total Material Cost										
Construction Labor (25K/ test segment)	4	LS							\$	25,000
Hydrotest Labor (10K/ test segment)	4	day(s)							\$	40,000
Dewater/ Dry Pipeline (\$15,000/ test segment)	4	LS							\$	60,000
Tie-ins Crew Rates (\$25,000/ test segment)	4	Each							\$	100,000
3rd Party Witness (\$2,000/ test segment)	4	Each							\$	8,000
Test/Construction period (6 days per test segment+ Hydrotest Labor+ Disposal Time) =Z	29	day(s)							\$	308,000
Total Construction Cost										
Projects < \$1 million - company labor is 10%	10	%							\$	-
\$1 million < Projects < \$10 million - company labor is 5%	5	%							\$	269,925
Projects > \$10 million - company labor is 2.5%	2.5	%							\$	-
Total SCG Labor / Inspection Cost										
4 DESIGN / ENG. / CONST. / ENVIRON.										
Planning / Design / Eng / Coord / Procurement	5	%							\$	269,925
ROW Acquisition	0	LS							\$	-
Construction Permits	0	LS							\$	-
Environmental Permits	0	LS							\$	-
Environmental Monitoring	0	LS							\$	-
Total Design / Engineering / Construction Cost										
Projects < \$2 million - Contingency is 30%	30	%							\$	-
Projects > \$2 million - Contingency is 20%	20	%							\$	1,187,700
TOTAL PROJECT COST (See Appendix for assumptions/certifications)										
									\$	7,128,200

WP-IX-1-A84

Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Hydrotest Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	4000	0.586	3.114	3.700
Diameter (in.)	36			

Cost Detail

O&M

Hydrotest

Direct Labor	\$ 114,200
Direct Non Labor	\$ 2,899,800
Total Hydrotest	\$ 3,014,000

Hydrotest Repairs

Direct Labor	\$ 5,000
Direct Non Labor	\$ 45,000
Total Repairs	\$ 50,000

In Line Inspection

Direct Labor	\$ 30,000
Direct Non Labor	\$ 270,000
Total ILI	\$ 300,000

In Line Inspection Repairs

Direct Labor	\$ 258,675
Direct Non Labor	\$ 2,328,075
Total Repairs	\$ 2,586,750



**Southern California Gas Company
Pipeline Safety Enhancement Program - Workbook Supporting Chapter IX**

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision		
	Start	Stop				Tree	Box	Comments
Cat 4	209353	219000	-	36				
Cat 1	219000	260400	5.3080	36				
Cat 4	260400	305200	-	36				
Cat 4	305200	324984	0.5858	36	Hydrotest	5		multiple railroad crossings, terrain
Cat 1	324984	325037	-	36				
Cat 4	325037	327100	-	36				
Cat 1	327100	333115	-	36				
Cat 1	333115	333960	-	36				
Cat 1	333960	348269	-	36				
Cat 1	348269	349114	-	36				
Cat 1	349114	371728	0.1898	36				
Cat 1	371728	372984	0.2379	36				
Cat 1	372984	376306	0.6292	36				
Cat 2	376306	382166	0.7078	36				
Cat 1	382166	382694	-	36				
Cat 2	382694	383803	-	36				
Cat 1	383803	383909	-	36				
Cat 2	383909	389753	-	36				
Cat 1	389753	389951	-	36				
Cat 2	389951	425068	2.7568	36				
Cat 1	425068	425301	0.0441	36				
Cat 2	425301	434333	1.7106	36				
Cat 1	434333	434410	0.0146	36				
Cat 2	434410	437392	0.5648	36				
Cat 1	437392	437408	0.0030	36				
Cat 2	437408	443069	1.0722	36				
Cat 1	443069	443171	0.0193	36				
Cat 2	443171	457106	2.6392	36				
Cat 1	457106	457229	0.0233	36				

Cat 2	457229	499955	8.0920	36
Cat 1	499955	500012	0.0108	36
Cat 2	500012	510603	2.0059	36
Cat 1	510603	510970	0.0695	36
Cat 2	510970	536044	4.7489	36
Cat 1	536044	537037	0.1881	36
Cat 2	537037	569538	2.2114	36
Cat 1	569538	571753	0.4195	36
Cat 2	571753	577743	1.1345	36
Cat 1	577743	578386	0.1218	36
Cat 2	578386	582035	0.6911	36
Cat 1	582035	582337	0.0572	36
Cat 2	582337	586563	0.8004	36
Cat 1	586563	586579	0.0030	36
Cat 2	586579	586875	0.0561	36
Cat 1	586875	586910	0.0066	36
Cat 2	586910	588958	0.3879	36
Cat 1	588958	589629	0.1271	36
Cat 2	589629	591414	0.3381	36
Cat 1	591414	592048	0.1201	36
Cat 2	592048	600734	1.6451	36
Cat 1	600734	600800	0.0125	36
Cat 2	600800	615800	2.8409	36
Cat 1	615800	615854	0.0102	36
Cat 2	615854	620345	0.8506	36
Cat 1	620345	620735	0.0739	36
Cat 2	620735	622760	0.3835	36
Cat 1	622760	622866	0.0201	36
Cat 2	622866	623545	0.1286	36
Cat 1	623545	623570	0.0047	36

ESTIMATED BY: SPEC SERVICES, INC.
 STATE OF DESIGN: Conceptual
 SHEET: SPEC SERVICES
 DATE: July 26, 2011
 SPEC Project Number: 5057

DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe 36 Actual OD (in)	23,795		bb/OD							
0.486 Wall Thickness (in)	23,795		bb/Segment							
19784 Length (FT)										
Hydrotest Test Segment	1									
Water Volume Baker Tank Volume										
Water Volume Baker Tank Volume	0		bb/OD							
0 Length (FT)	0		bb/Segment							
Hydrotest Test Segment	0									
Water Volume Baker Tank Volume										
Water Volume Baker Tank Volume	0		bb/OD							
0 Length (FT)	0		bb/Segment							
Hydrotest Test Segment	0									
Total Hydrotest Length	3.7	Miles								
Total Hydrotest Segment(s)	1	QTY								
Purging Volume of Nitrogen [to obtain 3 atm (44 psig) on line], minimum 4 miles per test segment	427,890		SCF	\$ 0.19	\$ 81,289			\$ 81,289		
Temporary Pig Launcher/Receiver (one/ OD change)	1		LS	\$ 25,000	\$ 25,000			\$ 25,000		
Water Injection Pump & Filter (capacity 1200 gpm)	2		day(s)	\$ 486	\$ 972			\$ 972		
On-Site Vacuum Truck(s) (minimum one per/ test segment)	1		each	\$ 5,000	\$ 5,000			\$ 5,000		
Baker Tank(s) =X	80		each							
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	80		day(s)	\$ 1,600	\$ 128,000			\$ 128,000		
Total Hydrotest Water (\$19/bbl)	23,795		bbl	\$ 19.00	\$ 452,102			\$ 452,102		
Water Disposal Vacuum Truck(s) =A	10		each							
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	199		loads							
Disposal Time =>C*B/(A*10)	2		day(s)							
Total Vacuum Truck(s) Rental days (\$/day per truck) =>D*C*A	20		day(s)	\$ 5,000	\$ 100,000			\$ 100,000		
Treated Water Disposal (\$55/bbl)	23,795		bbl	\$ 55	\$ 1,308,717			\$ 1,308,717		
Miscellaneous Materials	5		%		\$ 105,055			\$ 105,055		
SCG Post Estimate Changes:										
Additional Baker Tanks:	0		QTY							
Additional Test Segments:	0		QTY							
(due to elevation changes)	0		QTY							
2 CONSTRUCTION										
Construction Labor (25K/ test segment)	1		LS			\$ 25,000	\$ 25,000	\$ 25,000		
Hydrotest Labor (10K/ test segment)	1		day(s)			\$ 10,000	\$ 10,000	\$ 10,000		
Dewater/ Dry Pipeline (\$15,000/ test segment)	1		LS			\$ 15,000	\$ 15,000	\$ 15,000		
Tie-ins Crew Rates (\$25,000/ test segment)	1		Each			\$ 25,000	\$ 25,000	\$ 25,000		
3rd Party Witness (\$2,000/ test segment)	1		Each			\$ 2,000	\$ 2,000	\$ 2,000		
Test/Construction period (6 days per test segment+ Hydrotest Labor+ Disposal Time) =>Z	8		day(s)							
Total Construction Cost								\$ 77,000		
Projects < \$1 million - company labor is 10%	10		%					\$ -		
\$1 million < Projects < \$10 million - company labor is 5%	5		%					\$ 114,160		
Projects > \$10 million - company labor is 2.5%	2.5		%					\$ -		
Total SCG Labor / Inspection Cost								\$ 114,200		
4 DESIGN / ENG. / CONST. / ENVIRON.										
Planning / Design / Eng / Coord / Procurement	5		%					\$ 114,160		
ROW Acquisition	0		LS					\$ -		
Construction Permits	0		LS					\$ -		
Environmental Permits	0		LS					\$ -		
Environmental Monitoring	0		LS					\$ -		
Total Design / Engineering / Construction Cost								\$ 114,200		
Projects < \$2 million - Contingency is 30%	30		%					\$ -		
Projects > \$2 million - Contingency is 20%	20		%					\$ 502,320		
5 CONTINGENCY										
TOTAL PROJECT COST (See Appendix for assumptions/certifications)								\$ 3,014,000		

WP-IX-1-A88

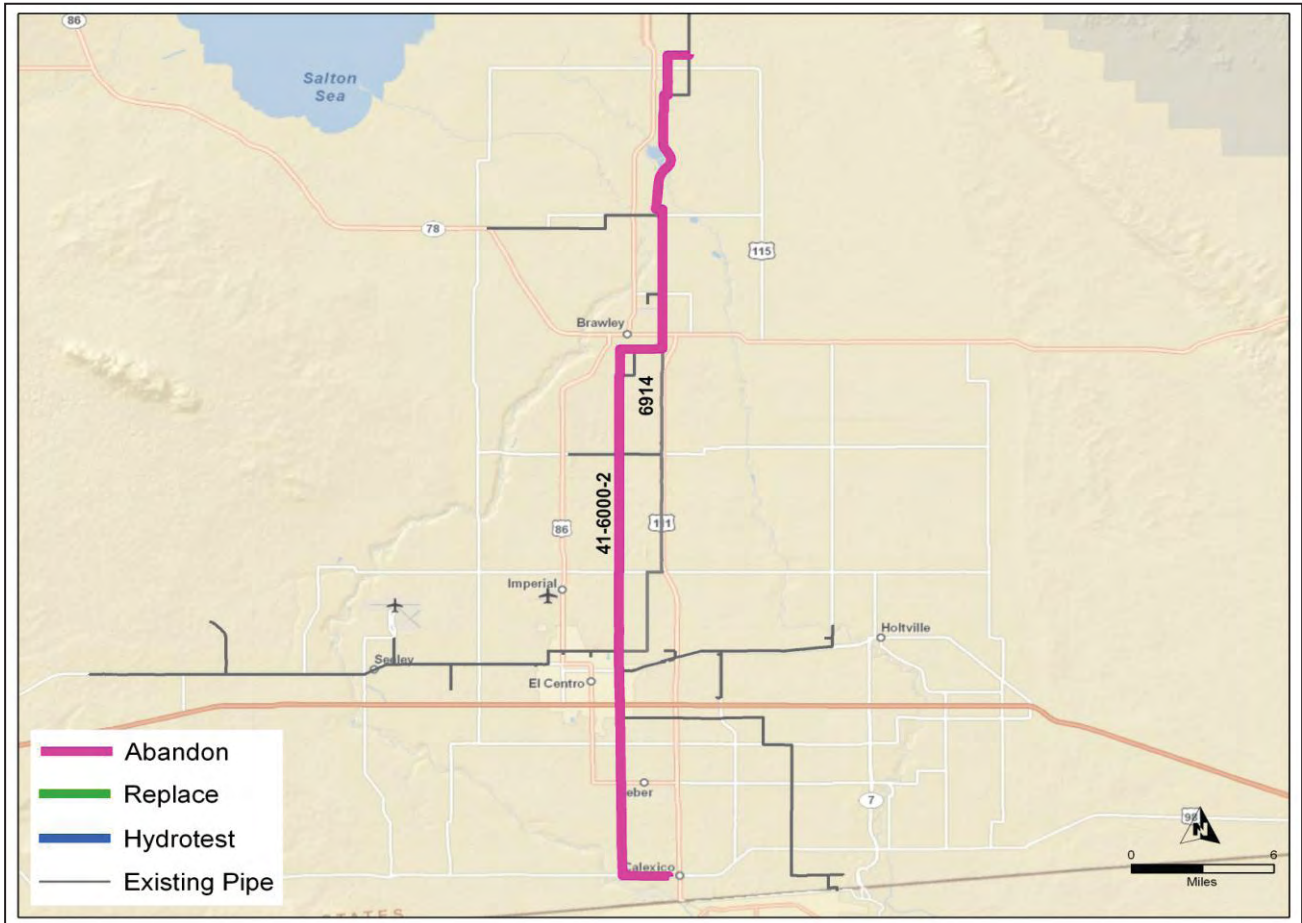
Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Abandonment Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	41-6000-2	11.373	24.577	35.950
Diameter (in.)	Multiple: 6.625 - 16			

Cost Detail

Capital		O&M	
Direct Labor	\$ 978,000	Direct Labor	\$ -
Direct Non Labor	\$ 52,202,600	Direct Non Labor	\$ -
Total Direct Capital	\$ 53,180,600	Total Direct O&M	\$ -

* Capital cost estimates provided cover the extension of existing L-6914. Extending this pipeline will allow for the abandonment of line 41-6000-2.



**Southern California Gas Company
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Existing Segments

Category	Station Start	Station Stop	Criteria Miles	Diameter	Action	Decision Tree Box	Comments
Cat 1	-10.5	1	-	6.625	Abandon	2	
Cat 1	1	8	-	8.625	Abandon	2	
Cat 4	8	6711	0.8527	8.625	Abandon	2	
Cat 4	6711	17814	0.5763	10.75	Abandon	2	State Highway 115 crossing on Brown Ave, rail road crossing at Brown Ave & Bowles Rd.
Cat 4	17814	17818	-	10.75	Abandon	2	
Cat 4	17818	55404	-	10.75	Abandon	2	Alamo River Canal crossing Possible environmental issues.
Cat 1	55404	56161	-	10.75	Abandon	2	Shank Road crossing.
Cat 4	56161	66076	1.3220	10.75	Abandon	2	
Cat 4	66076	66100	0.0045	10.75	Abandon	2	Bryant canal crossing.
Cat 4	66100	72548	1.2212	10.75	Abandon	2	
Cat 4	72548	79544	0.9335	8.625	Abandon	2	Two railroad crossings.
Cat 4	79544	90047	0.1458	16	Abandon	2	
Cat 4	90047	90197	-	8.625	Abandon	2	
Cat 4	90197	99505	-	16	Abandon	2	Tie-in connection with supply line 41-80 also recommended for replacement (see tab 2).
Cat 4	99505	106908	0.1212	8.625	Abandon	2	
Cat 4	106908	106990	-	8.625	Abandon	2	Date Canal crossing
Cat 4	106990	129872	-	8.625	Abandon	2	
Cat 4	129872	130017	-	8.625	Abandon	2	Central Drain (Sloped) on 23rd Rd.
Cat 4	130017	135172	0.2805	8.625	Abandon	2	Railroad crossing on Imperial Ave.
Cat 4	135172	145969	2.0449	6.625	Abandon	2	Highway 8 crossing. Approx. 440 feet of Cat 2 in between Cat 4 segments.
Cat 2	145969	146412	0.0756	6.625	Abandon	2	
Cat 4	146412	169783	2.4225	6.625	Abandon	2	
Cat 1	169783	169983	-	6.625	Abandon	2	Railroad crossing and Central Main Canal crossing next to Jasper Rd. Approx. 200 feet of Cat 2 in between Cat 4 segments.
Cat 4	169983	175560	-	6.625	Abandon	2	
Cat 4	175560	175839	-	6.625	Abandon	2	Beech Canal crossing
Cat 4	175839	184215	0.4055	6.625	Abandon	2	
Cat 2	184215	184303	0.0167	6.625	Abandon	2	All American Canal crossing. Approx. 88 feet of Cat 2 in between Cat 4 segments.
Cat 4	184303	189807	1.0424	6.625	Abandon	2	

New Segments

Length (ft)	Diameter	Wall Thickness	Grade	Comments
60069	24	0.375	X-65	The extension of existing L-6914 will allow for the abandonment of 41-6000-2
13484	10	0.365	X-52	

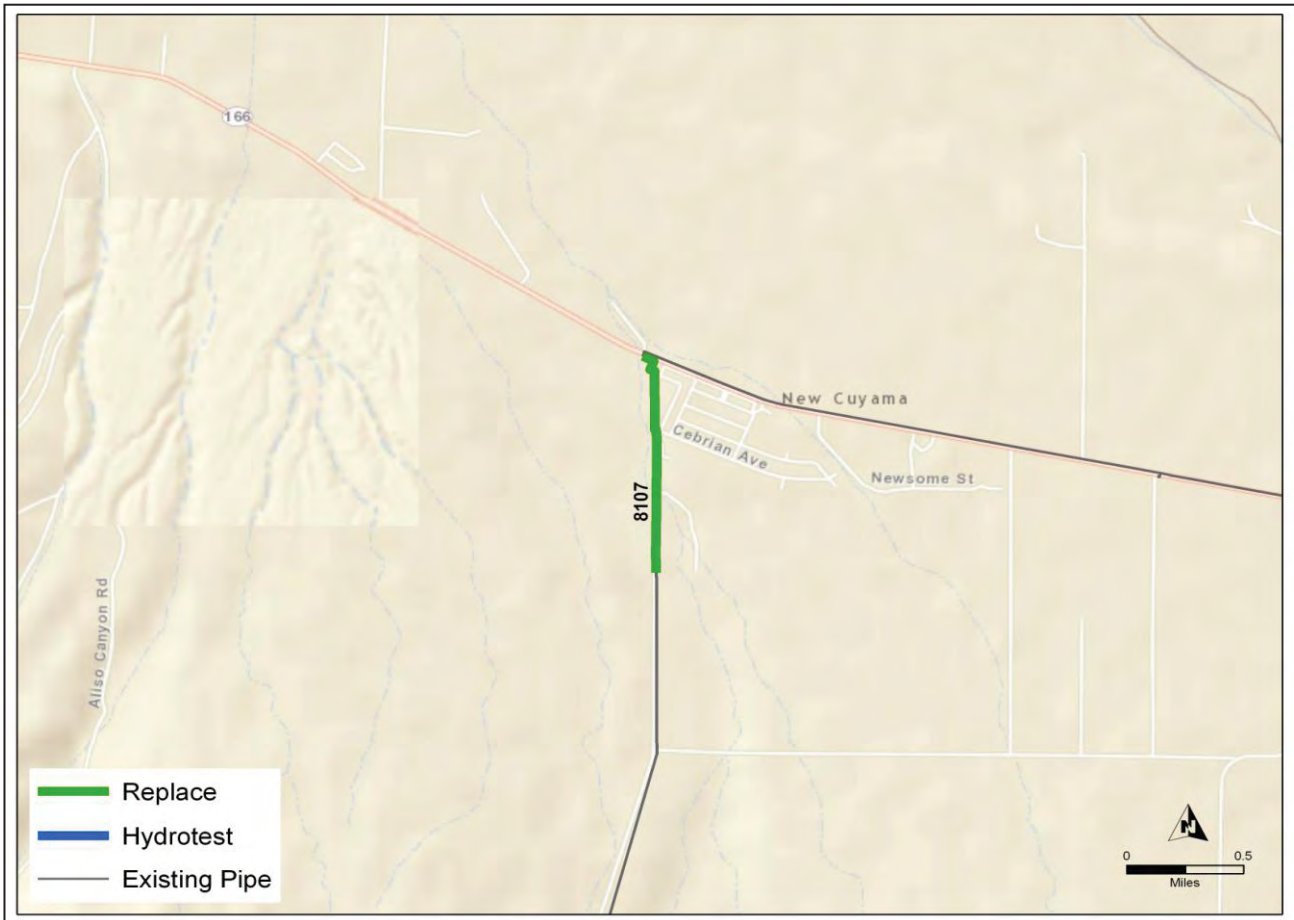
ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 6914			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 30, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 24 inch, .375 WT X-65									
		60069	Feet	\$ 92	\$ 5,508,928			\$ 5,508,928	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	244	Each	\$ 7,229	\$ 1,763,959			\$ 1,763,959	
	Pressure Rating 400 lb Block Valve w/Electric Actuator (one per 4 miles)	2	Each	\$ 365,386	\$ 730,772			\$ 730,772	
	FBE Coating (5/ft)			\$ 6.58	\$ 395,254			\$ 395,254	
	Miscellaneous Materials (5%)	1	Lot					\$ 400,183	
	Freight / Tax	12.5	%					\$ 1,099,887	
Pipe 10 inch, STD. WT X-52									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	13484	Feet	\$ 36	\$ 487,986			\$ 487,986	
	Pressure Rating 400 lb Block Valve w/Electric Actuator (one per 4 miles)	57	Each	\$ 1,408	\$ 80,256			\$ 80,256	
	FBE Coating (5/ft)	0	Each	\$ 87,798	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot	\$ 2.86	\$ 38,564			\$ 38,564	
	Freight / Tax	12.5	%					\$ 28,412	
								\$ 79,402	
Pipe n/a									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	0	Feet	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	4	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)	0	Each	\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot	\$ -	\$ -			\$ -	
	Freight / Tax	12.5	%					\$ -	
Casing 14 inch, STD. WT X-52									
	Miscellaneous Materials (5%)	100	Feet	\$ 55	\$ 5,548			\$ 5,548	Casing Pipe for RR Crossing
	Freight / Tax	1	Lot					\$ 277.40	
		12.5	%					\$ 1,327,429	
Total length		13.9	Miles						
Total Material Cost								\$ 11,946,900	
2 CONSTRUCTION (See Appendix for construction type definitions)									
24 inch pipe									
	Pipe Install - Type 1	7639	Feet			\$ 225	\$ 1,718,775	\$ 1,718,775	
	Pipe Install - Type 2	50670	Feet			\$ 360	\$ 18,241,200	\$ 18,241,200	
	Pipe Install - Type 3	0	Feet			\$ 540	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet			\$ 850	\$ -	\$ -	
	Pipe Install - Type 5	1760	Feet			\$ 800	\$ 1,408,000	\$ 1,408,000	
	Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet			\$ 702	\$ -	\$ -	
10 inch pipe									
	Pipe Install - Type 1	472	Feet			\$ 175	\$ 82,600	\$ 82,600	
	Pipe Install - Type 2	12500	Feet			\$ 280	\$ 3,500,000	\$ 3,500,000	
	Pipe Install - Type 3	0	Feet			\$ 450	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet			\$ 600	\$ -	\$ -	
	Pipe Install - Type 5	512	Feet			\$ 400	\$ 204,800	\$ 204,800	
	Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet			\$ 585	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -	
Tie-ins Crew Rates									
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	2	Each			\$ 33,167	\$ 66,334	\$ 66,334	
	Purging Labor	784268	SCF	\$ 0.19	\$ 149,011			\$ 149,011	
	95% Abandonment of Existing Pipeline (\$50/CY)	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	6892	CY			\$ 95	\$ 654,740	\$ 654,740	
	Mobilization / Demobilization	75	%					\$ 943,327	
		2	Each			\$ 30,000	\$ 60,000	\$ 60,000	
	Contaminated Soil	0	CY			\$ -	\$ -	\$ -	
	Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -	
	Radiographic Inspection	156	Days	\$ 150	\$ 23,400	\$ 600	\$ 93,600	\$ 117,000	
Construction period		164	days						
Total Construction Cost								\$ 27,170,800	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%				\$ -	\$ -	
	\$1 million < Projects < \$10 million - company labor is 5%	5	%				\$ -	\$ -	
	Projects > \$10 million - company labor is 2.5%	2.5	%				\$ 977,943	\$ 977,943	
Total SCG Labor / Inspection Cost								\$ 978,000	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%				\$ 3,911,770	\$ 3,911,770	
	Construction Stake, As-Built Survey (2 man crew)	156	Days	\$ 100	\$ 15,600	\$ 1,400	\$ 218,400	\$ 234,000	
	ROW Acquisition	0	LS				\$ -	\$ -	
	Construction Permits	0	LS				\$ -	\$ -	
	Environmental Permits	0	LS				\$ -	\$ -	
	Environmental Monitoring	0	LS				\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 75,553	\$ 75,553	
Total Design / Engineering / Construction Cost								\$ 4,221,400	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%				\$ -	\$ -	
	Projects > \$2 million - Contingency is 20%	20	%				\$ 8,863,420	\$ 8,863,420	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 53,180,600	

Southern California Gas Company
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Company	SCG	Replacement Mileage		
Plant Category	Trans	Category 4		
		Criteria	Accelerated	Total
Line Number	8107	0.541	0.351	0.892
Diameter (in.)	10.75			

Cost Detail

Capital		O&M	
Direct Labor	\$ -	Direct Labor	\$ -
Direct Non Labor	\$ -	Direct Non Labor	\$ -
Total Direct Capital	\$ -	Total Direct O&M	\$ -



Southern California Gas Company
 Pipeline Safety Enhancement Program - Workbook Supporting Chapter IX

Existing Segments

Category	Station Start	Station Stop	Criteria Miles	Diameter	Action	Decision Tree Box	Comments
Cat 4	0	4709.62	0.5407	10.75	Replace	5	

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
0	4709.62	8	0.322	X-52	

Amended/Revised Workpapers 12-2-11

**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Company SCG
Plant Category Trans

Summary of remaining pipelines

Line Number	Replacement Mileage			Capital Cost Detail		
	Category 4 Criteria	Accelerated	Total	Direct Labor	Direct Non Labor	Total Direct Capital
1003LT2	0.003	-	0.003	\$ -	\$ -	\$ -
1005 ID805-T	0.004	-	0.004	\$ -	\$ -	\$ -
1014	0.003	-	0.003	\$ 17,000	\$ 254,600	\$ 271,600
1017BP1	0.005	-	0.005	\$ 10,600	\$ 160,900	\$ 171,500
1017BP2	0.005	-	0.005	\$ 10,600	\$ 160,900	\$ 171,500
1017BP3	0.005	-	0.005	\$ 10,600	\$ 160,900	\$ 171,500
1017BR4	0.004	-	0.004	\$ 10,800	\$ 164,400	\$ 175,200
1017BR5	0.004	-	0.004	\$ 10,700	\$ 162,400	\$ 173,100
1017BR6	0.004	-	0.004	\$ 10,700	\$ 162,400	\$ 173,100
1017BR7	0.005	-	0.005	\$ 10,800	\$ 164,400	\$ 175,200
1018	0.043	0.005	0.048	\$ -	\$ -	\$ -
1019BP1	0.004	-	0.004	\$ 9,900	\$ 150,600	\$ 160,500
1025	0.072	-	0.072	\$ 30,300	\$ 448,900	\$ 479,200
1170 ID502-T 1	0.001	-	0.001	\$ 8,800	\$ 134,900	\$ 143,700
1171 ID567-P 13	0.003	-	0.003	\$ 11,800	\$ 178,000	\$ 189,800
1171LT1BP2	0.017	-	0.017	\$ 19,400	\$ 289,700	\$ 309,100
1171LT2	0.012	-	0.012	\$ 17,200	\$ 257,500	\$ 274,700
1172 ID 2313 1	0.001	-	0.001	\$ 8,900	\$ 136,400	\$ 145,300
1172 ID 2313 2	0.015	-	0.015	\$ 14,500	\$ 217,200	\$ 231,700
1172 ID 2313 3	0.009	-	0.009	\$ 11,800	\$ 178,800	\$ 190,600
1172BP2ST1	0.001	-	0.001	\$ -	\$ -	\$ -
1172BP2ST2	0.001	-	0.001	\$ 8,600	\$ 132,000	\$ 140,600
1172BP2ST3	0.003	-	0.003	\$ -	\$ -	\$ -
1172BP2ST4	0.006	-	0.006	\$ -	\$ -	\$ -
1172BP3	0.012	-	0.012	\$ -	\$ -	\$ -
1230-A	0.022	-	0.022	\$ -	\$ -	\$ -
1230-B	0.001	-	0.001	\$ -	\$ -	\$ -
169	0.012	-	0.012	\$ 12,600	\$ 190,500	\$ 203,100
2000-0.18-BO	0.012	-	0.012	\$ 11,200	\$ 169,700	\$ 180,900
2000-0.18-XO1	0.009	-	0.009	\$ 10,700	\$ 162,900	\$ 173,600
2000-0.18-XO2	0.009	-	0.009	\$ 14,200	\$ 213,600	\$ 227,800
2002 ID465-T 2	0.006	-	0.006	\$ -	\$ -	\$ -
2002 ID465-T 3	0.002	-	0.002	\$ -	\$ -	\$ -
2007 ID629-T2	0.003	-	0.003	\$ -	\$ -	\$ -
247	0.082	-	0.082	\$ 28,800	\$ 427,300	\$ 456,100
3000-261.73-BO	0.002	-	0.002	\$ 9,100	\$ 138,600	\$ 147,700
3000-261.73-BR	0.005	-	0.005	\$ 9,800	\$ 149,200	\$ 159,000
408XO1	0.011	-	0.011	\$ 14,100	\$ 211,400	\$ 225,500
5009	0.041	-	0.041	\$ 23,900	\$ 359,600	\$ 383,500
6100	0.006	-	0.006	\$ -	\$ -	\$ -

Amended/Revised Workpapers 12-2-11

Line Number	Replacement Mileage			Capital Cost Detail		
	Category 4 Criteria	Accelerated	Total	Direct Labor	Direct Non Labor	Total Direct Capital
765-8.24-BO	0.013	-	0.013	\$ -	\$ -	\$ -
765-8.24-BR	0.001	-	0.001	\$ -	\$ -	\$ -
765BR4	0.005	-	0.005	\$ -	\$ -	\$ -
765ST2	0.002	-	0.002	\$ -	\$ -	\$ -
775	0.090	-	0.090	\$ 24,100	\$ 358,800	\$ 382,900
775BO1	0.007	-	0.007	\$ 10,900	\$ 165,000	\$ 175,900

Line Number	Abandonment Mileage		
	Category 4 Criteria	Accelerated	Total
53	0.880	0.390	1.270

ACTIVITY AND LOCATION: Line 1014	SPECIFICATION NO.	A/E FIRM NAME SPC SERVICES	SHEET Sheet 1 of 1
PROJECT TITLE AND CLIENT: SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE	ESTIMATED BY: SPEC	DATE: July 12, 2011	
	STATUS OF DESIGN Conceptual	SPEC Project Number 5057	

DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS								
1 MATERIALS								
Pipe 30 inch, 562 WT X-70	8	Feet	\$ 188	\$ 1,507			\$ 1,507	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 11,805	\$ 47,221			\$ 47,221	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 225,836	\$ -			\$ -	
FBE Coating (5/ft)			\$ 8.59	\$ 69			\$ 69	
Miscellaneous Materials (5%)	1	Lot					\$ 2,436	
Freight / Tax	12.5	%					\$ 6,404	
Pipe n/a	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (5/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
Pipe n/a	1	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (5/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
Casing n/a	0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
Total length	0.0	Miles						
Total Material Cost							\$ 57,700	
2 CONSTRUCTION (See Appendix for construction type definitions)								
30 inch pipe								
Pipe Install - Type 1	8	Feet		\$ 250	\$ 2,000		\$ 2,000	
Pipe Install - Type 2	0	Feet		\$ 400	\$ -		\$ -	
Pipe Install - Type 3	0	Feet		\$ 580	\$ -		\$ -	
Pipe Install - Type 4	0	Feet		\$ 925	\$ -		\$ -	
Pipe Install - Type 5	0	Feet		\$ 1,000	\$ -		\$ -	
Pipe Install - Type 6	0	Feet		\$ -	\$ -		\$ -	
Pipe Install - Type 7	0	Feet		\$ 754	\$ -		\$ -	
n/a								
Pipe Install - Type 1	0	Feet		\$ -	\$ -		\$ -	
Pipe Install - Type 2	0	Feet		\$ -	\$ -		\$ -	
Pipe Install - Type 3	0	Feet		\$ -	\$ -		\$ -	
Pipe Install - Type 4	0	Feet		\$ -	\$ -		\$ -	
Pipe Install - Type 5	0	Feet		\$ -	\$ -		\$ -	
Pipe Install - Type 6	0	Feet		\$ -	\$ -		\$ -	
Pipe Install - Type 7	0	Feet		\$ -	\$ -		\$ -	
n/a								
Pipe Install - Type 1	0	Feet		\$ -	\$ -		\$ -	
Pipe Install - Type 2	0	Feet		\$ -	\$ -		\$ -	
Pipe Install - Type 3	0	Feet		\$ -	\$ -		\$ -	
Pipe Install - Type 4	0	Feet		\$ -	\$ -		\$ -	
Pipe Install - Type 5	0	Feet		\$ -	\$ -		\$ -	
Pipe Install - Type 7	1	Feet		\$ -	\$ -		\$ -	
Pipe Install - Type 6	0	Feet		\$ -	\$ -		\$ -	
Tie-ins Crew Rates	1	Each		\$ 53,333	\$ 53,333		\$ 53,333	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	160	SCF	\$ 0.19	\$ 30			\$ 30	
Purging Labor	1	LS		\$ 25,000	\$ 25,000		\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)	2	CY		\$ 95	\$ 190		\$ 190	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 75	
Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000		\$ 30,000	
Contaminated Soil	0	CY		\$ -	\$ -		\$ -	
Asbestos Abatement	0	Feet		\$ -	\$ -		\$ -	
Radiographic Inspection	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200	\$ 1,500	
Construction period	10	days						
Total Construction Cost							\$ 112,200	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%				\$ 16,990	\$ 16,990	
\$1million <Projects < \$10 million - company labor is 5%	5	%				\$ -	\$ -	
Projects >\$10 million - company labor is 2.5%	2.5	%				\$ -	\$ -	
Total SCG Labor / Inspection Cost							\$ 17,000	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%				\$ 16,990	\$ 16,990	
Construction Stake, As-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ 3,000	
ROW Acquisition	0	LS				\$ -	\$ -	
Construction Permits	0	LS				\$ -	\$ -	
Environmental Permits	0	LS				\$ -	\$ -	
Environmental Monitoring	0	LS				\$ -	\$ -	
As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 2,009	\$ 2,009	
Total Design / Engineering / Construction Cost							\$ 22,000	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%				\$ 62,670	\$ 62,670	
Projects>\$2 million - Contingency is 20%	20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 271,600	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1017 BP1			SPEC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		July 12, 2011					
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 10 inch, STD. WT X-52									
	26	Feet	\$ 36	\$ 941				\$ 941	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ 1,408	\$ 5,632				\$ 5,632	
Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ 26,508	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ 2,86	\$ 74				\$ 74	
Miscellaneous Materials (5%)									
	12.5	%						\$ 329	
Freight / Tax									
								\$ 872	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Casing n/a									
	0	Feet	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Total length									
	0.0	Miles						\$ -	
Total Material Cost								\$ 7,900	
2 CONSTRUCTION (See Appendix for construction type definitions)									
10 inch pipe									
Pipe Install - Type 1									
	0	Feet		\$ 175	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ 280	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ 450	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ 600	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ 400	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	26	Feet		\$ 600	\$ 15,600			\$ 15,600	Facility piping
Pipe Install - Type 7									
	0	Feet		\$ 585	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Tie-ins Crew Rates									
	1	Each		\$ 25,000	\$ 25,000			\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
	60	SCF	\$ 0.19	\$ 11				\$ 11	
Purging Labor									
	1	LS		\$ 25,000	\$ 25,000			\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
	1	CY		\$ 95	\$ 95			\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
	75	%						\$ 585	
Mobilization / Demobilization									
	1	Each		\$ 30,000	\$ 30,000			\$ 30,000	
Contaminated Soil									
	0	CY		\$ -	\$ -	\$ -		\$ -	
Asbestos Abatement									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Radiographic Inspection									
	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200		\$ 1,500	
Construction period									
	10	days						\$ -	
Total Construction Cost								\$ 97,800	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
	10	%				\$ 10,570		\$ 10,570	
\$1million <Projects < \$10 million - company labor is 5%									
	5	%				\$ -		\$ -	
Projects >\$10 million - company labor is 2.5%									
	2.5	%				\$ -		\$ -	
Total SCG Labor / Inspection Cost								\$ 10,600	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
	10	%				\$ 10,570		\$ 10,570	
Construction Stake, As-Built Survey (2 man crew)									
	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800		\$ 3,000	
ROW Acquisition									
	0	LS				\$ -		\$ -	
Construction Permits									
	0	LS				\$ -		\$ -	
Environmental Permits									
	0	LS				\$ -		\$ -	
Environmental Monitoring									
	0	LS				\$ -		\$ -	
As-Built Drawings (\$2000+\$1/ft)									
	1	LS				\$ 2,026		\$ 2,026	
Total Design / Engineering / Construction Cost								\$ 15,600	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
	30	%				\$ 39,570		\$ 39,570	
Projects>\$2 million - Contingency is 20%									
	20	%				\$ -		\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 171,500	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1017 BP2			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 10 inch, STD. WT X-52									
	26	Feet	\$ 36	\$ 941				\$ 941	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ 1,408	\$ 5,632				\$ 5,632	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ 28,405	\$ -				\$ -	
FBE Coating (5/ft)									
			\$ 2.86	\$ 74				\$ 74	
Miscellaneous Materials (5%)									
	1	Lot						\$ 329	
Freight / Tax									
	12.5	%						\$ 872	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
			\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
			\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Casing n/a									
	0	Feet	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 7,900	
2 CONSTRUCTION (See Appendix for construction type definitions)									
10 inch pipe									
Pipe Install - Type 1									
	0	Feet		\$ 175	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ 280	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ 450	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ 600	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ 400	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	26	Feet		\$ 600	\$ 15,600			\$ 15,600	Facility piping
Pipe Install - Type 7									
	0	Feet		\$ 585	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Tie-ins Crew Rates									
	1	Each		\$ 25,000	\$ 25,000			\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
	60	SCF	\$ 0.19	\$ 11				\$ 11	
Purging Labor									
	1	LS		\$ 25,000	\$ 25,000			\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
	1	CY		\$ 95	\$ 95			\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
	75	%						\$ 585	
Mobilization / Demobilization									
	1	Each		\$ 30,000	\$ 30,000			\$ 30,000	
Contaminated Soil									
	0	CY		\$ -	\$ -	\$ -		\$ -	
Asbestos Abatement									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Radiographic Inspection									
	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200		\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 97,800	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
	10	%				\$ 10,570		\$ 10,570	
\$1 million < Projects < \$10 million - company labor is 5%									
	5	%				\$ -		\$ -	
Projects > \$10 million - company labor is 2.5%									
	2.5	%				\$ -		\$ -	
Total SCG Labor / Inspection Cost								\$ 10,600	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
	10	%				\$ 10,570		\$ 10,570	
Construction Stake, As-Built Survey (2 man crew)									
	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800		\$ 3,000	
ROW Acquisition									
	0	LS				\$ -		\$ -	
Construction Permits									
	0	LS				\$ -		\$ -	
Environmental Permits									
	0	LS				\$ -		\$ -	
Environmental Monitoring									
	0	LS				\$ -		\$ -	
As-Built Drawings (\$2000+\$1/ft)									
	1	LS				\$ 2,026		\$ 2,026	
Total Design / Engineering / Construction Cost								\$ 15,600	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
	30	%				\$ 39,570		\$ 39,570	
Projects > \$2 million - Contingency is 20%									
	20	%				\$ -		\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 171,500	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1017 BP3			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
10 inch. STD. WT X-52									
Pipe	10	26	Feet	\$ 36	\$ 941			\$ 941	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ 1,408	\$ 5,632			\$ 5,632	
Pressure Rating	300	0	Each	\$ 28,405	\$ -			\$ -	
FBE Coating (5/ft)				\$ 2.86	\$ 74			\$ 74	
Miscellaneous Materials (5%)		1	Lot					\$ 329	
Freight / Tax		12.5	%					\$ 872	
n/a									
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
Pipe	n/a	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ -	\$ -			\$ -	
Pressure Rating	n/a	0	Each	\$ -	\$ -			\$ -	
FBE Coating (5/ft)				\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
n/a									
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
Pipe	n/a	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ -	\$ -			\$ -	
Pressure Rating	n/a	0	Each	\$ -	\$ -			\$ -	
FBE Coating (5/ft)				\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
n/a									
Miscellaneous Materials (5%)									
Casing	n/a	0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 7,900	
2 CONSTRUCTION (See Appendix for construction type definitions)									
10 inch pipe									
Pipe Install - Type 1		0	Feet		\$ 175	\$ -	\$ -	\$ -	
Pipe Install - Type 2		0	Feet		\$ 280	\$ -	\$ -	\$ -	
Pipe Install - Type 3		0	Feet		\$ 450	\$ -	\$ -	\$ -	
Pipe Install - Type 4		0	Feet		\$ 600	\$ -	\$ -	\$ -	
Pipe Install - Type 5		0	Feet		\$ 400	\$ -	\$ -	\$ -	
Pipe Install - Type 6		26	Feet		\$ 600	\$ 15,600		\$ 15,600	Facility Piping
Pipe Install - Type 7		0	Feet		\$ 585	\$ -	\$ -	\$ -	
n/a									
Pipe Install - Type 1		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 2		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 3		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 4		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 5		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 6		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7		0	Feet		\$ -	\$ -	\$ -	\$ -	
n/a									
Pipe Install - Type 1		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 2		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 3		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 4		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 5		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 6		0	Feet		\$ -	\$ -	\$ -	\$ -	
Tie-ins Crew Rates									
		1	Each		\$ 25,000	\$ 25,000		\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)		60	SCF	\$ 0.19	\$ 11			\$ 11	
Purging Labor		1	LS		\$ 25,000	\$ 25,000		\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)		1	CY		\$ 95	\$ 95		\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)		75	%					\$ 585	
Mobilization / Demobilization		1	Each		\$ 30,000	\$ 30,000		\$ 30,000	
Contaminated Soil		0	CY		\$ -	\$ -		\$ -	
Asbestos Abatement		0	Feet		\$ -	\$ -		\$ -	
Radiographic Inspection		2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200	\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 97,800	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%		10	%			\$ 10,570	\$ -	\$ 10,570	
\$1 million < Projects < \$10 million - company labor is 5%		5	%			\$ -	\$ -	\$ -	
Projects > \$10 million - company labor is 2.5%		2.5	%			\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 10,600	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement		10	%			\$ 10,570	\$ -	\$ 10,570	
Construction Stake, As-Built Survey (2 man crew)		2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ 3,000	
ROW Acquisition		0	LS			\$ -	\$ -	\$ -	
Construction Permits		0	LS			\$ -	\$ -	\$ -	
Environmental Permits		0	LS			\$ -	\$ -	\$ -	
Environmental Monitoring		0	LS			\$ -	\$ -	\$ -	
As-Built Drawings (\$2000+\$1/ft)		1	LS			\$ 2,026	\$ -	\$ 2,026	
Total Design / Engineering / Construction Cost								\$ 15,600	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%		30	%			\$ 39,570	\$ -	\$ 39,570	
Projects > \$2 million - Contingency is 20%		20	%			\$ -	\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 171,500	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1017 BR4			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 12 inch, STD. WT X-52									
		26	Feet	\$ 44	\$ 1,151			\$ 1,151	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
		4	Each	\$ 1,833	\$ 7,333			\$ 7,333	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)									
		0	Each	\$ 36,010	\$ -			\$ -	
FBE Coating (5/ft)									
		1	Lot	\$ 3,26	\$ 85			\$ 85	
Miscellaneous Materials (5%)									
		12.5	%					\$ 424	
Freight / Tax									
								\$ 1,124	
Pipe n/a									
		0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
		4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
		0	Each	\$ -	\$ -			\$ -	
FBE Coating (5/ft)									
		1	Lot	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)									
		12.5	%					\$ -	
Freight / Tax									
								\$ -	
Pipe n/a									
		0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
		4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
		0	Each	\$ -	\$ -			\$ -	
FBE Coating (5/ft)									
		1	Lot	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)									
		12.5	%					\$ -	
Freight / Tax									
								\$ -	
Casing n/a									
		0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)									
		1	Lot					\$ -	
Freight / Tax									
		12.5	%					\$ -	
Total length									
		0.0	Miles						
Total Material Cost								\$ 10,200	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
	Pipe Install - Type 1	0	Feet		\$ 175	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ 280	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ 450	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ 600	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ 400	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	26	Feet		\$ 600	\$ 15,600	\$ 15,600	\$ 15,600	Facility Piping
	Pipe Install - Type 7	0	Feet		\$ 585	\$ -	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
Tie-ins Crew Rates									
		1	Each		\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
		84	SCF	\$ 0.19	\$ 16			\$ 16	
Purging Labor									
		1	LS		\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
		1	CY		\$ 95	\$ 95	\$ 95	\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
		75	%					\$ 585	
Mobilization / Demobilization									
		1	Each		\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	
Contaminated Soil									
		0	CY		\$ -	\$ -	\$ -	\$ -	
Asbestos Abatement									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Radiographic Inspection									
		2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200	\$ 1,500	
Construction period									
		10	days						
Total Construction Cost								\$ 97,800	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%				\$ 10,800	\$ 10,800	
	\$1 million < Projects < \$10 million - company labor is 5%	5	%				\$ -	\$ -	
	Projects > \$10 million - company labor is 2.5%	2.5	%				\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 10,800	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%				\$ 10,800	\$ 10,800	
	Construction Stake, As-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ 3,000	
	ROW Acquisition	0	LS				\$ -	\$ -	
	Construction Permits	0	LS				\$ -	\$ -	
	Environmental Permits	0	LS				\$ -	\$ -	
	Environmental Monitoring	0	LS				\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 2,026	\$ 2,026	
Total Design / Engineering / Construction Cost								\$ 15,900	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%				\$ 40,410	\$ 40,410	
	Projects > \$2 million - Contingency is 20%	20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 175,200	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1017 BR5			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 12 inch, STD. WT X-52									
	24	Feet	\$ 44	\$ 1,063				\$ 1,063	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ 1,833	\$ 7,333				\$ 7,333	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ 36,010	\$ -				\$ -	
FBE Coating (5/ft)									
		\$	\$ 3.26	\$ 78				\$ 78	
Miscellaneous Materials (5%)									
	1	Lot						\$ 420	
Freight / Tax									
	12.5	%						\$ 1,112	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
		\$	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
		\$	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Casing n/a									
	0	Feet	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 10,100	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
Pipe Install - Type 1									
	0	Feet		\$ 175	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ 280	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ 450	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ 600	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ 400	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	24	Feet		\$ 600	\$ 14,400			\$ 14,400	Facility piping
Pipe Install - Type 7									
	0	Feet		\$ 585	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Tie-ins Crew Rates									
	1	Each		\$ 25,000	\$ 25,000			\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
	76	SCF	\$ 0.19	\$ 14				\$ 14	
Purging Labor									
	1	LS		\$ 25,000	\$ 25,000			\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
	1	CY		\$ 95	\$ 95			\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
	75	%						\$ 540	
Mobilization / Demobilization									
	1	Each		\$ 30,000	\$ 30,000			\$ 30,000	
Contaminated Soil									
	0	CY		\$ -	\$ -	\$ -		\$ -	
Asbestos Abatement									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Radiographic Inspection									
	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200		\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 96,600	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
	10	%				\$ 10,670		\$ 10,670	
\$1 million < Projects < \$10 million - company labor is 5%									
	5	%				\$ -		\$ -	
Projects > \$10 million - company labor is 2.5%									
	2.5	%				\$ -		\$ -	
Total SCG Labor / Inspection Cost								\$ 10,700	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
	10	%				\$ 10,670		\$ 10,670	
Construction Stake, As-Built Survey (2 man crew)									
	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800		\$ 3,000	
ROW Acquisition									
	0	LS				\$ -		\$ -	
Construction Permits									
	0	LS				\$ -		\$ -	
Environmental Permits									
	0	LS				\$ -		\$ -	
Environmental Monitoring									
	0	LS				\$ -		\$ -	
As-Built Drawings (\$2000+\$1/ft)									
	1	LS				\$ 2,024		\$ 2,024	
Total Design / Engineering / Construction Cost								\$ 15,700	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
	30	%				\$ 39,930		\$ 39,930	
Projects > \$2 million - Contingency is 20%									
	20	%				\$ -		\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 173,100	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1017 BR6			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 12 inch, STD. WT X-52		24	Feet	\$ 44	\$ 1,063			\$ 1,063	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ 1,833	\$ 7,333			\$ 7,333	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ 36,010	\$ -			\$ -	
FBE Coating (5/ft)				\$ 3.26	\$ 78			\$ 78	
Miscellaneous Materials (5%)		1	Lot					\$ 420	
Freight / Tax		12.5	%					\$ 1,112	
Pipe n/a		0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ -	\$ -			\$ -	
FBE Coating (5/ft)				\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
Pipe n/a		0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ -	\$ -			\$ -	
FBE Coating (5/ft)				\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
Casing n/a		0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 10,100	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
Pipe Install - Type 1		0	Feet		\$ 175	\$ -	\$ -	\$ -	
Pipe Install - Type 2		0	Feet		\$ 280	\$ -	\$ -	\$ -	
Pipe Install - Type 3		0	Feet		\$ 450	\$ -	\$ -	\$ -	
Pipe Install - Type 4		0	Feet		\$ 600	\$ -	\$ -	\$ -	
Pipe Install - Type 5		0	Feet		\$ 400	\$ -	\$ -	\$ -	
Pipe Install - Type 6		24	Feet		\$ 600	\$ 14,400	\$ 14,400	\$ 14,400	Facility piping
Pipe Install - Type 7		0	Feet		\$ 585	\$ -	\$ -	\$ -	
n/a									
Pipe Install - Type 1		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 2		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 3		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 4		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 5		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 6		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7		0	Feet		\$ -	\$ -	\$ -	\$ -	
n/a									
Pipe Install - Type 1		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 2		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 3		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 4		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 5		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 6		0	Feet		\$ -	\$ -	\$ -	\$ -	
Tie-ins Crew Rates		1	Each		\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)		76	SCF	\$ 0.19	\$ 14			\$ 14	
Purging Labor		1	LS		\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)		1	CY		\$ 95	\$ 95	\$ 95	\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)		75	%					\$ 540	
Mobilization / Demobilization		1	Each		\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	
Contaminated Soil		0	CY		\$ -	\$ -	\$ -	\$ -	
Asbestos Abatement		0	Feet		\$ -	\$ -	\$ -	\$ -	
Radiographic Inspection		2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200	\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 96,600	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%		10	%			\$ 10,670	\$ 10,670	\$ 10,670	
\$1 million < Projects < \$10 million - company labor is 5%		5	%			\$ -	\$ -	\$ -	
Projects > \$10 million - company labor is 2.5%		2.5	%			\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 10,700	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement		10	%			\$ 10,670	\$ 10,670	\$ 10,670	
Construction Stake, As-Built Survey (2 man crew)		2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ 3,000	
ROW Acquisition		0	LS			\$ -	\$ -	\$ -	
Construction Permits		0	LS			\$ -	\$ -	\$ -	
Environmental Permits		0	LS			\$ -	\$ -	\$ -	
Environmental Monitoring		0	LS			\$ -	\$ -	\$ -	
As-Built Drawings (\$2000+\$1/ft)		1	LS			\$ 2,024	\$ 2,024	\$ 2,024	
Total Design / Engineering / Construction Cost								\$ 15,700	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%		30	%			\$ 39,930	\$ 39,930	\$ 39,930	
Projects > \$2 million - Contingency is 20%		20	%			\$ -	\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 173,100	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1017 BR7			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 12 inch, STD. WT X-52									
	26	Feet	\$ 44	\$ 1,151				\$ 1,151	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ 1,833	\$ 7,333				\$ 7,333	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ 36,010	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ 3,26	\$ 85				\$ 85	
Miscellaneous Materials (5%)									
	12.5	%						\$ 424	
Freight / Tax									
								\$ 1,124	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Casing n/a									
	0	Feet	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
								\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 10,200	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
Pipe Install - Type 1									
	0	Feet		\$ 175	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ 280	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ 450	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ 600	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ 400	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	26	Feet		\$ 600	\$ 15,600			\$ 15,600	Facility piping
Pipe Install - Type 7									
	0	Feet		\$ 585	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Tie-ins Crew Rates									
	1	Each		\$ 25,000	\$ 25,000			\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
	84	SCF	\$ 0.19	\$ 16				\$ 16	
Purging Labor									
	1	LS		\$ 25,000	\$ 25,000			\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
	1	CY		\$ 95	\$ 95			\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
	75	%						\$ 585	
Mobilization / Demobilization									
	1	Each		\$ 30,000	\$ 30,000			\$ 30,000	
Contaminated Soil									
	0	CY		\$ -	\$ -	\$ -		\$ -	
Asbestos Abatement									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Radiographic Inspection									
	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200		\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 97,800	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
	10	%				\$ 10,800		\$ 10,800	
\$1 million < Projects < \$10 million - company labor is 5%									
	5	%				\$ -		\$ -	
Projects > \$10 million - company labor is 2.5%									
	2.5	%				\$ -		\$ -	
Total SCG Labor / Inspection Cost								\$ 10,800	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
	10	%				\$ 10,800		\$ 10,800	
Construction Stake, As-Built Survey (2 man crew)									
	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800		\$ 3,000	
ROW Acquisition									
	0	LS				\$ -		\$ -	
Construction Permits									
	0	LS				\$ -		\$ -	
Environmental Permits									
	0	LS				\$ -		\$ -	
Environmental Monitoring									
	0	LS				\$ -		\$ -	
As-Built Drawings (\$2000+\$1/ft)									
	1	LS				\$ 2,026		\$ 2,026	
Total Design / Engineering / Construction Cost								\$ 15,900	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
	30	%				\$ 40,410		\$ 40,410	
Projects > \$2 million - Contingency is 20%									
	20	%				\$ -		\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 175,200	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1019 BP1			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 10 inch, STD. WT X-52									
	20	Feet	\$ 36	\$ 724				\$ 724	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ 1,408	\$ 5,632				\$ 5,632	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ 28,405	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ 2,86	\$ 57				\$ 57	
Miscellaneous Materials (5%)									
	12.5	%						\$ 318	
Freight / Tax									
								\$ 841	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Casing n/a									
	0	Feet	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Total length									
	0.0	Miles						\$ -	
Total Material Cost								\$ 7,600	
2 CONSTRUCTION (See Appendix for construction type definitions)									
10 inch pipe									
Pipe Install - Type 1									
	0	Feet		\$ 175	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ 280	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	20	Feet		\$ 450	\$ 9,000	\$ -		\$ 9,000	
Pipe Install - Type 4									
	0	Feet		\$ 600	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ 400	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ 585	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Tie-ins Crew Rates									
	1	Each		\$ 25,000	\$ 25,000	\$ -		\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
	44	SCF	\$ 0.19	\$ 8				\$ 8	
Purging Labor									
	1	LS		\$ 25,000	\$ 25,000	\$ -		\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
	1	CY		\$ 95	\$ 95	\$ -		\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
	75	%						\$ 338	
Mobilization / Demobilization									
	1	Each		\$ 30,000	\$ 30,000	\$ -		\$ 30,000	
Contaminated Soil									
	0	CY		\$ -	\$ -	\$ -		\$ -	
Asbestos Abatement									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Radiographic Inspection									
	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200		\$ 1,500	
Construction period									
	10	days						\$ -	
Total Construction Cost								\$ 91,000	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
	10	%				\$ 9,860		\$ 9,860	
\$1 million < Projects < \$10 million - company labor is 5%									
	5	%				\$ -		\$ -	
Projects > \$10 million - company labor is 2.5%									
	2.5	%				\$ -		\$ -	
Total SCG Labor / Inspection Cost								\$ 9,900	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
	10	%				\$ 9,860		\$ 9,860	
Construction Stake, As-Built Survey (2 man crew)									
	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800		\$ 3,000	
ROW Acquisition									
	0	LS				\$ -		\$ -	
Construction Permits									
	0	LS				\$ -		\$ -	
Environmental Permits									
	0	LS				\$ -		\$ -	
Environmental Monitoring									
	0	LS				\$ -		\$ -	
As-Built Drawings (\$2000+\$1/ft)									
	1	LS				\$ 2,020		\$ 2,020	
Total Design / Engineering / Construction Cost								\$ 14,900	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
	30	%				\$ 37,020		\$ 37,020	
Projects > \$2 million - Contingency is 20%									
	20	%				\$ -		\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 160,500	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1025			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 24 inch, .375 WT X-65									
		14	Feet	\$ 92	\$ 1,284			\$ 1,284	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 7,229	\$ 28,917			\$ 28,917	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ 6.58	\$ 92			\$ 92	
	Miscellaneous Materials (5%)	1	Lot					\$ 1,510	
	Freight / Tax	12.5	%					\$ 3,975	
Pipe 16 inch, .312 WT X-65									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	366	Feet	\$ 57	\$ 20,994			\$ 20,994	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	5	Each	\$ 3,339	\$ 16,693			\$ 16,693	
	FBE Coating (5/ft)	0	Each	\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot	\$ 4.14	\$ 1,515			\$ 1,515	
	Freight / Tax	12.5	%					\$ 1,884	
								\$ 5,136	
Pipe n/a									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	1	Feet	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	4	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)	0	Each	\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot	\$ -	\$ -			\$ -	
	Freight / Tax	12.5	%					\$ -	
Casing n/a									
	Miscellaneous Materials (5%)	0	Feet	\$ -	\$ -			\$ -	
	Freight / Tax	1	Lot					\$ -	
		12.5	%					\$ -	
Total length		0.1	Miles						
Total Material Cost								\$ 82,100	
2 CONSTRUCTION (See Appendix for construction type definitions)									
24 inch pipe									
	Pipe Install - Type 1	0	Feet		\$ 225	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	14	Feet		\$ 360	\$ 5,040	\$ -	\$ 5,040	
	Pipe Install - Type 3	0	Feet		\$ 540	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ 850	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ 800	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet		\$ 702	\$ -	\$ -	\$ -	
16 inch pipe									
	Pipe Install - Type 1	0	Feet		\$ 200	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	366	Feet		\$ 320	\$ 117,120	\$ -	\$ 117,120	
	Pipe Install - Type 3	0	Feet		\$ 500	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ 750	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ 600	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet		\$ 650	\$ -	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	1	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
Tie-ins Crew Rates									
		1	Each		\$ 34,908	\$ 34,908	\$ -	\$ 34,908	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
		2224	SCF	\$ 0.19	\$ 423			\$ 423	
Purging Labor									
		1	LS		\$ 25,000	\$ 25,000	\$ -	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
		20	CY		\$ 95	\$ 1,900	\$ -	\$ 1,900	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
		75	%					\$ 4,581	
Mobilization / Demobilization									
		1	Each		\$ 30,000	\$ 30,000	\$ -	\$ 30,000	
Contaminated Soil									
		0	CY		\$ -	\$ -	\$ -	\$ -	
Asbestos Abatement									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Radiographic Inspection									
		2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200	\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 220,500	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%			\$ 30,260	\$ -	\$ 30,260	
	\$1 million < Projects < \$10 million - company labor is 5%	5	%			\$ -	\$ -	\$ -	
	Projects > \$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 30,300	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 30,260	\$ -	\$ 30,260	
	Construction Stake, As-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ 3,000	
	ROW Acquisition	0	LS			\$ -	\$ -	\$ -	
	Construction Permits	0	LS			\$ -	\$ -	\$ -	
	Environmental Permits	0	LS			\$ -	\$ -	\$ -	
	Environmental Monitoring	0	LS			\$ -	\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 2,381	\$ -	\$ 2,381	
Total Design / Engineering / Construction Cost								\$ 35,700	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%			\$ 110,580	\$ -	\$ 110,580	
	Projects > \$2 million - Contingency is 20%	20	%			\$ -	\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 479,200	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1170 ID502-T 1			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 10 inch, STD. WT X-52									
	6	Feet	\$ 36	\$ 217				\$ 217	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ 1,408	\$ 5,632				\$ 5,632	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ 28,405	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ 2,86	\$ 17				\$ 17	
Miscellaneous Materials (5%)									
	12.5	%						\$ 292	
Freight / Tax									
								\$ 770	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Pipe n/a									
	1	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Casing n/a									
	0	Feet	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Total length									
	0.0	Miles						\$ -	
Total Material Cost								\$ 7,000	
2 CONSTRUCTION (See Appendix for construction type definitions)									
10 inch pipe									
Pipe Install - Type 1									
	0	Feet		\$ 175	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ 280	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	6	Feet		\$ 450	\$ 2,700	\$ -		\$ 2,700	
Pipe Install - Type 4									
	0	Feet		\$ 600	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ 400	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ 585	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	1	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Tie-ins Crew Rates									
	1	Each		\$ 21,429	\$ 21,429	\$ -		\$ 21,429	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
	16	SCF	\$ 0.19	\$ 3				\$ 3	
Purging Labor									
	1	LS		\$ 25,000	\$ 25,000	\$ -		\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
	1	CY		\$ 95	\$ 95	\$ -		\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
	75	%						\$ 101	
Mobilization / Demobilization									
	1	Each		\$ 30,000	\$ 30,000	\$ -		\$ 30,000	
Contaminated Soil									
	0	CY		\$ -	\$ -	\$ -		\$ -	
Asbestos Abatement									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Radiographic Inspection									
	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200		\$ 1,500	
Construction period									
	10	days						\$ -	
Total Construction Cost								\$ 80,900	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
	10	%				\$ 8,790		\$ 8,790	
\$1million <Projects < \$10 million - company labor is 5%									
	5	%				\$ -		\$ -	
Projects >\$10 million - company labor is 2.5%									
	2.5	%				\$ -		\$ -	
Total SCG Labor / Inspection Cost								\$ 8,800	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
	10	%				\$ 8,790		\$ 8,790	
Construction Stake, As-Built Survey (2 man crew)									
	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800		\$ 3,000	
ROW Acquisition									
	0	LS				\$ -		\$ -	
Construction Permits									
	0	LS				\$ -		\$ -	
Environmental Permits									
	0	LS				\$ -		\$ -	
Environmental Monitoring									
	0	LS				\$ -		\$ -	
As-Built Drawings (\$2000+\$1/ft)									
	1	LS				\$ 2,007		\$ 2,007	
Total Design / Engineering / Construction Cost								\$ 13,800	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
	30	%				\$ 33,150		\$ 33,150	
Projects>\$2 million - Contingency is 20%									
	20	%				\$ -		\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 143,700	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1171 ID567-P 13			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 16 inch, .312 WT X-65									
	17	Feet	\$ 57	\$ 975				\$ 975	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ 3,339	\$ 13,356				\$ 13,356	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ 94,320	\$ -				\$ -	
FBE Coating (5/ft)									
		\$	\$ 4.14	\$ 70				\$ 70	
Miscellaneous Materials (5%)									
	1	Lot						\$ 716	
Freight / Tax									
	12.5	%						\$ 1,890	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
		\$	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Pipe n/a									
	1	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
		\$	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Casing n/a									
	0	Feet	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 17,100	
2 CONSTRUCTION (See Appendix for construction type definitions)									
16 inch pipe									
Pipe Install - Type 1									
	0	Feet		\$ 200	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ 320	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ 500	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ 750	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ 600	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	17	Feet		\$ 600	\$ 10,200	\$ -		\$ 10,200	Facility piping
Pipe Install - Type 7									
	0	Feet		\$ 650	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	1	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Tie-ins Crew Rates									
	1	Each		\$ 33,056	\$ 33,056	\$ -		\$ 33,056	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
	96	SCF	\$ 0.19	\$ 18				\$ 18	
Purging Labor									
	1	LS		\$ 25,000	\$ 25,000	\$ -		\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
	1	CY		\$ 95	\$ 95	\$ -		\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
	75	%						\$ 383	
Mobilization / Demobilization									
	1	Each		\$ 30,000	\$ 30,000	\$ -		\$ 30,000	
Contaminated Soil									
	0	CY		\$ -	\$ -	\$ -		\$ -	
Asbestos Abatement									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Radiographic Inspection									
	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200		\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 100,300	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
	10	%				\$ 11,740		\$ 11,740	
\$1 million < Projects < \$10 million - company labor is 5%									
	5	%				\$ -		\$ -	
Projects > \$10 million - company labor is 2.5%									
	2.5	%				\$ -		\$ -	
Total SCG Labor / Inspection Cost								\$ 11,800	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
	10	%				\$ 11,740		\$ 11,740	
Construction Stake, As-Built Survey (2 man crew)									
	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800		\$ 3,000	
ROW Acquisition									
	0	LS				\$ -		\$ -	
Construction Permits									
	0	LS				\$ -		\$ -	
Environmental Permits									
	0	LS				\$ -		\$ -	
Environmental Monitoring									
	0	LS				\$ -		\$ -	
As-Built Drawings (\$2000+\$1/ft)									
	1	LS				\$ 2,018		\$ 2,018	
Total Design / Engineering / Construction Cost								\$ 16,800	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
	30	%				\$ 43,800		\$ 43,800	
Projects > \$2 million - Contingency is 20%									
	20	%				\$ -		\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 189,800	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1171 LT1BP2			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
24	inch	91	Feet	\$ 92	\$ 8,346			\$ 8,346	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 7,229	\$ 28,917			\$ 28,917	
300	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 179,283	\$ -			\$ -	
	FBE Coating (5/ft)			\$ 6.58	\$ 599			\$ 599	
	Miscellaneous Materials (5%)	1	Lot					\$ 1,863	
	Freight / Tax	12.5	%					\$ 4,966	
n/a		0	Feet	\$ -	\$ -			\$ -	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
n/a	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
n/a		1	Feet	\$ -	\$ -			\$ -	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
n/a	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
n/a		0	Feet	\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
	Total length	0.0	Miles						
Total Material Cost								\$ 44,700	
2 CONSTRUCTION (See Appendix for construction type definitions)									
24 inch pipe									
	Pipe Install - Type 1	0	Feet		\$ 225	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ 360	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ 540	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ 850	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ 800	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	91	Feet		\$ 600	\$ 54,600	\$ 54,600	\$ 54,600	Facility piping
	Pipe Install - Type 7	0	Feet		\$ 702	\$ -	\$ -	\$ -	
n/a		0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	\$ -	
n/a		0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	1	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Tie-ins Crew Rates	1	Each		\$ 34,620	\$ 34,620	\$ 34,620	\$ 34,620	
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	1144	SCF	\$ 0.19	\$ 217			\$ 217	
	Purging Labor	1	LS		\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	11	CY		\$ 95	\$ 1,045	\$ 1,045	\$ 1,045	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 2,048	
	Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	
	Contaminated Soil	0	CY		\$ -	\$ -	\$ -	\$ -	
	Asbestos Abatement	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Radiographic Inspection	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200	\$ 1,500	
	Construction period	10	days						
Total Construction Cost								\$ 149,100	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%			\$ 19,380	\$ 19,380	\$ 19,380	
	\$1million <Projects < \$10 million - company labor is 5%	5	%			\$ -	\$ -	\$ -	
	Projects >\$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 19,400	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 19,380	\$ 19,380	\$ 19,380	
	Construction Stake, As-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ 3,000	
	ROW Acquisition	0	LS			\$ -	\$ -	\$ -	
	Construction Permits	0	LS			\$ -	\$ -	\$ -	
	Environmental Permits	0	LS			\$ -	\$ -	\$ -	
	Environmental Monitoring	0	LS			\$ -	\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 2,092	\$ 2,092	\$ 2,092	
Total Design / Engineering / Construction Cost								\$ 24,500	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%			\$ 71,310	\$ 71,310	\$ 71,310	
	Projects>\$2 million - Contingency is 20%	20	%			\$ -	\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 309,100	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1171 LT 2			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 24 inch, .375 WT X-65									
		62	Feet	\$ 92	\$ 5,686			\$ 5,686	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 7,229	\$ 28,917			\$ 28,917	
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 179,283	\$ -			\$ -	
	FBE Coating (5/ft)			\$ 6.58	\$ 408			\$ 408	
	Miscellaneous Materials (5%)	1	Lot					\$ 1,730	
	Freight / Tax	12.5	%					\$ 4,593	
Pipe n/a									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Pipe n/a									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Casing n/a									
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
	Total length	0.0	Miles						
Total Material Cost								\$ 41,400	
2 CONSTRUCTION (See Appendix for construction type definitions)									
24 inch pipe									
	Pipe Install - Type 1	0	Feet		\$ 225	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ 360	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ 540	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ 850	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ 800	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	62	Feet		\$ 600	\$ 37,200	\$ 37,200	\$ 37,200	Facility piping
	Pipe Install - Type 7	0	Feet		\$ 702	\$ -	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	1	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
Tie-ins Crew Rates									
		1	Each		\$ 34,444	\$ 34,444	\$ 34,444	\$ 34,444	
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	780	SCF	\$ 0.19	\$ 148			\$ 148	
	Purging Labor	1	LS		\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	7	CY		\$ 95	\$ 665	\$ 665	\$ 665	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 1,395	
	Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	
	Contaminated Soil	0	CY		\$ -	\$ -	\$ -	\$ -	
	Asbestos Abatement	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Radiographic Inspection	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200	\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 130,400	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%			\$ 17,180	\$ 17,180	\$ 17,180	
	\$1 million < Projects < \$10 million - company labor is 5%	5	%			\$ -	\$ -	\$ -	
	Projects > \$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 17,200	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 17,180	\$ 17,180	\$ 17,180	
	Construction Stake, As-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ 3,000	
	ROW Acquisition	0	LS			\$ -	\$ -	\$ -	
	Construction Permits	0	LS			\$ -	\$ -	\$ -	
	Environmental Permits	0	LS			\$ -	\$ -	\$ -	
	Environmental Monitoring	0	LS			\$ -	\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 2,063	\$ 2,063	\$ 2,063	
Total Design / Engineering / Construction Cost								\$ 22,300	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%			\$ 63,390	\$ 63,390	\$ 63,390	
	Projects > \$2 million - Contingency is 20%	20	%			\$ -	\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 274,700	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1172 ID 2313 1			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 8 inch, STD. WT X-52									
	5	Feet	\$ 26	\$ 129				\$ 129	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ 824	\$ 3,296				\$ 3,296	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ 24,779	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ 2,29	\$ 11				\$ 11	
Miscellaneous Materials (5%)									
	12.5	%						\$ 171	
Freight / Tax									
								\$ 451	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Casing n/a									
	0	Feet	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Total length									
	0.0	Miles							
Total Material Cost								\$ 4,100	
2 CONSTRUCTION (See Appendix for construction type definitions)									
8 inch pipe									
Pipe Install - Type 1									
	0	Feet		\$ 175	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ 280	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ 450	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ 600	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ 400	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	5	Feet		\$ 600	\$ 3,000	\$ -		\$ 3,000	
Pipe Install - Type 7									
	0	Feet		\$ 585	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Tie-ins Crew Rates									
	1	Each		\$ 25,000	\$ 25,000	\$ -		\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
	8	SCF	\$ 0.19	\$ 2				\$ 2	
Purging Labor									
	1	LS		\$ 25,000	\$ 25,000	\$ -		\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
	1	CY		\$ 95	\$ 95	\$ -		\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
	75	%						\$ 113	
Mobilization / Demobilization									
	1	Each		\$ 30,000	\$ 30,000	\$ -		\$ 30,000	
Contaminated Soil									
	0	CY		\$ -	\$ -	\$ -		\$ -	
Asbestos Abatement									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Radiographic Inspection									
	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200		\$ 1,500	
Construction period									
	10	days							
Total Construction Cost								\$ 84,800	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
	10	%				\$ 8,890		\$ 8,890	
\$1 million < Projects < \$10 million - company labor is 5%									
	5	%				\$ -		\$ -	
Projects > \$10 million - company labor is 2.5%									
	2.5	%				\$ -		\$ -	
Total SCG Labor / Inspection Cost								\$ 8,900	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
	10	%				\$ 8,890		\$ 8,890	
Construction Stake, As-Built Survey (2 man crew)									
	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800		\$ 3,000	
ROW Acquisition									
	0	LS				\$ -		\$ -	
Construction Permits									
	0	LS				\$ -		\$ -	
Environmental Permits									
	0	LS				\$ -		\$ -	
Environmental Monitoring									
	0	LS				\$ -		\$ -	
As-Built Drawings (\$2000+\$1/ft)									
	1	LS				\$ 2,005		\$ 2,005	
Total Design / Engineering / Construction Cost								\$ 13,900	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
	30	%				\$ 33,510		\$ 33,510	
Projects > \$2 million - Contingency is 20%									
	20	%				\$ -		\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 145,300	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1172 ID 2313 2			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 12 inch, STD. WT X-52									
		79	Feet	\$ 44	\$ 3,498			\$ 3,498	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
		4	Each	\$ 1,833	\$ 7,333			\$ 7,333	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)									
		0	Each	\$ 36,010	\$ -			\$ -	
FBE Coating (5/ft)									
			\$	\$ 3.26	\$ 258			\$ 258	
Miscellaneous Materials (5%)									
		1	Lot					\$ 542	
Freight / Tax									
		12.5	%					\$ 1,454	
Pipe n/a									
		0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
		4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
		0	Each	\$ -	\$ -			\$ -	
FBE Coating (5/ft)									
			\$	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)									
		1	Lot					\$ -	
Freight / Tax									
		12.5	%					\$ -	
Pipe n/a									
		0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
		4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
		0	Each	\$ -	\$ -			\$ -	
FBE Coating (5/ft)									
			\$	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)									
		1	Lot					\$ -	
Freight / Tax									
		12.5	%					\$ -	
Casing n/a									
		0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)									
		1	Lot					\$ -	
Freight / Tax									
		12.5	%					\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 13,100	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
Pipe Install - Type 1									
		0	Feet		\$ 175	\$ -	\$ -	\$ -	
Pipe Install - Type 2									
		0	Feet		\$ 280	\$ -	\$ -	\$ -	
Pipe Install - Type 3									
		0	Feet		\$ 450	\$ -	\$ -	\$ -	
Pipe Install - Type 4									
		0	Feet		\$ 600	\$ -	\$ -	\$ -	
Pipe Install - Type 5									
		0	Feet		\$ 400	\$ -	\$ -	\$ -	
Pipe Install - Type 6									
		79	Feet		\$ 600	\$ 47,400	\$ 47,400	\$ 47,400	
Pipe Install - Type 7									
		0	Feet		\$ 585	\$ -	\$ -	\$ -	
n/a									
Pipe Install - Type 1									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 2									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 3									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 4									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 5									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 6									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
n/a									
Pipe Install - Type 1									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 2									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 3									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 4									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 5									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Tie-ins Crew Rates									
		1	Each		\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
		252	SCF	\$ 0.19	\$ 48			\$ 48	
Purging Labor									
		1	LS		\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
		3	CY		\$ 95	\$ 285	\$ 285	\$ 285	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
		75	%					\$ 1,778	
Mobilization / Demobilization									
		1	Each		\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	
Contaminated Soil									
		0	CY		\$ -	\$ -	\$ -	\$ -	
Asbestos Abatement									
		0	Feet		\$ -	\$ -	\$ -	\$ -	
Radiographic Inspection									
		2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200	\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 131,100	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
		10	%			\$ 14,420	\$ 14,420	\$ 14,420	
\$1 million < Projects < \$10 million - company labor is 5%									
		5	%			\$ -	\$ -	\$ -	
Projects > \$10 million - company labor is 2.5%									
		2.5	%			\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 14,500	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
		10	%			\$ 14,420	\$ 14,420	\$ 14,420	
Construction Stake, As-Built Survey (2 man crew)									
		2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ 3,000	
ROW Acquisition									
		0	LS			\$ -	\$ -	\$ -	
Construction Permits									
		0	LS			\$ -	\$ -	\$ -	
Environmental Permits									
		0	LS			\$ -	\$ -	\$ -	
Environmental Monitoring									
		0	LS			\$ -	\$ -	\$ -	
As-Built Drawings (\$2000+\$1/ft)									
		1	LS			\$ 2,079	\$ 2,079	\$ 2,079	
Total Design / Engineering / Construction Cost								\$ 19,500	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
		30	%			\$ 53,460	\$ 53,460	\$ 53,460	
Projects > \$2 million - Contingency is 20%									
		20	%			\$ -	\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 231,700	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1172 ID 2313 3			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 8 inch, STD. WT X-52									
		50	Feet	\$ 26	\$ 1,289			\$ 1,289	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 824	\$ 3,296			\$ 3,296	
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 24,779	\$ -			\$ -	
	FBE Coating (5/ft)			\$ 2.29	\$ 115			\$ 115	
	Miscellaneous Materials (5%)	1	Lot					\$ 229	
	Freight / Tax	12.5	%					\$ 616	
Pipe n/a									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Pipe n/a									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	1	Feet	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	4	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)	0	Each	\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Casing n/a									
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
	Total length	0.0	Miles						
Total Material Cost								\$ 5,600	
2 CONSTRUCTION (See Appendix for construction type definitions)									
8 inch pipe									
	Pipe Install - Type 1	0	Feet		\$ 175	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ 280	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ 450	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ 600	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ 400	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	50	Feet		\$ 600	\$ 30,000	\$ -	\$ 30,000	
	Pipe Install - Type 7	0	Feet		\$ 585	\$ -	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	1	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Tie-ins Crew Rates	1	Each		\$ 24,510	\$ 24,510		\$ 24,510	
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	72	SCF	\$ 0.19	\$ 14			\$ 14	
	Purging Labor	1	LS		\$ 25,000	\$ 25,000		\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	1	CY		\$ 95	\$ 95		\$ 95	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 1,125	
	Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000		\$ 30,000	
	Contaminated Soil	0	CY		\$ -	\$ -		\$ -	
	Asbestos Abatement	0	Feet		\$ -	\$ -		\$ -	
	Radiographic Inspection	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200	\$ 1,500	
	Construction period	10	days						
Total Construction Cost								\$ 112,300	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%			\$ 11,790	\$ -	\$ 11,790	
	\$1million <Projects < \$10 million - company labor is 5%	5	%			\$ -	\$ -	\$ -	
	Projects >\$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 11,800	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 11,790	\$ -	\$ 11,790	
	Construction Stake, As-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ 3,000	
	ROW Acquisition	0	LS			\$ -	\$ -	\$ -	
	Construction Permits	0	LS			\$ -	\$ -	\$ -	
	Environmental Permits	0	LS			\$ -	\$ -	\$ -	
	Environmental Monitoring	0	LS			\$ -	\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 2,051	\$ -	\$ 2,051	
Total Design / Engineering / Construction Cost								\$ 16,900	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%			\$ 43,980	\$ -	\$ 43,980	
	Projects >\$2 million - Contingency is 20%	20	%			\$ -	\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 190,600	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 1172 BP2ST2			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
1									
Pipe		4	Feet	\$ 11	\$ 42			\$ 42	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ 353	\$ 1,413			\$ 1,413	
Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ 14,647	\$ -			\$ -	
FBE Coating (5/ft)				\$ 1.42	\$ 6			\$ 6	
Miscellaneous Materials (5%)		1	Lot					\$ 73	
Freight / Tax		12.5	%					\$ 192	
Pipe n/a		0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ -	\$ -			\$ -	
FBE Coating (5/ft)				\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
Pipe n/a		0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ -	\$ -			\$ -	
FBE Coating (5/ft)				\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
Casing n/a		0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 1,800	
2 CONSTRUCTION (See Appendix for construction type definitions)									
4 inch pipe									
Pipe Install - Type 1		0	Feet		\$ 150	\$ -	\$ -	\$ -	
Pipe Install - Type 2		0	Feet		\$ 240	\$ -	\$ -	\$ -	
Pipe Install - Type 3		0	Feet		\$ 400	\$ -	\$ -	\$ -	
Pipe Install - Type 4		0	Feet		\$ 450	\$ -	\$ -	\$ -	
Pipe Install - Type 5		0	Feet		\$ 300	\$ -	\$ -	\$ -	
Pipe Install - Type 6		4	Feet		\$ 600	\$ 2,400		\$ 2,400	Facility Piping
Pipe Install - Type 7		0	Feet		\$ 520	\$ -	\$ -	\$ -	
n/a									
Pipe Install - Type 1		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 2		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 3		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 4		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 5		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 6		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7		0	Feet		\$ -	\$ -	\$ -	\$ -	
n/a									
Pipe Install - Type 1		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 2		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 3		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 4		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 5		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 6		0	Feet		\$ -	\$ -	\$ -	\$ -	
Tie-ins Crew Rates		1	Each		\$ 25,000	\$ 25,000		\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)		4	SCF	\$ 0.19	\$ 1			\$ 1	
Purging Labor		1	LS		\$ 25,000	\$ 25,000		\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)		1	CY		\$ 95	\$ 95		\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)		75	%					\$ 90	
Mobilization / Demobilization		1	Each		\$ 30,000	\$ 30,000		\$ 30,000	
Contaminated Soil		0	CY		\$ -	\$ -		\$ -	
Asbestos Abatement		0	Feet		\$ -	\$ -		\$ -	
Radiographic Inspection		2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200	\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 84,100	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%		10	%			\$ 8,590	\$ 8,590	\$ 8,590	
\$1million <Projects < \$10 million - company labor is 5%		5	%			\$ -	\$ -	\$ -	
Projects >\$10 million - company labor is 2.5%		2.5	%			\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 8,600	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement		10	%			\$ 8,590	\$ 8,590	\$ 8,590	
Construction Stake, As-Built Survey (2 man crew)		2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ 3,000	
ROW Acquisition		0	LS			\$ -	\$ -	\$ -	
Construction Permits		0	LS			\$ -	\$ -	\$ -	
Environmental Permits		0	LS			\$ -	\$ -	\$ -	
Environmental Monitoring		0	LS			\$ -	\$ -	\$ -	
As-Built Drawings (\$2000+\$1/ft)		1	LS			\$ 2,004	\$ 2,004	\$ 2,004	
Total Design / Engineering / Construction Cost								\$ 13,600	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%		30	%			\$ 32,430	\$ 32,430	\$ 32,430	
Projects>\$2 million - Contingency is 20%		20	%			\$ -	\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 140,600	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 169			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 13, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 8 inch, STD. WT X-52									
	62	Feet	\$ 26	\$ 1,598				\$ 1,598	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ 824	\$ 3,296				\$ 3,296	
Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ 23,384	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ 2,29	\$ 142				\$ 142	
Miscellaneous Materials (5%)									
	12.5	%						\$ 245	
Freight / Tax									
								\$ 660	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Pipe n/a									
	1	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Casing n/a									
	0	Feet	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
								\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 6,000	
2 CONSTRUCTION (See Appendix for construction type definitions)									
8 inch pipe									
Pipe Install - Type 1									
	0	Feet		\$ 175	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ 280	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ 450	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ 600	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ 400	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	62	Feet		\$ 600	\$ 37,200	\$ -		\$ 37,200	
Pipe Install - Type 7									
	0	Feet		\$ 585	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	1	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Tie-ins Crew Rates									
	1	Each		\$ 24,603	\$ 24,603	\$ -		\$ 24,603	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
	88	SCF	\$ 0.19	\$ 17				\$ 17	
Purging Labor									
	1	LS		\$ 25,000	\$ 25,000	\$ -		\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
	1	CY		\$ 95	\$ 95	\$ -		\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
	75	%						\$ 1,395	
Mobilization / Demobilization									
	1	Each		\$ 30,000	\$ 30,000	\$ -		\$ 30,000	
Contaminated Soil									
	0	CY		\$ -	\$ -	\$ -		\$ -	
Asbestos Abatement									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Radiographic Inspection									
	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200		\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 119,900	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
	10	%				\$ 12,590		\$ 12,590	
\$1 million < Projects < \$10 million - company labor is 5%									
	5	%				\$ -		\$ -	
Projects > \$10 million - company labor is 2.5%									
	2.5	%				\$ -		\$ -	
Total SCG Labor / Inspection Cost								\$ 12,600	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
	10	%				\$ 12,590		\$ 12,590	
Construction Stake, As-Built Survey (2 man crew)									
	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800		\$ 3,000	
ROW Acquisition									
	0	LS				\$ -		\$ -	
Construction Permits									
	0	LS				\$ -		\$ -	
Environmental Permits									
	0	LS				\$ -		\$ -	
Environmental Monitoring									
	0	LS				\$ -		\$ -	
As-Built Drawings (\$2000+\$1/ft)									
	1	LS				\$ 2,063		\$ 2,063	
Total Design / Engineering / Construction Cost								\$ 17,700	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
	30	%				\$ 46,860		\$ 46,860	
Projects > \$2 million - Contingency is 20%									
	20	%				\$ -		\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 203,100	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 2000-0.18-BO			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 13, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 12 inch, STD. WT X-52									
		62	Feet	\$ 44	\$ 2,745			\$ 2,745	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 1,833	\$ 7,333			\$ 7,333	
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 36,010	\$ -			\$ -	
	FBE Coating (5/ft)			\$ 3.26	\$ 202			\$ 202	
	Miscellaneous Materials (5%)	1	Lot					\$ 504	
	Freight / Tax	12.5	%					\$ 1,348	
Pipe n/a									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Pipe n/a									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	1	Feet	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	4	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)	0	Each	\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Casing n/a									
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 12,200	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
	Pipe Install - Type 1	0	Feet		\$ 175	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	62	Feet		\$ 280	\$ 17,360	\$ -	\$ 17,360	inside private Parking Lot
	Pipe Install - Type 3	0	Feet		\$ 450	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ 600	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ 400	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ 400	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet		\$ 585	\$ -	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	1	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
Tie-ins Crew Rates									
		1	Each		\$ 24,603	\$ 24,603	\$ -	\$ 24,603	
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	196	SCF	\$ 0.19	\$ 37			\$ 37	
	Purging Labor	1	LS		\$ 25,000	\$ 25,000	\$ -	\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	2	CY		\$ 95	\$ 190	\$ -	\$ 190	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 651	
	Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000	\$ -	\$ 30,000	
	Contaminated Soil	0	CY		\$ -	\$ -	\$ -	\$ -	
	Asbestos Abatement	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Radiographic Inspection	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200	\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 99,400	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%				\$ 11,160	\$ 11,160	
	\$1 million < Projects < \$10 million - company labor is 5%	5	%				\$ -	\$ -	
	Projects > \$10 million - company labor is 2.5%	2.5	%				\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 11,200	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%				\$ 11,160	\$ 11,160	
	Construction Stake, As-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ 3,000	
	ROW Acquisition	0	LS				\$ -	\$ -	
	Construction Permits	0	LS				\$ -	\$ -	
	Environmental Permits	0	LS				\$ -	\$ -	
	Environmental Monitoring	0	LS				\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 2,063	\$ 2,063	
Total Design / Engineering / Construction Cost								\$ 16,300	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%				\$ 41,730	\$ 41,730	
	Projects > \$2 million - Contingency is 20%	20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 180,900	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 2000-0.18-XO1			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 13, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 12 inch, STD. WT X-52									
		49	Feet	\$ 44	\$ 2,170			\$ 2,170	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 1,833	\$ 7,333			\$ 7,333	
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 36,010	\$ -			\$ -	
	FBE Coating (5/ft)			\$ 3.26	\$ 160			\$ 160	
	Miscellaneous Materials (5%)	1	Lot					\$ 475	
	Freight / Tax	12.5	%					\$ 1,267	
Pipe n/a									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Pipe n/a									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	1	Feet	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	4	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)	0	Each	\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Casing n/a									
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 11,500	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
	Pipe Install - Type 1	0	Feet		\$ 175	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	49	Feet		\$ 280	\$ 13,720	\$ -	\$ 13,720	inside Private Parking Lot
	Pipe Install - Type 3	0	Feet		\$ 450	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ 600	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ 400	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ 400	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet		\$ 585	\$ -	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	1	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
Tie-ins Crew Rates									
		1	Each		\$ 24,500	\$ 24,500		\$ 24,500	
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	156	SCF	\$ 0.19	\$ 30			\$ 30	
	Purging Labor	1	LS		\$ 25,000	\$ 25,000		\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	2	CY		\$ 95	\$ 190		\$ 190	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 515	
	Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000		\$ 30,000	
	Contaminated Soil	0	CY		\$ -	\$ -		\$ -	
	Asbestos Abatement	0	Feet		\$ -	\$ -		\$ -	
	Radiographic Inspection	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200	\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 95,500	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%			\$ 10,700	\$ -	\$ 10,700	
	\$1million <Projects < \$10 million - company labor is 5%	5	%			\$ -	\$ -	\$ -	
	Projects >\$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 10,700	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 10,700	\$ -	\$ 10,700	
	Construction Stake, As-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ 3,000	
	ROW Acquisition	0	LS			\$ -	\$ -	\$ -	
	Construction Permits	0	LS			\$ -	\$ -	\$ -	
	Environmental Permits	0	LS			\$ -	\$ -	\$ -	
	Environmental Monitoring	0	LS			\$ -	\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 2,050	\$ -	\$ 2,050	
Total Design / Engineering / Construction Cost								\$ 15,800	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%			\$ 40,050	\$ -	\$ 40,050	
	Projects>\$2 million - Contingency is 20%	20	%			\$ -	\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 173,600	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 2000-0.18-X02			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPC	July 13, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 20 inch, .312 WT X-65									
	50	Feet	\$ 76	\$ 3,802				\$ 3,802	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ 5,679	\$ 22,715				\$ 22,715	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ 129,536	\$ -				\$ -	
FBE Coating (5/ft)									
		\$	\$ 5.32	\$ 266				\$ 266	
Miscellaneous Materials (5%)									
	1	Lot						\$ 1,326	
Freight / Tax									
	12.5	%						\$ 3,514	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
		\$	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Pipe n/a									
	1	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
		\$	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Casing n/a									
	0	Feet	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 31,700	
2 CONSTRUCTION (See Appendix for construction type definitions)									
20 inch pipe									
Pipe Install - Type 1									
	0	Feet		\$ 225	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	50	Feet		\$ 360	\$ 18,000	\$ -		\$ 18,000	inside Private Parking Lot
Pipe Install - Type 3									
	0	Feet		\$ 540	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ 850	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ 800	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ 702	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	1	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Tie-ins Crew Rates									
	1	Each		\$ 34,314	\$ 34,314	\$ -		\$ 34,314	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
	440	SCF	\$ 0.19	\$ 84				\$ 84	
Purging Labor									
	1	LS		\$ 25,000	\$ 25,000	\$ -		\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
	4	CY		\$ 95	\$ 380	\$ -		\$ 380	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
	75	%						\$ 675	
Mobilization / Demobilization									
	1	Each		\$ 30,000	\$ 30,000	\$ -		\$ 30,000	
Contaminated Soil									
	0	CY		\$ -	\$ -	\$ -		\$ -	
Asbestos Abatement									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Radiographic Inspection									
	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200		\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 110,000	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
	10	%				\$ 14,170		\$ 14,170	
\$1 million < Projects < \$10 million - company labor is 5%									
	5	%				\$ -		\$ -	
Projects > \$10 million - company labor is 2.5%									
	2.5	%				\$ -		\$ -	
Total SCG Labor / Inspection Cost								\$ 14,200	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
	10	%				\$ 14,170		\$ 14,170	
Construction Stake, As-Built Survey (2 man crew)									
	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800		\$ 3,000	
ROW Acquisition									
	0	LS				\$ -		\$ -	
Construction Permits									
	0	LS				\$ -		\$ -	
Environmental Permits									
	0	LS				\$ -		\$ -	
Environmental Monitoring									
	0	LS				\$ -		\$ -	
As-Built Drawings (\$2000+\$1/ft)									
	1	LS				\$ 2,051		\$ 2,051	
Total Design / Engineering / Construction Cost								\$ 19,300	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
	30	%				\$ 52,560		\$ 52,560	
Projects > \$2 million - Contingency is 20%									
	20	%				\$ -		\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 227,800	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 247			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 16 inch, .312 WT X-65									
	430	Feet	\$ 57	\$ 24,665				\$ 24,665	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	5	Each	\$ 3,339	\$ 16,693				\$ 16,693	
Pressure Rating 400 lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ 210,828	\$ -				\$ -	
FBE Coating (5/ft)									
	0	\$	\$ 4.14	\$ 1,780				\$ 1,780	
Miscellaneous Materials (5%)									
	1	Lot						\$ 2,068	
Freight / Tax									
	12.5	%						\$ 5,651	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	0	\$	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Pipe n/a									
	1	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	0	\$	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Casing n/a									
	0	Feet	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
	12.5	%						\$ -	
Total length		0.1	Miles						
Total Material Cost								\$ 50,900	
2 CONSTRUCTION (See Appendix for construction type definitions)									
16 inch pipe									
Pipe Install - Type 1									
	0	Feet		\$ 200	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	430	Feet		\$ 320	\$ 137,600	\$ -		\$ 137,600	
Pipe Install - Type 3									
	0	Feet		\$ 500	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ 750	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ 600	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ 650	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	1	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Tie-ins Crew Rates									
	1	Each		\$ 34,919	\$ 34,919	\$ -		\$ 34,919	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
	2404	SCF	\$ 0.19	\$ 457				\$ 457	
Purging Labor									
	1	LS		\$ 25,000	\$ 25,000	\$ -		\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
	22	CY		\$ 95	\$ 2,090	\$ -		\$ 2,090	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
	75	%						\$ 5,160	
Mobilization / Demobilization									
	1	Each		\$ 30,000	\$ 30,000	\$ -		\$ 30,000	
Contaminated Soil									
	0	CY		\$ -	\$ -	\$ -		\$ -	
Asbestos Abatement									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Radiographic Inspection									
	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200		\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 236,800	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
	10	%				\$ 28,770		\$ 28,770	
\$1 million < Projects < \$10 million - company labor is 5%									
	5	%				\$ -		\$ -	
Projects > \$10 million - company labor is 2.5%									
	2.5	%				\$ -		\$ -	
Total SCG Labor / Inspection Cost								\$ 28,800	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
	10	%				\$ 28,770		\$ 28,770	
Construction Stake, As-Built Survey (2 man crew)									
	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800		\$ 3,000	
ROW Acquisition									
	0	LS				\$ -		\$ -	
Construction Permits									
	0	LS				\$ -		\$ -	
Environmental Permits									
	0	LS				\$ -		\$ -	
Environmental Monitoring									
	0	LS				\$ -		\$ -	
As-Built Drawings (\$2000+\$1/ft)									
	1	LS				\$ 2,431		\$ 2,431	
Total Design / Engineering / Construction Cost								\$ 34,300	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
	30	%				\$ 105,240		\$ 105,240	
Projects > \$2 million - Contingency is 20%									
	20	%				\$ -		\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 456,100	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 3000-621.73-BO			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 13, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 12 inch, STD. WT X-52									
	8	Feet	\$ 44	\$ 354				\$ 354	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ 1,833	\$ 7,333				\$ 7,333	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ 36,010	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ 3.26	\$ 26				\$ 26	
Miscellaneous Materials (5%)									
	12.5	%						\$ 384	
Freight / Tax									
								\$ 1,012	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Pipe n/a									
	1	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Casing n/a									
	0	Feet	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot	\$ -	\$ -				\$ -	
Freight / Tax									
	12.5	%						\$ -	
Total length									
	0.0	Miles						\$ -	
Total Material Cost								\$ 9,200	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
Pipe Install - Type 1									
	0	Feet		\$ 175	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	8	Feet		\$ 280	\$ 2,240	\$ -		\$ 2,240	4' Inside private home backyard and 4' in Street
Pipe Install - Type 3									
	0	Feet		\$ 450	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ 600	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ 400	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ 585	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 7									
	1	Feet		\$ -	\$ -	\$ -		\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Tie-ins Crew Rates									
	1	Each		\$ 22,222	\$ 22,222	\$ -		\$ 22,222	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
	28	SCF	\$ 0.19	\$ 5				\$ 5	
Purging Labor									
	1	LS		\$ 25,000	\$ 25,000	\$ -		\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
	1	CY		\$ 95	\$ 95	\$ -		\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
	75	%						\$ 84	
Mobilization / Demobilization									
	1	Each		\$ 30,000	\$ 30,000	\$ -		\$ 30,000	
Contaminated Soil									
	0	CY		\$ -	\$ -	\$ -		\$ -	
Asbestos Abatement									
	0	Feet		\$ -	\$ -	\$ -		\$ -	
Radiographic Inspection									
	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200		\$ 1,500	
Construction period									
	10	days						\$ -	
Total Construction Cost								\$ 81,200	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
	10	%				\$ 9,040		\$ 9,040	
\$1 million < Projects < \$10 million - company labor is 5%									
	5	%				\$ -		\$ -	
Projects > \$10 million - company labor is 2.5%									
	2.5	%				\$ -		\$ -	
Total SCG Labor / Inspection Cost								\$ 9,100	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
	10	%				\$ 9,040		\$ 9,040	
Construction Stake, As-Built Survey (2 man crew)									
	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800		\$ 3,000	
ROW Acquisition									
	0	LS				\$ -		\$ -	
Construction Permits									
	0	LS				\$ -		\$ -	
Environmental Permits									
	0	LS				\$ -		\$ -	
Environmental Monitoring									
	0	LS				\$ -		\$ -	
As-Built Drawings (\$2000+\$1/ft)									
	1	LS				\$ 2,009		\$ 2,009	
Total Design / Engineering / Construction Cost								\$ 14,100	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
	30	%				\$ 34,080		\$ 34,080	
Projects > \$2 million - Contingency is 20%									
	20	%				\$ -		\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 147,700	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 3000-621.73-BR			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 13, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 12 inch, STD. WT X-52									
	24	Feet	\$ 44	\$ 1,063				\$ 1,063	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ 1,833	\$ 7,333				\$ 7,333	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ 36,010	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ 3,26	\$ 78				\$ 78	
Miscellaneous Materials (5%)									
	12.5	%						\$ 420	
Freight / Tax									
								\$ 1,112	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Pipe n/a									
	1	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Casing n/a									
	0	Feet	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot						\$ -	
Freight / Tax									
								\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 10,100	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
Pipe Install - Type 1									
	0	Feet		\$ 175	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 2									
	24	Feet		\$ 280	\$ 6,720	\$ -	\$ -	\$ 6,720	In Paved Street
Pipe Install - Type 3									
	0	Feet		\$ 450	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 4									
	0	Feet		\$ 600	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 5									
	0	Feet		\$ 400	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7									
	0	Feet		\$ 585	\$ -	\$ -	\$ -	\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7									
	1	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Tie-ins Crew Rates									
	1	Each		\$ 24,000	\$ 24,000	\$ -	\$ -	\$ 24,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
	76	SCF	\$ 0.19	\$ 14				\$ 14	
Purging Labor									
	1	LS		\$ 25,000	\$ 25,000	\$ -	\$ -	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
	1	CY		\$ 95	\$ 95	\$ -	\$ -	\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
	75	%						\$ 252	
Mobilization / Demobilization									
	1	Each		\$ 30,000	\$ 30,000	\$ -	\$ -	\$ 30,000	
Contaminated Soil									
	0	CY		\$ -	\$ -	\$ -	\$ -	\$ -	
Asbestos Abatement									
	0	Feet		\$ -	\$ -	\$ -	\$ -	\$ -	
Radiographic Inspection									
	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200	\$ -	\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 87,600	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
	10	%				\$ 9,770	\$ -	\$ 9,770	
\$1 million < Projects < \$10 million - company labor is 5%									
	5	%				\$ -	\$ -	\$ -	
Projects > \$10 million - company labor is 2.5%									
	2.5	%				\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 9,800	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
	10	%				\$ 9,770	\$ -	\$ 9,770	
Construction Stake, As-Built Survey (2 man crew)									
	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ -	\$ 3,000	
ROW Acquisition									
	0	LS				\$ -	\$ -	\$ -	
Construction Permits									
	0	LS				\$ -	\$ -	\$ -	
Environmental Permits									
	0	LS				\$ -	\$ -	\$ -	
Environmental Monitoring									
	0	LS				\$ -	\$ -	\$ -	
As-Built Drawings (\$2000+\$1/ft)									
	1	LS				\$ 2,025	\$ -	\$ 2,025	
Total Design / Engineering / Construction Cost								\$ 14,800	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
	30	%				\$ 36,690	\$ -	\$ 36,690	
Projects > \$2 million - Contingency is 20%									
	20	%				\$ -	\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 159,000	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 408X01			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPC	July 13, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 16 inch, .312 WT X-65									
		56	Feet	\$ 57	\$ 3,212			\$ 3,212	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 3,339	\$ 13,355			\$ 13,355	
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 94,320	\$ -			\$ -	
	FBE Coating (5/ft)			\$ 4.14	\$ 232			\$ 232	
	Miscellaneous Materials (5%)	1	Lot					\$ 828	
	Freight / Tax	12.5	%					\$ 2,203	
Pipe n/a									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Pipe n/a									
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	1	Feet	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	4	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)	0	Each	\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Casing n/a									
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 19,900	
2 CONSTRUCTION (See Appendix for construction type definitions)									
16 inch pipe									
	Pipe Install - Type 1	0	Feet			\$ 200	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet			\$ 320	\$ -	\$ -	
	Pipe Install - Type 3	56	Feet			\$ 500	\$ 28,000	\$ 28,000	Inside Road Shoulder
	Pipe Install - Type 4	0	Feet			\$ 750	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet			\$ 600	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet			\$ 650	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet			\$ -	\$ -	\$ -	
n/a									
	Pipe Install - Type 1	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 7	1	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -	
Tie-ins Crew Rates									
		1	Each			\$ 34,386	\$ 34,386	\$ 34,386	
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	316	SCF	\$ 0.19	\$ 60			\$ 60	
	Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	3	CY			\$ 95	\$ 285	\$ 285	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 1,050	
	Mobilization / Demobilization	1	Each			\$ 30,000	\$ 30,000	\$ 30,000	
	Contaminated Soil	0	CY			\$ -	\$ -	\$ -	
	Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -	
	Radiographic Inspection	2	Days	\$ 150	\$ 300		\$ 600	\$ 1,200	\$ 1,500
Construction period		10	days						
Total Construction Cost								\$ 120,300	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%				\$ 14,020	\$ 14,020	
	\$1 million < Projects < \$10 million - company labor is 5%	5	%				\$ -	\$ -	
	Projects > \$10 million - company labor is 2.5%	2.5	%				\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 14,100	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%				\$ 14,020	\$ 14,020	
	Construction Stake, As-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200		\$ 1,400	\$ 2,800	\$ 3,000
	ROW Acquisition	0	LS				\$ -	\$ -	
	Construction Permits	0	LS				\$ -	\$ -	
	Environmental Permits	0	LS				\$ -	\$ -	
	Environmental Monitoring	0	LS				\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 2,057	\$ 2,057	
Total Design / Engineering / Construction Cost								\$ 19,100	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%				\$ 52,020	\$ 52,020	
	Projects > \$2 million - Contingency is 20%	20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 225,500	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 5009			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 13, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 12 inch, STD. WT X-52									
		216	Feet	\$ 44	\$ 9,564			\$ 9,564	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 1,833	\$ 7,333			\$ 7,333	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ 3.26	\$ 704			\$ 704	
	Miscellaneous Materials (5%)	1	Lot					\$ 845	
	Freight / Tax	12.5	%					\$ 2,306	
	Pipe n/a	0	Feet	\$ -	\$ -			\$ -	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
	Pipe n/a	1	Feet	\$ -	\$ -			\$ -	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
	Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
	Casing n/a	0	Feet	\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
	Total length	0.0	Miles						
	Total Material Cost							\$ 20,800	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
	Pipe Install - Type 1	0	Feet		\$ 175	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ 280	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ 450	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ 600	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ 400	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	216	Feet		\$ 600	\$ 129,600	\$ 129,600	\$ 129,600	Facility piping
	Pipe Install - Type 7	0	Feet		\$ 585	\$ -	\$ -	\$ -	
	n/a								
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	\$ -	
	n/a								
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	1	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Tie-ins Crew Rates	1	Each		\$ 24,885	\$ 24,885	\$ 24,885	\$ 24,885	
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	680	SCF	\$ 0.19	\$ 129			\$ 129	
	Purging Labor	1	LS		\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	6	CY		\$ 95	\$ 570	\$ 570	\$ 570	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 4,860	
	Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	
	Contaminated Soil	0	CY		\$ -	\$ -	\$ -	\$ -	
	Asbestos Abatement	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Radiographic Inspection	4	Days	\$ 150	\$ 600	\$ 600	\$ 2,400	\$ 3,000	
	Construction period	12	days						
	Total Construction Cost							\$ 218,100	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%				\$ 23,890	\$ 23,890	
	\$1 million < Projects < \$10 million - company labor is 5%	5	%				\$ -	\$ -	
	Projects > \$10 million - company labor is 2.5%	2.5	%				\$ -	\$ -	
	Total SCG Labor / Inspection Cost							\$ 23,900	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%				\$ 23,890	\$ 23,890	
	Construction Stake, As-Built Survey (2 man crew)	4	Days	\$ 100	\$ 400	\$ 1,400	\$ 5,600	\$ 6,000	
	ROW Acquisition	0	LS				\$ -	\$ -	
	Construction Permits	0	LS				\$ -	\$ -	
	Environmental Permits	0	LS				\$ -	\$ -	
	Environmental Monitoring	0	LS				\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 2,217	\$ 2,217	
	Total Design / Engineering / Construction Cost							\$ 32,200	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%				\$ 88,500	\$ 88,500	
	Projects > \$2 million - Contingency is 20%	20	%				\$ -	\$ -	
	TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 383,500	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 765ST2			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPC	July 13, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
Pipe 12 inch, STD. WT X-52									
	11	Feet	\$ 44	\$ 487				\$ 487	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ 1,833	\$ 7,333				\$ 7,333	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ 36,010	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ 3.26	\$ 36				\$ 36	
Miscellaneous Materials (5%)									
	12.5	%						\$ 391	
Freight / Tax									
								\$ 1,031	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Pipe n/a									
	0	Feet	\$ -	\$ -				\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
	4	Each	\$ -	\$ -				\$ -	
Pressure Rating n/a lb Block Valve w/Electric Actuator (one per 4 miles)									
	0	Each	\$ -	\$ -				\$ -	
FBE Coating (5/ft)									
	1	Lot	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	12.5	%						\$ -	
Freight / Tax									
								\$ -	
Casing n/a									
	0	Feet	\$ -	\$ -				\$ -	
Miscellaneous Materials (5%)									
	1	Lot	\$ -	\$ -				\$ -	
Freight / Tax									
	12.5	%						\$ -	
Total length									
	0.0	Miles							
Total Material Cost								\$ 9,300	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
Pipe Install - Type 1									
	11	Feet		\$ 175	\$ 1,925			\$ 1,925	
Pipe Install - Type 2									
	0	Feet		\$ 280	\$ -			\$ -	
Pipe Install - Type 3									
	0	Feet		\$ 450	\$ -			\$ -	
Pipe Install - Type 4									
	0	Feet		\$ 600	\$ -			\$ -	
Pipe Install - Type 5									
	0	Feet		\$ 400	\$ -			\$ -	
Pipe Install - Type 6									
	0	Feet		\$ 400	\$ -			\$ -	
Pipe Install - Type 7									
	0	Feet		\$ 585	\$ -			\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -			\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -			\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -			\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -			\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -			\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -			\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -			\$ -	
n/a									
Pipe Install - Type 1									
	0	Feet		\$ -	\$ -			\$ -	
Pipe Install - Type 2									
	0	Feet		\$ -	\$ -			\$ -	
Pipe Install - Type 3									
	0	Feet		\$ -	\$ -			\$ -	
Pipe Install - Type 4									
	0	Feet		\$ -	\$ -			\$ -	
Pipe Install - Type 5									
	0	Feet		\$ -	\$ -			\$ -	
Pipe Install - Type 7									
	0	Feet		\$ -	\$ -			\$ -	
Pipe Install - Type 6									
	0	Feet		\$ -	\$ -			\$ -	
Tie-ins Crew Rates									
	1	Each		\$ 25,000	\$ 25,000			\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
	36	SCF	\$ 0.19	\$ 7				\$ 7	
Purging Labor									
	1	LS		\$ 25,000	\$ 25,000			\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
	1	CY		\$ 95	\$ 95			\$ 95	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
	75	%						\$ 72	
Mobilization / Demobilization									
	1	Each		\$ 30,000	\$ 30,000			\$ 30,000	
Contaminated Soil									
	0	CY		\$ -	\$ -			\$ -	
Asbestos Abatement									
	0	Feet		\$ -	\$ -			\$ -	
Radiographic Inspection									
	2	Days	\$ 150	\$ 300		\$ 600	\$ 1,200	\$ 1,500	
Construction period									
	10	days							
Total Construction Cost								\$ 83,600	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
	10	%				\$ 9,290	\$ 9,290	\$ 9,290	
\$1 million < Projects < \$10 million - company labor is 5%									
	5	%				\$ -	\$ -	\$ -	
Projects > \$10 million - company labor is 2.5%									
	2.5	%				\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 9,300	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
	10	%				\$ 9,290	\$ 9,290	\$ 9,290	
Construction Stake, As-Built Survey (2 man crew)									
	2	Days	\$ 100	\$ 200		\$ 1,400	\$ 2,800	\$ 3,000	
ROW Acquisition									
	0	LS				\$ -	\$ -	\$ -	
Construction Permits									
	0	LS				\$ -	\$ -	\$ -	
Environmental Permits									
	0	LS				\$ -	\$ -	\$ -	
Environmental Monitoring									
	0	LS				\$ -	\$ -	\$ -	
As-Built Drawings (\$2000+\$1/ft)									
	1	LS				\$ 2,011	\$ 2,011	\$ 2,011	
Total Design / Engineering / Construction Cost								\$ 14,400	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
	30	%				\$ 34,980	\$ 34,980	\$ 34,980	
Projects > \$2 million - Contingency is 20%									
	20	%				\$ -	\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 151,600	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 775			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPC	July 12, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS									
1 MATERIALS									
8 inch pipe									
Pipe	8 inch, STD. WT X-52	475	Feet	\$ 26	\$ 12,241			\$ 12,241	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	5	Each	\$ 824	\$ 4,120			\$ 4,120	
Pressure Rating	300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 24,779	\$ -			\$ -	
	FBE Coating (5/ft)			\$ 2.29	\$ 1,088			\$ 1,088	
	Miscellaneous Materials (5%)	1	Lot					\$ 818	
	Freight / Tax	12.5	%					\$ 2,283	
Pipe	n/a	0	Feet	\$ -	\$ -			\$ -	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating	n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Pipe	n/a	1	Feet	\$ -	\$ -			\$ -	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating	n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
	FBE Coating (5/ft)			\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Casing	n/a	0	Feet	\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
Total length		0.1	Miles						
Total Material Cost								\$ 20,600	
2 CONSTRUCTION (See Appendix for construction type definitions)									
8 inch pipe									
	Pipe Install - Type 1	0	Feet		\$ 175	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	475	Feet		\$ 280	\$ 133,000	\$ -	\$ 133,000	
	Pipe Install - Type 3	0	Feet		\$ 450	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ 600	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ 400	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ 400	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet		\$ 585	\$ -	\$ -	\$ -	
	n/a	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	\$ -	
	n/a	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 1	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 3	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 4	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 5	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 7	1	Feet		\$ -	\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Tie-ins Crew Rates	1	Each		\$ 24,947	\$ 24,947	\$ -	\$ 24,947	
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	664	SCF	\$ 0.19	\$ 126			\$ 126	
	Purging Labor	1	LS		\$ 25,000	\$ 25,000	\$ -	\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	6	CY		\$ 95	\$ 570	\$ -	\$ 570	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 4,988	
	Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000	\$ -	\$ 30,000	
	Contaminated Soil	0	CY		\$ -	\$ -	\$ -	\$ -	
	Asbestos Abatement	0	Feet		\$ -	\$ -	\$ -	\$ -	
	Radiographic Inspection	2	Days	\$ 150	\$ 300	\$ 600	\$ 1,200	\$ 1,500	
Construction period		10	days						
Total Construction Cost								\$ 220,200	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%			\$ 24,080	\$ -	\$ 24,080	
	\$1 million < Projects < \$10 million - company labor is 5%	5	%			\$ -	\$ -	\$ -	
	Projects > \$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 24,100	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 24,080	\$ -	\$ 24,080	
	Construction Stake, As-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ 3,000	
	ROW Acquisition	0	LS			\$ -	\$ -	\$ -	
	Construction Permits	0	LS			\$ -	\$ -	\$ -	
	Environmental Permits	0	LS			\$ -	\$ -	\$ -	
	Environmental Monitoring	0	LS			\$ -	\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 2,476	\$ -	\$ 2,476	
Total Design / Engineering / Construction Cost								\$ 29,600	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%			\$ 88,350	\$ -	\$ 88,350	
	Projects > \$2 million - Contingency is 20%	20	%			\$ -	\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 382,900	

