

Appendix IX-1-B

SoCalGas Distribution

Cost Estimates for Pipeline Replacements and Pressure Tests

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

SoCalGas Distribution

Line	Workpaper Page	Line	Workpaper Page	Line	Workpaper Page
30-02	WP-IX-1-B1	36-1001	WP-IX-1-B201	41-35-1-KST2	WP-IX-1-B201
30-02-U	WP-IX-1-B201	36-1002	WP-IX-1-B201	41-55	WP-IX-1-B201
30-09-A	WP-IX-1-B201	36-1006	WP-IX-1-B74	41-80	WP-IX-1-B201
30-18	WP-IX-1-B3	36-1032	WP-IX-1-B78	41-83	WP-IX-1-B201
30-32	WP-IX-1-B7	36-6588	WP-IX-1-B84	41-84	WP-IX-1-B164
30-6200	WP-IX-1-B201	37-04	WP-IX-1-B86	41-84-A	WP-IX-1-B167
30-6209	WP-IX-1-B201	37-07	WP-IX-1-B90	41-90	WP-IX-1-B201
30-6292	WP-IX-1-B201	37-15	WP-IX-1-B201	41-101	WP-IX-1-B201
30-6543	WP-IX-1-B201	37-18	WP-IX-1-B93	41-116	WP-IX-1-B201
30-6799	WP-IX-1-B201	37-18-F	WP-IX-1-B97	41-116BP1	WP-IX-1-B201
30-6799BR1	WP-IX-1-B201	37-18-J	WP-IX-1-B201	41-117	WP-IX-1-B201
31-09	WP-IX-1-B11	37-18-K	WP-IX-1-B100	41-128	WP-IX-1-B201
32-21	WP-IX-1-B15	37-49	WP-IX-1-B103	41-141	WP-IX-1-B201
32-90	WP-IX-1-B201	37-6180	WP-IX-1-B201	41-181	WP-IX-1-B201
33-120	WP-IX-1-B19	38-200	WP-IX-1-B106	41-198	WP-IX-1-B201
33-121	WP-IX-1-B23	38-351	WP-IX-1-B201	41-199	WP-IX-1-B201
35-10	WP-IX-1-B27	38-501	WP-IX-1-B109	41-201	WP-IX-1-B201
35-20	WP-IX-1-B30	38-508	WP-IX-1-B112	41-6000-2	WP-IX-1-B170
35-20-A	WP-IX-1-B35	38-512	WP-IX-1-B115	41-6001-2	WP-IX-1-B201
35-20-A1	WP-IX-1-B38	38-514	WP-IX-1-B201	41-6045	WP-IX-1-B201
35-20-N	WP-IX-1-B201	38-516	WP-IX-1-B119	42-12	WP-IX-1-B201
35-22	WP-IX-1-B41	38-523	WP-IX-1-B122	42-46	WP-IX-1-B173
35-39	WP-IX-1-B201	38-528	WP-IX-1-B126	42-46-F	WP-IX-1-B201
35-40	WP-IX-1-B201	38-539	WP-IX-1-B129	42-57	WP-IX-1-B201
35-6405	WP-IX-1-B201	38-552	WP-IX-1-B132	42-66-1	WP-IX-1-B201
35-6405BR1	WP-IX-1-B201	38-959	WP-IX-1-B136	42-66-2	WP-IX-1-B201
35-6416	WP-IX-1-B201	41-04-I	WP-IX-1-B140	43-34	WP-IX-1-B177
35-6520	WP-IX-1-B201	41-04ST1	WP-IX-1-B201	43-121	WP-IX-1-B180
36-7-04	WP-IX-1-B201	41-05	WP-IX-1-B143	43-1106	WP-IX-1-B201
36-8-01	WP-IX-1-B44	41-05-A	WP-IX-1-B147	44-137	WP-IX-1-B184
36-8-01-C	WP-IX-1-B201	41-17	WP-IX-1-B150	44-654	WP-IX-1-B201
36-8-06	WP-IX-1-B49	41-17-A2	WP-IX-1-B201	44-687	WP-IX-1-B201
36-9-06	WP-IX-1-B54	41-17-F	WP-IX-1-B201	44-720	WP-IX-1-B187
36-9-09 North	WP-IX-1-B58	41-17-FST1	WP-IX-1-B201	44-1008	WP-IX-1-B190
36-9-06-A	WP-IX-1-B65	41-19	WP-IX-1-B201	45-120	WP-IX-1-B193
36-9-06-F	WP-IX-1-B68	41-25	WP-IX-1-B201	45-120X01	WP-IX-1-B201
36-9-21	WP-IX-1-B71	41-25-A	WP-IX-1-B154	45-163	WP-IX-1-B197
36-9-21BR1	WP-IX-1-B201	41-30	WP-IX-1-B157		
36-37	WP-IX-1-B201	41-30-A	WP-IX-1-B161		

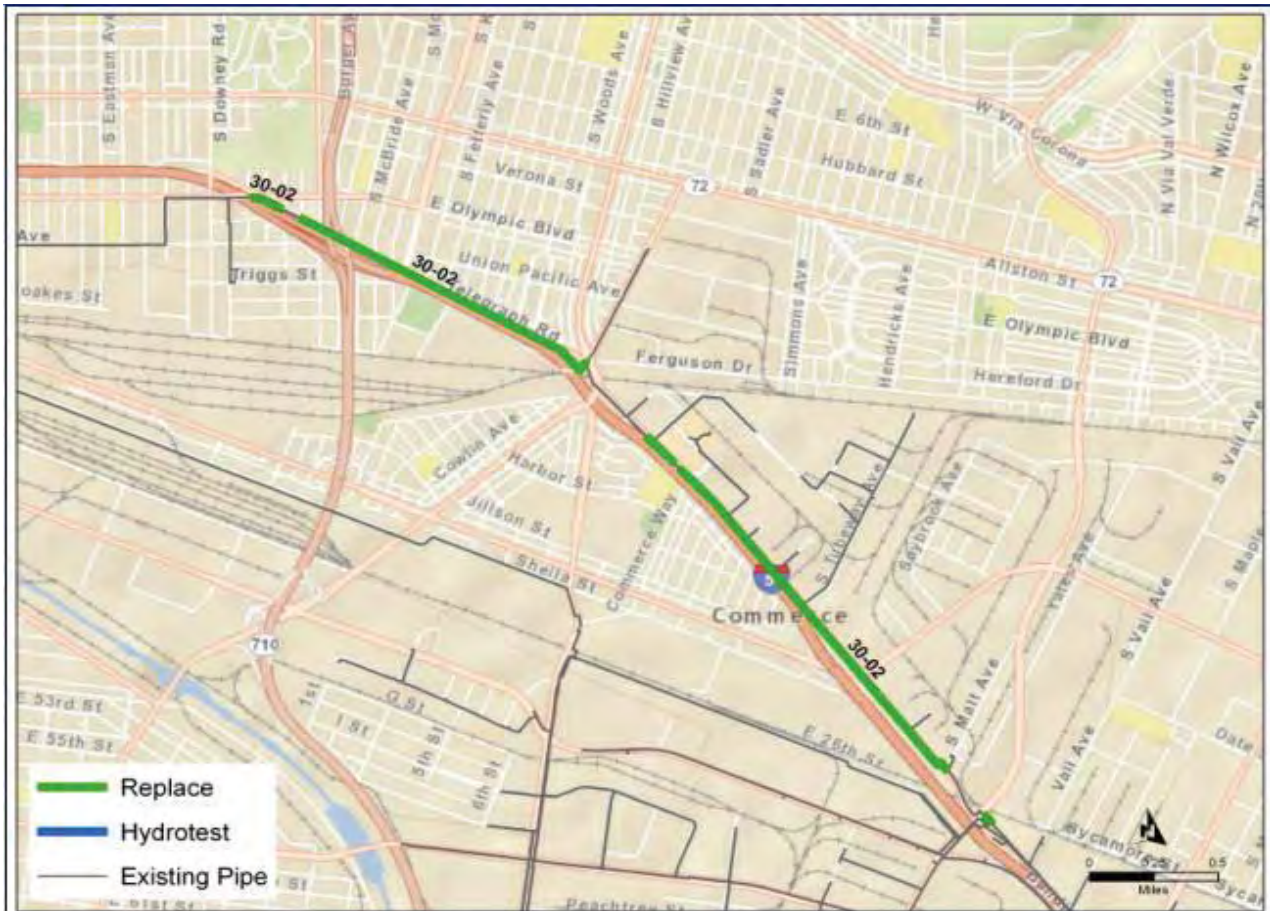
**Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX**

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	30-02	1.561	1.271	2.832
Diameter (in.)	Multiple: 6.625 - 16			

Cost Detail

Capital		O&M	
Direct Labor	\$ 385,733	Direct Labor	\$ -
Direct Non Labor	\$ 10,353,971	Direct Non Labor	\$ -
Total Direct Capital *	\$ 10,739,704	Total Direct O&M	\$ -

* No cost estimate sheet was provided for this pipeline. Project cost was estimated based on SPEC Services estimates of similarly sized projects in the same general area.



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

Existing Segments

Category	Station	Station	Criteria		Action	Decision	
	Start	Stop	Miles	Diameter		Tree Box	Comments
Cat 2	0	11	-	10.75	Replace	2	
Cat 2	11	8045	-	8.625			
Cat 2	8045	8895	-	8.625			
Cat 4	8895	9475	0.0250	16	Replace	2	
Cat 4	9475	9770	-	12.75			
Cat 4	9770	11915	0.0917	12.75	Replace	2	
Cat 4	11915	12746	0.1568	12.75	Replace	2	
Cat 4	12746	12756	0.0019	12.75	Replace	2	
Cat 4	12756	13066	0.0587	12.75	Replace	2	
Cat 4	13066	13087	0.0040	12.75	Replace	2	
Cat 4	13087	13392	0.0530	12.75	Replace	2	
Cat 4	13392	13411	0.0036	12.75	Replace	2	
Cat 4	13411	13731	0.0606	12.75	Replace	2	
Cat 2	13754	13798	0.0083	12.75	Replace	2	
Cat 4	13798	14848	0.1884	12.75	Replace	2	
Cat 2	14848	14920	0.0137	12.75	Replace	2	
Cat 4	14920	15570	0.0042	12.75	Replace	2	
Cat 2	15570	15810	-	12.75			
Cat 2	15810	15917	-	12.75			
Cat 2	15917	15937	-	12.75			
Cat 1	15937	16002	-	12.75			
Cat 2	16002	16827	-	12.75			
Cat 4	16827	17252	-	12.75			
Cat 2	17252	17977	0.0017	12.75	Replace	2	
Cat 2	17977	18077	-	8.625			
Cat 4	18077	20600	0.1080	12.75	Replace	2	
Cat 4	20600	25150	0.8004	12.75	Replace	2	
Cat 2	25150	25363	-	8.625			
Cat 4	25363	26258	-	12.75			
Cat 1	26258	26446	0.0229	12.75	Replace	2	
Cat 2	26446	32466	-	6.625			

New Segments

Station	Station	Wall			Comments
Start	Stop	Diameter	Thickness	Grade	
0	11	10.75	0.365	X-52	
8895	9475	16	0.375	X-52	
9770	11915	12.75	0.375	X-52	
11915	12746	12.75	0.375	X-52	
12746	12756	12.75	0.375	X-52	
12756	13066	12.75	0.375	X-52	
13066	13087	12.75	0.375	X-52	
13087	13392	12.75	0.375	X-52	
13392	13411	12.75	0.375	X-52	
13411	13731	12.75	0.375	X-52	
13754	13798	12.75	0.375	X-52	
13798	14848	12.75	0.375	X-52	
14848	14920	12.75	0.375	X-52	
14920	15570	12.75	0.375	X-52	
17252	17977	12.75	0.375	X-52	
18077	20600	12.75	0.375	X-52	
20600	25150	12.75	0.375	X-52	
26258	26446	12.75	0.375	X-52	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	30-18	2.139	0.445	2.584
Diameter (in.)	Multiple: 4.5 - 16			

Cost Detail

Capital		O&M	
Direct Labor	\$ 313,100	Direct Labor	\$ -
Direct Non Labor	\$ 16,738,500	Direct Non Labor	\$ -
Total Direct Capital *	\$ 17,051,600	Total Direct O&M	\$ -

* Cost estimate to be reduced to \$12,782,300 based on updated information (see estimate sheet)



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	0	5893	0.9756	16	Replace		
Cat 4	5893	6403	0.0966	16	Replace		
Cat 4	6403	9643	0.5932	16	Replace		
Cat 4	9643	10393	0.0081	16	Replace		
Cat 4	10393	10533	0.0265	16	Replace		
Cat 4	10533	11643	0.1364	16	Replace		
Cat 4	11643	11921	0.0527	16	Replace		
Cat 4	11921	13291	0.2225	16	Replace		
Cat 4	13291	13645	0.0273	16	Replace		
Cat 4	13645	14380	-	16			
Cat 4	14380	17230	-	12.75			
Cat 4	17230	20800	-	8.625			
Cat 4	20800	20838	-	8.625			
Cat 4	20838	20848	-	8.625			
Cat 4	20848	20980	-	8.625			
Cat 4	20980	20996	-	8.625			
Cat 4	20996	22534	-	8.625			
Cat 4	22534	22372	-	6.625			
Cat 4	22372	22384	-	4.5			

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
5893	6403	16	0.375	X-65	
6403	9643	16	0.375	X-65	

9643	10393	16	0.375	X-65
10393	10533	16	0.375	X-65
10533	11643	16	0.375	X-65
11643	11921	16	0.375	X-65
11921	13291	16	0.375	X-65
13291	13645	16	0.375	X-65

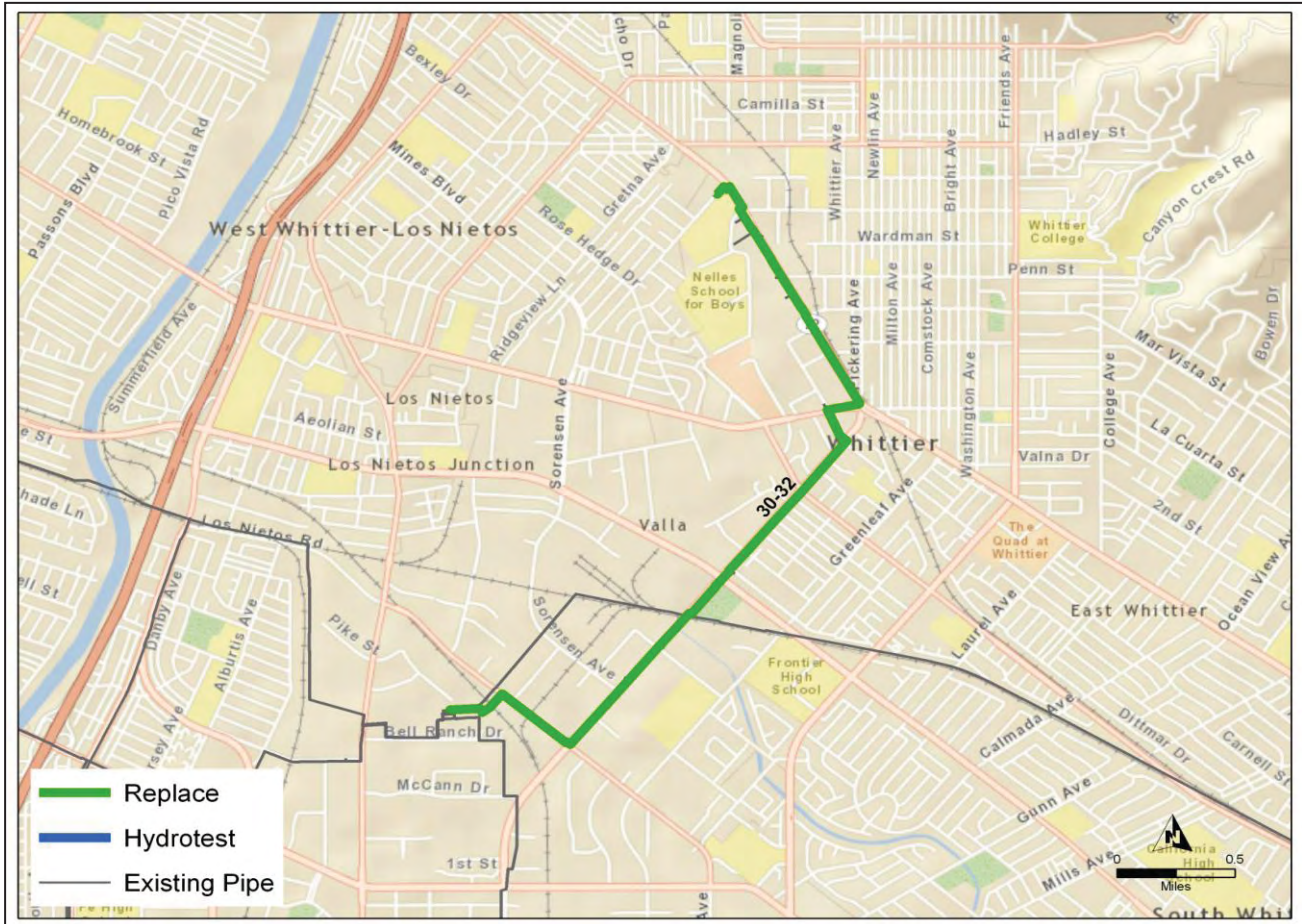
ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 30-18				Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	June 30, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Complete	5057						
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 16" 0.312" WT X-65									
		13645	Feet	\$ 103	\$ 1,399,568			\$ 1,399,568	Replaced 8" & 12" line OD with 16" per Remediation Plan
	Bends, 3R-Forged (minimum of one, plus one bend/250 feet)	55	Each	\$ 2,307	\$ 126,885			\$ 126,885	
	Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)	1	Each	\$ 27,317	\$ 19,122			\$ 19,122	
	FBE Coating (5/ft)			\$ 4.14	\$ 56,490			\$ 56,490	
	Miscellaneous Materials (5%)	1	Lot					\$ 77,279	
	Freight / Tax	12.5	%					\$ 209,918	
	Pipe n/a	0	Feet	\$ -	\$ -			\$ -	
	Bends, 3R-Forged (minimum of one, plus one bend/250 feet)	0	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 one, plus one bend/250 feet)	0	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	2.6	Miles						
	Total Material Cost							\$ 1,889,300	
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	13645	Feet			\$ 500	\$ 6,822,500	\$ 6,822,500	
	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	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -	
	Tie-ins Crew Rates	1	Each			\$ 35,000	\$ 35,000	\$ 35,000	
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	76212	SCF	\$ 0.19	\$ 14,480			\$ 14,480	
	Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	670	CY			\$ 95	\$ 63,650	\$ 63,650	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 255,844	
	Mobilization / Demobilization	1	Each			\$ 30,000	\$ 30,000	\$ 30,000	
	Contaminated Soil	0	CY			\$ -	\$ -	\$ -	
	Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -	
	Radiographic Inspection	55	Days	\$ 150	\$ 8,250	\$ 600	\$ 33,000	\$ 41,250	
	Construction period	55	days						
	Total Construction Cost							\$ 7,287,800	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%				\$ -	\$ -	
	\$1million <Projects < \$10 million - company labor is 5%	5	%				\$ 458,855	\$ 458,855	
	Projects>\$10 million - company labor is 2.5%	2.5	%				\$ -	\$ -	
	Total SCG Labor / Inspection Cost							\$ 458,900	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%				\$ 917,710	\$ 917,710	
	Construction Stake, As-Built Survey (2 man crew)	55	Days	\$ 100	\$ 5,500	\$ 1,400	\$ 77,000	\$ 82,500	
	ROW Acquisition	0	LS				\$ -	\$ -	
	Construction Permits	0	LS				\$ -	\$ -	
	Environmental Permits	0	LS				\$ -	\$ -	
	Environmental Monitoring	0	LS				\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 15,645	\$ 15,645	
	Total Design / Engineering / Construction Cost							\$ 1,015,900	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%				\$ -	\$ -	
	Projects>\$2 million - Contingency is 20%	20	%				\$ 2,130,380	\$ 2,130,380	
	TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 12,782,300	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
Line Number	30-32	Criteria	Accelerated	Total
Diameter (in.)	Multiple: 6.625 - 12.75	1.042	2.349	3.392

Cost Detail

Capital		O&M	
Direct Labor	\$ 289,100	Direct Labor	\$ -
Direct Non Labor	\$ 7,762,500	Direct Non Labor	\$ -
Total Direct Capital	\$ 8,051,600	Total Direct O&M	\$ -



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

Existing Segments

Category	Station		Station Stop	Criteria Miles	Diameter	Action	Decision		Comments
	Start	Stop					Tree	Box	
Cat 4	0	30	30	0.0057	8.625	Replace	2	2	City of Whittier
Cat 4	30	54	54	0.0045	10.75	Replace	2	2	City of Santa Fe Springs
Cat 4	54	704	704	0.1231	8.625	Replace	2	2	Traffic Plans @ major
Cat 4	704	1204	1204	-	10.75	Replace	2	2	
Cat 4	1204	2819	2819	-	8.625	Replace	2	2	traffic ways
Cat 4	2819	2924	2924	0.0199	8.625	Replace	2	2	
Cat 4	2924	6055	6055	-	8.625	Replace	2	2	
Cat 4	6055	6125	6125	0.0133	8.625	Replace	2	2	Flood control Channel
Cat 4	6125	6450	6450	-	8.625	Replace	2	2	
Cat 4	6450	6485	6485	0.0066	8.625	Replace	2	2	RR Xing
Cat 4	6485	7241	7241	-	12.75	Replace	2	2	
Cat 4	7241	7626	7626	0.0729	12.75	Replace	2	2	hospital
Cat 4	7626	9466	9466	0.3485	12.75	Replace	2	2	hospital
Cat 4	9466	10061	10061	0.1127	12.75	Replace	2	2	hospital
Cat 4	10061	11061	11061	0.1894	12.75	Replace	2	2	hospital
Cat 4	11061	11109	11109	0.0091	8.625	Replace	2	2	hospital
Cat 4	11109	11791	11791	0.1292	8.625	Replace	2	2	hospital
Cat 4	11791	17071	17071	-	8.625	Replace	2	2	hospital
Cat 4	17071	17111	17111	0.0076	8.625	Replace	2	2	hospital
Cat 4	171+21	171+21	171+21	-	8.625	Replace	2	2	
Cat 2	17111	17611	17611	0.0947	8.625	Replace	2	2	
Cat 4	17611	17612	17612	-	8.625	Replace	2	2	
Cat 4	17612	17901	17901	-	6.625	Replace	2	2	
Cat 4	17901	17908	17908	-	6.625	Replace	2	2	

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
0	30	12	0.375	X-52	
30	54	12	0.375	X-52	
54	704	12	0.375	X-52	
704	1204	12	0.375	X-52	Replacing this extra footage (0 crit. Miles)
1204	2819	12	0.375	X-52	Replacing this extra footage (0 crit. Miles)
2819	2924	12	0.375	X-52	
2924	6055	12	0.375	X-52	Replacing this extra footage (0 crit. Miles)
6055	6125	12	0.375	X-52	
6125	6450	12	0.375	X-52	Replacing this extra footage (0 crit. Miles)
6450	6485	12	0.375	X-52	
6485	7241	12	0.375	X-52	Replacing this extra footage (0 crit. Miles)
7241	7626	12	0.375	X-52	
7626	9466	12	0.375	X-52	
9466	10061	12	0.375	X-52	
10061	11061	12	0.375	X-52	
11061	11109	12	0.375	X-52	
11109	11791	12	0.375	X-52	
11791	17071	12	0.375	X-52	Replacing this extra footage (0 crit. Miles) over 20%
17071	17111	12	0.375	X-52	Replacing this extra footage (0 crit. Miles) over 20%
171+21	171+21	12	0.375	X-52	Replacing this extra footage (0 crit. Miles) over 20%
17111	17611	12	0.375	X-52	Replacing this extra footage (0 crit. Miles) over 20%
17611	17612	12	0.375	X-52	
17612	17901	12	0.375	X-52	Replacing this extra footage (0 crit. Miles)
17901	17908	12	0.375	X-52	Replacing this extra footage (0 crit. Miles)

ACTIVITY AND LOCATION: Line 30-32	SPECIFICATION NO.	THE 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: June 30, 2011	
	STATUS OF DESIGN Conceptual	SPEC Project Number 5057	

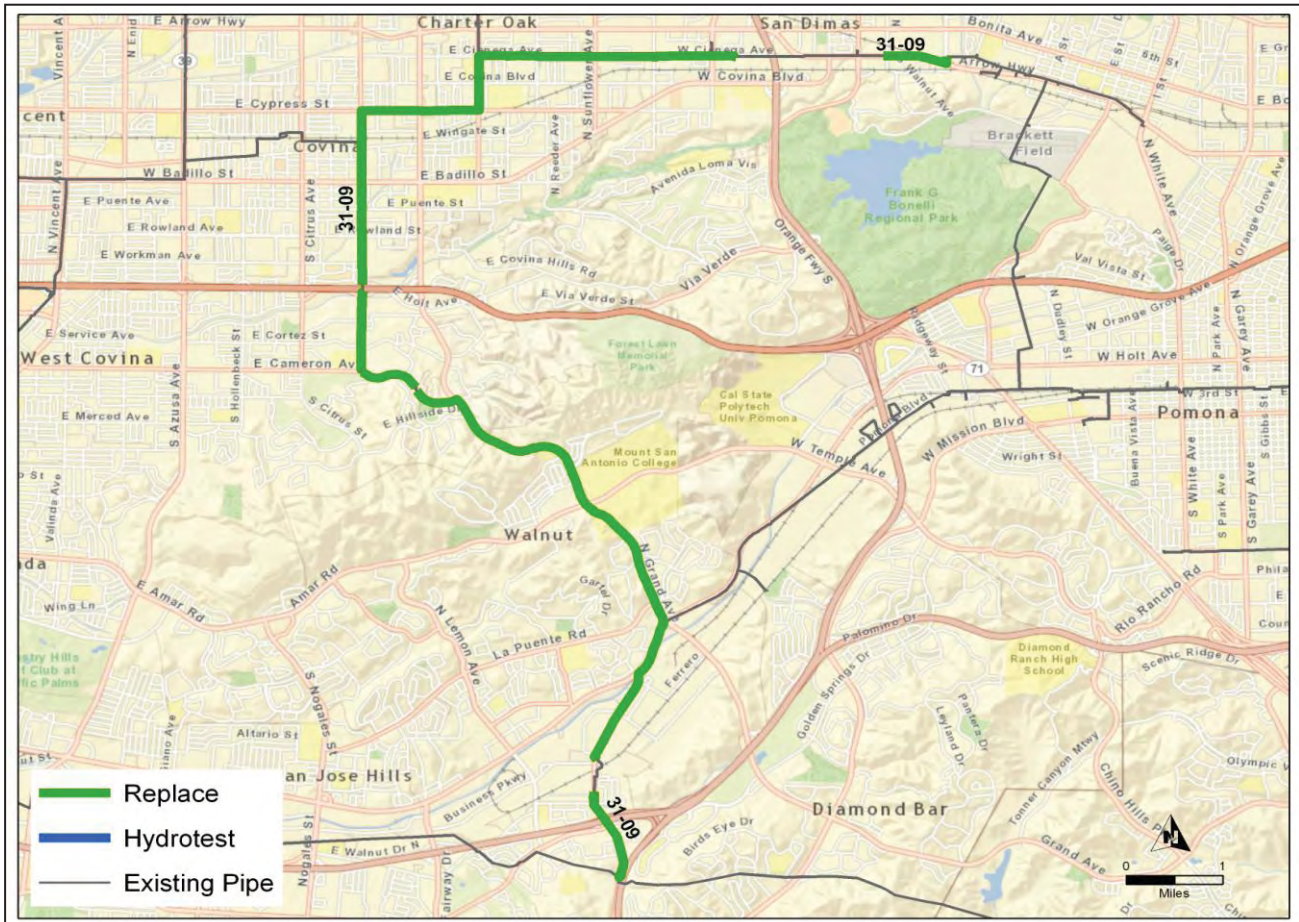
DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
1 MATERIALS								
INPUT IN ALL GREEN CELLS								
12 inch	17908	Feet	\$ 44	\$ 792,966			\$ 792,966	
Pressure Rating	75	Each	\$ 1,833	\$ 137,501			\$ 137,501	
	0	Each	\$ 31,190	\$ -			\$ -	
			\$ 3.26	\$ 58,380			\$ 58,380	
	1	Lot					\$ 46,523	
	12.5	%					\$ 129,421	
	0	Feet	\$ -	\$ -			\$ -	
	4	Each	\$ -	\$ -			\$ -	
	0	Each	\$ -	\$ -			\$ -	
			\$ -	\$ -			\$ -	
	1	Lot					\$ -	
	12.5	%					\$ -	
	0	Feet	\$ -	\$ -			\$ -	
	4	Each	\$ -	\$ -			\$ -	
	0	Each	\$ -	\$ -			\$ -	
			\$ -	\$ -			\$ -	
	1	Lot					\$ -	
	12.5	%					\$ -	
	0	Feet	\$ -	\$ -			\$ -	
	1	Lot					\$ -	
	12.5	%					\$ -	
Total length	3.4	Miles						
Total Material Cost							\$ 1,164,800	
2 CONSTRUCTION (See Appendix for construction type definitions)								
12 inch pipe								
Pipe Install - Type 1	8192	Feet			\$ 175	\$ 1,433,600	\$ 1,433,600	
Pipe Install - Type 2	8972	Feet			\$ 280	\$ 2,484,160	\$ 2,484,160	
Pipe Install - Type 3	809	Feet			\$ 450	\$ 364,050	\$ 364,050	
Pipe Install - Type 4	0	Feet			\$ 600	\$ -	\$ -	
Pipe Install - Type 5	35	Feet			\$ 400	\$ 14,000	\$ 14,000	
Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -	
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 6	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)	56260	SCF	\$ 0.19	\$ 10,689			\$ 10,689	
Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)	495	CY			\$ 95	\$ 47,025	\$ 47,025	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 161,093	
Mobilization / Demobilization	1	Each			\$ 30,000	\$ 30,000	\$ 30,000	
Contaminated Soil	0	CY			\$ -	\$ -	\$ -	
Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -	
Radiographic Inspection	28	Days	\$ 150	\$ 4,200	\$ 600	\$ 16,800	\$ 21,000	
Construction period	36	days						
Total Construction Cost							\$ 4,615,700	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%					\$ -	
\$1 million - Projects < \$10 million - company labor is 5%	5	%					\$ 289,025	
Projects > \$10 million - company labor is 2.5%	2.5	%					\$ -	
Total SCG Labor / Inspection Cost							\$ 289,100	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%					\$ 578,050	
Construction Stakes, AS-Built Survey (2 man crew)	28	Days	\$ 100	\$ 2,800	\$ 1,400	\$ 39,200	\$ 42,000	
ROW Acquisition	0	LS					\$ -	
Construction Permits	0	LS					\$ -	
Environmental Permits	0	LS					\$ -	
Environmental Monitoring	0	LS					\$ -	
AS-Built Drawings (\$2000+\$1/m)	1	LS					\$ 19,908	
Total Design / Engineering / Construction Cost							\$ 640,000	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%					\$ -	
Projects > \$2 million - Contingency is 20%	20	%					\$ 1,341,920	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 8,051,600	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4	Accelerated	Total
Line Number	31-09	Criteria		
Diameter (in.)	Multiple: 8.625 - 24	7.348	5.462	12.810

Cost Detail

Capital		O&M	
Direct Labor	\$ 620,200	Direct Labor	\$ -
Direct Non Labor	\$ 33,145,300	Direct Non Labor	\$ -
Total Direct Capital	\$ 33,765,500	Total Direct O&M	\$ -



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

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision		Comments
	Start	Stop				Tree	Box	
Cat 4	0	4122.95	0.7782	24	Replace	2		Traffic Plans
Cat 4	4122.95	4246.69	0.0234	24	Replace	2		City of Walnut
Cat 4	4246.69	4711.48	0.0880	24	Replace	2		City of Industry
Cat 1	4711.48	6600.64	0.0398	24	Keep As Is	2		RR xing (3)
Cat 4	6600.64	10780.38	0.7622	24	Replace	2		College
Cat 4	10780.38	10894.91	0.0217	24	Replace	2		City of West Covina
Cat 4	10894.91	13721.68	0.5354	24	Replace	2		City of Covina
Cat 4	13721.68	31750	0.0160	20	Replace	2		
Cat 2	31750	31983.29	0.0061	20	Keep As Is	2		Flood Control Channel
Cat 4	31983.29	34810.69	0.5355	20	Replace	2		
Cat 2	34810.69	34936.25	0.0002	20	Keep As Is	2		
Cat 4	34936.25	37932.07	0.5674	20	Replace	2		schools (3)
Cat 4	37932.07	38630.2	0.1180	20	Replace	2		Caltrans
Cat 2	38630.2	38981.68	0.0126	20	Keep As Is	2		
Cat 4	38981.68	40200	0.2307	20	Replace	2		underFwy crossing
Cat 4	40200	42506.9	0.4369	20	Replace	2		City of San Dimas
Cat 4	42506.9	42700.9	0.0367	20	Replace	2		
Cat 4	42700.9	45983.07	0.5930	20	Replace	2		
Cat 4	45983.07	54800	0.0928	16	Replace	2		Railroad crossing
Cat 4	54800	55700	0.1705	16	Replace	2		
Cat 4	55700	63481.08	1.3629	10.75	Replace	2		
Cat 2	63481.08	64067.31	0.1110	8.625	Replace	2		
Cat 4	64067.31	65947.9	0.3439	10.75	Replace	2		
Cat 4	65947.9	66025.9	0.0148	10.75	Replace	2		
Cat 4	66025.9	66036.9	0.0021	10.75	Replace	2		
Cat 2	66036.9	72750	1.2714	10.75	Keep As Is	2		
Cat 4	72750	75475	0.5161	8.625	Replace	2		
Cat 4	75475	76015	0.1023	8.625	Replace	2		
Cat 4	76015	76950	-	8.625	Replace	2		

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
0	4122.95	20"	0.312	X-65	
4122.95	4246.69	20"	0.312	X-65	
4246.69	4711.48	20"	0.312	X-65	
6600.64	10780.38	20"	0.312	X-65	
10780.38	10894.91	20"	0.312	X-65	
10894.91	13721.68	20"	0.312	X-65	
13721.68	31750	20"	0.312	X-65	
31983.29	34810.69	20"	0.312	X-65	
34936.25	37932.07	20"	0.312	X-65	
37932.07	38630.2	20"	0.312	X-65	
38981.68	40200	20"	0.312	X-65	
40200	42506.9	20"	0.312	X-65	
42506.9	42700.9	20"	0.312	X-65	
42700.9	45983.07	20"	0.312	X-65	
45983.07	54800	16"	0.312	X-65	
54800	55700	16"	0.312	X-65	
55700	63481.08	12"	0.375	X-52	
63481.08	64067.31	12"	0.375	X-52	Replace 586 feet of 8 inch Category 2 between Category 4.
64067.31	65947.9	12"	0.375	X-52	
65947.9	66025.9	12"	0.375	X-52	
66025.9	66036.9	12"	0.375	X-52	
72750	75475	12"	0.375	X-52	
75475	76015	12"	0.375	X-52	
76015	76950	12"	0.375	X-52	Replacing this extra 935 feet (0 crit. Miles); may upsize; Over 20%

ACTIVITY AND LOCATION: Line 31-09	SPECIFICATION NO.	A/E FIRM NAME SPEC SERVICES	SHEET Sheet 1 of 1
PROJECT TITLE AND CLIENT: SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE	ESTIMATED BY SPEC	DATE: August 11, 2011	
	STATUS OF DESIGN Conceptual	SPEC Project Number 5057	

DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL
INPUT IN ALL GREEN CELLS							
1 MATERIALS							
Pipe 20 Inch, .312 WT X-.65	25232	Feet	\$ 76	\$ 1,918,641			\$ 1,918,641
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	104	Each	\$ 5,679	\$ 590,582			\$ 590,582
Pressure Rating 15# lb Block Valve w/Electric Actuator (one per 4 miles)	1	Each	\$ 77,511	\$ 77,511			\$ 77,511
FBE Coating (\$/ft)			\$ 5.32	\$ 134,234			\$ 134,234
Miscellaneous Materials (5%)	1	Lot					\$ 129,337
Freight / Tax	12.5	%					\$ 356,288
Pipe 16 Inch, .312 WT X-.65	17498	Feet	\$ 57	\$ 1,003,685			\$ 1,003,685
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	73	Each	\$ 3,339	\$ 243,723			\$ 243,723
Pressure Rating 15# lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 55,508	\$ -			\$ -
FBE Coating (\$/ft)			\$ 4.14	\$ 72,442			\$ 72,442
Miscellaneous Materials (5%)	1	Lot					\$ 62,370
Freight / Tax	12.5	%					\$ 172,778
Pipe 12 Inch, STD. WT X-.52	6756	Feet	\$ 44	\$ 299,156			\$ 299,156
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	31	Each	\$ 1,833	\$ 56,834			\$ 56,834
Pressure Rating 15# lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 31,190	\$ -			\$ -
FBE Coating (\$/ft)			\$ 3.26	\$ 22,025			\$ 22,025
Miscellaneous Materials (5%)	1	Lot					\$ 17,799
Freight / Tax	12.5	%					\$ 49,477
Casing 22 Inch, .375 WT X-.65	300	Feet	\$ 93	\$ 27,951			\$ 27,951
Miscellaneous Materials (5%)	1	Lot					\$ 1,397.55
Freight / Tax	12.5	%					\$ 3,669
Total length	9.4	Miles					
Total Material Cost							\$ 5,239,900
2 CONSTRUCTION							
(See Appendix for construction type definitions)							
20 Inch pipe							
Pipe Install - Type 1	3476	Feet			\$ 225	\$ 782,100	\$ 782,100
Pipe Install - Type 2	2307	Feet			\$ 360	\$ 830,520	\$ 830,520
Pipe Install - Type 3	15103	Feet			\$ 540	\$ 8,155,620	\$ 8,155,620
Pipe Install - Type 4	4046	Feet			\$ 850	\$ 3,439,100	\$ 3,439,100
Pipe Install - Type 5	300	Feet			\$ 800	\$ 240,000	\$ 240,000
Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -
Pipe Install - Type 7	0	Feet			\$ 702	\$ -	\$ -
16 inch pipe							
Pipe Install - Type 1	17398	Feet			\$ 200	\$ 3,479,600	\$ 3,479,600
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	100	Feet			\$ 600	\$ 60,000	\$ 60,000
Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -
Pipe Install - Type 7	0	Feet			\$ 650	\$ -	\$ -
12 Inch pipe							
Pipe Install - Type 1	6756	Feet			\$ 175	\$ 1,182,300	\$ 1,182,300
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 7	0	Feet			\$ -	\$ -	\$ -
Pipe Install - Type 6	0	Feet			\$ 585	\$ -	\$ -
Tie-ins Crew Rates	4	Each			\$ 33,635	\$ 134,539	\$ 134,539
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	339144	SCF	\$ 0.19	\$ 64,437			\$ 64,437
Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000
95% Abandonment of Existing Pipeline (\$50/CY)	2981	CY			\$ 95	\$ 283,195	\$ 283,195
5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 681,347
Mobilization / Demobilization	4	Each			\$ 30,000	\$ 120,000	\$ 120,000
Contaminated Soil	0	CY			\$ -	\$ -	\$ -
Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -
Radiographic Inspection	119	Days	\$ 150	\$ 17,850	\$ 600	\$ 71,400	\$ 89,250
Construction period	127	days					
Total Construction Cost							\$ 19,567,100
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	%			\$ 620,175	\$ 620,175	\$ 620,175
Total SCG Labor / Inspection Cost							\$ 620,200
4 DESIGN / ENG. / CONST. / ENVIRON.							
Planning / Design / Eng / Coord / Procurement	10	%			\$ 2,480,700	\$ 2,480,700	\$ 2,480,700
Construction Stake, As-Built Survey (2 man crew)	119	Days	\$ 100	\$ 11,900	\$ 1,400	\$ 166,600	\$ 178,500
ROW Acquisition	0	LS			\$ -	\$ -	\$ -
Construction Permits	0	LS			\$ -	\$ -	\$ -
Environmental Permits	0	LS			\$ -	\$ -	\$ -
Environmental Monitoring	0	LS			\$ -	\$ -	\$ -
As-Built Drawings (\$2000-\$1/ft)	1	LS			\$ 51,486	\$ 51,486	\$ 51,486
Total Design / Engineering / Construction Cost							\$ 2,710,700
5 CONTINGENCY							
Projects < \$2 million - Contingency is 30%	30	%			\$ -	\$ -	\$ -
Projects > \$2 million - Contingency is 20%	20	%			\$ 5,627,580	\$ 5,627,580	\$ 5,627,580
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 33,765,500

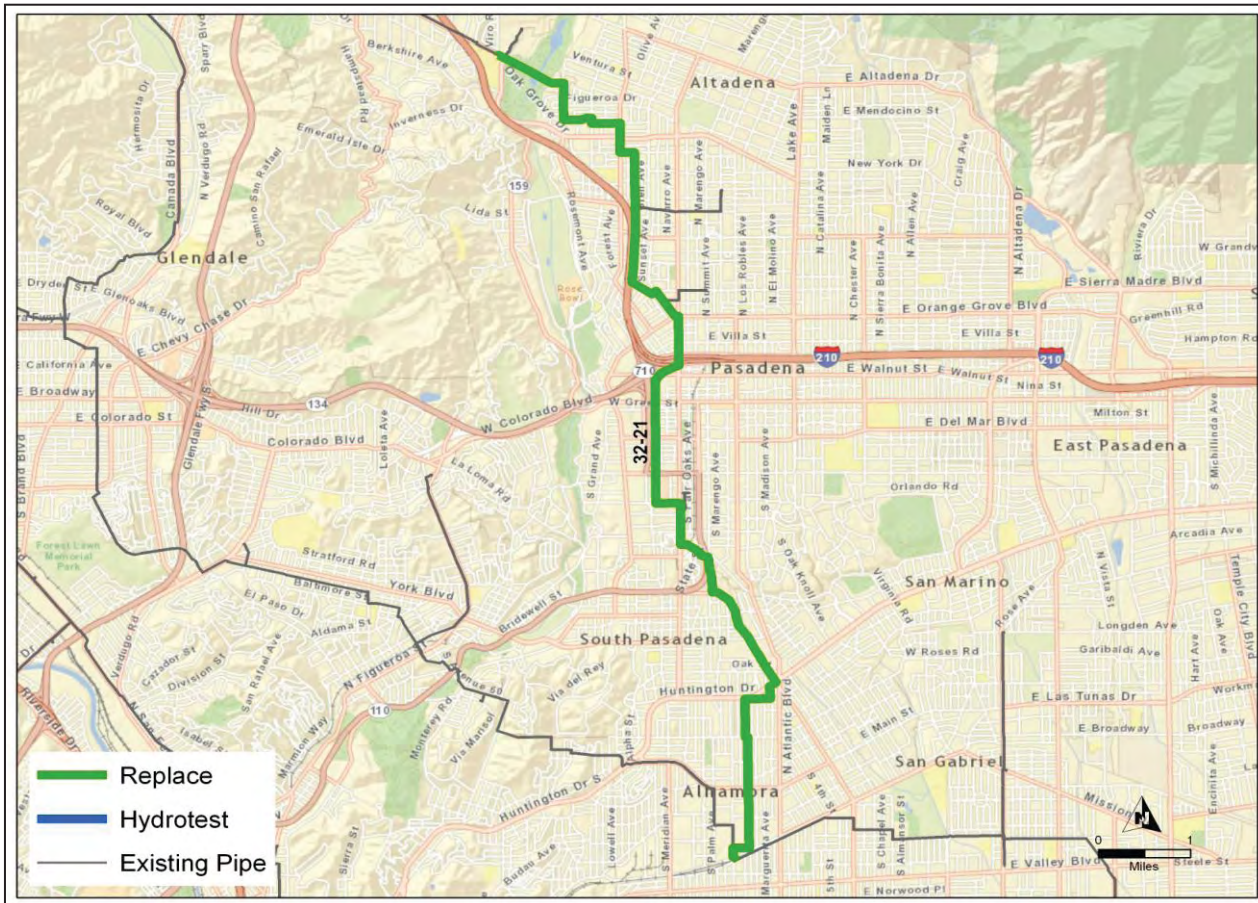
Comments
Replace all segments pipe OD per Remediation Plan
Extra 100 Ft of pipe to be used for Casing of 16" under the RR Crossing

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	32-21	8.590	1.641	10.230
Diameter (in.)	12.75, 16, 20			

Cost Detail

Capital		O&M	
Direct Labor	\$ 706,600	Direct Labor	\$ -
Direct Non Labor	\$ 37,716,400	Direct Non Labor	\$ -
Total Direct Capital	\$ 38,423,000	Total Direct O&M	\$ -




**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
Cat 4	0	20	-	16	Replace	2	
Cat 4	20	11130	2.1032	20	Replace	2	City of Alhambra
Cat 4	11130	11140	0.0019	12.75	Replace	2	City of So. Pasadena
Cat 4	11140	11150	0.0019	12.75	Replace	2	some residential
Cat 4	11150	16945	1.0975	20	Replace	2	Traffic Plans @ major
Cat 4	16945	16965	0.0038	20	Replace	2	intersections
Cat 4	16965	16985	0.0038	16	Replace	2	under Fwy crossing
Cat 4	16985	17645	0.1250	20	Replace	2	Caltrans
Cat 4	17645	19000	0.2566	20	Replace	2	school
Cat 4	19000	19335	0.0634	16	Replace	2	hospital
Cat 4	19335	19345	0.0019	16	Replace	2	""
Cat 4	19345	26835	1.4186	20	Replace	2	""
Cat 1	26835	28760	0.3646	20	Replace		
Cat 1	28760	28785	0.0047	12.75	Replace		
Cat 1	28785	34305	1.0455	20	Replace		
Cat 4	34305	36255	0.3693	20	Replace	2	Traffic Plans @ major
Cat 4	36255	36280	0.0047	12.75	Replace	2	intersections
Cat 4	36280	42620	1.2008	20	Replace	2	some pvt property
Cat 4	42620	51906	1.7587	12.75	Replace	2	some residential
Cat 4	51906	54017	0.1786	12.75	Replace	2	Pasadena, La Canada

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
0	20	20	0.312	X-65	Replacing this extra footage (0 crit. Miles) over 20%
20	11130	20	0.312	X-65	
11130	11140	20	0.312	X-65	
11140	11150	20	0.312	X-65	
11150	16945	20	0.312	X-65	
16945	16965	20	0.312	X-65	
16965	16985	20	0.312	X-65	
16985	17645	20	0.312	X-65	
17645	19000	20	0.312	X-65	
19000	19335	20	0.312	X-65	
19335	19345	20	0.312	X-65	To be planned and completed in 2011
19345	26835	20	0.312	X-65	To be planned and completed in 2011
26835	28760	20	0.312	X-65	Capturing additional footage >20%
28760	28785	20	0.312	X-65	Capturing additional footage
28785	34305	20	0.312	X-65	Capturing additional footage >20%
34305	36255	20	0.312	X-65	
36255	36280	20	0.312	X-65	
36280	42620	20	0.312	X-65	
42620	51906	20	0.312	X-65	
51906	54017	20	0.312	X-65	

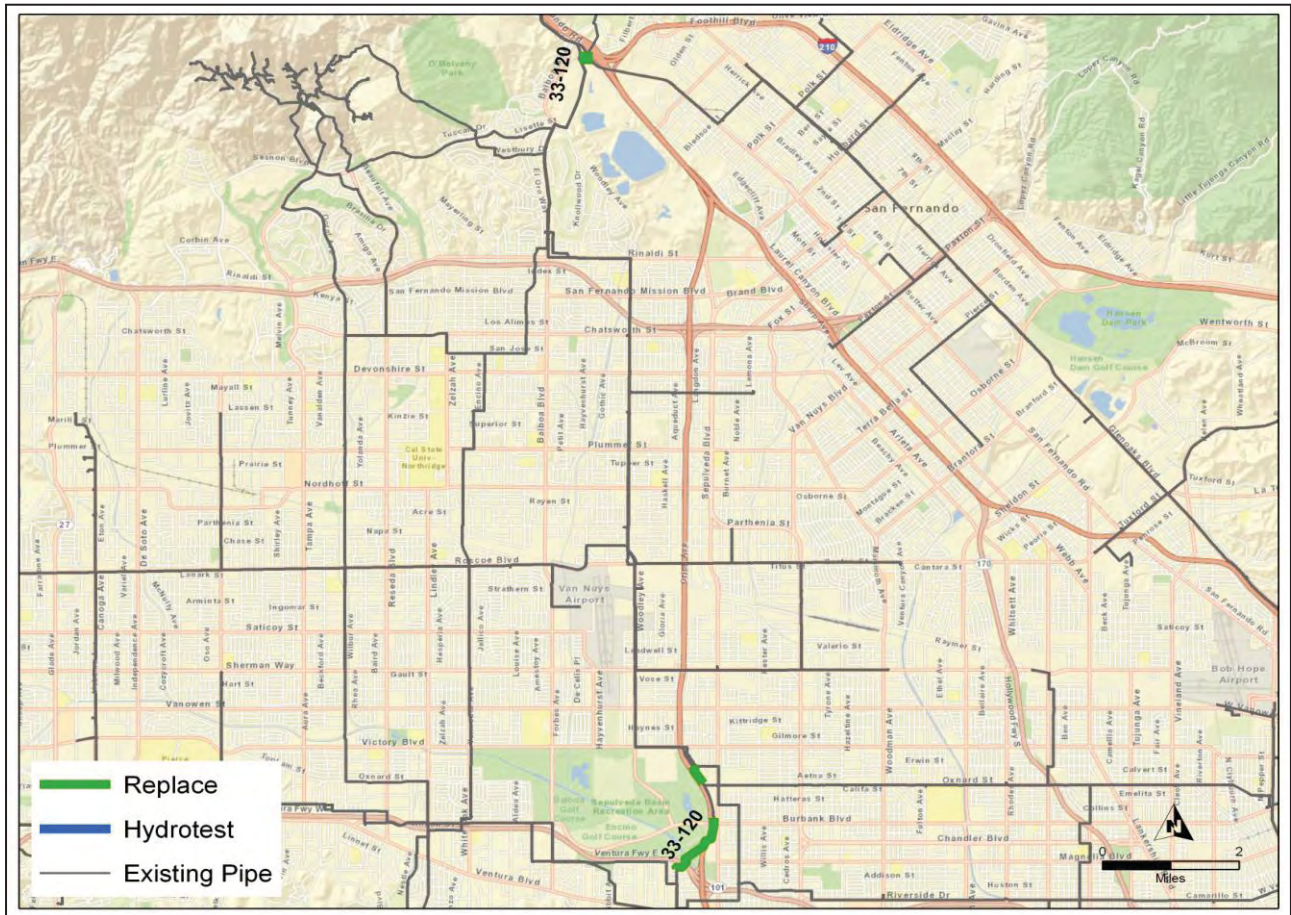
ACTIVITY AND LOCATION:		SPECIFICATION NO.	THE FIRM NAME	SHEET						
Line 32-21				Sheet 1 of 1						
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:	SPEC Project Number						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 5, 2011	5057						
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments	
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL		
1 MATERIALS										
INPUT IN ALL GREEN CELLS										
20 inch										
Pipe	n/a	inch, 312 WT X-65	54017	Feet	\$ 76	\$ 4,107,453			\$ 4,107,453	Replaced all segments Pipe OD as per Remediation Plan
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	220	Each	\$ 5,679	\$ 1,249,307			\$ 1,249,307	
Pressure Rating	n/a	lb Block Valve w/Electric Actuator (one per 4 miles)	2	Each	\$ 77,511	\$ 155,022			\$ 155,022	
		FBE Coating (\$/ft)			\$ 5.32	\$ 287,370			\$ 287,370	
		Miscellaneous Materials (5%)	1	Lot					\$ 275,589	
		Freight / Tax	12.5	%					\$ 759,343	
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 (\$/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 (\$/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			10.2	Miles						
Total Material Cost									\$ 6,834,100	
2 CONSTRUCTION (See Appendix for construction type definitions)										
20 inch pipe										
		Pipe Install - Type 1	7790	Feet		\$ 225	\$ 1,685,250		\$ 1,685,250	
		Pipe Install - Type 2	30057	Feet		\$ 360	\$ 13,700,520		\$ 13,700,520	
		Pipe Install - Type 3	8470	Feet		\$ 540	\$ 4,573,800		\$ 4,573,800	
		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	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 6	0	Feet		\$ -	\$ -		\$ -	
		Pipe Install - Type 7	0	Feet		\$ -	\$ -		\$ -	
		Tie-ins Crew Rates	2	Each		\$ 35,000	\$ 70,000		\$ 70,000	
		Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	471388	SCF	\$ 0.19	\$ 89,564			\$ 89,564	
		Purging Labor	1	LS		\$ 25,000	\$ 25,000		\$ 25,000	
		95% Abandonment of Existing Pipeline (\$50/CY)	4143	CY		\$ 95	\$ 393,585		\$ 393,585	
		5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 748,484	
		Mobilization / Demobilization	2	Each		\$ 30,000	\$ 60,000		\$ 60,000	
		Contaminated Soil	0	CY		\$ -	\$ -		\$ -	
		Asbestos Abatement	0	Feet		\$ -	\$ -		\$ -	
		Radiographic Inspection	111	Days	\$ 150	\$ 16,650	\$ 600	\$ 66,600	\$ 83,250	
		Construction period	119	days						
Total Construction Cost									\$ 21,429,800	
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	%			\$ 706,590	\$ 706,590	\$ 706,590	
Total SCG Labor / Inspection Cost									\$ 706,600	
4 DESIGN / ENG. / CONST / ENVIRON.										
		Planning / Design / Eng / Coord / Procurement	10	%			\$ 2,826,360	\$ 2,826,360	\$ 2,826,360	
		Construction Stakes, AS-Built Survey (2 man crew)	111	Days	\$ 100	\$ 11,100	\$ 1,400	\$ 155,400	\$ 166,500	
		ROW Acquisition	0	LS			\$ -	\$ -	\$ -	
		Construction Permits	0	LS			\$ -	\$ -	\$ -	
		Environmental Permits	0	LS			\$ -	\$ -	\$ -	
		Environmental Monitoring	0	LS			\$ -	\$ -	\$ -	
		AS-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 56,017	\$ 56,017	\$ 56,017	
Total Design / Engineering / Construction Cost									\$ 3,048,900	
5 CONTINGENCY										
		Projects < \$2 million - Contingency is 30%	30	%			\$ -	\$ -	\$ -	
		Projects > \$2 million - Contingency is 20%	20	%			\$ 6,403,820	\$ 6,403,820	\$ 6,403,820	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)									\$ 38,423,000	

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

Company	SCG	Replacement Mileage			
Plant Category	Dist	Category 4	Accelerated	Total	
Line Number	33-120	Criteria	0.387	0.865	1.252
Diameter (in.)	22, 24				

Cost Detail

Capital		O&M	
Direct Labor	\$ 270,200	Direct Labor	\$ -
Direct Non Labor	\$ 7,258,900	Direct Non Labor	\$ -
Total Direct Capital	\$ 7,529,100	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	405	0.0208	22	Replace	2		Bore pits required since we need to bore under DWP/MWD aqueduct. Approximately 500-feet between bore bit to bore pit.
Cat 1	405	5882	1.0373	22				
Cat 1	5882	7200	0.2496	22				
Cat 1	7200	11120	0.7424	22				
Cat 1	11120	11960	0.1591	22				
Cat 1	11960	44540	2.7828	24				
Cat 1	44540	57221	-	24				
Cat 1	57221	57735	-	22				
Cat 1	57735	58310	-	22				
Cat 1	58310	59160	-	22				
Cat 4	59160	60600	0.2191	22	Replace	2		Caltrans encroachment permit may be reqd. Pipe is believed to be approx. 14' deep at this location
Cat 4	60600	63125	-	22				
Cat 4	63125	65494	0.1466	22	Replace	2		Caltrans encroachment permit may be reqd. Pipe is believed to be approx. 14' deep at this location
Cat 4	65494	66174	-	22	Replace	2		
Cat 4	66174	66187	-	22	Replace	2		
Cat 4	66187	66827	-	22	Replace	2		
Cat 4	66827	66846	-	22	Replace	2		
Cat 4	66846	67856	-	22	Replace	2		
Cat 1	67856	70856	-	24				
Cat 4	70856	70888	-	22	Replace	2		

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
0	405	24	0.375	X-65	24-inch would be preferred size to potentially match 24-inch further downstream
59160	60600	24	0.375	X-65	24-inch would be preferred size to potentially match 24-inch further downstream
63125	65494	24	0.375	X-65	24-inch would be preferred size to potentially match 24-inch further downstream
65494	66174	24	0.375	X-65	Include Cat. 4 non-criteria miles segment for continuity
66174	66187	24	0.375	X-65	Include Cat. 4 non-criteria miles segment for continuity
66187	66827	24	0.375	X-65	Include Cat. 4 non-criteria miles segment for continuity
66827	66846	24	0.375	X-65	Include Cat. 4 non-criteria miles segment for continuity
66846	67856	24	0.375	X-65	Include Cat. 4 non-criteria miles segment for continuity
70856	70888	24	0.375	X-65	Include Cat. 4 non-criteria miles segment for continuity

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 33-120			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPC	July 6, 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									
24 inch									
Pipe	24	inch, .375 WT X-65	6608	Feet	\$ 92	\$ 606,020		\$ 606,020	Replaced all segments Pipe OD per Remediation Plan
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	30	Each	\$ 7,229	\$ 216,880		\$ 216,880	
Pressure Rating	150	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 105,638	\$ -		\$ -	
		FBE Coating (5/ft)			\$ 6.58	\$ 43,481		\$ 43,481	
		Miscellaneous Materials (5%)	1	Lot				\$ 41,145	
		Freight / Tax	12.5	%				\$ 113,441	
Pipe	n/a	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	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	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	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			1.3	Miles					
Total Material Cost								\$ 1,021,000	
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	4928	Feet		\$ 540	\$ 2,661,120	\$ 2,661,120	
		Pipe Install - Type 4	460	Feet		\$ 850	\$ 408,000	\$ 408,000	Aqueduct Bore FWY HDD (2)
		Pipe Install - Type 5	1200	Feet		\$ 800	\$ 960,000	\$ 960,000	
		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 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 6	0	Feet		\$ -	\$ -	\$ -	
		Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	
		Tie-ins Crew Rates	1	Each		\$ 35,000	\$ 35,000	\$ 35,000	
		Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	83040	SCF	\$ 0.19	\$ 15,778		\$ 15,778	
		Purging Labor	1	LS		\$ 25,000	\$ 25,000	\$ 25,000	
		95% Abandonment of Existing Pipeline (\$50/CY)	730	CY		\$ 95	\$ 69,350	\$ 69,350	
		5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%				\$ 151,092	
		Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000	\$ 30,000	
		Contaminated Soil	0	CY		\$ -	\$ -	\$ -	
		Asbestos Abatement	0	Feet		\$ -	\$ -	\$ -	
		Radiographic Inspection	35	Days	\$ 150	\$ 5,250	\$ 600	\$ 21,000	\$ 26,250
		Construction period	43	days					
Total Construction Cost								\$ 4,381,600	
3 SCG LABOR / INSPECTION									
		Projects < \$1 million - company labor is 10%	10	%			\$ -	\$ -	
		\$1 million < Projects < \$10 million - company labor is 5%	5	%			\$ 270,130	\$ 270,130	
		Projects > \$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 270,200	
4 DESIGN / ENG. / CONST / ENVIRON.									
		Planning / Design / Eng / Coord / Procurement	10	%			\$ 540,260	\$ 540,260	
		Construction Stake, As-Built Survey (2 man crew)	35	Days	\$ 100	\$ 3,500	\$ 1,400	\$ 49,000	\$ 52,500
		ROW Acquisition	0	LS			\$ -	\$ -	
		Construction Permits	0	LS			\$ -	\$ -	
		Environmental Permits	0	LS			\$ -	\$ -	
		Environmental Monitoring	0	LS			\$ -	\$ -	
		As-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 8,608	\$ 8,608	
Total Design / Engineering / Construction Cost								\$ 601,400	
5 CONTINGENCY									
		Projects < \$2 million - Contingency is 30%	30	%			\$ -	\$ -	
		Projects > \$2 million - Contingency is 20%	20	%			\$ 1,254,840	\$ 1,254,840	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 7,529,100	

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

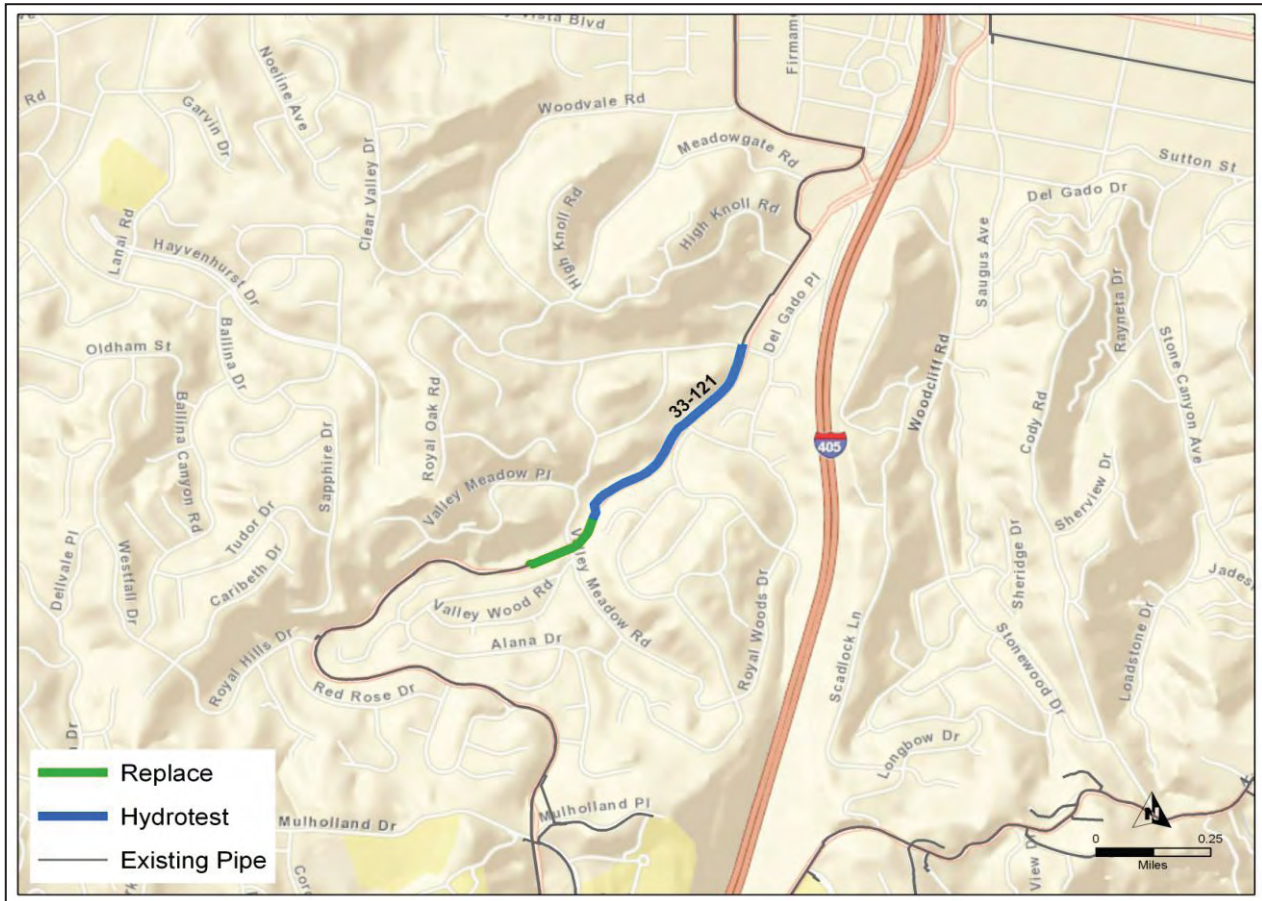
Company	SCG
Plant Category	Dist
Line Number	33-121
Diameter (in.)	22, 24, 26

Replacement Mileage		
Category 4 Criteria	Accelerated	Total
0.164	-	0.164

Hydrotest Mileage		
Category 4 Criteria	Accelerated	Total
0.445	0.001	0.447

Cost Detail

Capital		O&M	
Direct Labor	\$ 89,500	Hydrotest	
Direct Non Labor	\$ 1,317,000	Direct Labor	\$ 7,700
Total Direct Capital	\$ 1,406,500	Direct Non Labor	\$ 406,000
		Total Hydrotest	\$ 413,700
		Repairs	
		Direct Labor	\$ 5,000
		Direct Non Labor	\$ 45,000
		Total Repairs	\$ 50,000



**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 2	9	6057	-	22			
Cat 4	6057	8409	0.4455	24	Hydrotest	4	
Cat 4	8409	9274	0.1638	26	Replace	2	Line is on Sepulveda Blvd. This may require night work
Cat 2	9274	15555	-	26			

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
8409	9274	24	0.375	X-65	Downgrade pipe to match downstream piping

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 33-121			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 6, 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	865	Feet	\$ 92	\$ 79,329			
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	7	Each	\$ 7,229	\$ 50,605		\$ 79,329	
Pressure Rating	300	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 179,283	\$ -		\$ 50,605	Replaced segment pipe OD per Remediation Plan. Additional 2352' section indentified for hydrotesting.
		FBE Coating (5/ft)			\$ 6.58	\$ 5,692		\$ -	
		Miscellaneous Materials (5%)	1	Lot				\$ 5,692	
		Freight / Tax	12.5	%				\$ 6,497	
								\$ 17,769	
Pipe	n/a	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	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	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	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			0.2	Miles					
Total Material Cost								\$ 159,900	
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	0	Feet		\$ -	\$ -	\$ -	
		Pipe Install - Type 7	865	Feet		\$ 702	\$ 607,230	\$ 607,230	Night work on Sepulveda
		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 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 6	0	Feet		\$ -	\$ -	\$ -	
		Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	
		n/a							
		Tie-ins Crew Rates	1	Each		\$ 35,000	\$ 35,000	\$ 35,000	
		Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	10872	SCF	\$ 0.19	\$ 2,066		\$ 2,066	
		Purging Labor	1	LS		\$ 25,000	\$ 25,000	\$ 25,000	
		95% Abandonment of Existing Pipeline (\$50/CY)	96	CY		\$ 95	\$ 9,120	\$ 9,120	
		5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%				\$ 22,771	
		Mobilization / Demobilization	1	Each		\$ 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								\$ 734,200	
3 SCG LABOR / INSPECTION									
		Projects < \$1 million - company labor is 10%	10	%			\$ 89,410	\$ 89,410	
		\$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								\$ 89,500	
4 DESIGN / ENG. / CONST / ENVIRON.									
		Planning / Design / Eng / Coord / Procurement	10	%			\$ 89,410	\$ 89,410	
		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			\$ 2,865	\$ 2,865	
Total Design / Engineering / Construction Cost								\$ 98,300	
5 CONTINGENCY									
		Projects < \$2 million - Contingency is 30%	30	%			\$ 324,570	\$ 324,570	
		Projects > \$2 million - Contingency is 20%	20	%			\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 1,406,500	

SHEET: Sheet 1 of 1
 DATE: July 28, 2011
 SPEC Project Number: 5057
 SPEC SERVICES, INC.
 ESTIMATED BY: SPEC SERVICES, INC.
 STATE OF DESIGN: Conceptual

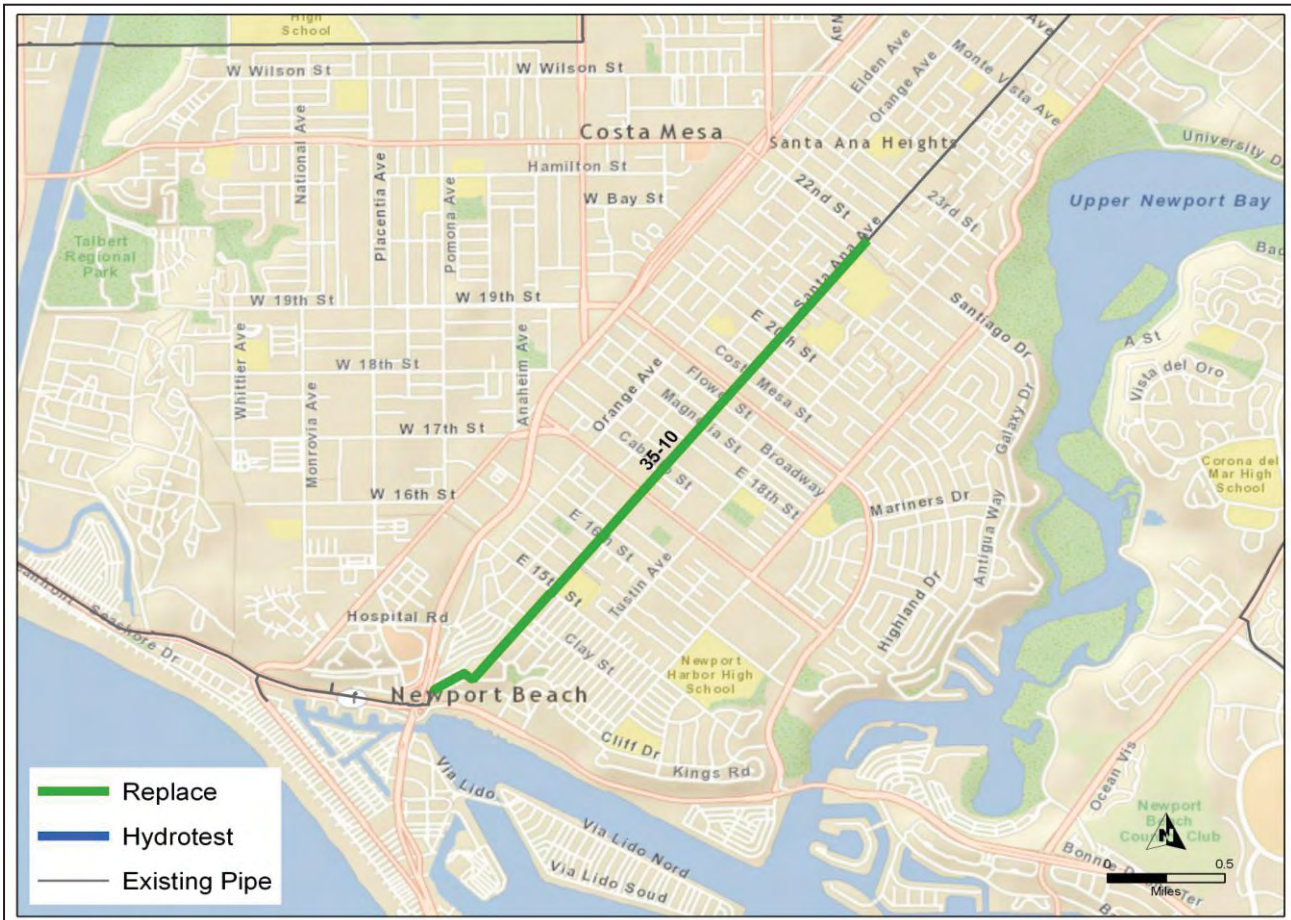
DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER	QTY		UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe	24	Actual OD (in)								
	0.281	Wall Thickness (in)								
	2358	Length (FT)								
	1	QTY								
Hydrotest Test Segment										
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)								
	0	QTY								
Hydrotest Test Segment										
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)								
	0	QTY								
Hydrotest Test Segment										
Total Hydrotest Length	0.4	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	189,838	SCF			\$ 0.19	\$ 36,069			\$ 36,069	
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	3	each								
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	21	day(s)			\$ 1,600	\$ 33,600			\$ 33,600	
Total Hydrotest Water (\$19/bbl)	1,258	bbl			\$ 19.00	\$ 23,907			\$ 23,907	
Water Disposal Vacuum Truck(s) =A	3	each								
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	11	loads								
Disposal Time =>C*B/(A*10)	1	day(s)								
Total Vacuum Truck(s) Rental days (\$/day per truck) =>D=C*A	3	day(s)			\$ 5,000	\$ 15,000			\$ 15,000	
Treated Water Disposal (\$55/bbl)	1,258	bbl			\$ 55	\$ 69,203			\$ 69,203	
Miscellaneous Materials	5	%				\$ 10,414			\$ 10,414	
SCG Post Estimate Changes:										
Additional Baker Tanks:	0	QTY								
Additional Test Segments:	0	QTY								
(due to elevation changes)										
				Total Material Cost					\$ 218,700	
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	
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	
\$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	%							\$ 14,785	
ROW Acquisition	0	LS							\$ -	
Construction Permits	0	LS							\$ -	
Environmental Permits	0	LS							\$ -	
Environmental Monitoring	0	LS							\$ -	
				Total Design / Engineering / Construction Cost					\$ 14,800	
5 CONTINGENCY										
Projects <\$2 million - Contingency is 30%	30	%							\$ 95,460	
Projects >\$2 million - Contingency is 20%	20	%							\$ -	
				TOTAL PROJECT COST (See Appendix for assumptions/certifications)					\$ 413,700	

Southern California Gas Company
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Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4	Accelerated	Total
Line Number	35-10	Criteria	1.080	3.440
Diameter (in.)	Multiple: 6.625 - 12.75	2.359		

Cost Detail

Capital		O&M	
Direct Labor	\$ 452,500	Direct Labor	\$ -
Direct Non Labor	\$ 12,161,300	Direct Non Labor	\$ -
Total Direct Capital	\$ 12,613,800	Total Direct O&M	\$ -



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 2	0	6658	1.2610	12.75	Keep As Is		
Cat 4	6658	9041	0.4513	12.75	Replace	2	City of Costa Mesa
Cat 4	9041	9465	0.0803	12.75	Replace	2	Traffic Plans @ major intersections
Cat 4	9465	14677	0.9871	12.75	Replace	2	school
Cat 4	14677	19084	0.8347	10.75	Replace	2	some residential
Cat 1	19084	19148	0.0121	10.75	Replace		
Cat 2	19148	19153	0.0009	6.625	Replace		
Cat 4	19153	19184	0.0059	6.625	Replace	2	some residential

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
9041	14677	12"	0.375	X-52	
9041	9465	12"	0.375	X-52	
9465	14677	12"	0.375	X-52	
14677	19084	12"	0.375	X-52	
19084	19148	12"	0.375	X-52	Replacing this extra footage Over 20%
19148	19153	12"	0.375	X-52	Replacing this extra footage Over 20%
19153	19184	12"	0.375	X-52	

ACTIVITY AND LOCATION: Line 35-10	SPECIFICATION NO.	THE FIRM NAME SPEC SERVICES	SHEET Sheet 1 of 1
PROJECT TITLE AND CLIENT: SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE	ESTIMATED BY: SPEC	DATE: August 11, 2011	
	STATUS OF DESIGN Conceptual	SPEC Project Number 5057	

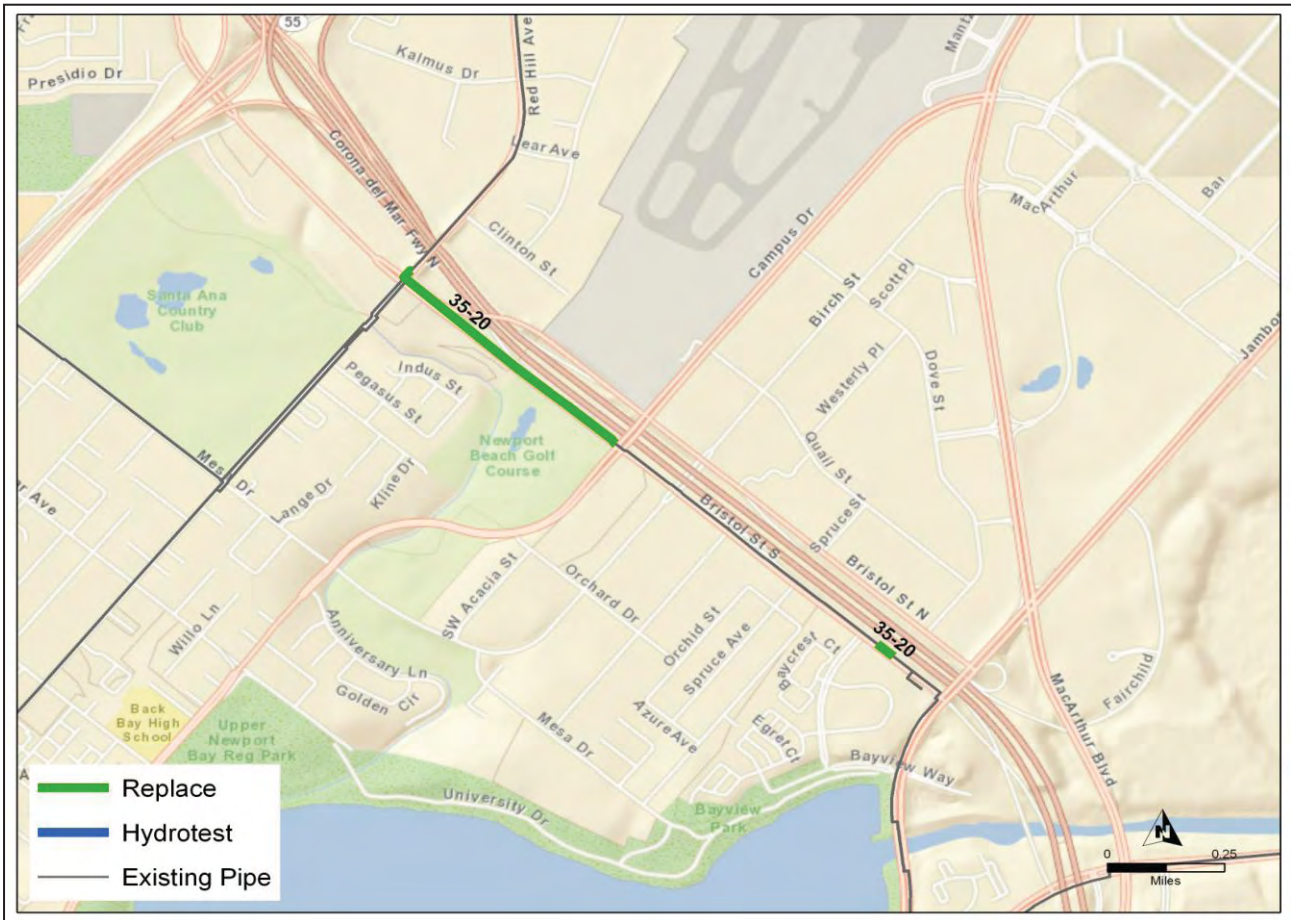
DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
1 MATERIALS								
INPUT IN ALL GREEN CELLS								
12 inch Pipe	18131	Feet	\$ 44	\$ 802,841			\$ 802,841	Replaced all segments Pipe OD per Remediation Plan
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	77	Each	\$ 1,833	\$ 141,167			\$ 141,167	
1/2 Block Valve w/Electric Actuator (one per 4 miles)	1	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/ft)			\$ 3.26	\$ 59,107			\$ 59,107	
Miscellaneous Materials (5%)	1	Lot					\$ 47,200	
Freight / Tax	12.5	%					\$ 131,289	
n/a Pipe	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
1/2 Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
n/a Pipe	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
1/2 Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
n/a Casing	0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
Total length	3.4	Miles						
Total Material Cost							\$ 1,181,700	
2 CONSTRUCTION (See Appendix for construction type definitions)								
12 inch pipe								
Pipe Install - Type 1	0	Feet			\$ 175	\$ -	\$ -	
Pipe Install - Type 2	4407	Feet			\$ 280	\$ 1,233,960	\$ 1,233,960	
Pipe Install - Type 3	13724	Feet			\$ 450	\$ 6,175,800	\$ 6,175,800	
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	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 6	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)	56964	SCF	\$ 0.19	\$ 10,823			\$ 10,823	
Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)	501	CY			\$ 95	\$ 47,595	\$ 47,595	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 277,864	
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							\$ 7,866,100	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%					\$ -	
\$1 million - Projects < \$10 million - company labor is 5%	5	%					\$ 452,490	
Projects > \$10 million - company labor is 2.5%	2.5	%					\$ -	
Total SCG Labor / Inspection Cost							\$ 452,600	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%					\$ 904,980	
Construction Stakes, 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					\$ 20,131	
Total Design / Engineering / Construction Cost							\$ 1,009,200	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%					\$ -	
Projects > \$2 million - Contingency is 20%	20	%					\$ 2,102,300	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 12,613,800	

**Southern California Gas Company
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Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
Line Number	35-20	Criteria	Accelerated	Total
Diameter (in.)	8.625, 12.75, 16	0.556	-	0.556

Cost Detail

Capital		O&M	
Direct Labor	\$ 105,300	Direct Labor	\$ -
Direct Non Labor	\$ 2,824,700	Direct Non Labor	\$ -
Total Direct Capital	\$ 2,930,000	Total Direct O&M	\$ -



**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 4	0	2592		0.4909	16	Replace		Traffic Plans
Cat 2	2592	6294.35		0.7012	16	Keep As Is		
Cat 4	6294.35	6637.37		0.0650	16	Replace		
Cat 2	6637.37	7800		0.2202	16	Keep As Is		
Cat 2	7800	8110.16		0.0587	16	Keep As Is		
Cat 2	8110.16	8552.71		0.0838	16	Keep As Is		
Cat 1	8552.71	20205		2.2069	16	Keep As Is		
Cat 2	8552.71	20205		-	8.625	Keep As Is		
Cat 1	20205	20209		0.0008	16	Keep As Is		
Cat 1	20209.00	27605.87		1.4010	16	Keep As Is		
Cat 2	27605.87	36521		1.6880	16	Keep As Is		
Cat 2	36521	36541.5		0.0039	12.75	Keep As Is		
Cat 1	36541.5	36548		0.0012	16	Keep As Is		
Cat 1	36548	42338		0.5580	12.75	Keep As Is		
Cat 2	42338	42346		0.0015	16	Keep As Is		
Cat 1	42346	45836		0.6610	16	Keep As Is		
Cat 1	45836	49076		0.4597	12.75	Keep As Is		
Cat 2	49076	49087		0.0021	16	Keep As Is		
Cat 2	49087	62011		2.4477	12.75	Keep As Is		
Cat 1	62011	62018		0.0013	16	Keep As Is		
Cat 1	62018	76382		2.7205	12.75	Keep As Is		
Cat 1	76382	76393		0.0021	16	Keep As Is		
Cat 2	76393	76403		0.0019	16	Keep As Is		
Cat 2	76403	80600		0.7949	16	Keep As Is		
Cat 2	80600	81000		0.0758	16	Keep As Is		
Cat 2	81000	85289		0.8123	12.75	Keep As Is		
Cat 1	85289	85294		0.0009	16	Keep As Is		
Cat 1	85794	97769		2.2680	16	Keep As Is		
Cat 2	97769	112300		2.5127	16	Keep As Is		

Cat 2 112300 112550 - 16 Keep As Is

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
0	2592	16	0.312	X-65	
6294.35	6637.37	16	0.312	X-65	

ACTIVITY AND LOCATION: Line 35-20	SPECIFICATION NO.	THE 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 5, 2011	
	STATUS OF DESIGN Conceptual	SPEC Project Number 5057	

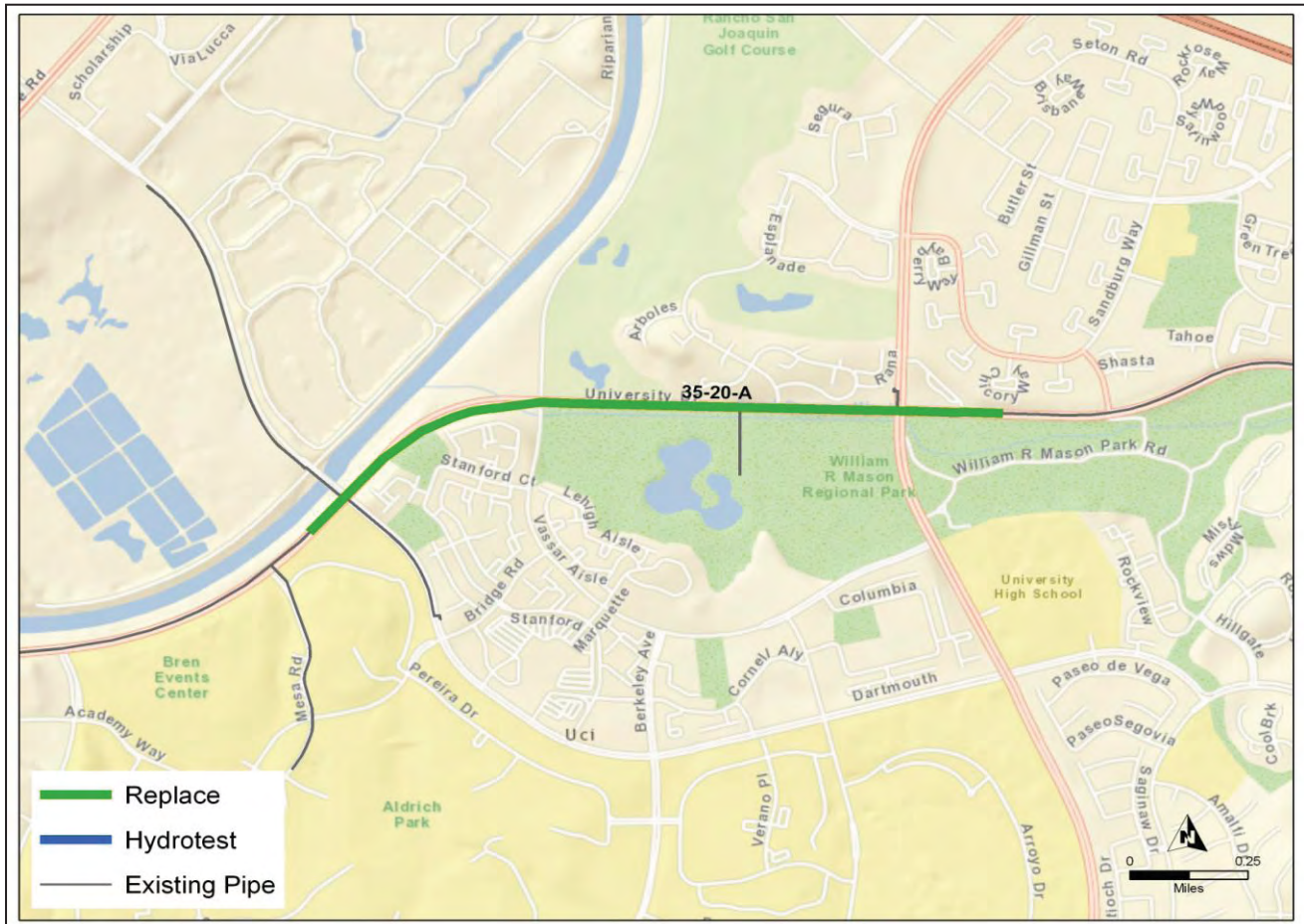
DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
1 MATERIALS								
INPUT IN ALL GREEN CELLS								
16 inch Pipe	2935	Feet	\$ 57	\$ 168,352			\$ 168,352	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	15	Each	\$ 3,339	\$ 50,080			\$ 50,080	
Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 94,320	\$ -			\$ -	
FBE Coating (\$/ft)			\$ 4.14	\$ 12,151			\$ 12,151	
Miscellaneous Materials (5%)	1	Lot					\$ 10,922	
Freight / Tax	12.5	%					\$ 30,188	
16 inch Pipe	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
16 inch Pipe	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
Caseing 16 inch	0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
Total length	0.6	Miles						
Total Material Cost							\$ 271,700	
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	2935	Feet		\$ 500	\$ 1,467,500		\$ 1,467,500	
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 6	0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	\$ -	
Tie-ins Crew Rates	4	Each		\$ 35,000	\$ 140,000		\$ 140,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	16396	SCF	\$ 0.19	\$ 3,115			\$ 3,115	
Purging Labor	1	LS		\$ 25,000	\$ 25,000		\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)	145	CY		\$ 95	\$ 13,775		\$ 13,775	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 55,031	
Mobilization / Demobilization	4	Each		\$ 30,000	\$ 120,000		\$ 120,000	
Contaminated Soil	0	CY		\$ -	\$ -	\$ -	\$ -	
Asbestos Abatement	0	Feet		\$ -	\$ -	\$ -	\$ -	
Radiographic Inspection	11	Days	\$ 150	\$ 1,650	\$ 600	\$ 6,600	\$ 8,250	
Construction period	19	days						
Total Construction Cost							\$ 1,832,700	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%				\$ -	\$ -	
\$1 million - Projects < \$10 million - company labor is 5%	5	%				\$ 105,220	\$ 105,220	
Projects > \$10 million - company labor is 2.5%	2.5	%				\$ -	\$ -	
Total SCG Labor / Inspection Cost							\$ 105,300	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%				\$ 210,440	\$ 210,440	
Construction Stake, AS-Built Survey (2 man crew)	11	Days	\$ 100	\$ 1,100	\$ 1,400	\$ 15,400	\$ 16,500	
ROW Acquisition	0	LS				\$ -	\$ -	
Construction Permits	0	LS				\$ -	\$ -	
Environmental Permits	0	LS				\$ -	\$ -	
Environmental Monitoring	0	LS				\$ -	\$ -	
AS-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 4,935	\$ 4,935	
Total Design / Engineering / Construction Cost							\$ 231,900	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%				\$ -	\$ -	
Projects > \$2 million - Contingency is 20%	20	%				\$ 488,320	\$ 488,320	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 2,930,000	

Southern California Gas Company
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Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	35-20-A	1.324	-	1.324
Diameter (in.)	4.5, 8.625, 12.75			

Cost Detail

Capital		O&M	
Direct Labor	\$ 192,200	Direct Labor	\$ -
Direct Non Labor	\$ 5,168,000	Direct Non Labor	\$ -
Total Direct Capital	\$ 5,360,200	Total Direct O&M	\$ -



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 2	0	137	0.0259	4.5	Keep As Is			
Cat 2	137	1157	0.1932	4.5	Keep As Is			
Cat 2	1157	1247	0.0170	4.5	Keep As Is			
Cat 2	1247	2337	0.1504	12.75	Keep As Is			
Cat 4	2337	2427	-	12.75	Keep As Is			
Cat 1	2427	2557	-	12.75	Keep As Is			
Cat 1	2557	2657	-	12.75	Keep As Is			
Cat 1	2657	2672	-	12.75	Keep As Is			
Cat 1	2672	7092	0.6816	12.75	Keep As Is			
Cat 4	7092	13678	1.2473	12.75	Replace	2		Traffic Plans
Cat 4	13678	14083	0.0767	12.75	Replace	2		Traffic Plans
Cat 2	14083	29784	2.9737	8.625	Keep As Is			
Cat 2	29784	29799	0.0028	4.5	Keep As Is			
Cat 2	29799	29805	0.0011	4.5	Keep As Is			

New Segments

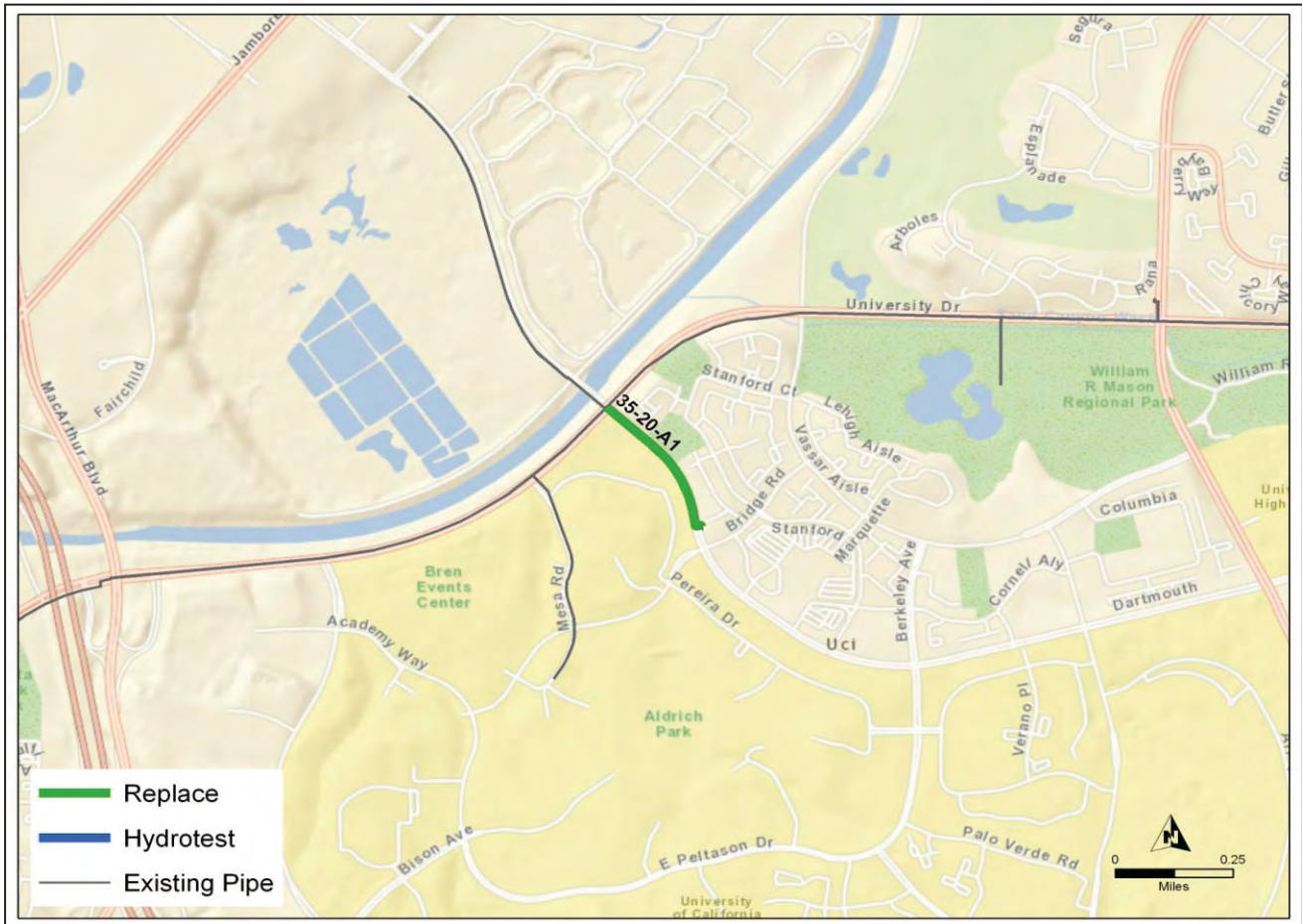
Station Start	Station Stop	Wall			
		Diameter	Thickness	Grade	Comments
7092	13678	12"	0.375	X-52	
13678	14083	12"	0.375	X-52	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	35-20-A1	0.285	0.011	0.296
Diameter (in.)	4.5, 8.625			

Cost Detail

Capital		O&M	
Direct Labor	\$ 87,800	Direct Labor	\$ -
Direct Non Labor	\$ 1,299,900	Direct Non Labor	\$ -
Total Direct Capital	\$ 1,387,700	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 4	0	1503	0.2847	8.625	Replace	2	Traffic Plans
Cat 2	1503	1561	0.0002	4.5	Replace		

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
1503	1561	8	0.322	X-52	Replacing this extra footage

ACTIVITY AND LOCATION:		SPECIFICATION NO.		FIRM NAME		SHEET	
Line 35-20-A1				SPEC SERVICES		Sheet 1 of 1	
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:		SPEC Project Number	
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		July 5, 2011		5057	
STATUS OF DESIGN							
Conceptual							
DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL
INPUT IN ALL GREEN CELLS							
1 MATERIALS							
Pipe	6	inch, STD, WT X-52	1561	Feet	\$ 26	\$ 40,227	\$ 40,227
Pressure Rating	n/a	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	10	Each	\$ 824	\$ 8,240	\$ 8,240
		lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -	\$ -
		FBE Coating (\$/ft)			\$ 2.29	\$ 3,575	\$ 3,575
		Miscellaneous Materials (5%)	1	Lot			\$ 2,423
		Freight / Tax	12.5	%			\$ 6,808
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 (\$/ft)	0	Each	\$ -	\$ -	\$ -
		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)	4	Each	\$ -	\$ -	\$ -
		FBE Coating (\$/ft)	0	Each	\$ -	\$ -	\$ -
		Miscellaneous Materials (5%)	1	Lot	\$ -	\$ -	\$ -
		Freight / Tax	12.5	%			\$ -
Casing	n/a	Miscellaneous Materials (5%)	0	Feet	\$ -	\$ -	\$ -
		Freight / Tax	1	Lot			\$ -
		Freight / Tax	12.5	%			\$ -
Total length			0.3	Miles			
Total Material Cost							\$ 61,300
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	1561	Feet		\$ 450	\$ 702,450
		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 6	0	Feet		\$ -	\$ -
		Pipe Install - Type 7	0	Feet		\$ -	\$ -
		Tie-ins Crew Rates	1	Each		\$ 25,000	\$ 25,000
		Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	2180	SCF	\$ 0.19	\$ 414	\$ 414
		Purging Labor	1	LS		\$ 25,000	\$ 25,000
		95% Abandonment of Existing Pipeline (\$50/CY)	20	CY		\$ 95	\$ 1,900
		5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%			\$ 26,342
		Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000
		Contaminated Soil	0	CY		\$ -	\$ -
		Asbestos Abatement	0	Feet		\$ -	\$ -
		Radiographic Inspection	7	Days	\$ 150	\$ 1,050	\$ 600
		Construction period	15	days			\$ 4,200
Total Construction Cost							\$ 816,400
3 SCG LABOR / INSPECTION							
		Projects < \$1 million - company labor is 10%	10	%		\$ 87,770	\$ 87,770
		\$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							\$ 87,800
4 DESIGN / ENG. / CONST. / ENVIRON.							
		Planning / Design / Eng / Coord / Procurement	10	%		\$ 87,770	\$ 87,770
		Construction Stakes, AS-Built Survey (2 man crew)	7	Days	\$ 100	\$ 700	\$ 1,400
		ROW Acquisition	0	LS		\$ -	\$ -
		Construction Permits	0	LS		\$ -	\$ -
		Environmental Permits	0	LS		\$ -	\$ -
		Environmental Monitoring	0	LS		\$ -	\$ -
		AS-Built Drawings (\$2000+\$1/ft)	1	LS		\$ 3,561	\$ 3,561
Total Design / Engineering / Construction Cost							\$ 101,900
5 CONTINGENCY							
		Projects < \$2 million - Contingency is 30%	30	%		\$ 320,220	\$ 320,220
		Projects > \$2 million - Contingency is 20%	20	%		\$ -	\$ -
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 1,387,700

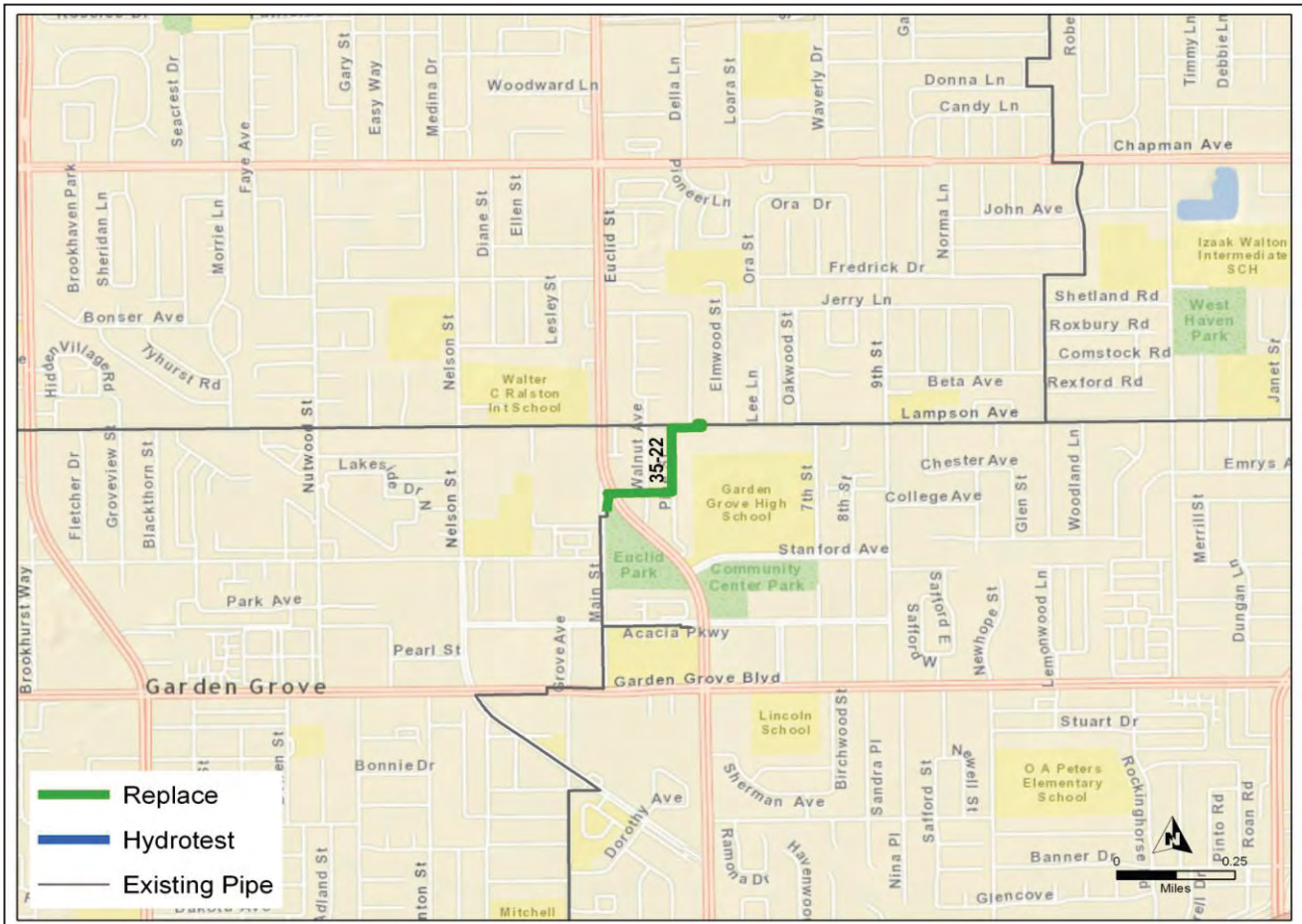
Comments
Replaced all segments pipe OD Per Remediation Plan

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	35-22	0.336	0.011	0.346
Diameter (in.)	6.625, 10.75			

Cost Detail

Capital		O&M	
Direct Labor	\$ 72,400	Direct Labor	\$ -
Direct Non Labor	\$ 1,071,600	Direct Non Labor	\$ -
Total Direct Capital	\$ 1,144,000	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	Tree Box	
Cat 4	0	1202	0.2277	10.75	Replace	2	2	City of Garden Grove
Cat 2	1202	1258	0.0106	10.75	Replace			
Cat 4	1258	1638	0.0720	10.75	Replace	2	2	Traffic Plans
Cat 4	1638	1822	0.0348	10.75	Replace	2	2	""
Cat 4	1822	1828	0.0011	6.625	Replace	2	2	""

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
1202	1258	10"	0.365	X-52	Replacing this extra footage Over 20%
1258	1638	10"	0.365	X-52	
1638	1822	10"	0.365	X-52	
1822	1828	10"	0.365	X-52	

ACTIVITY AND LOCATION: Line 35-22	SPECIFICATION NO.	THE FIRM NAME SPEC SERVICES	SHEET Sheet 1 of 1
PROJECT TITLE AND CLIENT: SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE	ESTIMATED BY: SPEC	DATE: August 11, 2011	SPEC Project Number 5057
	STATUS OF DESIGN Conceptual		

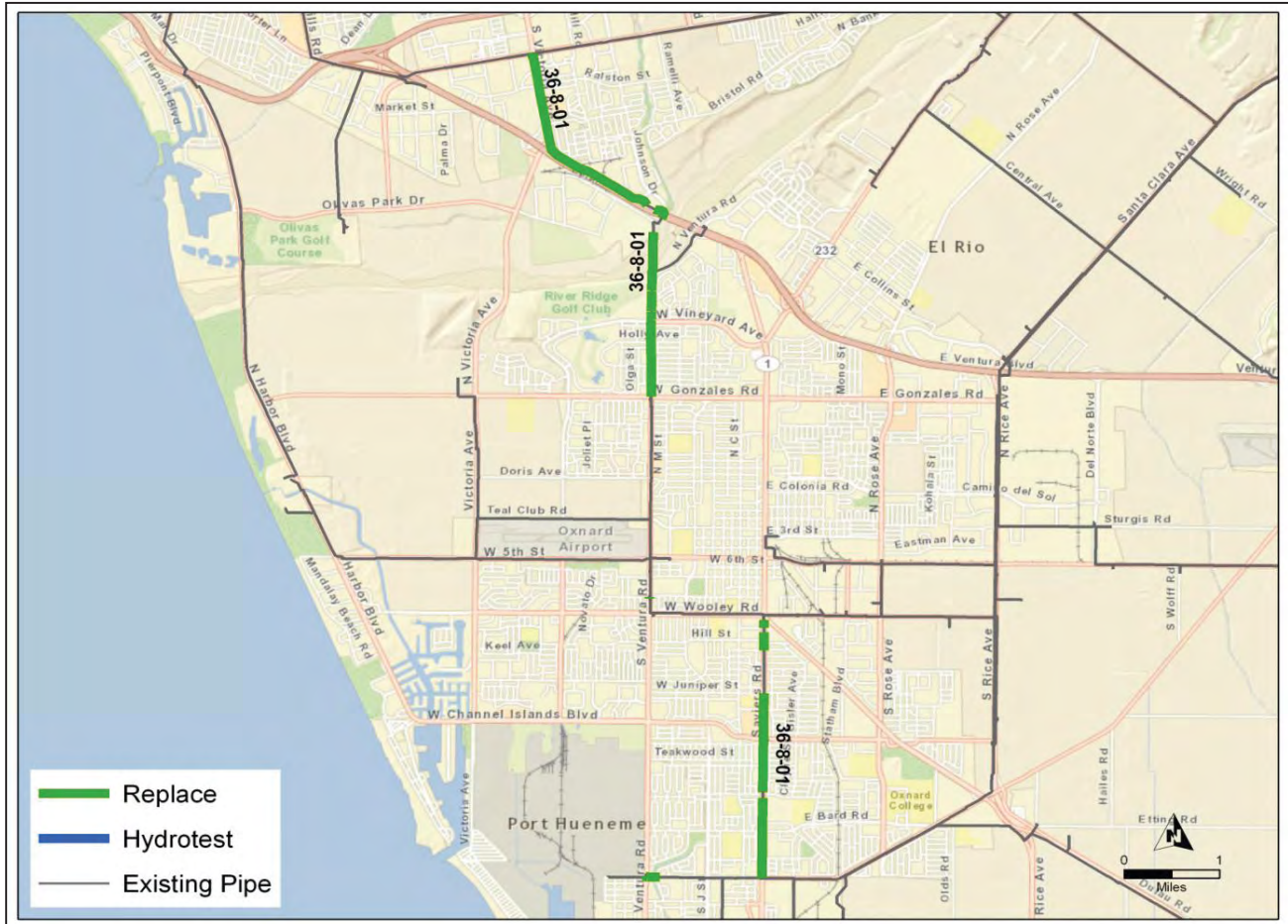
DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
1 MATERIALS								
INPUT IN ALL GREEN CELLS								
1 MATERIALS								
Pipe n/a 10 inch, STD, WT X-52	1638	Feet	\$ 36	\$ 59,279			\$ 59,279	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	11	Each	\$ 1,408	\$ 15,488			\$ 15,488	
Pressure Rating n/a 1b Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot	\$ 2,86	\$ 4,685			\$ 4,685	
Freight / Tax	12.5	%					\$ 3,738	
							\$ 10,399	
Pipe n/a	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a 1b Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/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 1b Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/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	0.3	Miles						
Total Material Cost							\$ 93,600	
2 CONSTRUCTION (See Appendix for construction type definitions)								
10 inch pipe								
Pipe Install - Type 1	0	Feet			\$ 175	\$ -	\$ -	
Pipe Install - Type 2	1259	Feet			\$ 280	\$ 352,240	\$ 352,240	
Pipe Install - Type 3	380	Feet			\$ 450	\$ 171,000	\$ 171,000	
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	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 6	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)	3576	SCF	\$ 0.19	\$ 679			\$ 679	
Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)	32	CY			\$ 95	\$ 3,040	\$ 3,040	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 19,622	
Mobilization / Demobilization	1	Each			\$ 30,000	\$ 30,000	\$ 30,000	
Contaminated Soil	0	CY			\$ -	\$ -	\$ -	
Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -	
Radiographic Inspection	5	Days	\$ 150	\$ 750	\$ 600	\$ 3,000	\$ 3,750	
Construction period	13	days						
Total Construction Cost							\$ 630,400	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%				\$ 72,400	\$ 72,400	
\$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							\$ 72,400	
4 DESIGN / ENG. / CONST. / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%				\$ 72,400	\$ 72,400	
Construction Stakes, AS-Built Survey (2 man crew)	5	Days	\$ 100	\$ 500	\$ 1,400	\$ 7,000	\$ 7,500	
ROW Acquisition	0	LS			\$ -	\$ -	\$ -	
Construction Permits	0	LS			\$ -	\$ -	\$ -	
Environmental Permits	0	LS			\$ -	\$ -	\$ -	
Environmental Monitoring	0	LS			\$ -	\$ -	\$ -	
AS-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 3,638	\$ 3,638	
Total Design / Engineering / Construction Cost							\$ 83,600	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%				\$ 264,000	\$ 264,000	
Projects > \$2 million - Contingency is 20%	20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 1,144,000	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	36-8-01	5.444	0.159	5.603
Diameter (in.)	Multiple: 6.625 - 12.75			

Cost Detail

Capital		O&M	
Direct Labor	\$ 409,500	Direct Labor	\$ -
Direct Non Labor	\$ 21,938,100	Direct Non Labor	\$ -
Total Direct Capital	\$ 22,347,600	Total Direct O&M	\$ -



**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 4	0	225	225	0.0426	8.625	Replace	2	
Cat 4	225	254	254	0.0055	10.75	Replace	2	
Cat 4	254	606	606	0.0667	12.75	Replace	2	
Cat 4	606	10088	10088	1.7958	12.75	Replace	2	
Cat 2	10088	10429	10429	-	12.75			
Cat 4	10429	10593	10593	0.0311	12.75	Replace	2	
Cat 4	10593	11227	11227	0.1201	12.75	Replace	2	
Cat 2	11227	12338	12338	-	12.75			
Cat 4	12338	14133	14133	0.1920	12.75	Replace	2	
Cat 4	14133	14300	14300	0.0316	12.75	Replace	2	
Cat 4	14300	15106	15106	0.1527	12.75	Replace	2	
Cat 4	15106	15128	15128	-	12.75			
Cat 4	15128	16212	16212	0.2053	12.75	Replace	2	
Cat 4	16212	16229	16229	-	12.75			
Cat 4	16229	16546	16546	0.0600	12.75	Replace	2	
Cat 4	16546	16559	16559	-	12.75			
Cat 4	16559	20231	20231	0.6955	12.75	Replace	2	
Cat 2	20231	28244	28244	-	10.75			
Cat 2	28244	28258	28258	0.0027	8.625			
Cat 4	28258	30159	30159	-	6.625			
Cat 4	30159	30233	30233	0.0140	6.625	Replace	2	
Cat 2	30233	36134	36134	-	12.75			
Cat 2	36134	36417	36417	-	8.625			
Cat 4	36417	36801	36801	0.0727	8.625	Replace	2	
Cat 4	36801	37010	37010	-	8.625			
Cat 4	37010	37460	37460	0.0852	8.625	Replace	2	
Cat 4	37460	37896	37896	0.0826	8.625	Replace	2	
Cat 4	37896	40000	40000	-	8.625			
Cat 4	40000	40014	40014	-	8.625			

Cat 4	40014	43227	0.6085	8.625	Replace	2
Cat 4	43227	44828	0.3032	8.625	Replace	2
Cat 2	44828	45110	0.0000	8.625		
Cat 4	45110	49062	0.7485	8.625	Replace	2
Cat 4	49062	49914	-	6.625		
Cat 2	49914	49928	-	6.625		
Cat 4	49928	50215	-	6.625		
Cat 4	50215	50985	-	6.625		
Cat 4	50985	51432	-	6.625		
Cat 4	51432	52680	-	6.625		
Cat 4	52680	53772	-	6.625		
Cat 4	53772	54363	0.1119	6.625	Replace	2
Cat 4	54363	54371	-	6.625		
Cat 4	54371	54466	0.0180	6.625	Replace	2

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
0	225	8.625	0.322	X-52	
225	254	10.75	0.365	X-52	
254	606	12.75	0.375	X-52	
606	10088	12.75	0.375	X-52	
10429	10593	12.75	0.375	X-52	
10593	11227	12.75	0.375	X-52	
12338	14133	12.75	0.375	X-52	
14133	14300	12.75	0.375	X-52	
14300	15106	12.75	0.375	X-52	
15128	16212	12.75	0.375	X-52	
16229	16546	12.75	0.375	X-52	
16559	20231	12.75	0.375	X-52	
30159	30233	6.625	0.280	X-52	
36417	36801	8.625	0.322	X-52	
37010	37460	8.625	0.322	X-52	

37460	37896	8.625	0.322	X-52
40014	43227	8.625	0.322	X-52
43227	44828	8.625	0.322	X-52
45110	49062	8.625	0.322	X-52
53772	54363	6.625	0.280	X-52
54371	54466	6.625	0.280	X-52

ACTIVITY AND LOCATION: Line 36-8-01	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 29, 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								
12 inch pipe	18554	Feet	\$ 44	\$ 821,571			\$ 821,571	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	78	Each	\$ 1,833	\$ 143,001			\$ 143,001	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 36,010	\$ -			\$ -	
FBE Coating (5/ft)			\$ 3.26	\$ 60,486			\$ 60,486	
Miscellaneous Materials (5%)	1	Lot					\$ 48,229	
Freight / Tax	12.5	%					\$ 134,161	
8 inch pipe	10261	Feet	\$ 26	\$ 264,426			\$ 264,426	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	45	Each	\$ 824	\$ 37,080			\$ 37,080	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 24,779	\$ -			\$ -	
FBE Coating (5/ft)			\$ 2.29	\$ 23,498			\$ 23,498	
Miscellaneous Materials (5%)	1	Lot					\$ 15,075	
Freight / Tax	12.5	%					\$ 42,510	
6 inch pipe	768	Feet	\$ 17	\$ 13,340			\$ 13,340	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	7	Each	\$ 590	\$ 4,060			\$ 4,060	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 21,999	\$ -			\$ -	
FBE Coating (5/ft)			\$ 1.73	\$ 1,329			\$ 1,329	
Miscellaneous Materials (5%)	1	Lot					\$ 870	
Freight / Tax	12.5	%					\$ 2,450	
Casing N/A	0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ 201,511	
Total length	5.6	Miles						
Total Material Cost							\$ 1,813,600	
2 CONSTRUCTION								
(See Appendix for construction type definitions)								
12 inch pipe								
Pipe Install - Type 1	167	Feet			\$ 175	\$ 29,225	\$ 29,225	
Pipe Install - Type 2	0	Feet			\$ 280	\$ -	\$ -	
Pipe Install - Type 3	16992	Feet			\$ 450	\$ 7,466,400	\$ 7,466,400	
Pipe Install - Type 4	1795	Feet			\$ 600	\$ 1,077,000	\$ 1,077,000	Crossing River
Pipe Install - Type 5	0	Feet			\$ 400	\$ -	\$ -	
Pipe Install - Type 6	0	Feet			\$ 400	\$ -	\$ -	
Pipe Install - Type 7	0	Feet			\$ 585	\$ -	\$ -	
8 inch pipe								
Pipe Install - Type 1	0	Feet			\$ 175	\$ -	\$ -	
Pipe Install - Type 2	0	Feet			\$ 280	\$ -	\$ -	
Pipe Install - Type 3	10261	Feet			\$ 450	\$ 4,617,450	\$ 4,617,450	
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	\$ -	\$ -	
6 inch pipe								
Pipe Install - Type 1	0	Feet			\$ 150	\$ -	\$ -	
Pipe Install - Type 2	0	Feet			\$ 240	\$ -	\$ -	
Pipe Install - Type 3	768	Feet			\$ 400	\$ 307,200	\$ 307,200	
Pipe Install - Type 4	0	Feet			\$ 450	\$ -	\$ -	
Pipe Install - Type 5	0	Feet			\$ 300	\$ -	\$ -	
Pipe Install - Type 7	0	Feet			\$ 520	\$ -	\$ -	
Pipe Install - Type 6	0	Feet			\$ 520	\$ -	\$ -	
Tie-ins Crew Rates	9	Each			\$ 25,000	\$ 225,000	\$ 225,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	73220	SCF	\$ 0.19	\$ 13,912			\$ 13,912	
Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)	644	CY			\$ 95	\$ 61,180	\$ 61,180	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 506,148	
Mobilization / Demobilization	5	Each			\$ 30,000	\$ 150,000	\$ 150,000	
Contaminated Soil	0	CY			\$ -	\$ -	\$ -	
Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -	
Radiographic Inspection	112	Days	\$ 150	\$ 16,800	\$ 600	\$ 67,200	\$ 84,000	
Construction period	120	days						
Total Construction Cost							\$ 14,562,600	
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	%				\$ 409,405	\$ 409,405	
Total SCG Labor / Inspection Cost							\$ 409,500	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%				\$ 1,637,620	\$ 1,637,620	
Construction Stake, As-Built Survey (2 man crew)	112	Days	\$ 100	\$ 11,200	\$ 1,400	\$ 156,800	\$ 168,000	
ROW Acquisition	0	LS				\$ -	\$ -	
Construction Permits	0	LS				\$ -	\$ -	
Environmental Permits	0	LS				\$ -	\$ -	
Environmental Monitoring	0	LS				\$ -	\$ -	
As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 31,583	\$ 31,583	
Total Design / Engineering / Construction Cost							\$ 1,837,300	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%				\$ -	\$ -	
Projects > \$2 million - Contingency is 20%	20	%				\$ 3,724,600	\$ 3,724,600	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 22,347,600	

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

Company	SCG
Plant Category	Dist
Line Number	36-8-06
Diameter (in.)	4.5, 6.625, 10.75

Replacement Mileage		
Category 4 Criteria	Accelerated	Total
-	0.042	0.042

Hydrotest Mileage		
Category 4 Criteria	Accelerated	Total
0.577	-	0.577

Cost Detail

Capital		O&M	
Direct Labor	\$ 14,300	Hydrotest	
Direct Non Labor	\$ 214,400	Direct Labor	\$ 7,700
Total Direct Capital	\$ 228,700	Direct Non Labor	\$ 189,800
		Total Hydrotest	\$ 197,500
		Repairs	
		Direct Labor	\$ 5,000
		Direct Non Labor	\$ 45,000
		Total Repairs	\$ 50,000



**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	223	-	4.5	Replace		
Cat 4	223	260	-	6.625			
Cat 4	260	802	-	6.625			
Cat 4	802	815	-	6.625			
Cat 4	815	941	-	6.625			
Cat 4	941	7801	-	6.625			
Cat 4	7801	12096	-	6.625			
Cat 2	12096	12206	-	6.625			
Cat 4	12206	15251	0.5767	6.625	Hydrotest		4
Cat 4	15251	15284	-	6.625			
Cat 4	15284	18649	-	6.625			
Cat 2	18649	18752	-	6.625			
Cat 4	18752	18880	-	6.625			
Cat 2	18880	19649	-	6.625			
Cat 4	19649	19682	-	6.625			
Cat 2	19682	19685	-	6.625			
Cat 2	19685	29383	-	10.75			
Cat 2	29383	33600	-	10.75			
Cat 2	33600	33637	-	6.625			
Cat 4	33637	35146	-	6.625			
Cat 4	35146	35850	-	6.625			
Cat 4	35850	36955	-	6.625			
Cat 4	36955	37075	-	6.625			
Cat 4	37075	37215	-	6.625			
Cat 4	37215	37466	-	6.625			
Cat 4	37466	37964	-	6.625			
Cat 4	37964	39979	-	6.625			
Cat 4	39979	40769	-	6.625			
Cat 4	40769	41067	-	6.625			

Cat 4	41067	41908	-	6.625
Cat 4	41908	42224	-	6.625
Cat 2	42224	42297	-	6.625
Cat 4	42297	42415	-	6.625

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
0	223	4.5	0.237	X-52	

ACTIVITY AND LOCATION: Line 36-8-06	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 7, 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 1/2 inch, STD. WT X-52	223	Feet	\$ 11	\$ 2,368			\$ 2,368	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 353	\$ 1,413			\$ 1,413	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 15,357	\$ -			\$ -	
FBE Coating (5/ft)			\$ 1.42	\$ 317			\$ 317	
Miscellaneous Materials (5%)	1	Lot					\$ 189	
Freight / Tax	12.5	%					\$ 536	
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							\$ 4,900	
2 CONSTRUCTION (See Appendix for construction type definitions)								
4 inch pipe								
Pipe Install - Type 1	0	Feet		\$ 150	\$ -	\$ -	\$ -	
Pipe Install - Type 2	223	Feet		\$ 240	\$ 53,520	\$ -	\$ 53,520	
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	0	Feet		\$ -	\$ -	\$ -	\$ -	
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 6	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)	80	SCF	\$ 0.19	\$ 15			\$ 15	
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	%					\$ 2,007	
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							\$ 137,200	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%			\$ 14,210	\$ -	\$ 14,210	
\$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							\$ 14,300	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%			\$ 14,210	\$ -	\$ 14,210	
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			\$ 2,223	\$ -	\$ 2,223	
Total Design / Engineering / Construction Cost							\$ 19,500	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%			\$ 52,770	\$ -	\$ 52,770	
Projects > \$2 million - Contingency is 20%	20	%			\$ -	\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 228,700	

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

ESTIMATED BY: **SPCC SERVICES, INC.**
 DATE: **July 29, 2011**

STATE OF DESIGN: **California**
 SPEC Project Number: **5057**



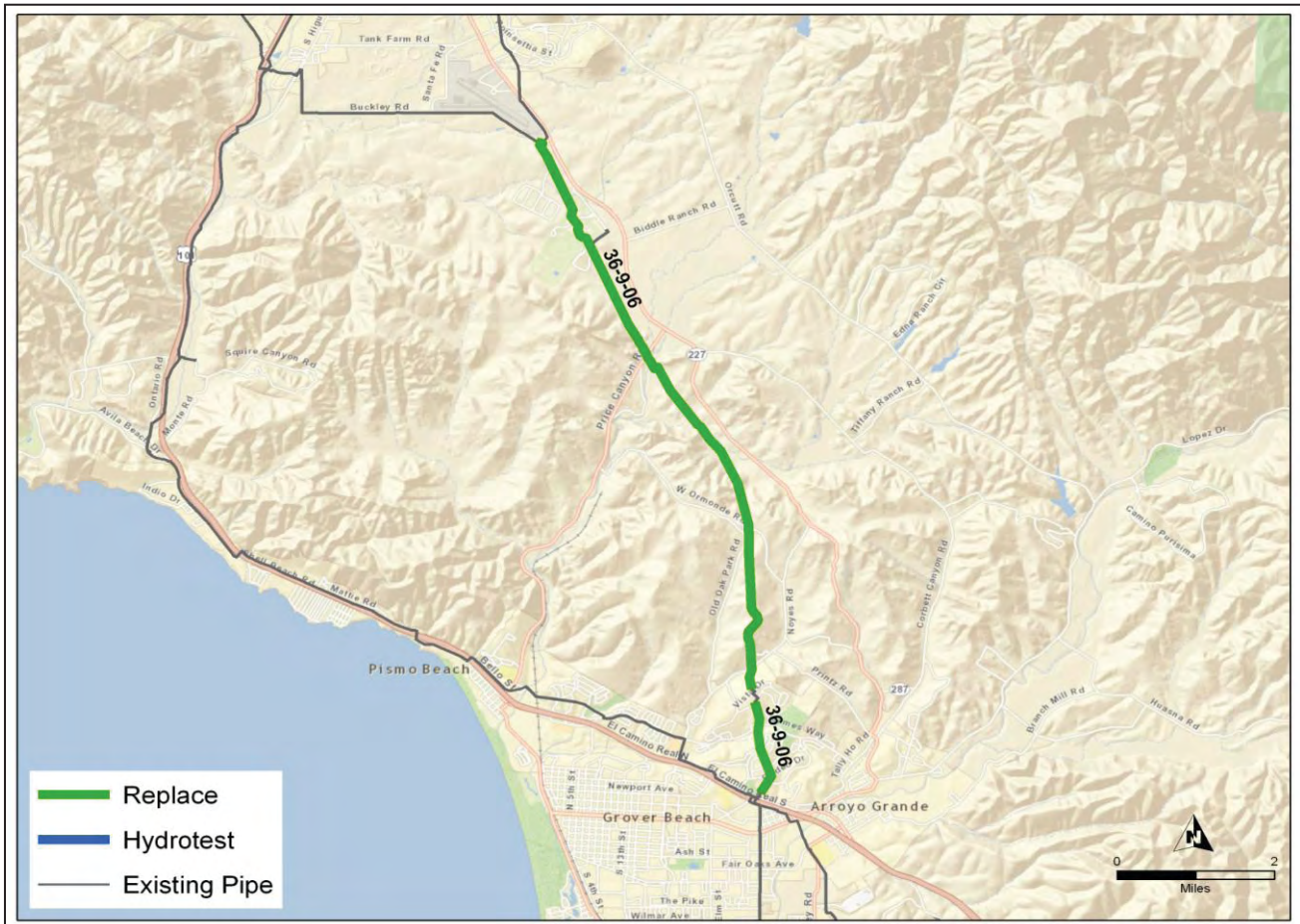
DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe 6.625 Actual OD (in)	111		bb/OD							
0.250 Wall Thickness (in)			bb/Segment							
3045 Length (FT)	1									
Hydrotest Test Segment	0									
Water Volume Baker Tank Volume	0		bb/OD							
n/a Actual OD (in)	0		bb/Segment							
0.000 Wall Thickness (in)	0									
0 Length (FT)	0									
Hydrotest Test Segment	0									
Water Volume Baker Tank Volume	0		bb/OD							
n/a Actual OD (in)	0		bb/Segment							
0.000 Wall Thickness (in)	0									
0 Length (FT)	0									
Hydrotest Test Segment	0									
Total Hydrotest Length 0.6 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	12,964		SCF	\$ 0.19	\$ 2,463				\$ 2,463	
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	1		each							
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	7		day(s)	\$ 1,600	\$ 11,200				\$ 11,200	
Total Hydrotest Water (\$19/bbl)	111		bbl	\$ 19.00	\$ 2,108				\$ 2,108	
Water Disposal Vacuum Truck(s) =A	1		each							
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	1		loads							
Disposal Time =>C*B/(A*10)	1		day(s)	\$ 5,000	\$ 5,000				\$ 5,000	
Total Vacuum Truck(s) Rental days (\$/day per truck) =>D=C*A	111		bbl	\$ 55	\$ 6,103				\$ 6,103	
Treated Water Disposal (\$55/bbl)	5		%		\$ 2,869				\$ 2,869	
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)	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		%					\$ 6,865	\$ 6,865	
ROW Acquisition	0		LS					\$ -	\$ -	
Construction Permits	0		LS					\$ -	\$ -	
Environmental Permits	0		LS					\$ -	\$ -	
Environmental Monitoring	0		LS					\$ -	\$ -	
Total Design / Engineering / Construction Cost									\$ 6,865	
5 CONTINGENCY										
Projects < \$2 million - Contingency is 30%	30		%					\$ 45,570	\$ 45,570	
Projects > \$2 million - Contingency is 20%	20		%					\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/certifications)									\$ 197,500	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	36-9-06	3.841	4.076	7.916
Diameter (in.)	16			

Cost Detail

Capital		O&M	
Direct Labor	\$ 428,100	Direct Labor	\$ -
Direct Non Labor	\$ 22,852,200	Direct Non Labor	\$ -
Total Direct Capital	\$ 23,280,300	Total Direct O&M	\$ -



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

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision		Comments
	Start	Stop				Tree Box		
Cat 1	0	923	0.1748	16				
Cat 1	923	16388	2.9290	16				
Cat 1	16388	25167	1.5430	16				
Cat 1	25167	47018	1.8087	16				
Cat 2	47018	47510	0.0932	16				
Cat 1	47510	59102	1.5574	16				
Cat 1	59102	107441	7.0366	16				
Cat 4	107441	113174	1.0858	16	Replace	2	Potential environmental impacts. Next to St Patrick's Elementary. May need to do work in the summer time or at night.	
Cat 2	113174	113236	0.0117	16				
Cat 2	113236	113530	0.0557	16				
Cat 2	113530	114212	0.1292	16				
Cat 4	114212	120231	0.9125	16	Replace	2	Potential environmental issues	
Cat 4	120231	120282	0.0000	16	Replace	2	Potential environmental issues	
Cat 4	120282	143321	1.0633	16	Replace	2	Potential environmental issues	
Cat 1	143321	145391	0.3920	16	Replace		Potential environmental issues	
Cat 4	145391	150277	0.7792	16	Replace	2	Potential environmental issues	
Cat 1	150277	258020	8.8775	16				

New Segments

Station Start	Station Stop	Wall			Comments
		Diameter	Thickness	Grade	
107441	113174	16	0.312	X-65	
114212	120231	16	0.312	X-65	
120231	120282	16	0.312	X-65	Include Cat. 4 zero criteria miles due to it being in between Cat. 4 criteria miles
120282	143321	16	0.312	X-65	

143321 145391 16 0.312 X-65 Include Cat. 1 mileage since it is between Cat. 4 criteria miles.

145391 150277 16 0.312 X-65

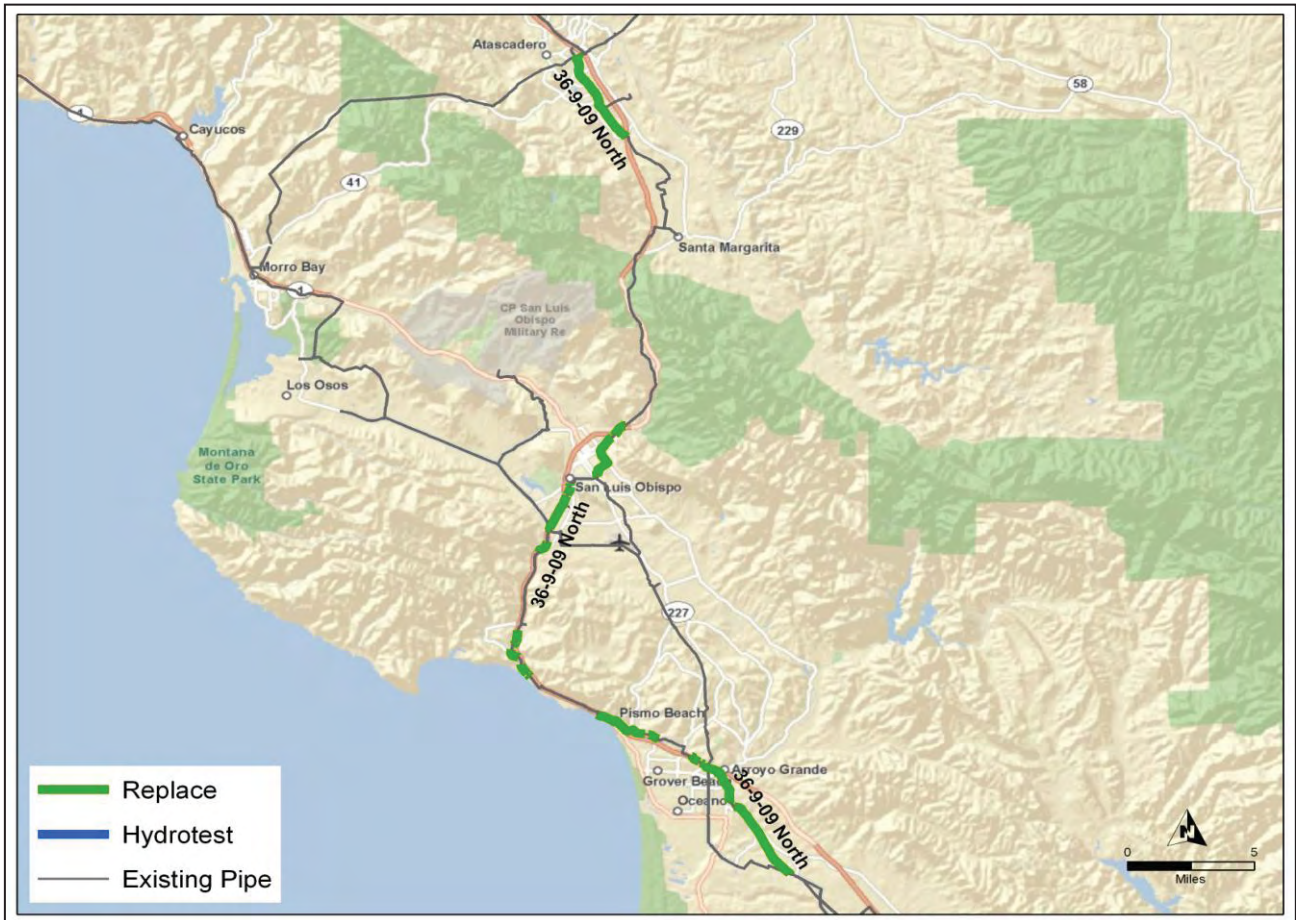
ACTIVITY AND LOCATION:		SPECIFICATION NO.		A/E FIRM NAME		SHEET		
Line 36-9-06				SPC SERVICES		Sheet 1 of 1		
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:		SPEC Project Number		
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		July 6, 2011		5057		
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL
INPUT IN ALL GREEN CELLS								
1 MATERIALS								
Pipe 16 inch, .312 WT X-65								
		41798	Feet	\$ 57	\$ 2,397,533			\$ 2,397,533
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	171	Each	\$ 3,339	\$ 570,913			\$ 570,913
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	1	Each	\$ 94,320	\$ 94,320			\$ 94,320
	FBE Coating (5/ft)			\$ 4.14	\$ 173,044			\$ 173,044
	Miscellaneous Materials (5%)	1	Lot					\$ 153,138
	Freight / Tax	12.5	%					\$ 423,618
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)	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					\$ -
	Freight / Tax	12.5	%					\$ -
	Total length	7.9	Miles					
	Total Material Cost							\$ 3,812,600
2 CONSTRUCTION (See Appendix for construction type definitions)								
16 inch pipe								
	Pipe Install - Type 1	27604	Feet			\$ 200	\$ 5,520,800	\$ 5,520,800
	Pipe Install - Type 2	6040	Feet			\$ 320	\$ 1,932,800	\$ 1,932,800
	Pipe Install - Type 3	2070	Feet			\$ 500	\$ 1,035,000	\$ 1,035,000
	Pipe Install - Type 4	51	Feet			\$ 750	\$ 38,250	\$ 38,250
	Pipe Install - Type 5	300	Feet			\$ 600	\$ 180,000	\$ 180,000
	Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -
	Pipe Install - Type 7	5733	Feet			\$ 650	\$ 3,726,450	\$ 3,726,450
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	2	Each			\$ 35,000	\$ 70,000	\$ 70,000
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	233448	SCF	\$ 0.19	\$ 44,355			\$ 44,355
	Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000
	95% Abandonment of Existing Pipeline (\$50/CY)	2052	CY			\$ 95	\$ 194,940	\$ 194,940
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 466,249
	Mobilization / Demobilization	1	Each			\$ 30,000	\$ 30,000	\$ 30,000
	Contaminated Soil	0	CY			\$ -	\$ -	\$ -
	Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -
	Radiographic Inspection	62	Days	\$ 150	\$ 9,300	\$ 600	\$ 37,200	\$ 46,500
	Construction period	70	days					
	Total Construction Cost							\$ 13,310,400
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	%			\$ 428,075	\$ 428,075	\$ 428,075
	Total SCG Labor / Inspection Cost							\$ 428,100
4 DESIGN / ENG. / CONST / ENVIRON.								
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 1,712,300	\$ 1,712,300	\$ 1,712,300
	Construction Stake, As-Built Survey (2 man crew)	62	Days	\$ 100	\$ 6,200	\$ 1,400	\$ 86,800	\$ 93,000
	ROW Acquisition	0	LS			\$ -	\$ -	\$ -
	Construction Permits	0	LS			\$ -	\$ -	\$ -
	Environmental Permits	0	LS			\$ -	\$ -	\$ -
	Environmental Monitoring	0	LS			\$ -	\$ -	\$ -
	As-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 43,798	\$ 43,798	\$ 43,798
	Total Design / Engineering / Construction Cost							\$ 1,849,100
5 CONTINGENCY								
	Projects < \$2 million - Contingency is 30%	30	%			\$ -	\$ -	\$ -
	Projects > \$2 million - Contingency is 20%	20	%			\$ 3,880,040	\$ 3,880,040	\$ 3,880,040
	TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 23,280,300

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	36-9-09 North	9.662	6.354	16.016
Diameter (in.)	Multiple: 6.625 - 16			

Cost Detail

Capital		O&M	
Direct Labor	\$ 849,500	Direct Labor	\$ -
Direct Non Labor	\$ 45,502,300	Direct Non Labor	\$ -
Total Direct Capital	\$ 46,351,800	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	
	Start	Stop					Tree Box	Comments
Cat 2	0	12	12	-	6.625			
Cat 4	12	781	781	0.1456	6.625	Replace	2	Pipe is in State Hwy 41.
Cat 4	781	1073	1073	0.0553	10.75	Replace	2	A portion of it (approx. 150-feet) is in State Hwy 41
Cat 4	1073	5027	5027	0.2038	6.625	Replace	2	
Cat 1	5027	5082	5082	-	6.625	Replace		
Cat 4	5082	17740	17740	0.2129	6.625	Replace	2	
Cat 4	17740	17872	17872	-	8.625			
Cat 4	17872	18007	18007	-	10.75			
Cat 4	18007	18899	18899	-	8.625			
Cat 4	18899	22570	22570	-	6.625			
Cat 2	22570	22595	22595	-	6.625			
Cat 4	22595	28480	28480	-	6.625			
Cat 1	28480	34073	34073	-	6.625			
Cat 2	34073	34081	34081	-	6.625			
Cat 1	34081	43001	43001	-	12.75			
Cat 2	43001	43006	43006	-	8.625			
Cat 4	43006	44898	44898	-	8.625			
Cat 4	44898	45098	45098	-	10.75			
Cat 4	45098	48033	48033	-	6.625			
Cat 4	48033	48171	48171	-	6.625			
Cat 4	48171	48856	48856	-	6.625			
Cat 4	48856	50569	50569	-	8.625			
Cat 4	50569	58892	58892	-	6.625			
Cat 4	58892	58937	58937	-	6.625			
Cat 4	58937	59924	59924	-	6.625			
Cat 1	59924	62311	62311	-	12.75			
Cat 2	62311	63513	63513	-	12.75			
Cat 2	63513	63684	63684	-	12.75			
Cat 4	63684	64584	64584	-	6.625			

Cat 4	64584	65330	-	6.625			
Cat 4	65330	65822	-	6.625			
Cat 4	65822	66123	-	6.625			
Cat 4	66123	69358	-	6.625			
Cat 2	69358	69361	-	6.625			
Cat 2	69361	75767	-	10.75			
Cat 1	75767	75932	-	12.75			
Cat 2	75932	77221	-	12.75			
Cat 1	77221	79361	-	12.75			
Cat 4	79361	83614	-	6.625			
Cat 4	83614	83648	-	6.625			
Cat 4	83648	85143	-	6.625			
Cat 4	85143	85385	-	6.625			
Cat 4	85385	86634	0.1165	6.625	Replace	2	There is a creek crossing from Sta. 861+75 to 866+34.
Cat 4	86634	87944	0.2481	10.75	Replace	2	There is a creek crossing and Hwy 101 crossing at Sta. 872+46 to 879+44
Cat 2	87944	88814	0.1648	10.75			
Cat 4	88814	98079	1.7547	10.75	Replace	2	Between 964+72 and 980+19 you will cross RR tracks
Cat 2	98079	98170	-	10.75			
Cat 2	98170	98187	-	16			
Cat 2	98187	98568	-	10.75			
Cat 2	98568	103747	-	10.75			
Cat 4	103747	104214	0.0884	10.75	Replace	2	
Cat 4	104214	104220	0.0011	10.75	Replace	2	
Cat 2	104220	104562	0.0648	8.625			
Cat 4	104562	105232	0.1269	10.75	Replace	2	
Cat 4	105232	105929	0.1320	6.625	Replace	2	
Cat 2	105929	105938	-	6.625			
Cat 2	105938	106198	-	10.75			
Cat 4	106198	106620	0.0799	8.625	Replace	2	
Cat 4	106620	106948	0.0621	6.625	Replace	2	
Cat 4	106948	107791	0.1597	10.75	Replace	2	
Cat 2	107791	107810	0.0036	10.75			
Cat 4	107810	109477	0.3157	10.75	Replace	2	Parallel Hwy 101. Possible Cal Trans Issues
Cat 4	109477	112801	0.2040	6.625	Replace	2	Parallel Hwy 101. Possible Cal Trans Issues
Cat 2	112801	112842	-	8.625	Replace		Parallel Hwy 101. Possible Cal Trans Issues
Cat 4	112842	113047	0.0165	10.75	Replace	2	

Cat 2	113047	114241	-	10.75								
Cat 4	114241	114950	-	10.75								
Cat 4	114950	115065	-	10.75								
Cat 4	115065	115615	-	10.75								
Cat 4	115615	117991	-	8.625	Replace	2						
Cat 1	117991	118298	-	8.625								
Cat 2	118298	118914	-	8.625								
Cat 1	118914	131995	-	8.625								
Cat 2	131995	132025	-	8.625								
Cat 1	132025	133458	-	8.625								
Cat 4	133458	135237	0.0360	8.625	Replace	2	Parallel Hwy 101.	Possible Cal Trans Issues				
Cat 1	135237	135519	0.0534	8.625								
Cat 1	135519	135817	0.0564	12.75								
Cat 4	135817	136402	0.1108	8.625	Replace	2						
Cat 2	136402	136406	-	8.625								
Cat 2	136406	137268	-	12.75								
Cat 2	137268	137319	-	10.75								
Cat 4	137319	139495	0.3686	8.625	Replace	2	Parallel Hwy 101.	Possible Cal Trans Issues				
Cat 2	139495	140990	0.1578	8.625								
Cat 4	140990	142744	0.3322	8.625	Replace	2	Parallel Hwy 101.	Possible Cal Trans Issues				
Cat 2	142744	142950	0.0390	8.625								
Cat 4	142950	143443	0.0934	8.625	Replace	2	Parallel Hwy 101.	Possible Cal Trans Issues.				
Cat 1	143443	146389	-	8.625								
Cat 4	146389	146437	0.0091	8.625	Replace	2	Parallel Hwy 101.	Possible Cal Trans Issues.				
Cat 2	146437	160470	-	10.75								
Cat 4	160470	161553	0.2051	10.75	Replace	2	Parallel Hwy 101.	Possible Cal Trans Issues. Along coast, possible environmental issues				
Cat 4	161553	163624	0.3922	8.625	Replace	2	Parallel Hwy 101.	Possible Cal Trans Issues. Crosses Hwy at STA 1636+24				
Cat 4	163624	164439	0.1544	10.75	Replace	2	Parallel Hwy 101.	Possible Cal Trans Issues.				
Cat 4	164439	165573	0.2148	10.75	Replace	2						
Cat 4	165573	166696	0.2127	10.75	Replace	2						
Cat 4	166696	166711	0.0028	8.625	Replace	2						
Cat 4	166711	167500	0.1494	8.625	Replace	2						
Cat 4	167500	170132	0.4985	8.625	Replace	2						
Cat 2	170132	170710	-	8.625								
Cat 4	170710	172620	0.3617	8.625	Replace	2						

Cat 1	172620	173831	-	8.625				
Cat 1	173831	178474	-	8.625				
Cat 2	178474	180465	-	8.625				
Cat 4	180465	180646	0.0343	8.625	Replace	2		
Cat 2	180646	180887	-	8.625				
Cat 4	180887	182096	0.2290	8.625	Replace	2	Parallel Hwy 101. Possible Cal Trans Issues.	
Cat 2	182096	182404	-	8.625				
Cat 4	182404	183063	0.1248	8.625	Replace	2	Parallel Hwy 101. Possible Cal Trans Issues.	
Cat 2	183063	183693	-	8.625				
Cat 4	183693	183758	0.0123	10.75	Replace	2	Parallel Hwy 101. Possible Cal Trans Issues.	
Cat 4	183758	183982	0.0424	16	Replace	2	Parallel Hwy 101. Hwy 101 Crossing. Possible Cal Trans Issues.	
Cat 4	183982	184032	0.0095	10.75	Replace	2	Parallel Hwy 101. Hwy 101 Crossing. Possible Cal Trans Issues.	
Cat 4	184032	184379	0.0657	8.625	Replace	2	Parallel Hwy 101. Possible Cal Trans Issues.	
Cat 4	184379	185296	0.1737	12.75	Replace	2	Parallel Hwy 101. Possible Cal Trans Issues.	
Cat 4	185296	186953	0.3138	12.75	Replace	2	Parallel Hwy 101. Possible Cal Trans Issues.	
Cat 4	186953	192787	1.1049	8.625	Replace	2	Parallel Hwy 101. Possible Cal Trans Issues. 1 canal crossing at STA 1880+39	
Cat 2	192787	193993	-	10.75				
Cat 4	193993	208411	0.7028	8.625	Replace	2	Creek Crossing at TSA 1950+00	

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
12	781	10.75	0.365	X-52	Upgrading pipe size per master planning files.
781	1073	10.75	0.365	X-52	Upgrading pipe size per master planning files.
1073	5027	10.75	0.365	X-52	Upgrading pipe size per master planning files.
5027	5082	10.75	0.365	X-52	Include Cat. 1 pipe since it's between 2 Cat. 4 criteria segments.
5082	17740	12.75	0.365	X-52	Upgrading pipe size per master planning files.
85385	86634	10.75	0.365	X-52	Upgrading pipe size per master planning files.
86634	87944	10.75	0.365	X-52	Upgrading pipe size per master planning files.
88814	98079	10.75	0.365	X-52	Upgrading pipe size per master planning files.
103747	104214	10.75	0.365	X-52	Upgrading pipe size per master planning files.
104214	104220	10.75	0.365	X-52	Upgrading pipe size per master planning files.
104562	105232	10.75	0.365	X-52	Upgrading pipe size per master planning files.

105232	105929	10.75	0.365	X-52	Upgrading pipe size per master planning files.
106198	106620	10.75	0.365	X-52	Upgrading pipe size per master planning files.
106620	106948	10.75	0.365	X-52	Upgrading pipe size per master planning files.
106948	107791	10.75	0.365	X-52	Upgrading pipe size per master planning files.
107810	109477	10.75	0.365	X-52	Upgrading pipe size per master planning files.
109477	112801	10.75	0.365	X-52	Upgrading pipe size per master planning files.
112801	112842	10.75	0.365	X-52	Upgrading pipe size per master planning files.
112842	113047	10.75	0.365	X-52	Upgrading pipe size per master planning files.
115615	117991	10.75	0.365	X-52	Upgrading pipe size per master planning files.
133458	135237	10.75	0.365	X-52	Upgrading pipe size per master planning files.
135817	136402	10.75	0.365	X-52	Upgrading pipe size per master planning files.
137319	139495	10.75	0.365	X-52	Upgrading pipe size per master planning files.
140990	142744	10.75	0.365	X-52	Upgrading pipe size per master planning files.
142950	143443	10.75	0.365	X-52	Upgrading pipe size per master planning files.
146389	146437	10.75	0.365	X-52	Upgrading pipe size per master planning files.
160470	161553	10.75	0.365	X-52	Upgrading pipe size per master planning files.
161553	163624	10.75	0.365	X-52	Upgrading pipe size per master planning files.
163624	164439	10.75	0.365	X-52	Upgrading pipe size per master planning files.
164439	165573	10.75	0.365	X-52	Upgrading pipe size per master planning files.
165573	166696	10.75	0.365	X-52	Upgrading pipe size per master planning files.
166696	166711	10.75	0.365	X-52	Upgrading pipe size per master planning files.
166711	167500	10.75	0.365	X-52	Upgrading pipe size per master planning files.
167500	170132	10.75	0.365	X-52	Upgrading pipe size per master planning files.
170710	172620	10.75	0.365	X-52	Upgrading pipe size per master planning files.
180465	180646	10.75	0.365	X-52	Upgrading pipe size per master planning files.
180887	182096	10.75	0.365	X-52	Upgrading pipe size per master planning files.
182404	183063	10.75	0.365	X-52	Upgrading pipe size per master planning files.
183693	183758	10.75	0.365	X-52	Upgrading pipe size per master planning files.
183758	183982	10.75	0.365	X-52	Upgrading pipe size per master planning files.
183982	184032	10.75	0.365	X-52	Upgrading pipe size per master planning files.
184032	184379	10.75	0.365	X-52	Upgrading pipe size per master planning files.
184379	185296	10.75	0.365	X-52	Upgrading pipe size per master planning files.
185296	186953	10.75	0.365	X-52	Upgrading pipe size per master planning files.
186953	192787	10.75	0.365	X-52	Upgrading pipe size per master planning files.
193993	208411	10.75	0.365	X-52	Upgrading pipe size per master planning files.

ACTIVITY AND LOCATION:		SPECIFICATION NO.		A/E FIRM NAME		SHEET		
Line 36-9-09 North				SPC SERVICES		Sheet 1 of 1		
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:		SPEC PROJECT NUMBER		
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		August 11, 2011		5057		
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL
INPUT IN ALL GREEN CELLS								
1 MATERIALS								
Pipe 10 inch, STD. WT X-52								
		71486	Feet	\$ 36	\$ 2,587,078			\$ 2,587,078
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	289	Each	\$ 1,408	\$ 406,912			\$ 406,912
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	3	Each	\$ 28,405	\$ 85,215			\$ 85,215
	FBE Coating (5/ft)			\$ 2.86	\$ 204,450			\$ 204,450
	Miscellaneous Materials (5%)	1	Lot					\$ 153,960
	Freight / Tax	12.5	%					\$ 429,702
Pipe 12 inch, STD. WT X-52								
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	12658	Feet	\$ 44	\$ 560,496			\$ 560,496
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	54	Each	\$ 1,833	\$ 99,000			\$ 99,000
	FBE Coating (5/ft)	0	Each	\$ 36,010	\$ -			\$ -
	Miscellaneous Materials (5%)	1	Lot	\$ 3.26	\$ 41,265			\$ 41,265
	Freight / Tax	12.5	%					\$ 32,975
								\$ 91,717
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 n/a								
	Miscellaneous Materials (5%)	0	Feet	\$ -	\$ -			\$ -
	Freight / Tax	1	Lot					\$ -
		12.5	%					\$ -
	Total length	15.9	Miles					
	Total Material Cost							\$ 4,692,800
2 CONSTRUCTION (See Appendix for construction type definitions)								
10 inch pipe								
	Pipe Install - Type 1	5600	Feet		\$ 175	\$ 980,000		\$ 980,000
	Pipe Install - Type 2	45703	Feet		\$ 280	\$ 12,796,840		\$ 12,796,840
	Pipe Install - Type 3	18173	Feet		\$ 450	\$ 8,177,850		\$ 8,177,850
	Pipe Install - Type 4	810	Feet		\$ 600	\$ 486,000		\$ 486,000
	Pipe Install - Type 5	1200	Feet		\$ 400	\$ 480,000		\$ 480,000
	Pipe Install - Type 6	0	Feet		\$ -	\$ -		\$ -
	Pipe Install - Type 7	0	Feet		\$ 585	\$ -		\$ -
12 inch pipe								
	Pipe Install - Type 1	0	Feet		\$ 175	\$ -		\$ -
	Pipe Install - Type 2	7658	Feet		\$ 280	\$ 2,144,240		\$ 2,144,240
	Pipe Install - Type 3	5000	Feet		\$ 450	\$ 2,250,000		\$ 2,250,000
	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 7	0	Feet		\$ -	\$ -		\$ -
	Pipe Install - Type 6	0	Feet		\$ -	\$ -		\$ -
	Tie-ins Crew Rates	19	Each		\$ 25,000	\$ 475,000		\$ 475,000
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	195728	SCF	\$ 0.19	\$ 37,188			\$ 37,188
	Purging Labor	1	LS		\$ 25,000	\$ 25,000		\$ 25,000
	95% Abandonment of Existing Pipeline (\$50/CY)	1720	CY		\$ 95	\$ 163,400		\$ 163,400
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 1,024,310
	Mobilization / Demobilization	3	Each		\$ 30,000	\$ 90,000		\$ 90,000
	Contaminated Soil	0	CY		\$ -	\$ -		\$ -
	Asbestos Abatement	0	Feet		\$ -	\$ -		\$ -
	Radiographic Inspection	209	Days	\$ 150	\$ 31,350	\$ 600	\$ 125,400	\$ 156,750
	Construction period	217	days					
	Total Construction Cost							\$ 29,286,600
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	%			\$ 849,485	\$ 849,485	\$ 849,485
	Total SCG Labor / Inspection Cost							\$ 849,500
4 DESIGN / ENG. / CONST / ENVIRON.								
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 3,397,940	\$ 3,397,940	\$ 3,397,940
	Construction Stake, As-Built Survey (2 man crew)	209	Days	\$ 100	\$ 20,900	\$ 1,400	\$ 292,600	\$ 313,500
	ROW Acquisition	0	LS			\$ -	\$ -	\$ -
	Construction Permits	0	LS			\$ -	\$ -	\$ -
	Environmental Permits	0	LS			\$ -	\$ -	\$ -
	Environmental Monitoring	0	LS			\$ -	\$ -	\$ -
	As-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 86,144	\$ 86,144	\$ 86,144
	Total Design / Engineering / Construction Cost							\$ 3,797,600
5 CONTINGENCY								
	Projects < \$2 million - Contingency is 30%	30	%			\$ -	\$ -	\$ -
	Projects > \$2 million - Contingency is 20%	20	%			\$ 7,725,300	\$ 7,725,300	\$ 7,725,300
	TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 46,351,800

Comments
Replaced segments pipe OD per Remediation Plan. Pipe size upgrade to 10" 12", 12" upgrade identified by green spreadsheet.
Multiple Bores Creek, Fly HDD's
Tie for 19 separate areas

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	36-9-06-A	2.641	-	2.641
Diameter (in.)	16			

Cost Detail

Capital		O&M	
Direct Labor	\$ 303,200	Direct Labor	\$ -
Direct Non Labor	\$ 8,136,400	Direct Non Labor	\$ -
Total Direct Capital	\$ 8,439,600	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 4	0	7	-	16			
Cat 2	7	1036	0.1949	16			
Cat 1	1036	3049	0.3813	16			
Cat 4	3049	15169	2.2955	16	Replace	2	Crossing State Hwy 227
Cat 4	15169	16994	0.3456	16	Replace	2	
Cat 2	16994	17276	-	16			

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
15169	16994	16	0.312	X-65	

ACTIVITY AND LOCATION: Line 36-9-06-A	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 7, 2011	
	STATUS OF DESIGN Conceptual	SPEC Project Number 5057	

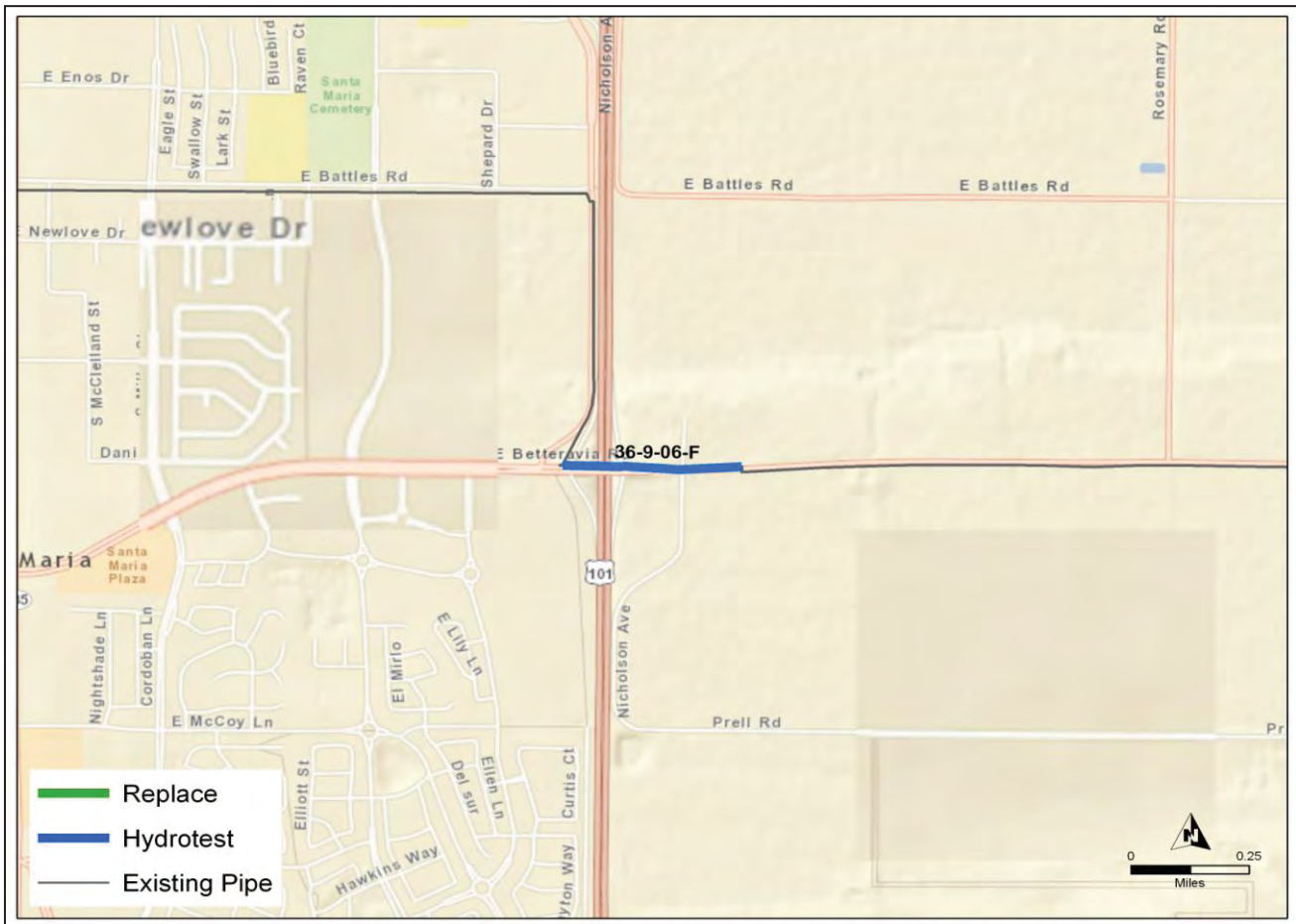
DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
INPUT IN ALL GREEN CELLS								
1 MATERIALS								
16 inch Pipe	13945	Feet	\$ 57	\$ 799,885			\$ 799,885	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	59	Each	\$ 3,339	\$ 196,982			\$ 196,982	
300 lb Pressure Rating Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 94,320	\$ -			\$ -	
FBE Coating (5/ft)			\$ 4.14	\$ 57,732			\$ 57,732	
Miscellaneous Materials (5%)	1	Lot					\$ 49,843	
Freight / Tax	12.5	%					\$ 138,055	
n/a Pipe	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
n/a Pressure Rating 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 Pipe	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
n/a Pressure Rating 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 Casing	0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
2.6 Total length		Miles						
1,242,500 Total Material Cost							\$ 1,242,500	
2 CONSTRUCTION (See Appendix for construction type definitions)								
16 inch pipe								
Pipe Install - Type 1	0	Feet			\$ 200	\$ -	\$ -	
Pipe Install - Type 2	13945	Feet			\$ 320	\$ 4,462,400	\$ 4,462,400	
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 6	0	Feet			\$ -	\$ -	\$ -	
Pipe Install - Type 7	0	Feet			\$ -	\$ -	\$ -	
Tie-ins Crew Rates	1	Each			\$ 35,000	\$ 35,000	\$ 35,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	77884	SCF	\$ 0.19	\$ 14,798			\$ 14,798	
Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)	685	CY			\$ 95	\$ 65,075	\$ 65,075	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 167,340	
Mobilization / Demobilization	1	Each			\$ 30,000	\$ 30,000	\$ 30,000	
Contaminated Soil	0	CY			\$ -	\$ -	\$ -	
Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -	
Radiographic Inspection	29	Days	\$ 150	\$ 4,350	\$ 600	\$ 17,400	\$ 21,750	
37 Construction period		days						
4,821,400 Total Construction Cost							\$ 4,821,400	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%					\$ -	\$ -
\$1million <Projects < \$10 million - company labor is 5%	5	%					\$ 303,195	\$ 303,195
Projects >\$10 million - company labor is 2.5%	2.5	%					\$ -	\$ -
303,200 Total SCG Labor / Inspection Cost							\$ 303,200	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%					\$ 606,390	\$ 606,390
Construction Stake, As-Built Survey (2 man crew)	29	Days	\$ 100	\$ 2,900	\$ 1,400	\$ 40,600	\$ 43,500	
ROW Acquisition	0	LS					\$ -	\$ -
Construction Permits	0	LS					\$ -	\$ -
Environmental Permits	0	LS					\$ -	\$ -
Environmental Monitoring	0	LS					\$ -	\$ -
As-Built Drawings (\$2000+\$1/ft)	1	LS					\$ 15,945	\$ 15,945
665,900 Total Design / Engineering / Construction Cost							\$ 665,900	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%					\$ -	\$ -
Projects >\$2 million - Contingency is 20%	20	%					\$ 1,406,600	\$ 1,406,600
8,439,600 TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 8,439,600	

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

Company	SCG	Hydrotest Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	36-9-06 F	-	0.308	0.308
Diameter (in.)	2.375, 4.5, 6.625			

Cost Detail

Capital		O&M	
		<i>Hydrotest</i>	
Direct Labor	\$ -	Direct Labor	\$ 7,700
Direct Non Labor	\$ -	Direct Non Labor	\$ 184,700
Total Direct Capital	\$ -	Total Hydrotest	\$ 192,400
		<i>Repairs</i>	
		Direct Labor	\$ 5,000
		Direct Non Labor	\$ 45,000
		Total Repairs	\$ 50,000



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 2	1	76	-	6.625			
Cat 2	76	8013	1.5032	6.625			
Cat 2	8013	10740	-	6.625			
Cat 4	10740	12365	-	6.625	Hydrotest		
Cat 2	12365	21715	-	6.625			
Cat 2	21715	24816	-	4.5			
Cat 2	24816	26863	-	4.5			
Cat 2	26863	26873	-	2.375			

SHEET: Sheet 1 of 1
 DATE: July 28, 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	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe	6.625	Actual OD (in)								
	0.188	Wall Thickness (in)								
	1625	Length (FT)								
	1	QTY								
Water Volume			bb/OD							
Baker Tank Volume			bb/Segment							
Hydrotest Test Segment										
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)								
	0	QTY								
Water Volume			bb/OD							
Baker Tank Volume			bb/Segment							
Hydrotest Test Segment										
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)								
	0	QTY								
Water Volume			bb/OD							
Baker Tank Volume			bb/Segment							
Hydrotest Test Segment										
Total Hydrotest Length	0.3	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	13,465	SCF		\$ 0.19	\$ 2,564				\$ 2,564	
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	1	each								
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	7	day(s)		\$ 1,600	\$ 11,200				\$ 11,200	
Total Hydrotest Water (\$19/bbl)	62	bbl		\$ 19.00	\$ 1,171				\$ 1,171	
Water Disposal Vacuum Truck(s) =A	1	each								
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	1	loads								
Disposal Time =>C-B/(A*10)	1	day(s)								
Total Vacuum Truck(s) Rental days (\$/day per truck) =>D=C*A	62	day(s)		\$ 5.00	\$ 5,000				\$ 5,000	
Treated Water Disposal (\$55/bbl)	62	bbl		\$ 55	\$ 3,380				\$ 3,380	
Miscellaneous Materials	5	%		\$	\$ 2,681				\$ 2,681	
SCG Post Estimate Changes										
Additional Baker Tanks:	0	QTY								
Additional Test Segments:	0	QTY								
(due to elevation changes)	0	QTY								
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	%							\$ 6,680	
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	%							\$ 44,400	
Projects >\$2 million - Contingency is 20%	20	%							\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/certifications)										
										\$ 192,400

WP-IX-1-B70

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

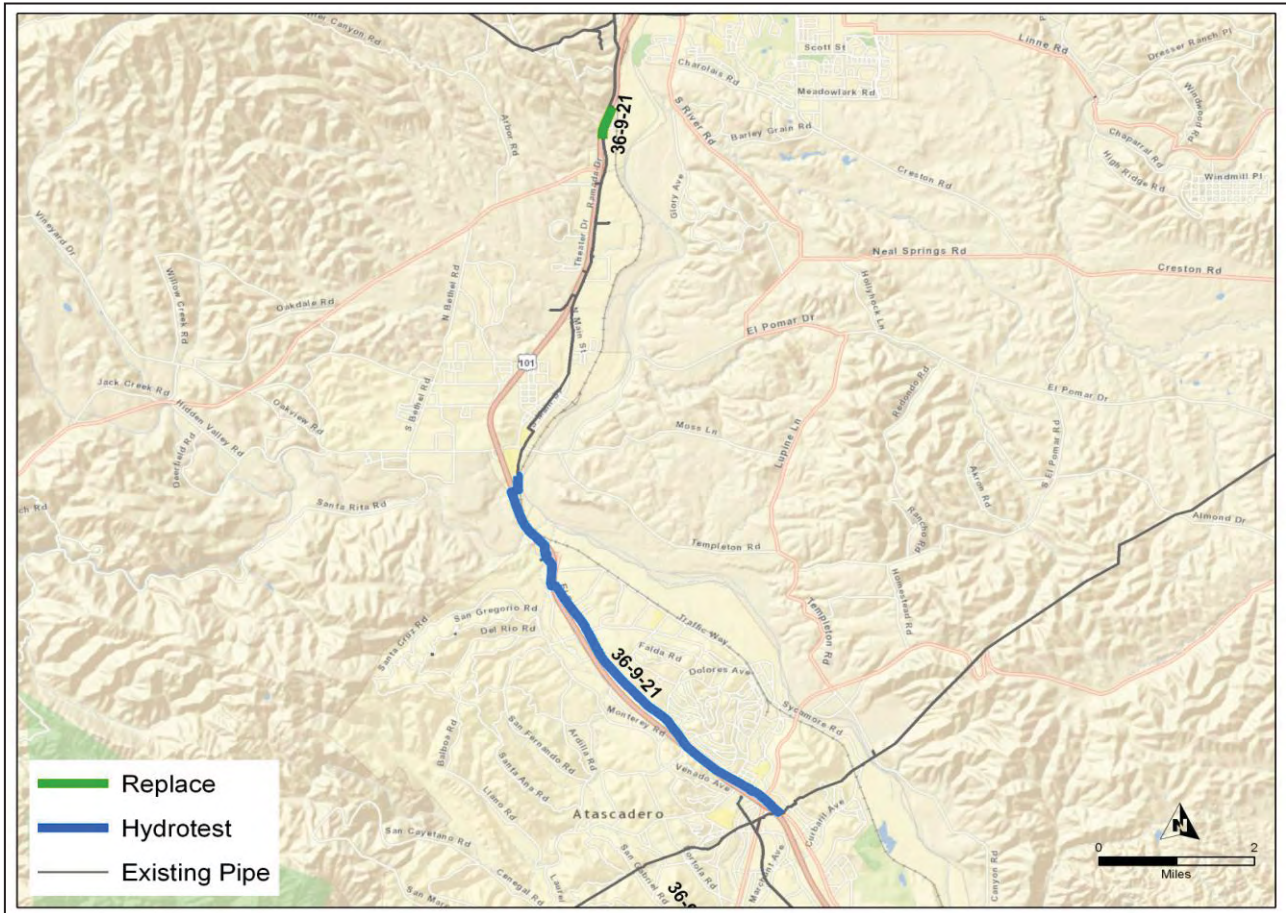
Company	SCG
Plant Category	Dist
Line Number	36-9-21
Diameter (in.)	6.625, 8.625, 10.75

Replacement Mileage		
Category 4 Criteria	Accelerated	Total
0.389	-	0.389

Hydrotest Mileage		
Category 4 Criteria	Accelerated	Total
1.530	3.527	5.057

Cost Detail

Capital		O&M	
Direct Labor	\$ 80,000	Direct Labor	\$ -
Direct Non Labor	\$ 1,184,600	Direct Non Labor	\$ -
Total Direct Capital	\$ 1,264,600	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 4	0	8081	1.5305	10.75	Hydrotest		4
Cat 4	8081	26701	-	10.75	Hydrotest		4
Cat 1	26701	28366	0.3153	10.75			
Cat 2	28366	37213	1.6756	10.75			
Cat 2	37213	48354	1.9405	10.75			
Cat 2	48354	48437	0.0157	6.625			
Cat 4	48437	50489	0.3886	6.625	Replace		2
Cat 1	50489	56811	0.7246	10.75			
Cat 1	56811	66607	-	8.625			

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
48437	50489	10.75	0.365	X-52	replace 6" with 10"

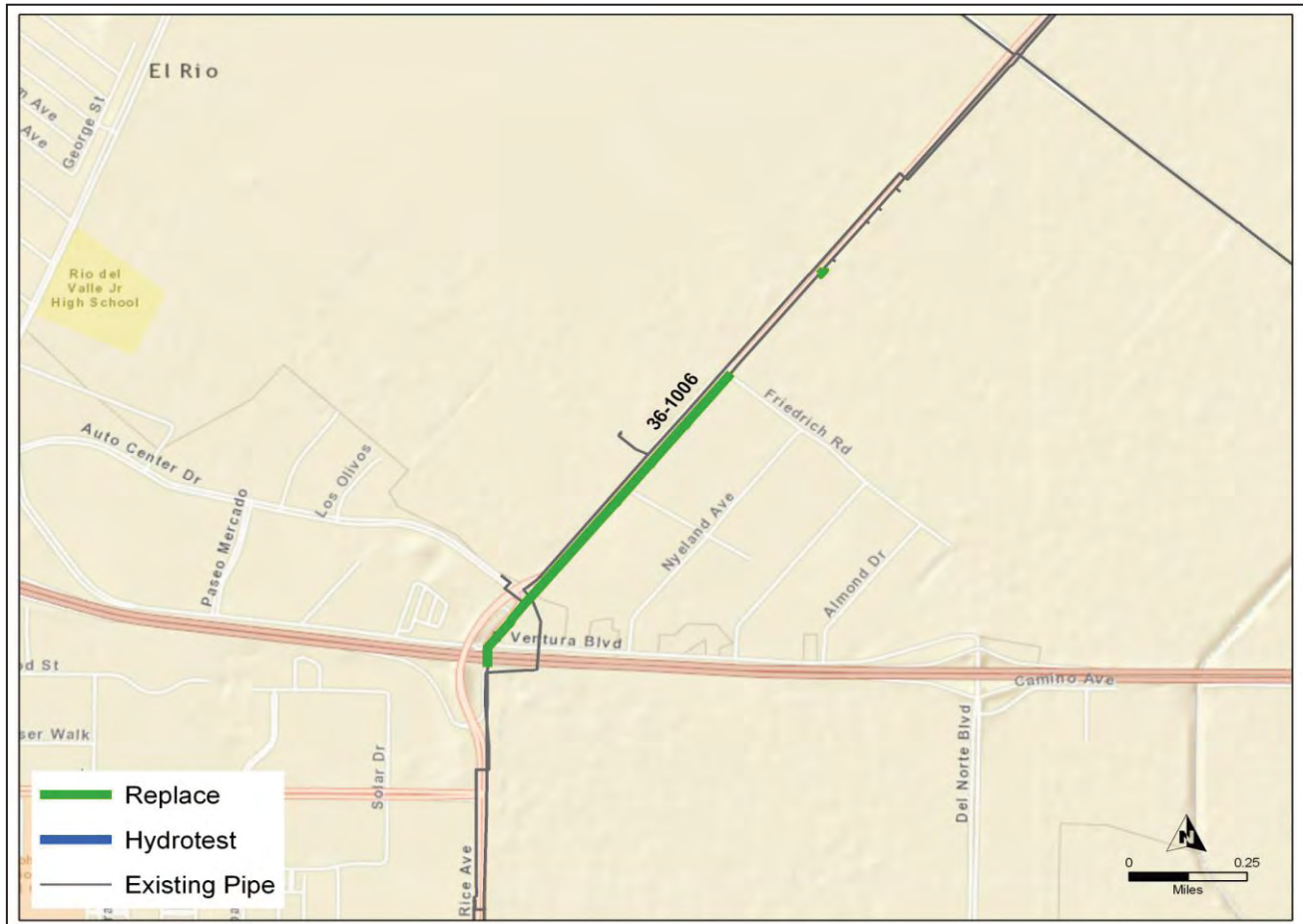
ACTIVITY AND LOCATION:		SPECIFICATION NO.		A/E FIRM NAME		SHEET		
Line 36-9-21				SPEC SERVICES		Sheet 1 of 1		
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:		SPEC Project Number		
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		July 6, 2011		5057		
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL
INPUT IN ALL GREEN CELLS								
1 MATERIALS								
Upsize to 10" per SCG comment								
Pipe 10 inch, STD. WT X-52		2052	Feet	\$ 36	\$ 74,262			\$ 74,262
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		12	Each	\$ 1,408	\$ 16,896			\$ 16,896
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ 28,405	\$ -			\$ -
FBE Coating (5/ft)				\$ 2.86	\$ 5,869			\$ 5,869
Miscellaneous Materials (5%)		1	Lot					\$ 4,558
Freight / Tax		12.5	%					\$ 12,698
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		0.4	Miles					
Total Material Cost								\$ 114,300
2 CONSTRUCTION (See Appendix for construction type definitions)								
10 inch pipe								
Pipe Install - Type 1		0	Feet			\$ 175	\$ -	\$ -
Pipe Install - Type 2		2052	Feet			\$ 280	\$ 574,560	\$ 574,560
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)		4480	SCF	\$ 0.19	\$ 851			\$ 851
Purging Labor		1	LS			\$ 25,000	\$ 25,000	\$ 25,000
95% Abandonment of Existing Pipeline (\$50/CY)		40	CY			\$ 95	\$ 3,800	\$ 3,800
5% Removal of Existing Pipeline (75% of Construction Labor Cost)		75	%					\$ 21,546
Mobilization / Demobilization		1	Each			\$ 30,000	\$ 30,000	\$ 30,000
Contaminated Soil		0	CY			\$ -	\$ -	\$ -
Asbestos Abatement		0	Feet			\$ -	\$ -	\$ -
Radiographic Inspection		6	Days	\$ 150	\$ 900	\$ 600	\$ 3,600	\$ 4,500
Construction period		14	days					
Total Construction Cost								\$ 685,300
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%		10	%				\$ 79,960	\$ 79,960
\$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								\$ 80,000
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement		10	%				\$ 79,960	\$ 79,960
Construction Stake, As-Built Survey (2 man crew)		6	Days	\$ 100	\$ 600	\$ 1,400	\$ 8,400	\$ 9,000
ROW Acquisition		0	LS				\$ -	\$ -
Construction Permits		0	LS				\$ -	\$ -
Environmental Permits		0	LS				\$ -	\$ -
Environmental Monitoring		0	LS				\$ -	\$ -
As-Built Drawings (\$2000+\$1/ft)		1	LS				\$ 4,052	\$ 4,052
Total Design / Engineering / Construction Cost								\$ 93,100
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%		30	%				\$ 291,810	\$ 291,810
Projects > \$2 million - Contingency is 20%		20	%				\$ -	\$ -
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 1,264,600

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	36-1006	0.200	0.526	0.726
Diameter (in.)	8.625, 12.75			

Cost Detail

Capital		O&M	
Direct Labor	\$ 69,300	Direct Labor	\$ -
Direct Non Labor	\$ 2,027,900	Direct Non Labor	\$ -
Total Direct Capital	\$ 2,097,200	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	
	Start	Stop					Tree Box	Comments
Cat 4	0	301		-	8.625			
Cat 2	301	305		-	8.625			
Cat 4	305	1938		-	8.625			
Cat 2	1938	1980		-	8.625			
Cat 4	1980	3364		-	8.625			
Cat 2	3364	3668		-	8.625			
Cat 4	3668	5115		-	8.625			
Cat 4	5115	5515		-	8.625			
Cat 4	5515	10798		-	8.625			
Cat 4	10798	10882		0.0106	8.625	Replace	2	
Cat 4	10882	12072		-	8.625			
Cat 2	12072	12140		-	8.625			
Cat 4	12140	12191		0.0097	8.625	Replace	2	
Cat 4	12191	12756		0.1070	8.625	Replace	2	
Cat 4	12756	12808		0.0098	8.625	Replace	2	
Cat 4	12808	13286		-	8.625	Replace	2	
Cat 4	13286	13330		0.0083	8.625	Replace	2	
Cat 4	13330	13791		-	8.625	Replace	2	
Cat 4	13791	13835		0.0083	8.625	Replace	2	
Cat 4	13835	15626		-	8.625	Replace	2	
Cat 4	15626	15701		0.0142	8.625	Replace	2	
Cat 4	15701	15717		-	8.625	Replace	2	
Cat 4	15717	15721		-	8.625	Replace	2	
Cat 4	15721	15888		0.0316	12.75	Replace	2	Pipe is in cell in bridge
Cat 4	15888	15889		-	8.625			
Cat 4	15889	19633		-	8.625			
Cat 4	19633	21136		-	8.625			
Cat 2	21136	21339		-	8.625			
Cat 4	21339	21424		-	8.625			

Cat 4	21424	23080	-	8.625
Cat 2	23080	23082	-	8.625

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
10798	10882	8.625	0.322	X-52	
12140	12191	8.625	0.322	X-52	
12191	12756	8.625	0.322	X-52	
12756	12808	8.625	0.322	X-52	
12808	13286	8.625	0.322	X-52	Picking up zero criteria miles since it is between criteria miles
13286	13330	8.625	0.322	X-52	
13330	13791	8.625	0.322	X-52	Picking up zero criteria miles since it is between criteria miles
13791	13835	8.625	0.322	X-52	
13835	15626	8.625	0.322	X-52	Picking up zero criteria miles since it is between criteria miles
15626	15701	8.625	0.322	X-52	
15701	15717	8.625	0.322	X-52	Picking up zero criteria miles since it is between criteria miles
15717	15721	8.625	0.322	X-52	Picking up zero criteria miles since it is between criteria miles
15721	15888	8.625	0.322	X-52	Will reduce pipe from 12.75 to 8.625 and install casing.

ACTIVITY AND LOCATION: Line 36-1006	SPECIFICATION NO.	A/E FIRM NAME SPCC SERVICES	SHEET Sheet 1 of 1
PROJECT TITLE AND CLIENT: SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE	ESTIMATED BY: SPEC	DATE: June 30, 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 8 inch, STD. WT X-52	3832	Feet	\$ 26	\$ 98,751			\$ 98,751	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	19	Each	\$ 824	\$ 15,656			\$ 15,656	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 24,779	\$ -			\$ -	
FBE Coating (5/ft)			\$ 2.29	\$ 8,775			\$ 8,775	
Miscellaneous Materials (5%)	1	Lot					\$ 5,720	
Freight / Tax	12.5	%					\$ 16,113	
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	0.7	Miles						
Total Material Cost							\$ 145,100	
2 CONSTRUCTION (See Appendix for construction type definitions)								
8 inch pipe								
Pipe Install - Type 1	0	Feet			\$ 175	\$ -	\$ -	
Pipe Install - Type 2	3832	Feet			\$ 280	\$ 1,016,960	\$ 1,016,960	
Pipe Install - Type 3	200	Feet			\$ 450	\$ 90,000	\$ 90,000	Hwy Bore
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 6	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)	5352	SCF	\$ 0.19	\$ 1,017			\$ 1,017	
Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)	48	CY			\$ 95	\$ 4,560	\$ 4,560	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 41,511	
Mobilization / Demobilization	1	Each			\$ 30,000	\$ 30,000	\$ 30,000	
Contaminated Soil	0	CY			\$ -	\$ -	\$ -	
Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -	
Radiographic Inspection	9	Days	\$ 150	\$ 1,350	\$ 600	\$ 5,400	\$ 6,750	
Construction period	17	days						
Total Construction Cost							\$ 1,240,800	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%				\$ -	\$ -	
\$1million <Projects < \$10 million - company labor is 5%	5	%				\$ 69,295	\$ 69,295	
Projects >\$10 million - company labor is 2.5%	2.5	%				\$ -	\$ -	
Total SCG Labor / Inspection Cost							\$ 69,300	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%				\$ 138,590	\$ 138,590	
Construction Stake, As-Built Survey (2 man crew)	9	Days	\$ 100	\$ 900	\$ 1,400	\$ 12,600	\$ 13,500	
ROW Acquisition	0	LS				\$ -	\$ -	
Construction Permits	0	LS				\$ -	\$ -	
Environmental Permits	0	LS				\$ -	\$ -	
Environmental Monitoring	0	LS				\$ -	\$ -	
As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 5,832	\$ 5,832	
Total Design / Engineering / Construction Cost							\$ 158,000	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%				\$ 483,960	\$ 483,960	
Projects >\$2 million - Contingency is 20%	20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 2,097,200	

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

Company	SCG
Plant Category	Dist
Line Number	36-1032
Diameter (in.)	6.625, 8.625, 10.75

Replacement Mileage		
Category 4 Criteria	Accelerated	Total
0.697	0.843	1.540

Hydrotest Mileage		
Category 4 Criteria	Accelerated	Total
1.165	0.390	1.555

Cost Detail

Capital		O&M	
Direct Labor	\$ 220,300	Hydrotest	
Direct Non Labor	\$ 5,922,200	Direct Labor	\$ 7,700
Total Direct Capital	\$ 6,142,500	Direct Non Labor	\$ 297,700
		Total Hydrotest	\$ 305,400
		Repairs	
		Direct Labor	\$ 5,000
		Direct Non Labor	\$ 45,000
		Total Repairs	\$ 50,000



**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 4	0	494		-	6.625			
Cat 4	494	829		-	8.625			
Cat 4	829	2149		-	8.625			
Cat 2	2149	8395		-	8.625			
Cat 4	8395	9348		-	8.625			
Cat 4	9348	10026		-	8.625			
Cat 4	10026	21002		-	8.625			
Cat 4	21002	21357		-	8.625			
Cat 1	21357	22004		-	8.625			
Cat 4	22004	24376		-	8.625			
Cat 4	24376	24447		-	8.625			
Cat 4	24447	29083		-	8.625			
Cat 4	29083	29181		-	8.625			
Cat 4	29181	30413		-	8.625			
Cat 4	30413	31731		-	8.625			
Cat 4	31731	32502		-	8.625			
Cat 2	32502	32721		-	8.625			
Cat 4	32721	33096		-	8.625			
Cat 2	33096	33224		-	8.625			
Cat 4	33224	34570		-	8.625			
Cat 4	34570	34887		-	8.625			
Cat 4	34887	35589		-	8.625			
Cat 4	35589	35750		-	8.625			
Cat 2	35750	35904		-	8.625			
Cat 4	35904	36525		-	8.625			
Cat 2	36525	37443		-	8.625			
Cat 4	37443	38628		-	8.625			
Cat 4	38628	39259		-	8.625			

Cat 4	39259	39399	-	8.625				
Cat 4	39399	46223	-	8.625				
Cat 4	46454	47304	-	10.75				
Cat 4	47304	51714	-	8.625				
Cat 4	51714	53221	-	8.625				
Cat 4	53221	56723	-	8.625				
Cat 4	56723	56833	-	10.75				
Cat 4	56833	57498	-	10.75				
Cat 4	57498	57637	-	8.625				
Cat 4	57637	59313	-	8.625				
Cat 4	59313	61442	-	8.625				
Cat 1	61442	67325	-	8.625				
Cat 4	67325	67437	-	8.625				
Cat 4	67437	68733	0.2040	8.625	Replace	2	Will require PCFBO to not lose customers	
Cat 4	68733	69333	0.1136	10.75	Replace	2	Will require PCFBO to not lose customers	
Cat 4	69333	70559	0.2322	10.75	Replace	2	Will require PCFBO to not lose customers	
Cat 2	70559	74016	-	10.75				
Cat 4	74016	74824	0.0064	10.75	Replace	2	Will require PCFBO to not lose customers	
Cat 4	74824	77938	0.5782	10.75	Hydrotest	4		
Cat 2	77938	78465	0.0998	10.75				
Cat 2	78465	79029	0.1068	10.75				
Cat 4	79029	79134	0.0199	10.75	Hydrotest	4		
Cat 2	79134	79142	0.0015	10.75				
Cat 4	79253	82245	0.5667	10.75	Hydrotest	4		
Cat 2	82245	83505	0.2386	8.625				
Cat 1	83505	88957	1.0326	8.625				
Cat 4	88957	89700	0.1407	10.75	Replace	2		
Cat 1	89700	91412	0.3191	8.625				
Cat 1	91412	98755	-	8.625				
Cat 4	98755	100800	-	10.75				
Cat 1	100800	101583	-	8.625				
Cat 4	101583	103438	-	10.75				

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
67437	68733	10.75	0.365	X-52	Upgrade pipe size to match downstream pipe
68733	69333	10.75	0.365	X-52	
69333	70559	10.75	0.365	X-52	
74016	74824	10.75	0.365	X-52	
88957	89700	10.75	0.365	X-52	

ACTIVITY AND LOCATION:		SPECIFICATION NO.		SHEET			
Line 36-1032				Sheet 1 of 1			
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:			
SOUTHERN CALIFORNIA GAS COMPANY PIPE HYDROTEST COST ESTIMATE		SPEC SERVICES, Inc.		July 28, 2011			
		STATUS OF DESIGN:		SPEC Project Number:			
		Complete		5057			
DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL
INPUT IN ALL BLUE CELLS							
1 MATERIALS	Pipe	10.75 Actual OD (in) 0.218 Wall Thickness (in) 8211 Length (ft)	Water Volume: Baker Tank Volume:	848 848	bbl / OD bbl / Segment		
	Hydrotest Test Segment	QTY					
	Pipe	n/A Actual OD (in) 0.000 Wall Thickness (in) 0 Length (ft)	Water Volume: Baker Tank Volume:	0 0	bbl / OD bbl / Segment		
	Hydrotest Test Segment	QTY					
	Pipe	n/A Actual OD (in) 0.000 Wall Thickness (in) 0 Length (ft)	Water Volume: Baker Tank Volume:	0 0	bbl / OD bbl / Segment		
	Hydrotest Test Segment	QTY					
	Total Hydrotest Length	1.6 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)	36,748	SCF	\$ 0.19	\$ 6,982		\$ 6,982
	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) =Y	2	each				
	Total Baker Tank(s) Rental days (\$/day per tank) =Y*X/Z	14	day(s)	\$ 1,600	\$ 22,400		\$ 22,400
	Total Hydrotest Water (\$19/bbl)	848	bbl	\$ 19.00	\$ 16,114		\$ 16,114
	Water Disposal Vacuum Truck(s) =A	2	each				
	Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	8	loads				
	Disposal Time =C=B/ A*10	1	day(s)	\$ 5,000	\$ 10,000		\$ 10,000
	Total Vacuum Truck(s) Rental days (\$/day per truck) =D=C*A	2	day(s)	\$ 5,000	\$ 10,000		\$ 10,000
	Treated Water Disposal (\$55/bbl)	848	bbl	\$ 55	\$ 46,647		\$ 46,647
	Miscellaneous Materials	5	%		\$ 6,632		\$ 6,632
	SCG Post Estimate Changes:						
	Additional Baker Tanks:	0 QTY					
	Additional Test Segments: (due to elevation changes)	0 QTY					
	Total Material Cost						\$ 139,300
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 (5 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
	\$1million < 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	%			\$ 10,815	\$ 10,815
	ROW Acquisition	0	LS			\$ -	\$ -
	Construction Permits	0	LS			\$ -	\$ -
	Environmental Permits	0	LS			\$ -	\$ -
	Environmental Monitoring	0	LS			\$ -	\$ -
	Total Design / Engineering / Construction Cost						\$ 10,900
5 CONTINGENCY	Projects < \$2 million - Contingency is 30%	30	%			\$ 70,470	\$ 70,470
	Projects >\$2 million - Contingency is 20%	20	%			\$ -	\$ -
	TOTAL PROJECT COST (See Appendix for assumptions/clarifications)						\$ 305,400

SHEET: Sheet 1 of 1
 DATE: July 28, 2011
 SPEC Project Number: 5057
 SPEC SERVICES, INC.
 ESTIMATED BY: SPEC SERVICES, INC.
 STATE OF DESIGN: Conceptual

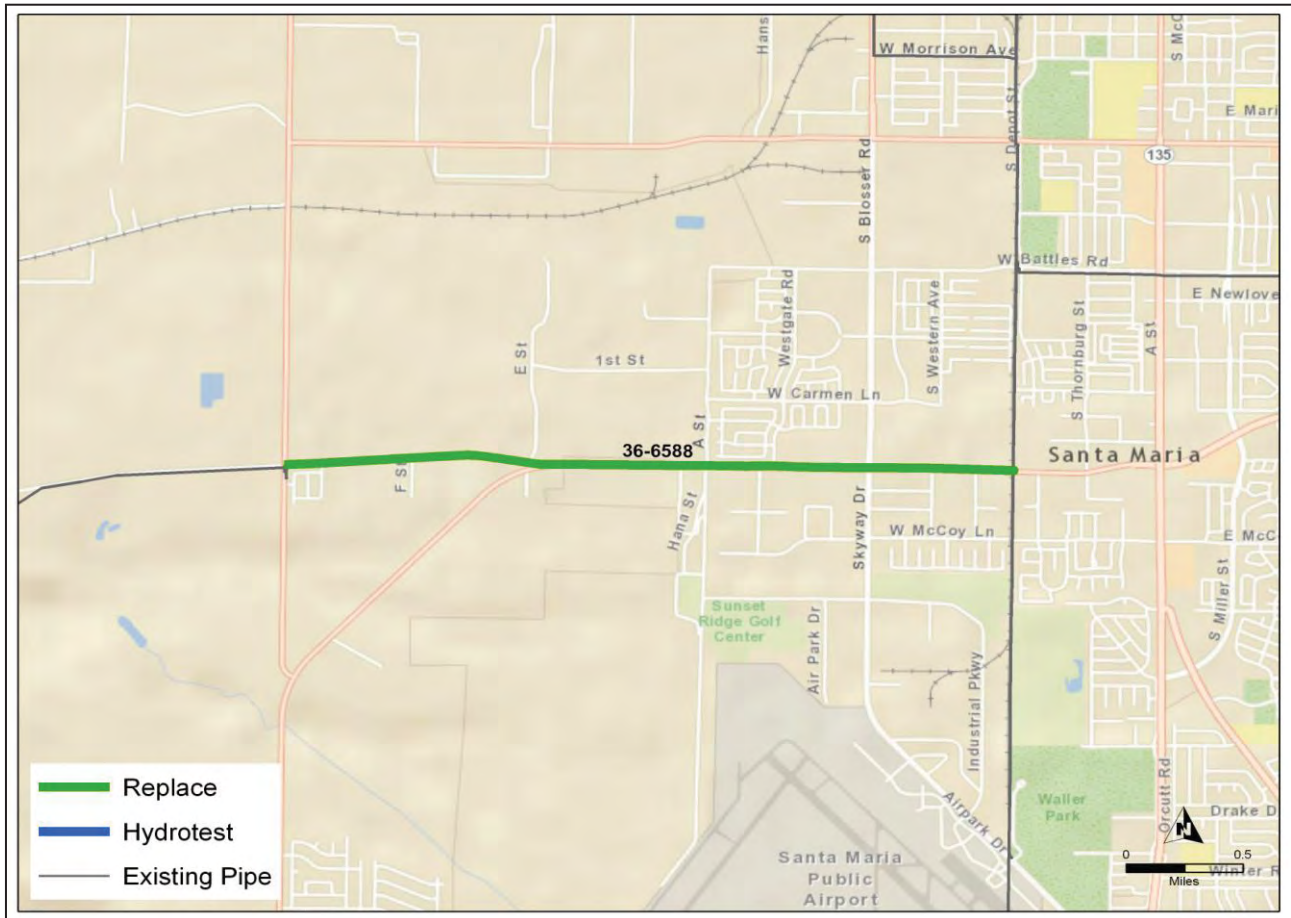
DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST		Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe	10.75	Actual OD (in)								
	0.218	Wall Thickness (in)								
	8211	Length (FT)								
	1	QTY								
Hydrotest Test Segment			bb/OD							
			bb/Segment							
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)								
	0	QTY								
Hydrotest Test Segment			bb/OD							
			bb/Segment							
Pipe	n/a	Actual OD (in)								
	0.000	Wall Thickness (in)								
	0	Length (FT)								
	0	QTY								
Hydrotest Test Segment			bb/OD							
			bb/Segment							
Total Hydrotest Length	1.6	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	36,748	SCF			6,982				6,982	
Temporary Pig Launcher/Receiver (one/ OD change)	1	LS			25,000				25,000	
Water Injection Pump & Filter (capacity 1200 gpm)	1	day(s)			486				486	
On-Site Vacuum Truck(s) (minimum one per/ test segment)	1	each			5,000				5,000	
Baker Tank(s) =X	2	each								
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	14	day(s)			1,600				22,400	
Total Hydrotest Water (\$19/bbl)	848	bbl			19,000				16,114	
Water Disposal Vacuum Truck(s) =A	2	each								
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	8	loads								
Disposal Time =>C*B/(A*10)	1	day(s)								
Total Vacuum Truck(s) Rental days (\$/day per truck) =>D=C*A	2	day(s)			5,000				10,000	
Treated Water Disposal (\$55/bbl)	848	bbl			55				46,647	
Miscellaneous Materials	5	%							6,632	
SCG Post Estimate Changes:										
Additional Baker Tanks:	0	QTY								
Additional Test Segments:										
(due to elevation changes)	0	QTY								
				Total Material Cost						
2 CONSTRUCTION										
Construction Labor (25K/ test segment)	1	LS							25,000	
Hydrotest Labor (10K/ test segment)	1	day(s)							10,000	
Dewater/ Dry Pipeline (\$15,000/ test segment)	1	LS							15,000	
Tie-ins Crew Rates (\$25,000/ test segment)	1	Each							25,000	
3rd Party Witness (\$2,000/ test segment)	1	Each							2,000	
Test/Construction period (6 days per test segment+ Hydrotest Labor+ Disposal Time) =Z	7	day(s)								
				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	%							10,815	
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	%							70,470	
Projects >\$2 million - Contingency is 20%	20	%								
				TOTAL PROJECT COST (See Appendix for assumptions/certifications)						
									\$	305,400

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	36-6588, 36-6588BR1	2.143	0.419	2.563
Diameter (in.)	8.625			

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 - Workshop Supporting Chapter IX**

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision	
	Start	Stop				Tree	Box
Cat 2	0	14.5	0.0027	8.625	Replace		Would require LNG truckers to keep line in service for 2 days
Cat 2	14.5	16.5	0.0004	8.625	Replace		Would require LNG truckers to keep line in service for 2 days
Cat 4	16.5	13532	2.1435	8.625	Replace	2	Would require LNG truckers to keep line in service for 2 days
Cat 2	0	5.5	0.0010	8.625	Replace		L-36-6588BR1, Would require LNG truckers to keep line in service for 2 days

New Segments

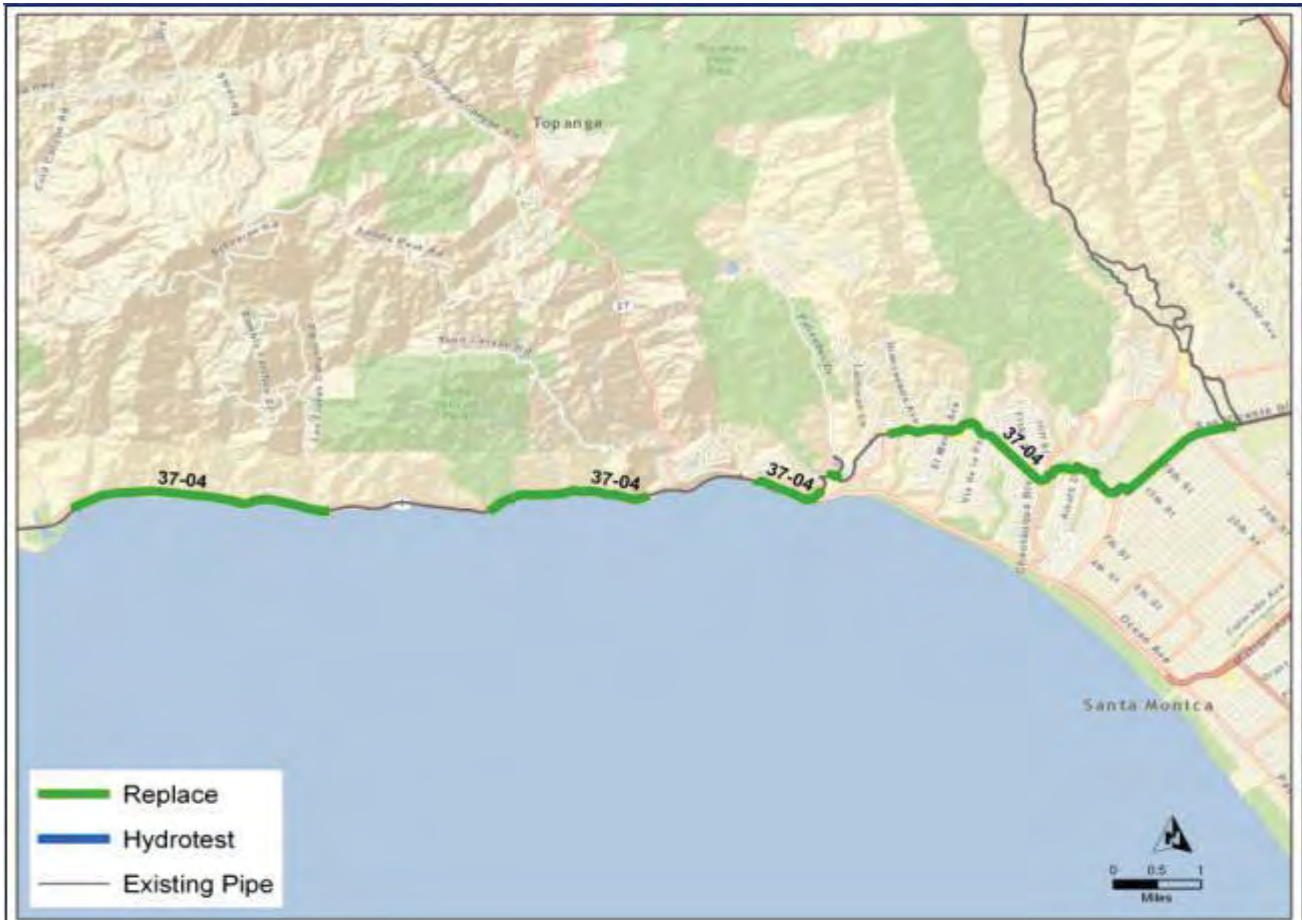
Station Start	Station		Wall Thickness	Diameter	Grade	Comments
	Stop	Diameter				
0	14.5	8.625	0.322	X-52		Replacing this pipe vs hydrotesting it would remove it from the BAP and we can keep the same MAOP.
14.5	16.5	8.625	0.322	X-52		
16.5	13532	8.625	0.322	X-52		
0	5.5	8.625	0.322	X-52		

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	37-04	4.522	4.505	9.027
Diameter (in.)	Multiple: 4.5 - 16			

Cost Detail

Capital		O&M	
Direct Labor	\$ 694,400	Direct Labor	\$ -
Direct Non Labor	\$ 37,177,500	Direct Non Labor	\$ -
Total Direct Capital	\$ 37,871,900	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 4	0	55	-	8.625			
Cat 4	55	207	-	10.75			
Cat 4	207	2557	0.3862	12.75	Replace	2	majority of pipe is in Malibu
Cat 4	2557	6505	0.0138	12.75	Replace	2	majority of pipe is in Malibu
Cat 2	6505	6552	0.0089	12.75	Replace	2	majority of pipe is in Malibu
Cat 4	6552	12742	1.1723	16	Replace	2	majority of pipe is in Malibu
Cat 4	12742	12927	0.0350	16	Replace	2	majority of pipe is in Malibu
Cat 4	12927	16098	0.6006	12.75	Replace	2	majority of pipe is in Malibu
Cat 4	16098	17488	0.2633	12.75	Replace	2	majority of pipe is in Malibu
Cat 4	17488	18613	0.2131	12.75	Replace	2	majority of pipe is in Malibu
Cat 4	18613	19425	0.1538	12.75	Replace	2	majority of pipe is in Malibu
Cat 4	19425	21975	0.0275	12.75	Replace	2	majority of pipe is in Malibu
Cat 4	21975	25200	-	12.75			
Cat 2	25200	25925	-	6.625			
Cat 4	25925	26601	0.0663	10.75	Replace	2	majority of pipe is in Malibu
Cat 2	26601	26706	-	6.625			
Cat 4	26706	26837	-	6.625			
Cat 2	26837	27626	-	6.625			
Cat 4	27626	28114	0.0619	8.625	Replace	2	majority of pipe is in Malibu
Cat 4	28114	28364	0.0473	8.625	Replace	2	majority of pipe is in Malibu
Cat 4	28364	31314	0.5394	8.625	Replace	2	majority of pipe is in Malibu
Cat 4	31314	33314	-	6.625			
Cat 4	33314	33609	-	6.625			
Cat 4	33609	33775	-	6.625			
Cat 4	33775	33891	-	6.625			
Cat 4	33891	33901	-	6.625			
Cat 4	33901	37001	-	6.625			
Cat 4	37001	43951	0.1517	8.625	Replace	2	majority of pipe is in Malibu
Cat 4	43951	45284	0.1002	8.625	Replace	2	majority of pipe is in Malibu

Cat 4	45284	53384	-	8.625		
Cat 4	53384	56669	0.5900	8.625	Replace	2 majority of pipe is in Malibu
Cat 4	56669	65734	0.0809	8.625	Replace	2 majority of pipe is in Malibu
Cat 4	65734	66632	0.0191	8.625	Replace	2 majority of pipe is in Malibu
Cat 4	66632	67234	-	8.625		
Cat 4	67234	67275	-	8.625		
Cat 2	67275	68145	-	8.625		
Cat 4	68145	69955	-	8.625		
Cat 2	69955	69994	-	4.5		

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
207	2557	12	0.375	X-52	
2557	6505	12	0.375	X-52	
6505	6552	12	0.375	X-52	
6552	12742	12	0.375	X-52	
12742	12927	12	0.375	X-52	
12927	16098	12	0.375	X-52	
16098	17488	12	0.375	X-52	
17488	18613	12	0.375	X-52	
18613	19425	12	0.375	X-52	
19425	21975	12	0.375	X-52	
25925	26601	12	0.375	X-52	
27626	28114	12	0.375	X-52	
28114	28364	12	0.375	X-52	
28364	31314	12	0.375	X-52	
37001	43951	12	0.375	X-52	
43951	45284	12	0.375	X-52	
53384	56669	12	0.375	X-52	
56669	65734	12	0.375	X-52	
65734	66632	12	0.375	X-52	

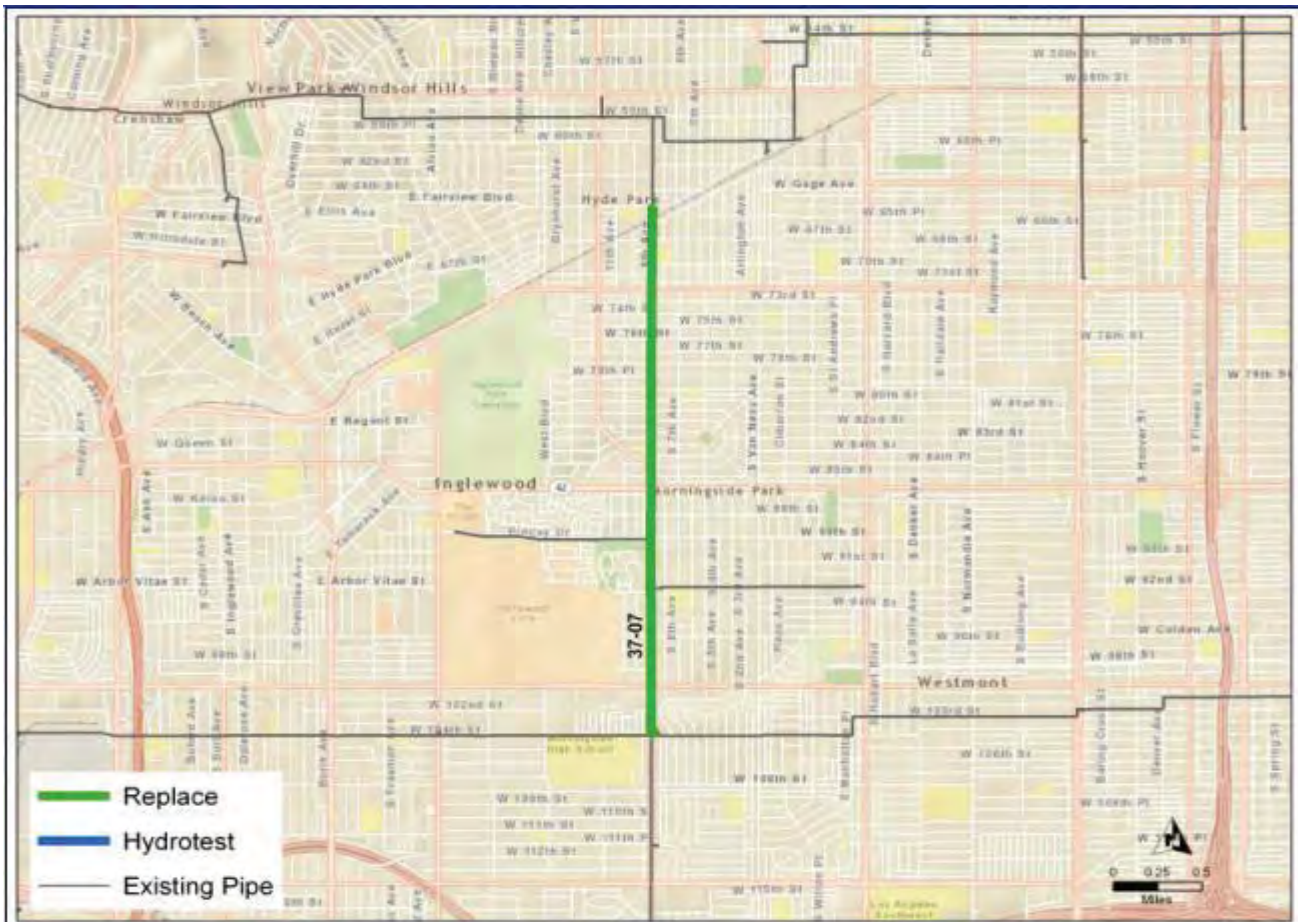
ACTIVITY AND LOCATION:		SPECIFICATION NO.	AE FIRM NAME	SHEET					
Line 37-04				Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		August 12, 2011					
		STATUS OF DESIGN		SPEC Project Number					
		Conceptual		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	17	inch, STD, WT X-52	50638	Feet	\$ 44	\$ 2,242,251	\$	2,242,251	Replaced all segments pipe OD per Remediation Plan
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	206	Each	\$ 1,833	\$ 377,668	\$	377,668	
Pressure Rating	2	lb Block Valve w/Electric Actuator (one per 4 miles)		Each	\$ 31,190	\$ 62,380	\$	62,380	
		FBE Coating (\$/ft)		\$	\$ 3.26	\$ 165,080	\$	165,080	
		Miscellaneous Materials (5%)	1	Lot			\$	134,115	
		Freight / Tax	12.5	%			\$	372,687	
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 (\$/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 (\$/ft)		\$	\$ -	\$ -	\$	-	
		Miscellaneous Materials (5%)	1	Lot			\$	-	
		Freight / Tax	12.5	%			\$	-	
Casing	16	inch, 312 WT X-65	400	Feet	\$ 57	\$ 22,944	\$	22,944	Casing pipe
		Miscellaneous Materials (5%)	1	Lot			\$	1,147.20	
		Freight / Tax	12.5	%			\$	3,011	
Total length	9.6	Miles							
Total Material Cost							\$	3,381,300	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
	0	Pipe Install - Type 1		Feet		\$ 175	\$ -	\$ -	
	0	Pipe Install - Type 2		Feet		\$ 280	\$ -	\$ -	
	50038	Pipe Install - Type 3		Feet		\$ 450	\$ 22,517,100	\$ 22,517,100	
	0	Pipe Install - Type 4		Feet		\$ 600	\$ -	\$ -	
	200	Pipe Install - Type 5		Feet		\$ 400	\$ 80,000	\$ 80,000	
	400	Pipe Install - Type 6		Feet		\$ 1,000	\$ 400,000	\$ 400,000	Crossing creeks and water Pipeline on the Bridge
	0	Pipe Install - Type 7		Feet		\$ 585	\$ -	\$ -	
n/a	0	Pipe Install - Type 1		Feet		\$ -	\$ -	\$ -	
	0	Pipe Install - Type 2		Feet		\$ -	\$ -	\$ -	
	0	Pipe Install - Type 3		Feet		\$ -	\$ -	\$ -	
	0	Pipe Install - Type 4		Feet		\$ -	\$ -	\$ -	
	0	Pipe Install - Type 5		Feet		\$ -	\$ -	\$ -	
	0	Pipe Install - Type 6		Feet		\$ -	\$ -	\$ -	
	0	Pipe Install - Type 7		Feet		\$ -	\$ -	\$ -	
n/a	0	Pipe Install - Type 1		Feet		\$ -	\$ -	\$ -	
	0	Pipe Install - Type 2		Feet		\$ -	\$ -	\$ -	
	0	Pipe Install - Type 3		Feet		\$ -	\$ -	\$ -	
	0	Pipe Install - Type 4		Feet		\$ -	\$ -	\$ -	
	0	Pipe Install - Type 5		Feet		\$ -	\$ -	\$ -	
	0	Pipe Install - Type 6		Feet		\$ -	\$ -	\$ -	
	0	Pipe Install - Type 7		Feet		\$ -	\$ -	\$ -	
	5	Tie-ins Crew Rates		Each		\$ 25,000	\$ 125,000	\$ 125,000	
	159084	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)		SCF	\$ 0.19	\$ 30,226		\$ 30,226	
	1	Purging Labor		LS		\$ 25,000	\$ 25,000	\$ 25,000	
	1398	95% Abandonment of Existing Pipeline (\$50/CY)		CY		\$ 95	\$ 132,810	\$ 132,810	
	75	5% Removal of Existing Pipeline (75% of Construction Labor Cost)		%				\$ 862,391	
	3	Mobilization / Demobilization		Each		\$ 30,000	\$ 90,000	\$ 90,000	
	0	Contaminated Soil		CY		\$ -	\$ -	\$ -	
	0	Asbestos Abatement		Feet		\$ -	\$ -	\$ -	
	174	Radiographic Inspection		Days	\$ 150	\$ 26,100	\$ 600	\$ 104,400	\$ 130,500
Construction period	182	days							
Total Construction Cost							\$	24,393,100	
3 SCG LABOR / INSPECTION									
	10	Projects < \$1 million - company labor is 10%		%			\$ -	\$ -	
	5	\$1 million - Projects < \$10 million - company labor is 5%		%			\$ -	\$ -	
	2.5	Projects > \$10 million - company labor is 2.5%		%			\$ 694,360	\$ 694,360	
Total SCG Labor / Inspection Cost							\$	694,400	
4 DESIGN / ENG. / CONST / ENVIRON.									
	10	Planning / Design / Eng / Coord / Procurement		%			\$ 2,777,440	\$ 2,777,440	
	174	Construction Stakes, AS-Built Survey (2 man crew)		Days	\$ 100	\$ 17,400	\$ 1,400	\$ 243,600	\$ 261,000
	0	ROW Acquisition		LS			\$ -	\$ -	
	0	Construction Permits		LS			\$ -	\$ -	
	0	Environmental Permits		LS			\$ -	\$ -	
	0	Environmental Monitoring		LS			\$ -	\$ -	
	1	AS-Built Drawings (\$2000+\$1/ft)		LS			\$ 52,638	\$ 52,638	
Total Design / Engineering / Construction Cost							\$	3,091,100	
5 CONTINGENCY									
	30	Projects < \$2 million - Contingency is 30%		%			\$ -	\$ -	
	20	Projects > \$2 million - Contingency is 20%		%			\$ 6,311,980	\$ 6,311,980	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$	37,871,900	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	37-07	2.673	0.010	2.683
Diameter (in.)	16			

Cost Detail

Capital		O&M	
Direct Labor	\$ 441,000	Direct Labor	\$ -
Direct Non Labor	\$ 11,837,900	Direct Non Labor	\$ -
Total Direct Capital	\$ 12,278,900	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
Cat 1	0	31	-	16			
Cat 4	31	95	0.0019	16	Replace		2
Cat 4	95	14198	2.6710	16	Replace		2

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
95	14198	16	0.375	X-65	

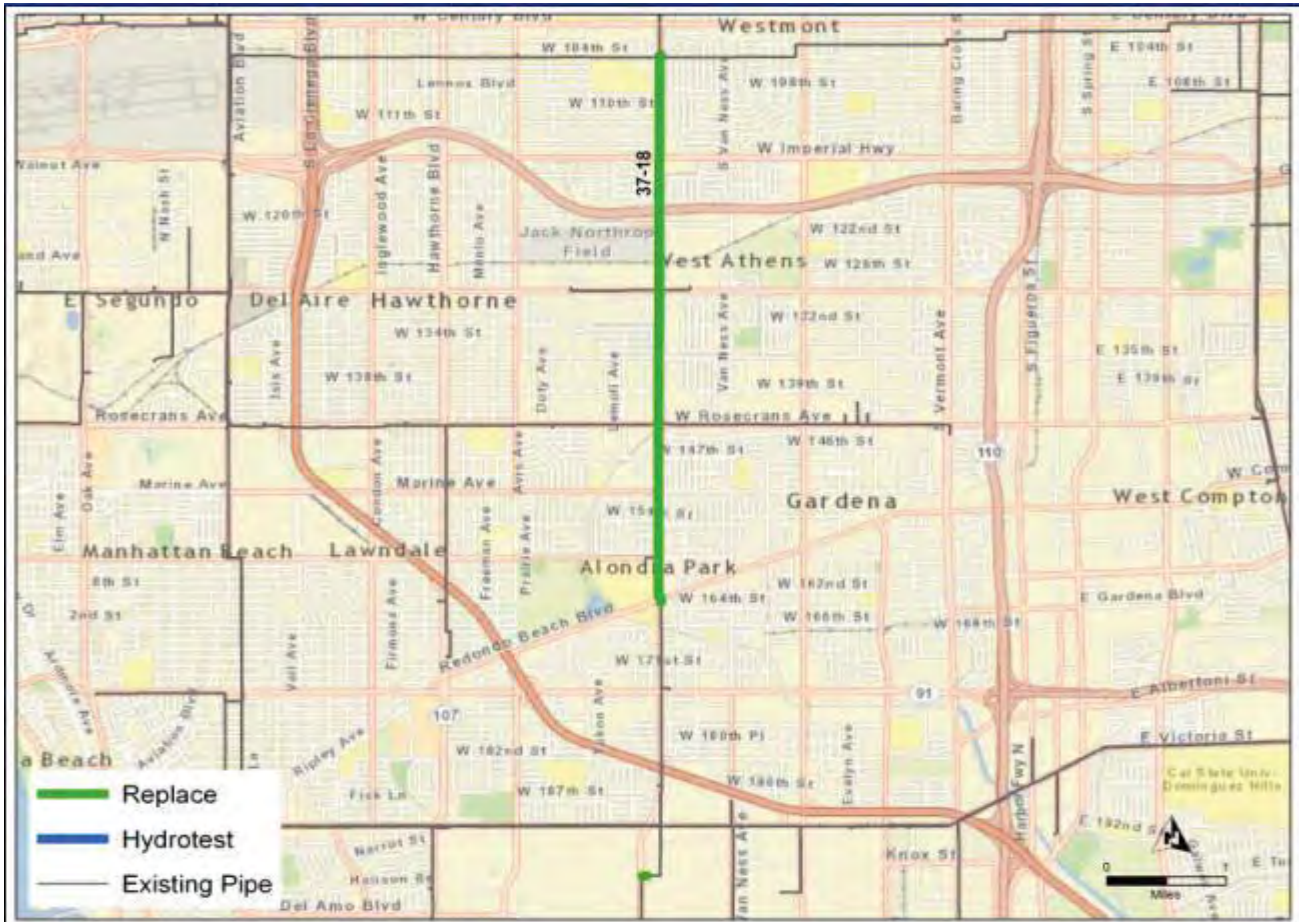
ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET				
Line 37-07				Sheet 1 of 1				
PROJECT TITLE AND CLIENT:		ESTIMATED BY	DATE:					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	June 30, 2011					
		STATUS OF DESIGN	SPEC Project Number					
		Conceptual	5057					
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 n/a	Inch. 312 WT X-65	14167	Feet	\$ 57	\$ 812,619			\$ 812,619
	Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	60	Each	\$ 3,339	\$ 200,320			\$ 200,320
Pressure Rating n/a	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 55,508	\$ -			\$ -
	FBE Coating (\$/ft)			\$ 4.14	\$ 58,651			\$ 58,651
	Miscellaneous Materials (5%)	1	Lot					\$ 50,647
	Freight / Tax	12.5	%					\$ 140,280
Pipe n/a	---	0	Feet	\$ -	\$ -			\$ -
	Bonds, 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 (\$/ft)			\$ -	\$ -			\$ -
	Miscellaneous Materials (5%)	1	Lot					\$ -
	Freight / Tax	12.5	%					\$ -
Pipe n/a	---	0	Feet	\$ -	\$ -			\$ -
	Bonds, 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 (\$/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		2.7	Miles					
Total Material Cost								\$ 1,262,600
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	14167	Feet		\$ 500	\$ 7,083,500		\$ 7,083,500
	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 6	0	Feet		\$ -	\$ -	\$ -	\$ -
	Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	\$ -
	Tie-ins Crew Rates	1	Each		\$ 35,000	\$ 35,000		\$ 35,000
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	79124	SCF	\$ 0.19	\$ 15,034			\$ 15,034
	Purging Labor	1	LS		\$ 25,000	\$ 25,000		\$ 25,000
	95% Abandonment of Existing Pipeline (\$50/CY)	696	CY		\$ 95	\$ 66,120		\$ 66,120
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 265,631
	Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000		\$ 30,000
	Contaminated Soil	0	CY		\$ -	\$ -	\$ -	\$ -
	Asbestos Abatement	0	Feet		\$ -	\$ -	\$ -	\$ -
	Radiographic Inspection	49	Days	\$ 150	\$ 7,350	\$ 600	\$ 29,400	\$ 36,750
Construction period		67	days					
Total Construction Cost								\$ 7,667,100
3 SCG LABOR / INSPECTION	Projects < \$1 million - company labor is 10%							
		10	%			\$ -	\$ -	\$ -
	\$1 million < Projects < \$10 million - company labor is 5%	5	%			\$ 440,985	\$ -	\$ 440,985
	Projects > \$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -	\$ -
Total SCG Labor / Inspection Cost								\$ 441,000
4 DESIGN / ENG. / CONST. / ENVIRON.	Planning / Design / Eng / Coord / Procurement							
		10	%			\$ 881,970	\$ -	\$ 881,970
	Construction Stake, As-Built Survey (2 man crew)	49	Days	\$ 100	\$ 4,900	\$ 1,400	\$ 68,600	\$ 73,500
	ROW Acquisition	0	LS			\$ -	\$ -	\$ -
	Construction Permits	0	LS			\$ -	\$ -	\$ -
	Environmental Permits	0	LS			\$ -	\$ -	\$ -
	Environmental Monitoring	0	LS			\$ -	\$ -	\$ -
	As-Built Drawings (\$2000-\$1/ft)	1	LS			\$ 16,167	\$ -	\$ 16,167
Total Design / Engineering / Construction Cost								\$ 971,700
5 CONTINGENCY	Projects < \$2 million - Contingency is 30%							
		30	%			\$ -	\$ -	\$ -
	Projects > \$2 million - Contingency is 20%	20	%			\$ 2,046,480	\$ -	\$ 2,046,480
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 12,278,900

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

Company	SCG	Replacement Mileage			
Plant Category	Dist	Category 4	Accelerated	Total	
Line Number	37-18	Criteria	3.561	0.603	4.165
Diameter (in.)	8.625, 12.75, 16				

Cost Detail

Capital		O&M	
Direct Labor	\$ 306,100	Direct Labor	\$ -
Direct Non Labor	\$ 16,369,900	Direct Non Labor	\$ -
Total Direct Capital	\$ 16,676,000	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
Cat 4	0	6710	1.2390	16	Replace	2	
Cat 4	6710	6850	0.0160	12.75	Replace	2	
Cat 4	6850	9500	0.5019	16	Replace	2	
Cat 4	9500	9540	0.0076	16	Replace	2	
Cat 4	9540	10790	0.2367	16	Replace	2	
Cat 4	10790	10990	0.0379	16	Replace	2	
Cat 4	10990	14730	0.6290	16	Replace	2	
Cat 1	14730	16610	0.3561	12.75			
Cat 4	16610	21630	0.8640	12.75	Replace	2	
Cat 2	21630	22910	-	12.75			
Cat 4	22910	23040	-	12.75			
Cat 2	23040	30720	-	12.75			
Cat 1	30720	32820	-	16			
Cat 4	32820	33179	0.0290	12.75	Replace	2	
Cat 4	33590	37810	-	8.625			
Cat 2	37810	37850	-	8.625			

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
6710	6850	16	0.375	X-65	
6850	9500	16	0.375	X-65	
9500	9540	16	0.375	X-65	
9540	10790	16	0.375	X-65	
10790	10990	16	0.375	X-65	

10990	14730	16	0.375	X-65
14730	16610	16	0.375	X-65
16610	21630	16	0.375	X-65
32820	33179	16	0.375	X-65

ACTIVITY AND LOCATION:		SPECIFICATION NO.		A/E FIRM NAME		SHEET		
Line 37-18						Sheet 1 of 1		
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:		SPEC PROJECT NUMBER		
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEX		August 12, 2011		5057		
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL
INPUT IN ALL GREEN CELLS								
1 MATERIALS								
16 inch								
Pipe n/a		19610	Feet	\$ 57	\$ 1,124,830			\$ 1,124,830
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		79	Each	\$ 3,339	\$ 263,755			\$ 263,755
Pressure Rating 150		1	Each	\$ 55,508	\$ 55,508			\$ 55,508
FBE Coating (\$/ft)				\$ 4.14	\$ 81,185			\$ 81,185
Miscellaneous Materials (5%)		1	Lot					\$ 72,205
Freight / Tax		12.5	%					\$ 199,685
Pipe n/a		0	Feet	\$ -	\$ -			\$ -
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		0	Each	\$ -	\$ -			\$ -
Pressure Rating n/a		0	Each	\$ -	\$ -			\$ -
1b Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ -	\$ -			\$ -
FBE Coating (\$/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)		0	Each	\$ -	\$ -			\$ -
Pressure Rating n/a		0	Each	\$ -	\$ -			\$ -
1b Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ -	\$ -			\$ -
FBE Coating (\$/ft)				\$ -	\$ -			\$ -
Miscellaneous Materials (5%)		1	Lot					\$ -
Freight / Tax		12.5	%					\$ -
Casing 20		100	Feet	\$ 76	\$ 7,604			\$ 7,604
Miscellaneous Materials (5%)		1	Lot					\$ 380,200
Freight / Tax		12.5	%					\$ 998
Total length		3.7	Miles					
Total Material Cost								\$ 1,806,200
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		19510	Feet		\$ 500	\$ 9,755,000		\$ 9,755,000
Pipe Install - Type 4		0	Feet		\$ 750	\$ -	\$ -	\$ -
Pipe Install - Type 5		100	Feet		\$ 600	\$ 60,000		\$ 60,000
Pipe Install - Type 6		0	Feet		\$ -	\$ -	\$ -	\$ -
Pipe Install - Type 7		0	Feet		\$ 650	\$ -	\$ -	\$ -
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 6		0	Feet		\$ -	\$ -	\$ -	\$ -
Pipe Install - Type 7		0	Feet		\$ -	\$ -	\$ -	\$ -
Tie-ins Crew Rates		1	Each		\$ 35,000	\$ 35,000		\$ 35,000
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)		109524	SCF	\$ 0.19	\$ 20,810			\$ 20,810
Purging Labor		1	LS		\$ 25,000	\$ 25,000		\$ 25,000
95% Abandonment of Existing Pipeline (\$50/CY)		963	CY		\$ 95	\$ 91,485		\$ 91,485
5% Removal of Existing Pipeline (75% of Construction Labor Cost)		75	%					\$ 368,063
Mobilization / Demobilization		1	Each		\$ 30,000	\$ 30,000		\$ 30,000
Contaminated Soil		0	CY		\$ -	\$ -	\$ -	\$ -
Asbestos Abatement		0	Feet		\$ -	\$ -	\$ -	\$ -
Radiographic Inspection		68	Days	\$ 150	\$ 10,200	\$ 600	\$ 40,800	\$ 51,000
Construction period		76	days					
Total Construction Cost								\$ 10,436,400
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	%			\$ 306,065	\$ 306,065	\$ 306,065
Total SCG Labor / Inspection Cost								\$ 306,100
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement		10	%			\$ 1,224,260	\$ 1,224,260	\$ 1,224,260
Construction Stake, AS-Built Survey (2 man crew)		68	Days	\$ 100	\$ 6,800	\$ 1,400	\$ 95,200	\$ 102,000
ROW Acquisition		0	LS			\$ -	\$ -	\$ -
Construction Permits		0	LS			\$ -	\$ -	\$ -
Environmental Permits		0	LS			\$ -	\$ -	\$ -
Environmental Monitoring		0	LS			\$ -	\$ -	\$ -
AS-Built Drawings (\$2000+\$1/ft)		1	LS			\$ 21,610	\$ 21,610	\$ 21,610
Total Design / Engineering / Construction Cost								\$ 1,347,900
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%		30	%			\$ -	\$ -	\$ -
Projects > \$2 million - Contingency is 20%		20	%			\$ 2,779,320	\$ 2,779,320	\$ 2,779,320
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 16,676,000

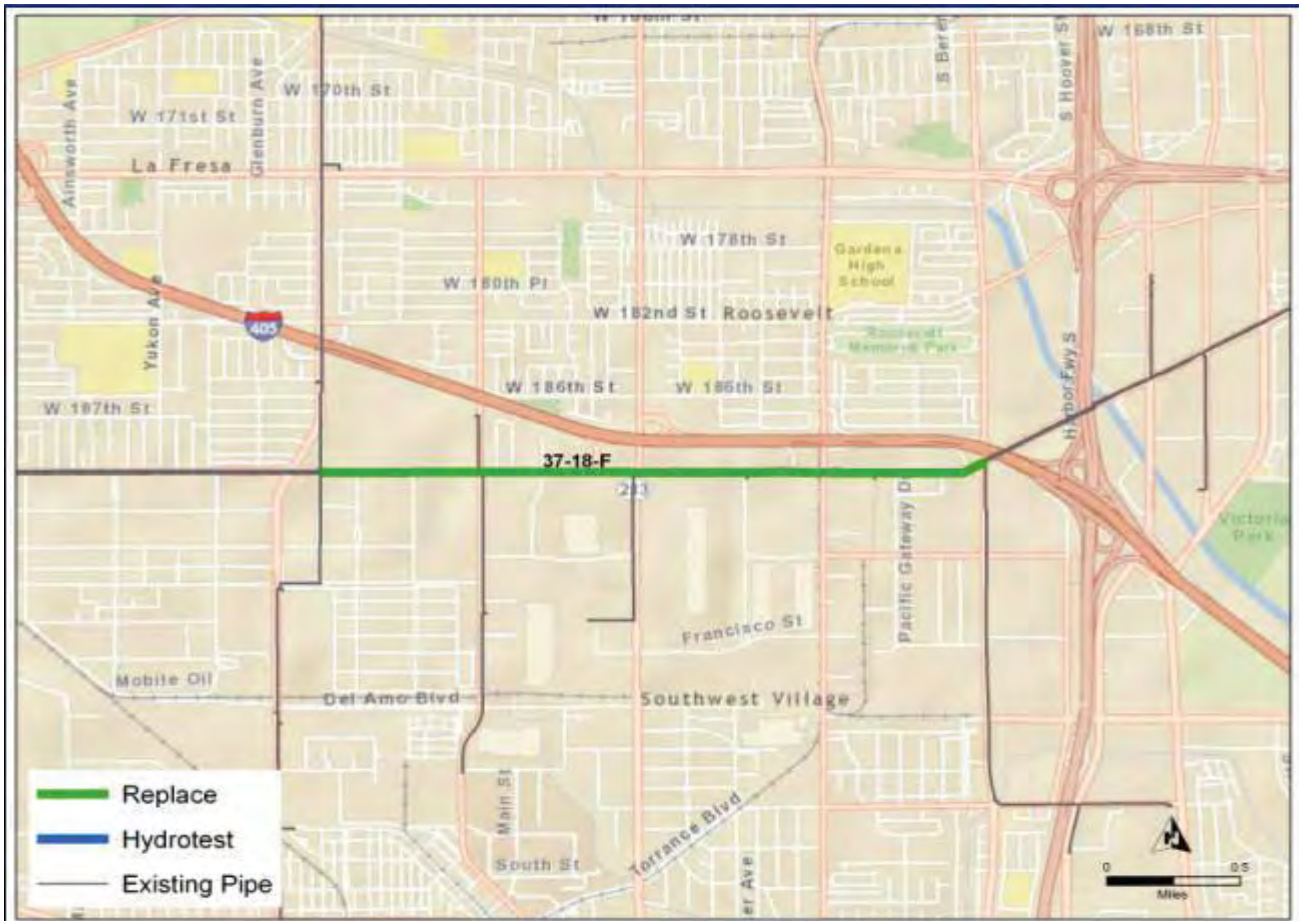
Comments
Replaced segment pipe OD per Remediation Plan

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4 Criteria	Accelerated	Total
Line Number	37-18F	2.057	-	2.057
Diameter (in.)	12.75, 16			

Cost Detail

Capital		O&M	
Direct Labor	\$ 295,900	Direct Labor	\$ -
Direct Non Labor	\$ 7,952,800	Direct Non Labor	\$ -
Total Direct Capital	\$ 8,248,700	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 4	0	10	0.0019	12.75	Replace		1	
Cat 4	10	10853	2.0536	16	Replace		1	
Cat 4	10853	10863	0.0019	16	Replace		1	

New Segments

Station Start	Station Stop	Diameter	Wall		Grade	Comments
			Thickness	Diameter		
0	10	12	0.375		X-52	
10	10853	12	0.375		X-52	
10853	10863	12	0.375		X-52	

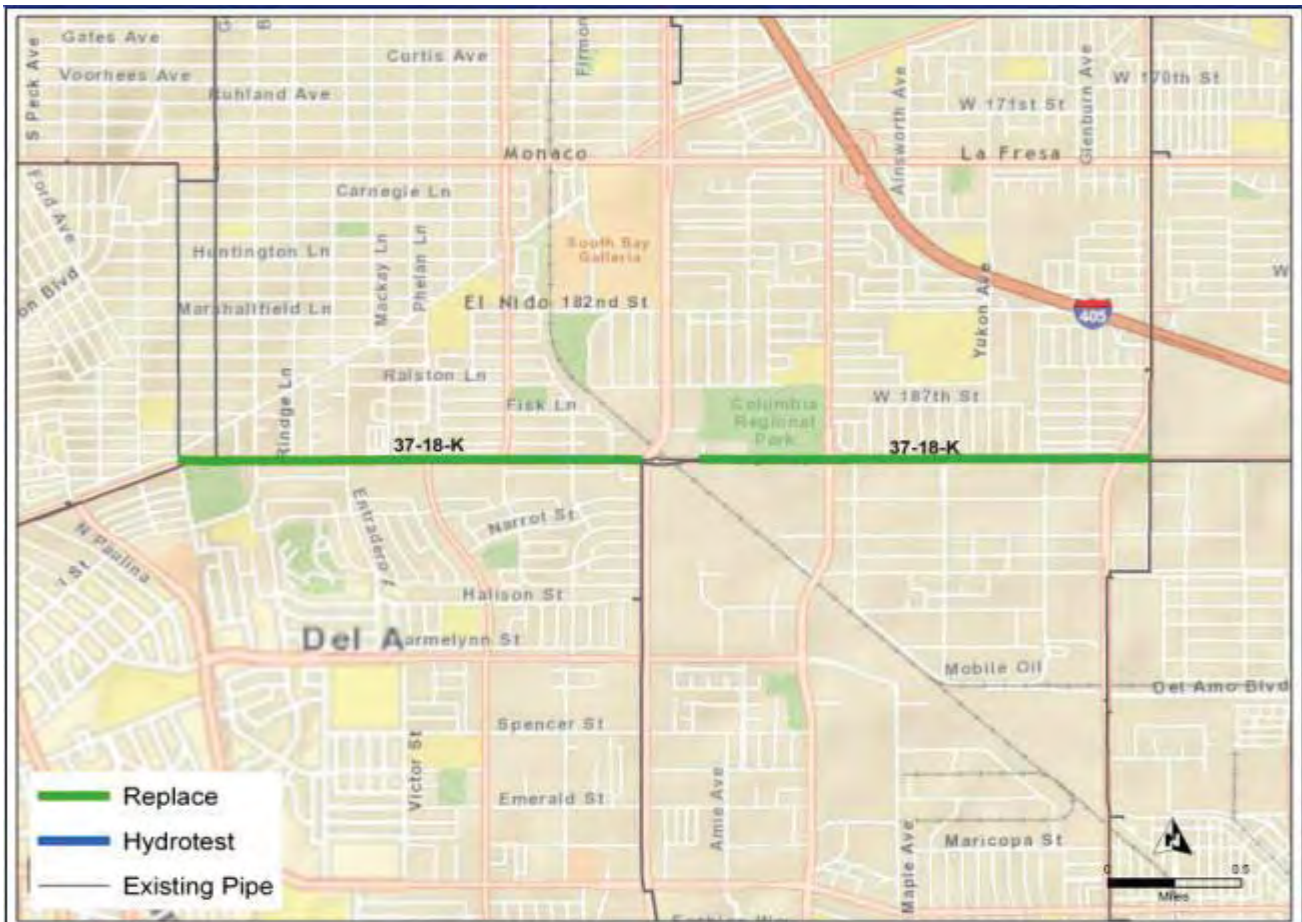
ACTIVITY AND LOCATION:		SPECIFICATION NO.	EST. FIRM NAME	SHEET					
Line 37-18-F				Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	June 30, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments	
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL		
1 MATERIALS									
INPUT IN ALL GREEN CELLS									
1	MATERIALS								
	Pipe	17	inch, STD, WT X-52	10863	Feet	\$ 44	\$ 481,014	\$ 481,014	Replaced all Segment Pipe OD per Remediation Plan
			Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	43	Each	\$ 1,833	\$ 78,834	\$ 78,834	
	Pressure Rating	1	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 31,190	\$ -	\$ -	
			FBE Coating (\$/ft)			\$ 3.26	\$ 35,413	\$ 35,413	
			Miscellaneous Materials (5%)	1	Lot		\$ 27,992	\$ 27,992	
			Freight / Tax	12.5	%			\$ 77,907	
	Pipe	n/a		0	Feet	\$ -	\$ -	\$ -	
			Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	0	Each	\$ -	\$ -	\$ -	
	Pressure Rating	n/a		0	Each	\$ -	\$ -	\$ -	
			lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -	\$ -	
			FBE Coating (\$/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)	0	Each	\$ -	\$ -	\$ -	
	Pressure Rating	n/a		0	Each	\$ -	\$ -	\$ -	
			lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -	\$ -	
			FBE Coating (\$/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	2.1	Miles						
Total Material Cost							\$ 701,200		
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	10863	Feet			\$ 450	\$ 4,888,350	\$ 4,888,350	
	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 6	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)	34128	SCF	\$ 0.19	\$ 6,484			\$ 6,484	
	Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	300	CY			\$ 95	\$ 28,500	\$ 28,500	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 183,313	
	Mobilization / Demobilization	1	Each			\$ 30,000	\$ 30,000	\$ 30,000	
	Contaminated Soil	0	CY			\$ -	\$ -	\$ -	
	Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -	
	Radiographic Inspection	38	Days	\$ 150	\$ 5,700	\$ 600	\$ 22,800	\$ 28,500	
	Construction period	46	days						
Total Construction Cost							\$ 6,215,200		
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%			\$ -	\$ -	\$ -	
	\$1 million - Projects < \$10 million - company labor is 5%	5	%			\$ 295,820	\$ 295,820	\$ 295,820	
	Projects > \$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost							\$ 295,900		
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 591,640	\$ 591,640	\$ 591,640	
	Construction Stake, AS-Built Survey (2 man crew)	38	Days	\$ 100	\$ 3,800	\$ 1,400	\$ 53,200	\$ 57,000	
	ROW Acquisition	0	LS			\$ -	\$ -	\$ -	
	Construction Permits	0	LS			\$ -	\$ -	\$ -	
	Environmental Permits	0	LS			\$ -	\$ -	\$ -	
	Environmental Monitoring	0	LS			\$ -	\$ -	\$ -	
	AS-Built Drawings (\$2000+\$1/m)	1	LS			\$ 12,863	\$ 12,863	\$ 12,863	
Total Design / Engineering / Construction Cost							\$ 661,600		
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%			\$ -	\$ -	\$ -	
	Projects > \$2 million - Contingency is 20%	20	%			\$ 1,374,780	\$ 1,374,780	\$ 1,374,780	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 8,248,700		

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	37-18K	2.850	-	2.850
Diameter (in.)	Multiple: 4.5 - 20			

Cost Detail

Capital		O&M	
Direct Labor	\$ 474,300	Direct Labor	\$ -
Direct Non Labor	\$ 12,729,600	Direct Non Labor	\$ -
Total Direct Capital	\$ 13,203,900	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 4	0	15	0.0028	10.75	Replace		2	
Cat 4	15	7435	1.4053	20	Replace		2	
Cat 1	7435	8478	-	16				
Cat 4	8478	8488	0.0019	16	Replace		2	
Cat 4	8488	10533	0.3873	20	Replace		2	
Cat 4	10533	16043	1.0436	16	Replace		2	
Cat 4	16043	16079	-	4.5				
Cat 4	16079	16122	0.0081	8.625	Replace		2	
Cat 4	16122	16158	-	4.5				
Cat 4	16158	16165	0.0013	6.625	Replace		2	

New Segments

Station Start	Station		Wall Thickness	Diameter	Grade	Comments
	Stop	Diameter				
0	15	16	0.375		X-65	
15	7435	16	0.375		X-65	
8478	8488	16	0.375		X-65	
8488	10533	16	0.375		X-65	
10533	16043	16	0.375		X-65	
16079	16122	16	0.375		X-65	
16158	16165	16	0.375		X-65	

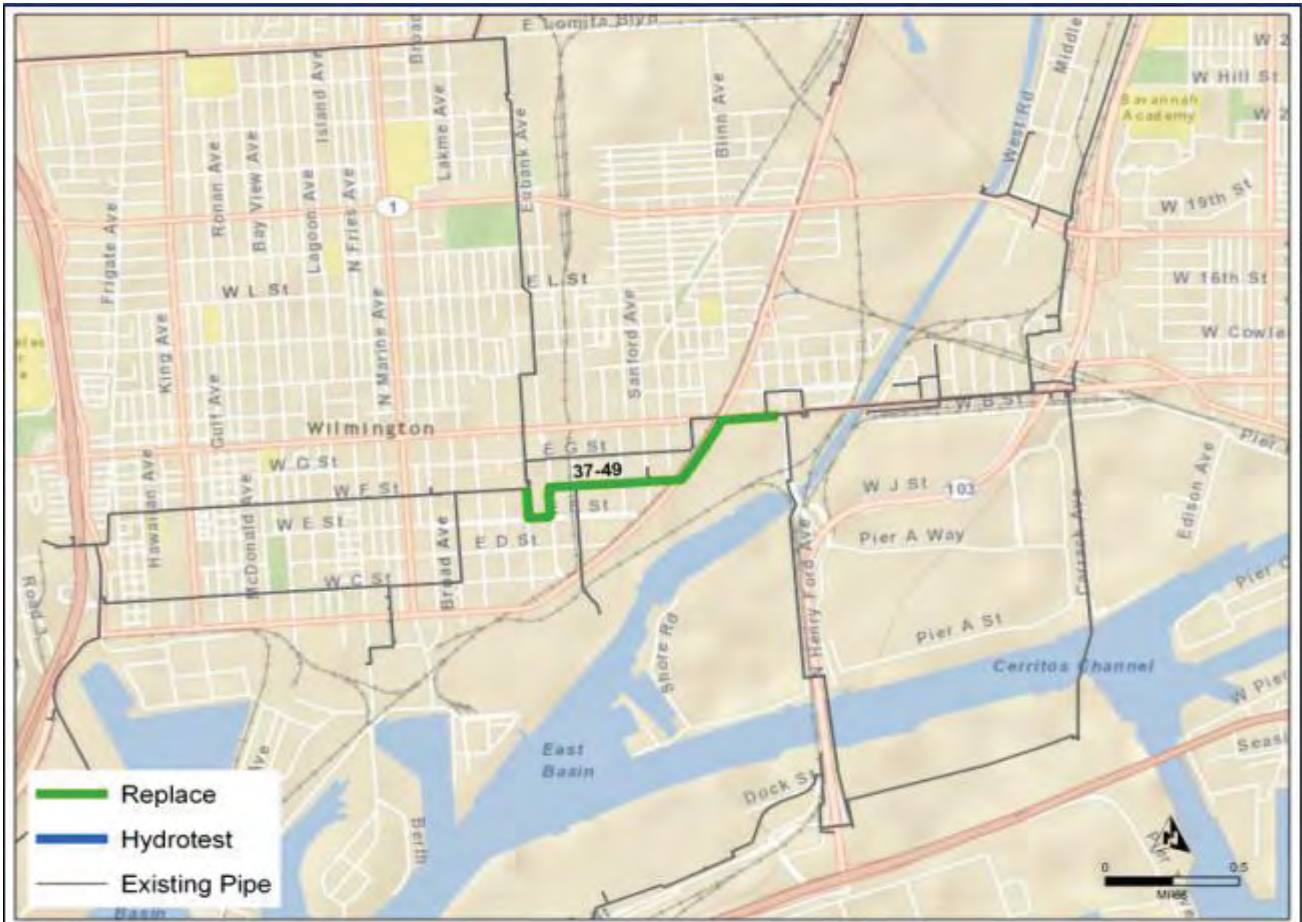
ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 37-18-K				Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	June 30, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	5057						
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	15050	Feet	\$ 57	\$ 863,268	\$	863,268	Replaced all segments pipe OD per Remediation Plan
		Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	64	Each	\$ 3,339	\$ 213,675	\$	213,675	
Pressure Rating	n/a	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 55,508	\$ -	\$	-	
		FBE Coating (\$/ft)			\$ 4.14	\$ 62,307	\$	62,307	
		Miscellaneous Materials (5%)	1	Lot			\$	53,847	
		Freight / Tax	12.5	%			\$	149,137	
Pipe	n/a	---	0	Feet	\$ -	\$ -	\$	-	
		Bonds, 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 (\$/ft)			\$ -	\$ -	\$	-	
		Miscellaneous Materials (5%)	1	Lot			\$	-	
		Freight / Tax	12.5	%			\$	-	
Pipe	n/a	---	0	Feet	\$ -	\$ -	\$	-	
		Bonds, 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 (\$/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			2.9	Miles					
Total Material Cost							\$ 1,342,300		
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	15000	Feet		\$ 500	\$ 7,500,000	\$ 7,500,000	
		Pipe Install - Type 4	0	Feet		\$ 750	\$ -	\$ -	
		Pipe Install - Type 5	0	Feet		\$ 600	\$ -	\$ -	
		Pipe Install - Type 6	50	Feet		\$ 800	\$ 40,000	\$ 40,000	
		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 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 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 6	0	Feet		\$ -	\$ -	\$ -	
		Pipe Install - Type 7	0	Feet		\$ -	\$ -	\$ -	
		n/a							
		Tie-ins Crew Rates	4	Each		\$ 35,000	\$ 140,000	\$ 140,000	
		Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	84056	SCF	\$ 0.19	\$ 15,971		\$ 15,971	
		Purging Labor	1	LS		\$ 25,000	\$ 25,000	\$ 25,000	
		95% Abandonment of Existing Pipeline (\$50/CY)	739	CY		\$ 95	\$ 70,205	\$ 70,205	
		5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%				\$ 282,750	
		Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000	\$ 30,000	
		Contaminated Soil	0	CY		\$ -	\$ -	\$ -	
		Asbestos Abatement	0	Feet		\$ -	\$ -	\$ -	
		Radiographic Inspection	52	Days	\$ 150	\$ 7,800	\$ 600	\$ 31,200	\$ 39,000
		Construction period	60	days					
Total Construction Cost							\$ 8,143,000		
3 SCG LABOR / INSPECTION									
		Projects < \$1 million - company labor is 10%	10	%			\$ -	\$ -	
		\$1 million < Projects < \$10 million - company labor is 5%	5	%			\$ 474,265	\$ 474,265	
		Projects > \$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -	
Total SCG Labor / Inspection Cost							\$ 474,300		
4 DESIGN / ENG. / CONST. / ENVIRON.									
		Planning / Design / Eng / Coord / Procurement	10	%			\$ 948,530	\$ 948,530	
		Construction Stake, As-Built Survey (2 man crew)	52	Days	\$ 100	\$ 5,200	\$ 1,400	\$ 72,800	\$ 78,000
		ROW Acquisition	0	LS			\$ -	\$ -	
		Construction Permits	0	LS			\$ -	\$ -	
		Environmental Permits	0	LS			\$ -	\$ -	
		Environmental Monitoring	0	LS			\$ -	\$ -	
		As-Built Drawings (\$2000-\$1/ft)	1	LS			\$ 17,050	\$ 17,050	
Total Design / Engineering / Construction Cost							\$ 1,043,600		
5 CONTINGENCY									
		Projects < \$2 million - Contingency is 30%	30	%			\$ -	\$ -	
		Projects > \$2 million - Contingency is 20%	20	%			\$ 2,200,640	\$ 2,200,640	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 13,203,900		

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4 Criteria	Accelerated	Total
Line Number	37-49	0.814	0.272	1.086
Diameter (in.)	12.75, 16, 20			

Cost Detail

Capital		O&M	
Direct Labor	\$ 208,800	Direct Labor	\$ -
Direct Non Labor	\$ 5,601,600	Direct Non Labor	\$ -
Total Direct Capital	\$ 5,810,400	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 2	0	25	-	16	Abandon	2	
Cat 2	25	485	-	16	Abandon	2	
Cat 2	485	510	0.0047	16	Abandon	2	2 potential railroad crossings
Cat 2	510	516	0.0011	20	Abandon	2	2 potential railroad crossings
Cat 4	516	4815	0.8142	20	Replace	2	2 potential railroad crossings
Cat 4	4815	4821	-	20	Replace	2	
Cat 2	4821	6225	-	20	Replace	2	
Cat 2	6225	6250	-	12.75	Replace	2	

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
4815	4821	20	0.375	X-65	
4821	6225	20	0.375	X-65	
6225	6250	20	0.375	X-65	

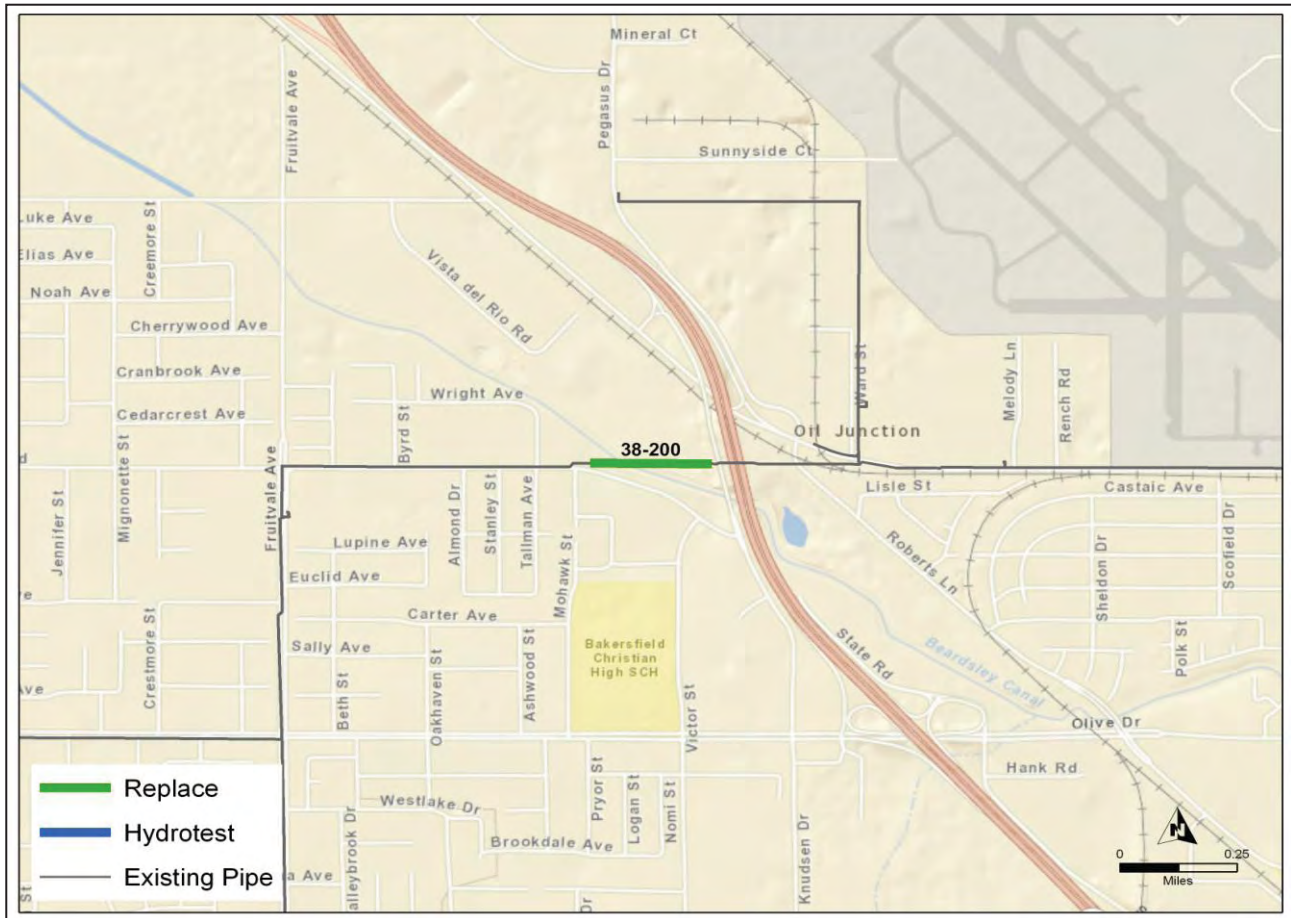
ACTIVITY AND LOCATION:		SPECIFICATION NO.	AE FIRM NAME	SHEET				
Line 37-49				Sheet 1 of 1				
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:				
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		June 30, 2011				
		STATUS OF DESIGN		SPEC Project Number				
		Conceptual		5057				
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								
20 inch								
Pipe	20	inch, 312 WT X-65	5709	Feet	\$ 76	\$ 434,112	\$	434,112
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	26	Each	\$ 5,679	\$ 147,645	\$	147,645
Pressure Rating	n/a	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 77,511	\$ -	\$	-
		FBE Coating (\$/ft)			\$ 5.32	\$ 30,372	\$	30,372
		Miscellaneous Materials (5%)	1	Lot		\$ 29,088	\$	29,088
		Freight / Tax	12.5	%		\$ 80,152	\$	80,152
Pipe	12	inch, STD. WT X-52	25	Feet	\$ 44	\$ 1,107	\$	1,107
		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 (\$/ft)			\$ 3.26	\$ 82	\$	82
		Miscellaneous Materials (5%)	1	Lot		\$ 422	\$	422
		Freight / Tax	12.5	%		\$ 1,118	\$	1,118
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 (\$/ft)			\$ -	\$ -	\$	-
		Miscellaneous Materials (5%)	1	Lot		\$ -	\$	-
		Freight / Tax	12.5	%		\$ -	\$	-
Casing	24	inch, 375 WT X-65	200	Feet	\$ 92	\$ 18,342	\$	18,342
		Miscellaneous Materials (5%)	1	Lot		\$ 917.10	\$	917.10
		Freight / Tax	12.5	%		\$ 2,407	\$	2,407
		Total length	1.1	Miles				
Total Material Cost							\$ 763,100	
2 CONSTRUCTION (See Appendix for construction type definitions)								
20 inch pipe								
		Pipe Install - Type 1	0	Feet		\$ 225	\$ -	\$ -
		Pipe Install - Type 2	0	Feet		\$ 360	\$ -	\$ -
		Pipe Install - Type 3	5509	Feet		\$ 540	\$ 2,974,860	\$ 2,974,860
		Pipe Install - Type 4	0	Feet		\$ 850	\$ -	\$ -
		Pipe Install - Type 5	200	Feet		\$ 800	\$ 160,000	\$ 160,000
		Pipe Install - Type 6	0	Feet		\$ -	\$ -	\$ -
		Pipe Install - Type 7	0	Feet		\$ 702	\$ -	\$ -
12 inch pipe								
		Pipe Install - Type 1	0	Feet		\$ 175	\$ -	\$ -
		Pipe Install - Type 2	0	Feet		\$ 280	\$ -	\$ -
		Pipe Install - Type 3	25	Feet		\$ 450	\$ 11,250	\$ 11,250
		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		\$ -	\$ -	\$ -
		Tie-Ins Crew Rates	1	Each		\$ 34,956	\$ 34,956	\$ 34,956
		Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	49900	SCF	\$ 0.19	\$ 9,481	\$ -	\$ 9,481
		Purging Labor	1	LS		\$ 25,000	\$ 25,000	\$ 25,000
		95% Abandonment of Existing Pipeline (\$50/CY)	439	CY		\$ 95	\$ 41,705	\$ 41,705
		5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%			\$ 117,979	\$ 117,979
		Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000	\$ 30,000
		Contaminated Soil	0	CY		\$ -	\$ -	\$ -
		Asbestos Abatement	0	Feet		\$ -	\$ -	\$ -
		Radiographic Inspection	22	Days	\$ 150	\$ 3,300	\$ 600	\$ 13,200
		Construction period	30	days				
Total Construction Cost							\$ 3,421,800	
3 SCG LABOR / INSPECTION								
		Projects < \$1 million - company labor is 10%	10	%		\$ -	\$ -	\$ -
		\$1 million - Projects < \$10 million - company labor is 5%	5	%		\$ 208,745	\$ 208,745	\$ 208,745
		Projects > \$10 million - company labor is 2.5%	2.5	%		\$ -	\$ -	\$ -
Total SCG Labor / Inspection Cost							\$ 208,800	
4 DESIGN / ENG. / CONST. / ENVIRON.								
		Planning / Design / Eng / Coord / Procurement	10	%		\$ 417,490	\$ 417,490	\$ 417,490
		Construction Stakes, AS-Built Survey (2 man crew)	22	Days	\$ 100	\$ 2,200	\$ 1,400	\$ 30,800
		ROW Acquisition	0	LS		\$ -	\$ -	\$ -
		Construction Permits	0	LS		\$ -	\$ -	\$ -
		Environmental Permits	0	LS		\$ -	\$ -	\$ -
		Environmental Monitoring	0	LS		\$ -	\$ -	\$ -
		AS-Built Drawings (\$2000+\$1/ft)	1	LS		\$ 7,734	\$ 7,734	\$ 7,734
Total Design / Engineering / Construction Cost							\$ 468,300	
5 CONTINGENCY								
		Projects < \$2 million - Contingency is 30%	30	%		\$ -	\$ -	\$ -
		Projects > \$2 million - Contingency is 20%	20	%		\$ 968,400	\$ 968,400	\$ 968,400
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 5,810,400	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	38-200	0.233	-	0.233
Diameter (in.)	8.625, 12.75			

Cost Detail

Capital		O&M	
Direct Labor	\$ 49,300	Direct Labor	\$ -
Direct Non Labor	\$ 736,600	Direct Non Labor	\$ -
Total Direct Capital	\$ 785,900	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	0	3397	0.6384	8.625			
Cat 4	3397	4472	0.2331	12.75	Replace	2	Bore pits required since we're crossing the Beardsley Canal. Approximately 250-feet from bore pit to bore pit
Cat 1	4472	4900	0.0769	12.75			
Cat 4	4900	5303	-	12.75			
Cat 1	5303	5892	0.1064	8.625			
Cat 1	5892	6330	0.0551	8.625			Records found

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET		
Line 38-200			SPC SERVICES	Sheet 1 of 1		
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:	SPEC Project Number		
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPC	June 30, 2011	5057		
DESCRIPTION		QUANTITY	MATERIAL COST		LABOR COST	TOTAL COST
		NUMBER	UNIT	UNIT COST	TOTAL	TOTAL
INPUT IN ALL GREEN CELLS						
1 MATERIALS						
Pipe	8 inch, STD. WT X-52	1075	Feet	\$ 26	\$ 27,703	\$ 27,703
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	8	Each	\$ 824	\$ 6,592	\$ 6,592
Pressure Rating	150 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 23,384	\$ -	\$ -
	FBE Coating (5/ft)		\$	\$ 2.29	\$ 2,462	\$ 2,462
	Miscellaneous Materials (5%)	1	Lot			\$ 1,715
	Freight / Tax	12.5	%			\$ 4,809
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	0.2	Miles			
Total Material Cost						\$ 43,300
2 CONSTRUCTION (See Appendix for construction type definitions)						
8 inch pipe						
	Pipe Install - Type 1	0	Feet		\$ 175	\$ -
	Pipe Install - Type 2	675	Feet		\$ 280	\$ 189,000
	Pipe Install - Type 3	0	Feet		\$ 450	\$ -
	Pipe Install - Type 4	0	Feet		\$ 600	\$ -
	Pipe Install - Type 5	400	Feet		\$ 400	\$ 160,000
	Pipe Install - Type 6	0	Feet		\$ -	\$ -
	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	0	Feet		\$ -	\$ -
	Pipe Install - Type 6	0	Feet		\$ -	\$ -
	Tie-ins Crew Rates	1	Each		\$ 25,000	\$ 25,000
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	1504	SCF	\$ 0.19	\$ 286	\$ 286
	Purging Labor	1	LS		\$ 25,000	\$ 25,000
	95% Abandonment of Existing Pipeline (\$50/CY)	14	CY		\$ 95	\$ 1,330
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%			\$ 13,088
	Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000
	Contaminated Soil	0	CY		\$ -	\$ -
	Asbestos Abatement	0	Feet		\$ -	\$ -
	Radiographic Inspection	7	Days	\$ 150	\$ 1,050	\$ 600
	Construction period	15	days			
Total Construction Cost						\$ 449,000
3 SCG LABOR / INSPECTION						
	Projects < \$1 million - company labor is 10%	10	%			\$ 49,230
	\$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						\$ 49,230
4 DESIGN / ENG. / CONST / ENVIRON.						
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 49,230
	Construction Stake, As-Built Survey (2 man crew)	7	Days	\$ 100	\$ 700	\$ 1,400
	ROW Acquisition	0	LS			\$ 9,800
	Construction Permits	0	LS			\$ -
	Environmental Permits	0	LS			\$ -
	Environmental Monitoring	0	LS			\$ -
	As-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 3,075
Total Design / Engineering / Construction Cost						\$ 62,900
5 CONTINGENCY						
	Projects < \$2 million - Contingency is 30%	30	%			\$ 181,350
	Projects > \$2 million - Contingency is 20%	20	%			\$ -
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)						\$ 785,900

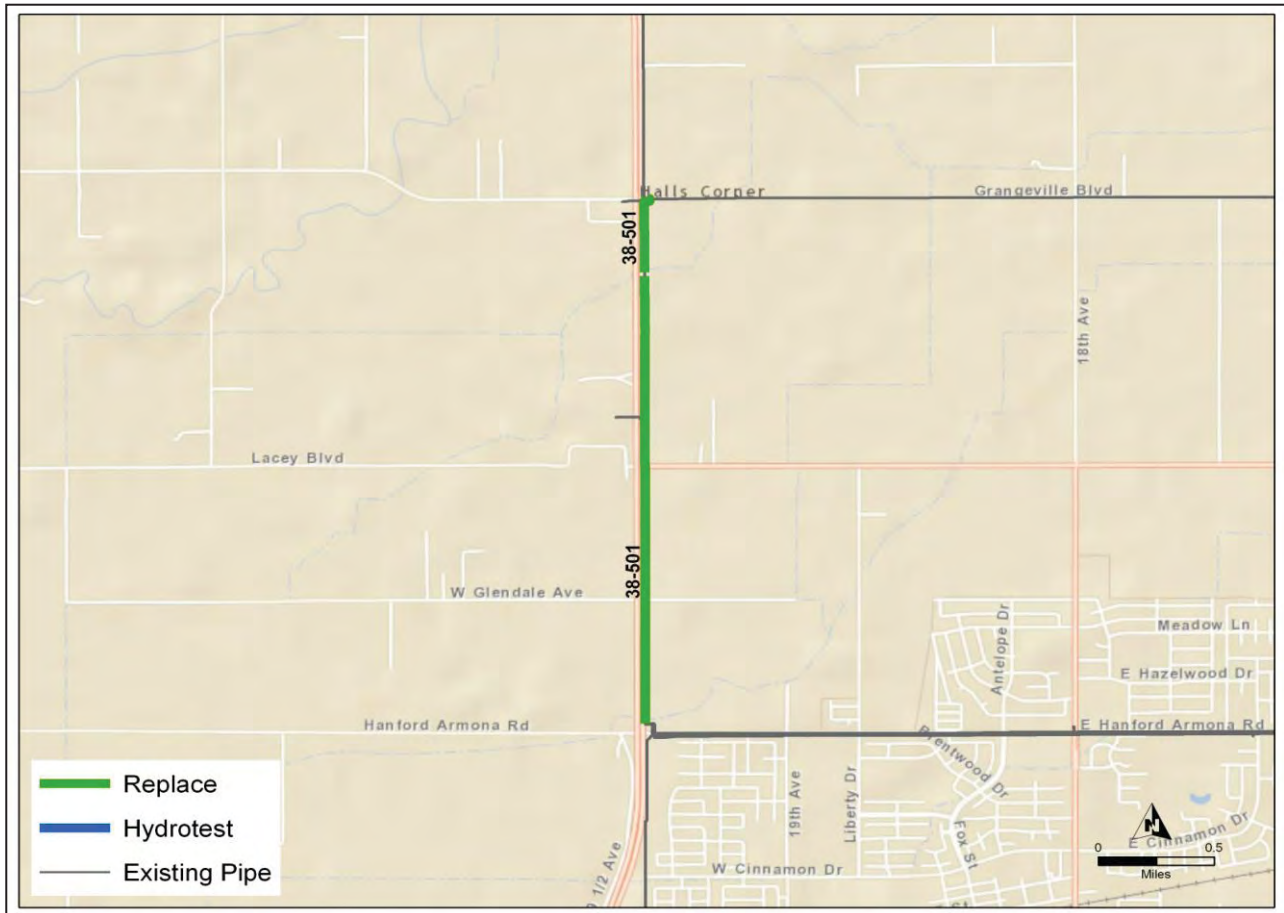
Comments
Canal HDD

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	38-501	1.147	0.838	1.985
Diameter (in.)	8.625, 12.75, 16			

Cost Detail

Capital		O&M	
Direct Labor	\$ 193,000	Direct Labor	\$ -
Direct Non Labor	\$ 5,188,400	Direct Non Labor	\$ -
Total Direct Capital	\$ 5,381,400	Total Direct O&M	\$ -



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

Existing Segments

Category	Station Start	Station Stop	Criteria Miles	Diameter	Action	Decision Tree Box	Comments
Cat 4	0	8970	0.8604	12.75	Replace	2	Adjacent to Hwy 41. Potential Caltrans permits required
Cat 1	8970	9039	0.0131	12.75			
Cat 4	9039	10552	0.2866	12.75	Replace	2	Adjacent to Hwy 41. Potential Caltrans permits required
Cat 1	10552	13127	0.1919	16			
Cat 1	13127	19569	0.3326	16			
Cat 2	19569	26932	-	16			
Cat 1	26932	27462	-	16			
Cat 1	27462	29065	-	12.75			
Cat 2	29065	29077	-	12.75			
Cat 2	29077	31440	-	16			
Cat 2	31440	32160	-	16			
Cat 2	32160	33373	0.1911	16			
Cat 2	33373	33381	0.0015	12.75			
Cat 1	33381	34230	0.0142	12.75			
Cat 1	34230	42065	-	12.75			
Cat 4	42065	43545	-	12.75			
Cat 1	43545	48875	0.1343	12.75			
Cat 1	48875	50505	-	12.75			
Cat 1	50505	52122	-	12.75			
Cat 1	52122	53685	-	12.75			
Cat 1	53685	55307	-	12.75			
Cat 1	55307	80212	-	12.75			
Cat 2	80212	80217	-	8.625			

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
0	8970	12.75	0.375	X-52	
9039	10552	12.75	0.375	X-52	

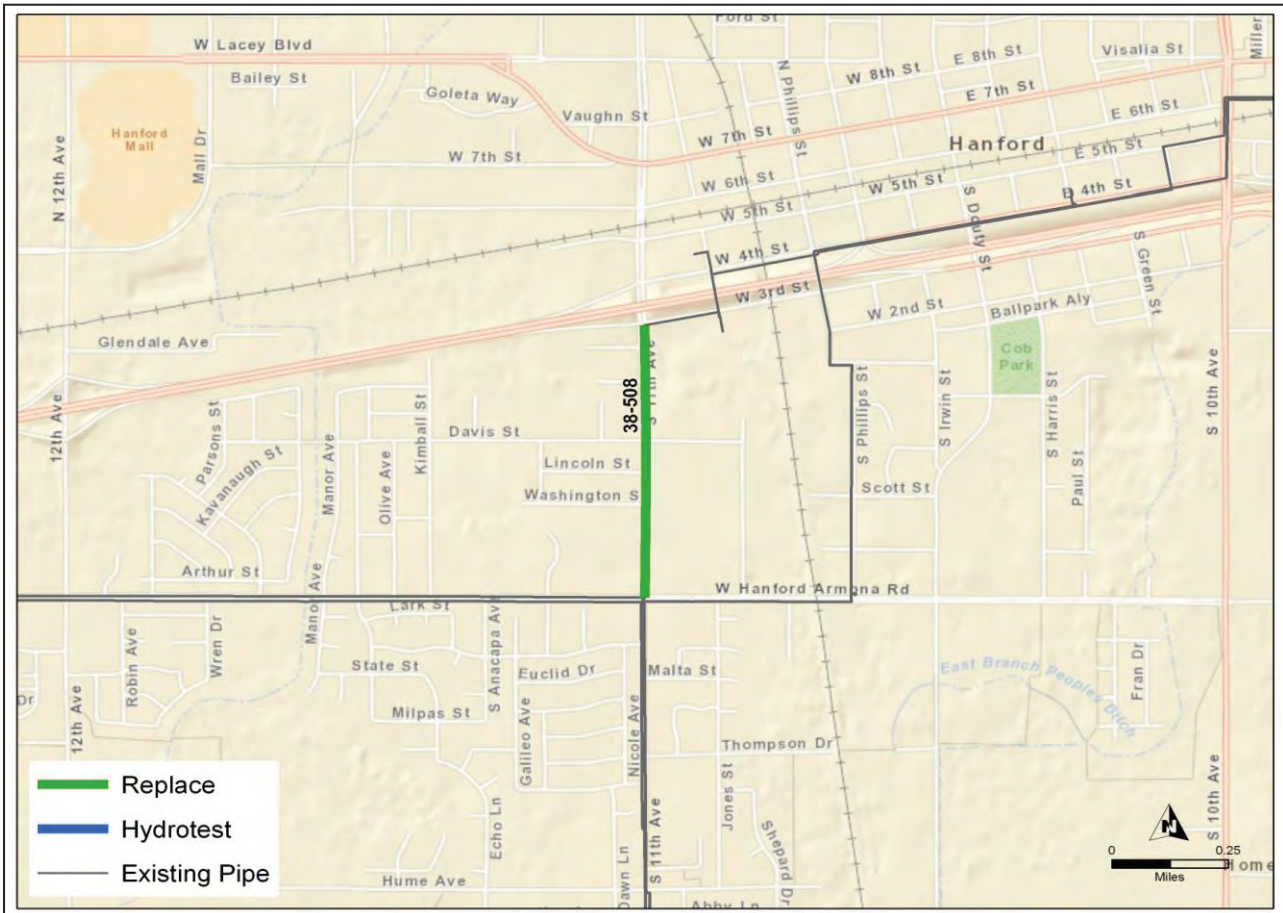
ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 38-501			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:	SPEC PROJECT NUMBER					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 7, 2011	5057					
		STATUS OF DESIGN							
		Conceptual							
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									
12 inch. STD. WT X-52									
Pipe	12	10483	Feet	\$ 44	\$ 464,187			\$ 464,187	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		45	Each	\$ 1,833	\$ 82,500			\$ 82,500	
Pressure Rating	300	0	Each	\$ 36,010	\$ -			\$ -	
FBE Coating (5/ft)				\$ 3.26	\$ 34,175			\$ 34,175	
Miscellaneous Materials (5%)		1	Lot					\$ 27,334	
Freight / Tax		12.5	%					\$ 76,029	
n/a									
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)		0	Feet	\$ -	\$ -			\$ -	
Pressure Rating	n/a	0	Each	\$ -	\$ -			\$ -	
FBE Coating (5/ft)				\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
n/a									
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
n/a									
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
Total length		2.0	Miles						
Total Material Cost								\$ 684,300	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
Pipe Install - Type 1		0	Feet		\$ 175	\$ -	\$ -	\$ -	
Pipe Install - Type 2		10483	Feet		\$ 280	\$ 2,935,240	\$ -	\$ 2,935,240	
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	\$ -	\$ -	\$ -	
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 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 6		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7		0	Feet		\$ -	\$ -	\$ -	\$ -	
n/a									
Tie-ins Crew Rates		1	Each		\$ 25,000	\$ 25,000	\$ -	\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)		32936	SCF	\$ 0.19	\$ 6,258	\$ -	\$ -	\$ 6,258	
Purging Labor		1	LS		\$ 25,000	\$ 25,000	\$ -	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)		290	CY		\$ 95	\$ 27,550	\$ -	\$ 27,550	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)		75	%					\$ 110,072	
Mobilization / Demobilization		1	Each		\$ 30,000	\$ 30,000	\$ -	\$ 30,000	
Contaminated Soil		0	CY		\$ -	\$ -	\$ -	\$ -	
Asbestos Abatement		0	Feet		\$ -	\$ -	\$ -	\$ -	
Radiographic Inspection		22	Days	\$ 150	\$ 3,300	\$ 600	\$ 13,200	\$ 16,500	
Construction period		30	days						
Total Construction Cost								\$ 3,175,700	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%		10	%			\$ -	\$ -	\$ -	
\$1 million < Projects < \$10 million - company labor is 5%		5	%			\$ 193,000	\$ -	\$ 193,000	
Projects > \$10 million - company labor is 2.5%		2.5	%			\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 193,000	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement		10	%			\$ 386,000	\$ -	\$ 386,000	
Construction Stake, As-Built Survey (2 man crew)		22	Days	\$ 100	\$ 2,200	\$ 1,400	\$ 30,800	\$ 33,000	
ROW Acquisition		0	LS			\$ -	\$ -	\$ -	
Construction Permits		0	LS			\$ -	\$ -	\$ -	
Environmental Permits		0	LS			\$ -	\$ -	\$ -	
Environmental Monitoring		0	LS			\$ -	\$ -	\$ -	
As-Built Drawings (\$2000+\$1/ft)		1	LS			\$ 12,483	\$ -	\$ 12,483	
Total Design / Engineering / Construction Cost								\$ 431,500	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%		30	%			\$ -	\$ -	\$ -	
Projects > \$2 million - Contingency is 20%		20	%			\$ 896,900	\$ -	\$ 896,900	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 5,381,400	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	38-508	0.501	-	0.501
Diameter (in.)	6.625, 8.625			

Cost Detail

Capital		O&M	
Direct Labor	\$ 62,900	Direct Labor	\$ -
Direct Non Labor	\$ 1,841,900	Direct Non Labor	\$ -
Total Direct Capital	\$ 1,904,800	Total Direct O&M	\$ -



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

Existing Segments

Category	Station Start	Station Stop	Criteria Miles	Diameter	Action	Decision Tree Box	Comments
Cat 4	0	39	-	6.625			
Cat 4	39	21926	-	6.625			
Cat 4	21926	32629	-	6.625			
Cat 1	32629	34562	-	6.625			
Cat 4	34562	42594	-	6.625			
Cat 2	42594	42606	-	6.625			
Cat 4	42606	44894	-	6.625			
Cat 1	44894	44899	-	6.625			
Cat 4	44899	47545	0.5011	6.625	Replace	2	
Cat 4	47545	48600	-	6.625			
Cat 1	48600	53632	-	8.625			
Cat 4	53632	67809	-	6.625			
Cat 1	67809	70383	-	6.625			
Cat 4	70383	72906	-	6.625			
Cat 4	72906	89099	-	6.625			
Cat 4	89099	89105	-	6.625			
Cat 4	89105	120231	-	6.625			
Cat 1	120231	120294	-	6.625			
Cat 4	120294	121419	-	6.625			
Cat 1	121419	129340	-	6.625			

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
44899	47545	6.625	0.280	X-52	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	38-512	2.238	2.546	4.784
Diameter (in.)	Multiple: 4.5 - 12.75			

Cost Detail

Capital		O&M	
Direct Labor	\$ 340,600	Direct Labor	\$ -
Direct Non Labor	\$ 9,161,300	Direct Non Labor	\$ -
Total Direct Capital	\$ 9,501,900	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
Cat 4	0	160	0.0303	12.75	Replace	2	
Cat 4	160	163	0.0006	6.625	Replace	2	
Cat 1	163	174	0.0021	6.625	Replace		
Cat 4	174	1252	0.2042	6.625	Replace	2	
Cat 4	1252	2760	0.2856	6.625	Replace	2	
Cat 4	2760	2803	0.0081	6.625	Replace	2	
Cat 4	2803	9855	1.3356	6.625	Replace	2	
Cat 2	9855	9865	0.0019	6.625	Replace		
Cat 4	9865	11326	0.2767	6.625	Replace	2	
Cat 4	11326	11328	0.0004	6.625	Replace	2	
Cat 4	11328	11836	0.0962	8.625	Replace	2	
Cat 4	11836	11838	0.0004	6.625	Replace	2	
Cat 4	11838	25590	-	6.625	Replace	2	
Cat 4	25590	25593	-	4.5	Replace	2	
Cat 4	25593	25620	-	6.625	Replace	2	

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments	
					Thickness	Comments
0	160	12.75	0.375	X-52		Inside Lemoore Junction
160	163	6.625	0.280	X-52		
163	174	6.625	0.280	X-52		Include Cat. 1 segment due to it being between Cat. 4 Criteria miles
174	1252	6.625	0.280	X-52		
1252	2760	6.625	0.280	X-52		
2760	2803	6.625	0.280	X-52		
2803	9855	6.625	0.280	X-52		

9855	9865	6.625	0.280	X-52	Include this Cat. 2 segment since it is only 10 feet and it is between 2 Cat. 4 criteria miles
9865	11326	6.625	0.280	X-52	
11326	11328	6.625	0.280	X-52	
11328	11836	6.625	0.280	X-52	Downgrade pipe to match upstream and downstream pipe sizes
11836	11838	6.625	0.280	X-52	
11838	25590	6.625	0.280	X-52	Include zero Cat. 4 criteria miles to remove 1929 pipe and to reduce SMYS to below 20%
25590	25593	6.625	0.280	X-52	Include zero Cat. 4 criteria miles to remove 1929 pipe and to reduce SMYS to below 20%
25593	25620	6.625	0.280	X-52	Include zero Cat. 4 criteria miles to remove 1929 pipe and to reduce SMYS to below 20%

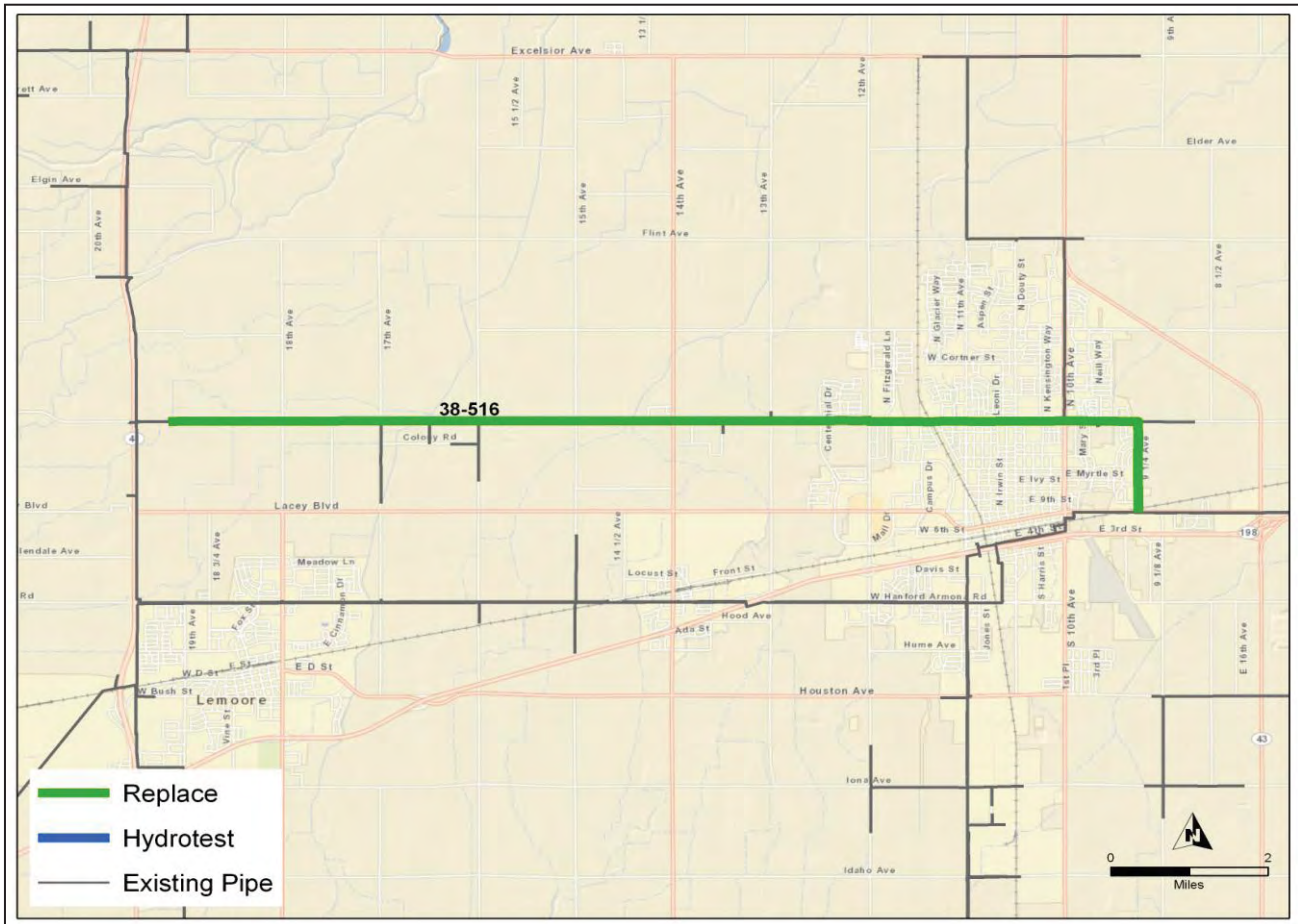
ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 38-512			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 7, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	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									
12 inch pipe									
Pipe 12 inch, STD. WT X-52		160	Feet	\$ 44	\$ 7,085			\$ 7,085	
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	\$ 522			\$ 522	
Miscellaneous Materials (5%)		1	Lot					\$ 721	
Freight / Tax		12.5	%					\$ 1,958	
6 inch pipe									
Pipe 6 inch, STD. WT X-52		25450	Feet	\$ 17	\$ 442,067			\$ 442,067	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		105	Each	\$ 580	\$ 60,900			\$ 60,900	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)		1	Each	\$ 21,999	\$ 21,999			\$ 21,999	
FBE Coating (5/ft)				\$ 1.73	\$ 44,029			\$ 44,029	
Miscellaneous Materials (5%)		1	Lot					\$ 25,148	
Freight / Tax		12.5	%					\$ 74,268	
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 n/a									
Casing n/a		0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
Total length		4.9	Miles						
Total Material Cost								\$ 686,100	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
Pipe Install - Type 1		0	Feet			\$ 175	\$ -	\$ -	
Pipe Install - Type 2		160	Feet			\$ 280	\$ 44,800	\$ 44,800	
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	\$ -	\$ -	
6 inch pipe									
Pipe Install - Type 1		17950	Feet			\$ 150	\$ 2,692,500	\$ 2,692,500	
Pipe Install - Type 2		0	Feet			\$ 240	\$ -	\$ -	
Pipe Install - Type 3		7400	Feet			\$ 400	\$ 2,960,000	\$ 2,960,000	
Pipe Install - Type 4		0	Feet			\$ 450	\$ -	\$ -	
Pipe Install - Type 5		0	Feet			\$ 300	\$ -	\$ -	
Pipe Install - Type 6		100	Feet			\$ 800	\$ 80,000	\$ 80,000	Bridge Attachment
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 7		0	Feet			\$ -	\$ -	\$ -	
Pipe Install - Type 6		0	Feet			\$ -	\$ -	\$ -	
Tie-ins Crew Rates									
Tie-ins Crew Rates		1	Each			\$ 25,000	\$ 25,000	\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)		20492	SCF	\$ 0.19	\$ 3,893			\$ 3,893	
Purging Labor		1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)		181	CY			\$ 95	\$ 17,195	\$ 17,195	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)		75	%					\$ 216,649	
Mobilization / Demobilization		1	Each			\$ 30,000	\$ 30,000	\$ 30,000	
Contaminated Soil		0	CY			\$ -	\$ -	\$ -	
Asbestos Abatement		0	Feet			\$ -	\$ -	\$ -	
Radiographic Inspection		39	Days	\$ 150	\$ 5,850	\$ 600	\$ 23,400	\$ 29,250	
Construction period		47	days						
Total Construction Cost								\$ 6,124,300	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%		10	%				\$ -	\$ -	
\$1 million < Projects < \$10 million - company labor is 5%		5	%				\$ 340,520	\$ 340,520	
Projects > \$10 million - company labor is 2.5%		2.5	%				\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 340,600	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement		10	%				\$ 681,040	\$ 681,040	
Construction Stake, As-Built Survey (2 man crew)		39	Days	\$ 100	\$ 3,900	\$ 1,400	\$ 54,600	\$ 58,500	
ROW Acquisition		0	LS				\$ -	\$ -	
Construction Permits		0	LS				\$ -	\$ -	
Environmental Permits		0	LS				\$ -	\$ -	
Environmental Monitoring		0	LS				\$ -	\$ -	
As-Built Drawings (\$2000+\$1/ft)		1	LS				\$ 27,610	\$ 27,610	
Total Design / Engineering / Construction Cost								\$ 767,200	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%		30	%				\$ -	\$ -	
Projects > \$2 million - Contingency is 20%		20	%				\$ 1,583,640	\$ 1,583,640	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 9,501,900	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	38-516	7.344	3.642	10.986
Diameter (in.)	6.625, 8.625			

Cost Detail

Capital		O&M	
Direct Labor	\$ 562,700	Direct Labor	\$ -
Direct Non Labor	\$ 30,155,400	Direct Non Labor	\$ -
Total Direct Capital	\$ 30,718,100	Total Direct O&M	\$ -



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 2	0	45	-	6.625			
Cat 4	45	23963	0.9087	8.625	Replace	2	
Cat 4	23963	23971	0.0015	8.625	Replace	2	
Cat 4	23971	52719	5.4237	8.625	Replace	2	
Cat 4	52719	58052	1.0100	6.625	Replace	2	

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
23963	23971	8.625	0.322	X-52	
23971	52719	8.625	0.322	X-52	
52719	58052	8.625	0.322	X-52	

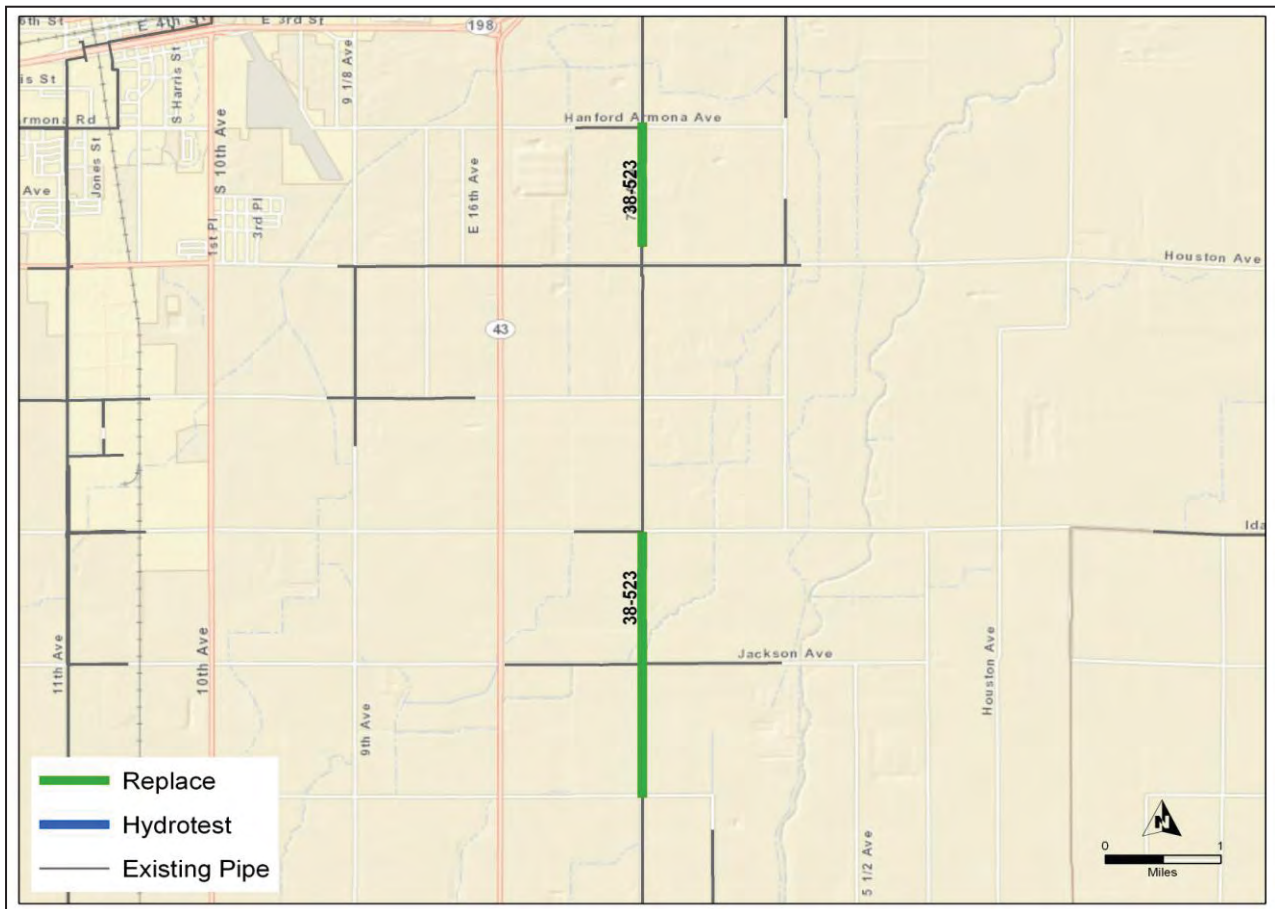
ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 38-516			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 6, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	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									
		58007	Feet	\$ 26	\$ 1,494,840			\$ 1,494,840	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
		236	Each	\$ 824	\$ 194,464			\$ 194,464	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)									
		2	Each	\$ 24,779	\$ 49,558			\$ 49,558	
FBE Coating (5/ft)									
				\$ 2.29	\$ 132,836			\$ 132,836	
Miscellaneous Materials (5%)									
		1	Lot					\$ 86,943	
Freight / Tax									
		12.5	%					\$ 244,830	
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		11.0	Miles						
Total Material Cost								\$ 2,203,500	
2 CONSTRUCTION (See Appendix for construction type definitions)									
8 inch pipe									
Pipe Install - Type 1									
		0	Feet			\$ 175	\$ -	\$ -	
Pipe Install - Type 2									
		40307	Feet			\$ 280	\$ 11,285,960	\$ 11,285,960	
Pipe Install - Type 3									
		17000	Feet			\$ 450	\$ 7,650,000	\$ 7,650,000	
Pipe Install - Type 4									
		150	Feet			\$ 600	\$ 90,000	\$ 90,000	
Pipe Install - Type 5									
		400	Feet			\$ 400	\$ 160,000	\$ 160,000	Canal Xing Bore & RR
Pipe Install - Type 6									
		150	Feet			\$ 800	\$ 120,000	\$ 120,000	Large Canal HDD
Pipe Install - Type 7									
		0	Feet			\$ 585	\$ -	\$ -	Bridge Attachment
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)									
		80996	SCF	\$ 0.19	\$ 15,389			\$ 15,389	
Purging Labor									
		1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
		712	CY			\$ 95	\$ 67,640	\$ 67,640	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
		75	%					\$ 723,974	
Mobilization / Demobilization									
		1	Each			\$ 30,000	\$ 30,000	\$ 30,000	
Contaminated Soil									
		0	CY			\$ -	\$ -	\$ -	
Asbestos Abatement									
		0	Feet			\$ -	\$ -	\$ -	
Radiographic Inspection									
		146	Days	\$ 150	\$ 21,900	\$ 600	\$ 87,600	\$ 109,500	
Construction period		154	days						
Total Construction Cost								\$ 20,302,500	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
		10	%				\$ -	\$ -	
\$1million <Projects < \$10 million - company labor is 5%									
		5	%				\$ -	\$ -	
Projects >\$10 million - company labor is 2.5%									
		2.5	%				\$ 562,650	\$ 562,650	
Total SCG Labor / Inspection Cost								\$ 562,700	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
		10	%				\$ 2,250,600	\$ 2,250,600	
Construction Stake, As-Built Survey (2 man crew)									
		146	Days	\$ 100	\$ 14,600	\$ 1,400	\$ 204,400	\$ 219,000	
ROW Acquisition									
		0	LS				\$ -	\$ -	
Construction Permits									
		0	LS				\$ -	\$ -	
Environmental Permits									
		0	LS				\$ -	\$ -	
Environmental Monitoring									
		0	LS				\$ -	\$ -	
As-Built Drawings (\$2000+\$1/ft)									
		1	LS				\$ 60,007	\$ 60,007	
Total Design / Engineering / Construction Cost								\$ 2,529,700	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
		30	%				\$ -	\$ -	
Projects >\$2 million - Contingency is 20%									
		20	%				\$ 5,119,680	\$ 5,119,680	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 30,718,100	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	38-523	0.250	2.663	2.913
Diameter (in.)	4.5, 6.625, 8.625			

Cost Detail

Capital		O&M	
Direct Labor	\$ 216,900	Direct Labor	\$ -
Direct Non Labor	\$ 5,846,100	Direct Non Labor	\$ -
Total Direct Capital	\$ 6,063,000	Total Direct O&M	\$ -



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 2	0	28	-	6.625			
Cat 2	28	270	-	8.625			
Cat 4	270	4908	-	6.625			
Cat 4	4908	9783	0.1110	4.5	Replace	2	
Cat 4	9783	9813	-	4.5			
Cat 4	9813	10976	-	8.625			
Cat 4	10976	11020	-	6.625			
Cat 4	11020	11048	-	6.625			
Cat 2	11048	11095	-	6.625			
Cat 4	11095	17557	-	6.625			
Cat 4	17557	21177	-	8.625			
Cat 4	21177	31683	0.1390	6.625	Replace	2	
Cat 4	31683	31691	-	6.625			
Cat 4	31691	47670	-	8.625			
Cat 4	47670	47674	-	6.625			
Cat 4	0	0	-	6.625			
Cat 4	54907	55502	-	4.5			
Cat 2	55502	55777	-	4.5			
Cat 4	55777	63955	-	4.5			
Cat 4	63955	64098	-	6.625			
Cat 4	64098	66447	-	4.5			
Cat 4	66447	66456	-	8.625			
Cat 4	66456	74137	-	8.625			

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
4908	9783	6.625	0.280	X-52	
21177	31683	6.625	0.280	X-52	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET						
Line 38-523			SPC SERVICES	Sheet 1 of 1						
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:							
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	June 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										
1										
Pipe	6	inch. STD. WT X-52	15381	Feet	\$ 17	\$	267,168	\$	267,168	Replaced segment pipe OD per Remediation Plan
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	65	Each	\$ 580	\$	37,700	\$	37,700	
Pressure Rating	300	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 21,999	\$	-	\$	-	
		FBE Coating (5/ft)			\$	\$	1,73	\$	26,609	
		Miscellaneous Materials (5%)	1	Lot				\$	15,243	
		Freight / Tax	12.5	%				\$	43,340	
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	2.9	Miles						
Total Material Cost								\$ 390,100		
2 CONSTRUCTION (See Appendix for construction type definitions)										
6 inch pipe										
		Pipe Install - Type 1	0	Feet		\$	150	\$	-	
		Pipe Install - Type 2	15381	Feet		\$	240	\$	3,691,440	
		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	0	Feet		\$	-	\$	-	
		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	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)										
			12084	SCF	\$ 0.19	\$	2,296	\$	2,296	
Purging Labor										
			1	LS		\$	25,000	\$	25,000	
95% Abandonment of Existing Pipeline (\$50/CY)										
			107	CY		\$	95	\$	10,165	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)										
			75	%				\$	138,429	
Mobilization / Demobilization										
			1	Each		\$	30,000	\$	30,000	
Contaminated Soil										
			0	CY		\$	-	\$	-	
Asbestos Abatement										
			0	Feet		\$	-	\$	-	
Radiographic Inspection										
			32	Days	\$ 150	\$	4,800	\$	19,200	
Construction period										
			40	days						
Total Construction Cost								\$ 3,946,400		
3 SCG LABOR / INSPECTION										
		Projects < \$1 million - company labor is 10%	10	%				\$ -	\$ -	
		\$1million <Projects < \$10 million - company labor is 5%	5	%				\$ 216,825	\$ 216,825	
		Projects >\$10 million - company labor is 2.5%	2.5	%				\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 216,900		
4 DESIGN / ENG. / CONST / ENVIRON.										
		Planning / Design / Eng / Coord / Procurement	10	%				\$ 433,650	\$ 433,650	
		Construction Stake, As-Built Survey (2 man crew)	32	Days	\$ 100	\$	3,200	\$ 1,400	\$ 44,800	
		ROW Acquisition	0	LS				\$ -	\$ -	
		Construction Permits	0	LS				\$ -	\$ -	
		Environmental Permits	0	LS				\$ -	\$ -	
		Environmental Monitoring	0	LS				\$ -	\$ -	
		As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 17,381	\$ 17,381	
Total Design / Engineering / Construction Cost								\$ 499,100		
5 CONTINGENCY										
		Projects < \$2 million - Contingency is 30%	30	%				\$ -	\$ -	
		Projects >\$2 million - Contingency is 20%	20	%				\$ 1,010,500	\$ 1,010,500	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 6,063,000		

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

Company	SCG	Hydrotest Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	38-528	2.434	1.751	4.184
Diameter (in.)	Multiple: 4.5 - 10.75			

Cost Detail

Capital		O&M	
		<i>Hydrotest</i>	
Direct Labor	\$ -	Direct Labor	\$ 15,400
Direct Non Labor	\$ -	Direct Non Labor	\$ 399,100
Total Direct Capital	\$ -	Total Hydrotest	\$ 414,500
		<i>Repairs</i>	
		Direct Labor	\$ 10,000
		Direct Non Labor	\$ 90,000
		Total Repairs	\$ 100,000



**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 2	0	37038	0.3938	10.75			
Cat 2	37038	63459	0.5860	10.75			
Cat 2	63459	66983	0.6674	10.75			
Cat 2	66983	68379	0.2644	10.75			
Cat 4	68379	68975	0.1129	6.625			RR crossing.
Cat 4	68975	69008	0.0063	6.625	Hydrotest	4	
Cat 4	69008	73934	0.9330	6.625	Hydrotest	4	
Cat 1	73934	73955	0.0040	6.625			
Cat 4	73955	82265	1.0403	6.625	Hydrotest	4	
Cat 1	82265	83738	-	6.625			
Cat 4	83738	83929	-	6.625			
Cat 1	83929	84467	-	6.625			
Cat 4	84467	85548	-	6.625			
Cat 4	85548	86921	-	6.625			
Cat 4	86921	90414	0.4195	6.625	Hydrotest	4	
Cat 4	90414	90422	0.0015	6.625	Hydrotest	4	
Cat 4	90422	95746	0.9739	6.625	Hydrotest	4	
Cat 1	95746	95758	-	8.625			
Cat 4	95758	98229	-	6.625			
Cat 1	98229	124802	-	8.625			
Cat 4	124802	124834	-	6.625			
Cat 4	124834	124836	-	4.5			

SHEET: Sheet 1 of 1
 DATE: July 28, 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	UNIT COST	TOTAL	
1 MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe 6.625 Actual OD (in)	838		bb/OD							
0.188 Wall Thickness (in)	419		bb/Segment							
22084 Length (FT)										
2 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 4.2 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	26,989		SCF	0.19	\$ 5,128				\$ 5,128	
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)	2		each	\$ 5,000	\$ 10,000				\$ 10,000	
Baker Tank(s) =X	1		each							
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	13		day(s)	\$ 1,600	\$ 20,800				\$ 20,800	
Total Hydrotest Water (\$19/bbl)	838		bbl	\$ 19.00	\$ 15,923				\$ 15,923	
Water Disposal Vacuum Truck(s) =A	1		each							
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	7		loads							
Disposal Time =>C*B/(A*10)	1		day(s)							
Total Vacuum Truck(s) Rental days (\$/day per truck) =>D=C*A	1		day(s)	\$ 5,000	\$ 5,000				\$ 5,000	
Treated Water Disposal (\$55/bbl)	838		bbl	\$ 55	\$ 46,093				\$ 46,093	
Miscellaneous Materials	5		%		\$ 6,422				\$ 6,422	
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	
Hydrotest Labor (10K/ test segment)	2		day(s)		\$ 10,000				\$ 20,000	
Dewater/ Dry Pipeline (\$15,000/ test segment)	2		LS		\$ 15,000				\$ 30,000	
Tie-ins Crew Rates (\$25,000/ test segment)	2		Each		\$ 25,000				\$ 50,000	
3rd Party Witness (\$2,000/ test segment)	2		Each		\$ 2,000				\$ 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		%						\$ 15,400	
\$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									\$ 15,400	
4 DESIGN / ENG. / CONST. / ENVIRON.										
Planning / Design / Eng / Coord / Procurement	5		%						\$ 14,445	
ROW Acquisition	0		LS						\$ -	
Construction Permits	0		LS						\$ -	
Environmental Permits	0		LS						\$ -	
Environmental Monitoring	0		LS						\$ -	
Total Design / Engineering / Construction Cost									\$ 14,445	
Projects <\$2 million - Contingency is 30%	30		%						\$ 95,640	
Projects >\$2 million - Contingency is 20%	20		%						\$ -	
5 CONTINGENCY										
TOTAL PROJECT COST (See Appendix for assumptions/certifications)									\$ 414,500	

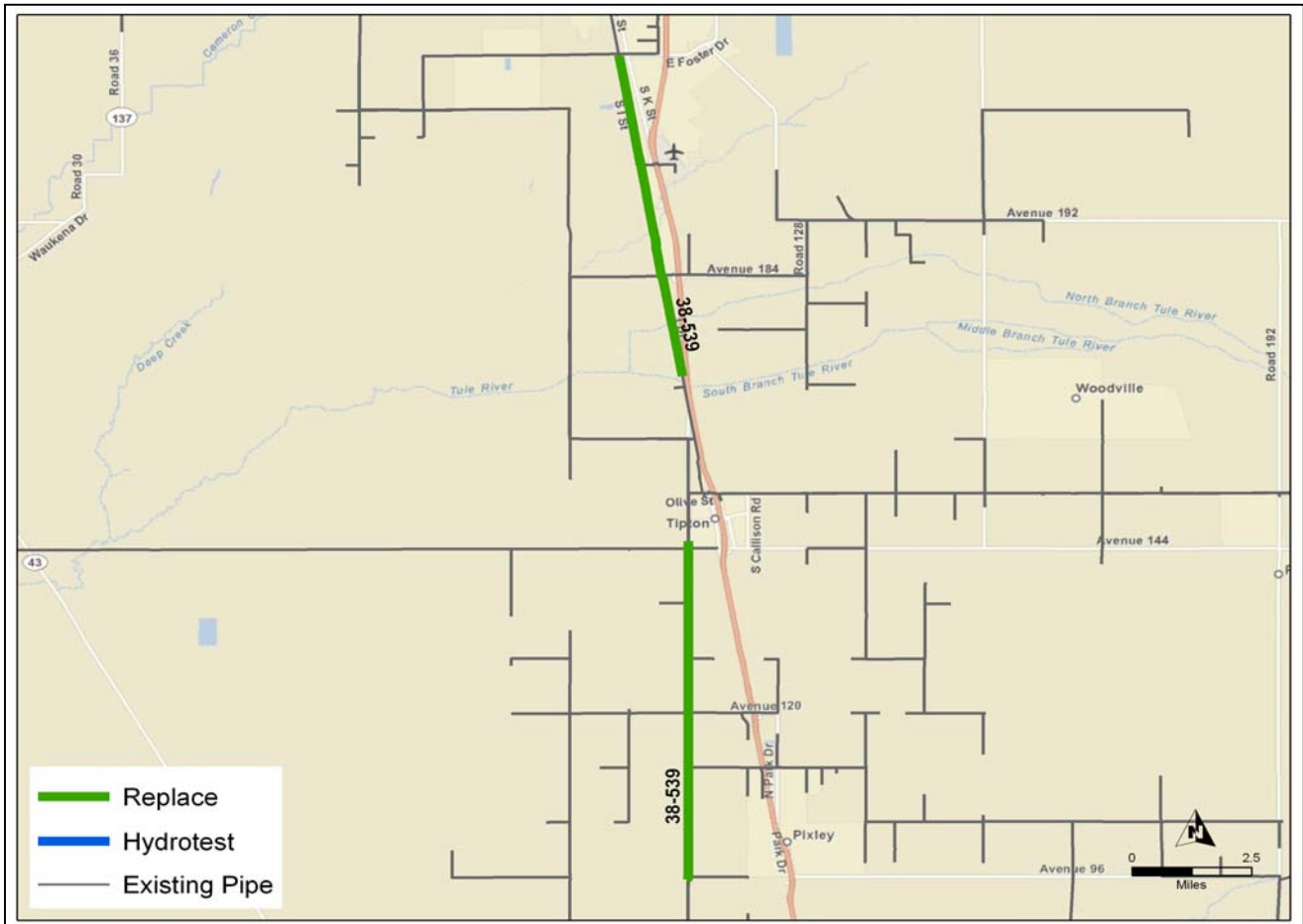
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Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
Line Number	38-539	Criteria	Accelerated	Total
Diameter (in.)	Multiple: 4.5 - 10.75	2.361	9.722	12.083

Cost Detail

Capital		O&M	
Direct Labor	\$ 566,800	Direct Labor	\$ -
Direct Non Labor	\$ 30,380,200	Direct Non Labor	\$ -
Total Direct Capital	\$ 30,947,000	Total Direct O&M	\$ -



**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	1	39.9	-	10.75			
Cat 2	39.9	53	-	10.75			
Cat 1	53	47383	-	10.75			
Cat 2	47383	47403	-	8.625			
Cat 4	47403	47497	-	8.625	Replace	2	
Cat 4	47497	47501	-	6.625	Replace	2	
Cat 4	47501	78942	0.2212	8.625	Replace	2	
Cat 2	78942	78982	-	8.625			
Cat 4	85979	85983	-	6.625			
Cat 4	85983	85988	-	8.625			
Cat 4	85988	94185	-	6.625			
Cat 4	94185	94209	-	6.625			
Cat 4	94209	96668	-	6.625			
Cat 2	96669	96897	-	6.625			
Cat 4	96897	129155	2.1396	6.625	Replace	2	Alignment passes thru open desert. Possible environmental
Cat 1	129155	129778	0.0009	6.625			
Cat 1	129778	129781	-	4.5			

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments	
					Comments	
47403	47497	10.75	0.365	X-52		Include non-criteria Cat. 4 segments
47497	47501	10.75	0.365	X-52		Include non-criteria Cat. 4 segments
47501	78942	10.75	0.365	X-52		Upsize to 10" per Master Planning
96897	129155	10.75	0.365	X-52		Upsize line to 10" per Master Planning

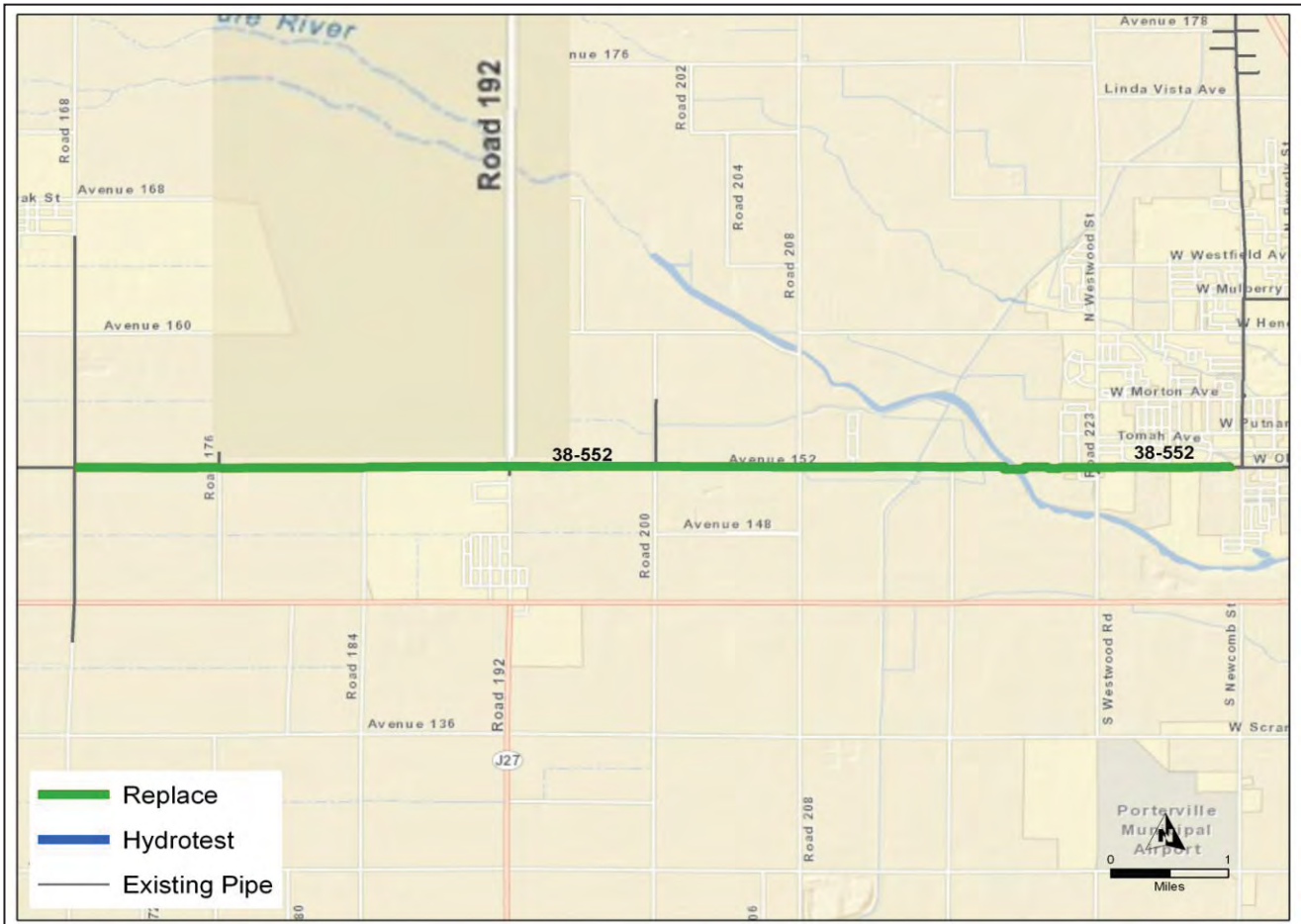
ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 38-539			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 7, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	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									
10 inch, STD. WT X-52									
Pipe	10	63797	Feet	\$ 36	\$ 2,308,813			\$ 2,308,813	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		255	Each	\$ 1,408	\$ 359,040			\$ 359,040	
Pressure Rating	300	3	Each	\$ 28,405	\$ 85,215			\$ 85,215	
FBE Coating (\$/ft)				\$ 2.86	\$ 182,459			\$ 182,459	
Miscellaneous Materials (5%)		1	Lot					\$ 137,653	
Freight / Tax		12.5	%					\$ 384,148	
12 inch, STD. WT X-52									
Pipe	n/a	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		0	Each	\$ -	\$ -			\$ -	
Pressure Rating	n/a	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/ft)				\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
16 inch, STD. WT X-52									
Pipe	16	100	Feet	\$ 36	\$ 3,619			\$ 3,619	
Miscellaneous Materials (5%)		1	Lot					\$ 180,95	
Freight / Tax		12.5	%					\$ 475	
Total length		12.1	Miles						
Total Material Cost								\$ 3,461,700	
2 CONSTRUCTION (See Appendix for construction type definitions)									
10 inch pipe									
Pipe Install - Type 1			Feet		\$ 175	\$ -	\$ -		
Pipe Install - Type 2		61797	Feet		\$ 280	\$ 17,303,160	\$ 17,303,160		
Pipe Install - Type 3		0	Feet		\$ 450	\$ -	\$ -		
Pipe Install - Type 4		200	Feet		\$ 600	\$ 120,000	\$ 120,000		
Pipe Install - Type 5		1890	Feet		\$ 400	\$ 720,000	\$ 720,000		Canal Xing (2)
Pipe Install - Type 6		0	Feet		\$ -	\$ -	\$ -		HDD Xing of Wash (3)
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									
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)		2	Each		\$ 25,000	\$ 50,000	\$ 50,000		
Purging Labor		139184	SCF	\$ 0.19	\$ 26,445		\$ 26,445		
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)		1224	CY		\$ 95	\$ 116,280	\$ 116,280		
Mobilization / Demobilization		75	%				\$ 680,369		
Contaminated Soil		2	Each		\$ 30,000	\$ 60,000	\$ 60,000		
Asbestos Abatement		0	CY		\$ -	\$ -	\$ -		
Radiographic Inspection		0	Feet		\$ -	\$ -	\$ -		
Radiographic Inspection		145	Days	\$ 150	\$ 21,750	\$ 600	\$ 87,000	\$ 108,750	
Construction period		153	days						
Total Construction Cost								\$ 19,210,100	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%		10	%				\$ -	\$ -	
\$1million < Projects < \$10 million - company labor is 5%		5	%				\$ -	\$ -	
Projects > \$10 million - company labor is 2.5%		2.5	%				\$ 566,795	\$ 566,795	
Total SCG Labor / Inspection Cost								\$ 566,800	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement		10	%				\$ 2,267,180	\$ 2,267,180	
Construction Stake, As-Built Survey (2 man crew)		145	Days	\$ 100	\$ 14,500	\$ 1,400	\$ 203,000	\$ 217,500	
ROW Acquisition		0	LS				\$ -	\$ -	
Construction Permits		0	LS				\$ -	\$ -	
Environmental Permits		0	LS				\$ -	\$ -	
Environmental Monitoring		0	LS				\$ -	\$ -	
As-Built Drawings (\$2000+\$1/ft)		1	LS				\$ 65,797	\$ 65,797	
Total Design / Engineering / Construction Cost								\$ 2,550,500	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%		30	%				\$ -	\$ -	
Projects > \$2 million - Contingency is 20%		20	%				\$ 5,157,820	\$ 5,157,820	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 30,947,000	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	38-552	3.226	4.762	7.988
Diameter (in.)	6.625			

Cost Detail

Capital		O&M	
Direct Labor	\$ 327,600	Direct Labor	\$ -
Direct Non Labor	\$ 17,589,900	Direct Non Labor	\$ -
Total Direct Capital	\$ 17,917,500	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	
	Start	Stop				Tree Box	Comments
Cat 4	0	29396	-	6.625			
Cat 4	29396	29401.5	-	6.625			
Cat 4	29401.5	29417	-	6.625			
Cat 1	29417	29419.5	-	6.625			
Cat 4	29419.5	45141	0.0765	6.625	Replace	2	
Cat 4	45141	45174	0.0063	6.625	Replace	2	
Cat 4	45174	55682	0.4739	6.625	Replace	2	
Cat 4	55682	55716	0.0064	6.625	Replace	2	
Cat 4	55716	59924	0.7330	6.625	Replace	2	
Cat 4	59924	60193	0.0509	6.625	Replace	2	
Cat 4	60193	62993	0.4502	6.625	Replace	2	
Cat 4	62993	63049	-	6.625	Replace	2	
Cat 4	63049	63972	-	6.625	Replace	2	
Cat 4	63972	64052	-	6.625	Replace	2	
Cat 4	64052	65089.05	0.1960	6.625	Replace	2	
Cat 4	65089.05	65366	0.0525	6.625	Replace	2	
Cat 4	65366	66705.05	0.2536	6.625	Replace	2	
Cat 2	66705.05	66709.05	0.0008	6.625	Replace	2	
Cat 4	66709.05	71601.05	0.9265	6.625	Replace	2	
Cat 1	71601.05	71618	0.0032	6.625	Replace	2	

New Segments

Station Start	Station Stop	Wall		
		Diameter	Thickness	Grade
29419.5	45141	6.625	0.280	X-52
45141	45174	6.625	0.280	X-52

45174	55682	6.625	0.280	X-52	Include zero criteria miles Cat. 4 segments since it is between Cat. 4 criteria miles Include zero criteria miles Cat. 4 segments since it is between Cat. 4 criteria miles Include zero criteria miles Cat. 4 segments since it is between Cat. 4 criteria miles
55682	55716	6.625	0.280	X-52	
55716	59924	6.625	0.280	X-52	
59924	60193	6.625	0.280	X-52	
60193	62993	6.625	0.280	X-52	
62993	63049	6.625	0.280	X-52	
63049	63972	6.625	0.280	X-52	
63972	64052	6.625	0.280	X-52	
64052	65089.05	6.625	0.280	X-52	
65089.05	65366	6.625	0.280	X-52	
65366	66705.05	6.625	0.280	X-52	
66709.05	71601.05	6.625	0.280	X-52	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 38-552			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPC	July 6, 2011						
		STATUS OF DESIGN	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 n/a 6 inch, STD. WT X-52									
		42178	Feet	\$ 17	\$ 732,632			\$ 732,632	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	172	Each	\$ 580	\$ 99,760			\$ 99,760	
	Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)	1	Each	\$ 19,497	\$ 19,497			\$ 19,497	
	FBE Coating (5/ft)			\$ 1.73	\$ 72,968			\$ 72,968	
	Miscellaneous Materials (5%)	1	Lot					\$ 42,594	
	Freight / Tax	12.5	%					\$ 120,931	
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									
		0	Feet	\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
	Total length	8.0	Miles						
Total Material Cost								\$ 1,088,400	
2 CONSTRUCTION (See Appendix for construction type definitions)									
6 inch pipe									
	Pipe Install - Type 1	0	Feet			\$ 150	\$ -	\$ -	
	Pipe Install - Type 2	34828	Feet			\$ 240	\$ 8,358,720	\$ 8,358,720	
	Pipe Install - Type 3	7000	Feet			\$ 400	\$ 2,800,000	\$ 2,800,000	
	Pipe Install - Type 4	200	Feet			\$ 450	\$ 90,000	\$ 90,000	Canal Xing (2)
	Pipe Install - Type 5	0	Feet			\$ 300	\$ -	\$ -	
	Pipe Install - Type 6	150	Feet			\$ 1,000	\$ 150,000	\$ 150,000	Bridge Attachment for Canal Xing
	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)	33128	SCF	\$ 0.19	\$ 6,294			\$ 6,294	
	Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	292	CY			\$ 95	\$ 27,740	\$ 27,740	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 427,452	
	Mobilization / Demobilization	1	Each			\$ 30,000	\$ 30,000	\$ 30,000	
	Contaminated Soil	0	CY			\$ -	\$ -	\$ -	
	Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -	
	Radiographic Inspection	98	Days	\$ 150	\$ 14,700	\$ 600	\$ 58,800	\$ 73,500	
	Construction period	106	days						
Total Construction Cost								\$ 12,013,800	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%				\$ -	\$ -	
	\$1million <Projects < \$10 million - company labor is 5%	5	%				\$ -	\$ -	
	Projects >\$10 million - company labor is 2.5%	2.5	%				\$ 327,555	\$ 327,555	
Total SCG Labor / Inspection Cost								\$ 327,600	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%				\$ 1,310,220	\$ 1,310,220	
	Construction Stake, As-Built Survey (2 man crew)	98	Days	\$ 100	\$ 9,800	\$ 1,400	\$ 137,200	\$ 147,000	
	ROW Acquisition	0	LS				\$ -	\$ -	
	Construction Permits	0	LS				\$ -	\$ -	
	Environmental Permits	0	LS				\$ -	\$ -	
	Environmental Monitoring	0	LS				\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 44,178	\$ 44,178	
Total Design / Engineering / Construction Cost								\$ 1,501,400	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%				\$ -	\$ -	
	Projects >\$2 million - Contingency is 20%	20	%				\$ 2,986,240	\$ 2,986,240	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 17,917,500	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
Line Number	38-959	Criteria	Accelerated	Total
Diameter (in.)	4.5, 6.625, 10.75	4.327	11.276	15.603

Cost Detail

Capital		O&M	
Direct Labor	\$ 521,700	Direct Labor	\$ -
Direct Non Labor	\$ 27,851,000	Direct Non Labor	\$ -
Total Direct Capital	\$ 28,372,700	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	6	-	4.5				
Cat 4	6	8744	-	6.625				
Cat 2	8744	8798	-	6.625				
Cat 4	8798	44843	0.1085	6.625	Replace	2		Single feed system. Possible Environmental issues at Arvin-Edison canal at Sta. 44843
Cat 1	44843	44865	-	6.625				
Cat 1	44865	44924	-	10.75				
Cat 1	44924	44946	-	6.625				
Cat 4	44946	60529	-	6.625				
Cat 2	60529	60638	-	6.625				
Cat 4	60638	73906	1.6152	6.625	Replace	2		Single feed system. Would require piggable PC figs to not shut-in
Cat 1	73906	73926	0.0038	6.625	Replace			
Cat 4	73926	77120	0.6049	6.625	Replace	2		
Cat 4	77120	77128	0.0015	6.625	Replace	2		
Cat 4	77128	89774	1.1051	6.625	Replace	2		
Cat 4	89774	106978	0.8922	6.625	Replace	2		
Cat 4	106978	106995	-	6.625				
Cat 4	106995	109441	-	6.625				
Cat 4	109441	111585	-	6.625				
Cat 1	111585	111645	-	6.625				
Cat 2	111645	111784	-	6.625				
Cat 1	111784	120555	-	6.625				
Cat 2	120555	120558	-	6.625				
Cat 2	120558	120563	-	4.5				

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
8798	44843	12.75	0.375	X-52	This system needs a pressure betterment due to low pressure problems.
60638	73906	12.75	0.375	X-52	This system needs a pressure betterment due to low pressure problems.
73906	73926	12.75	0.375	X-52	This system needs a pressure betterment due to low pressure problems. Include this Cat. 1 segment to reduce tie-in points.
73926	77120	12.75	0.375	X-52	This system needs a pressure betterment due to low pressure problems.
77120	77128	12.75	0.375	X-52	This system needs a pressure betterment due to low pressure problems.
77128	89774	12.75	0.375	X-52	This system needs a pressure betterment due to low pressure problems.
89774	106978	12.75	0.375	X-52	This system needs a pressure betterment due to low pressure problems.

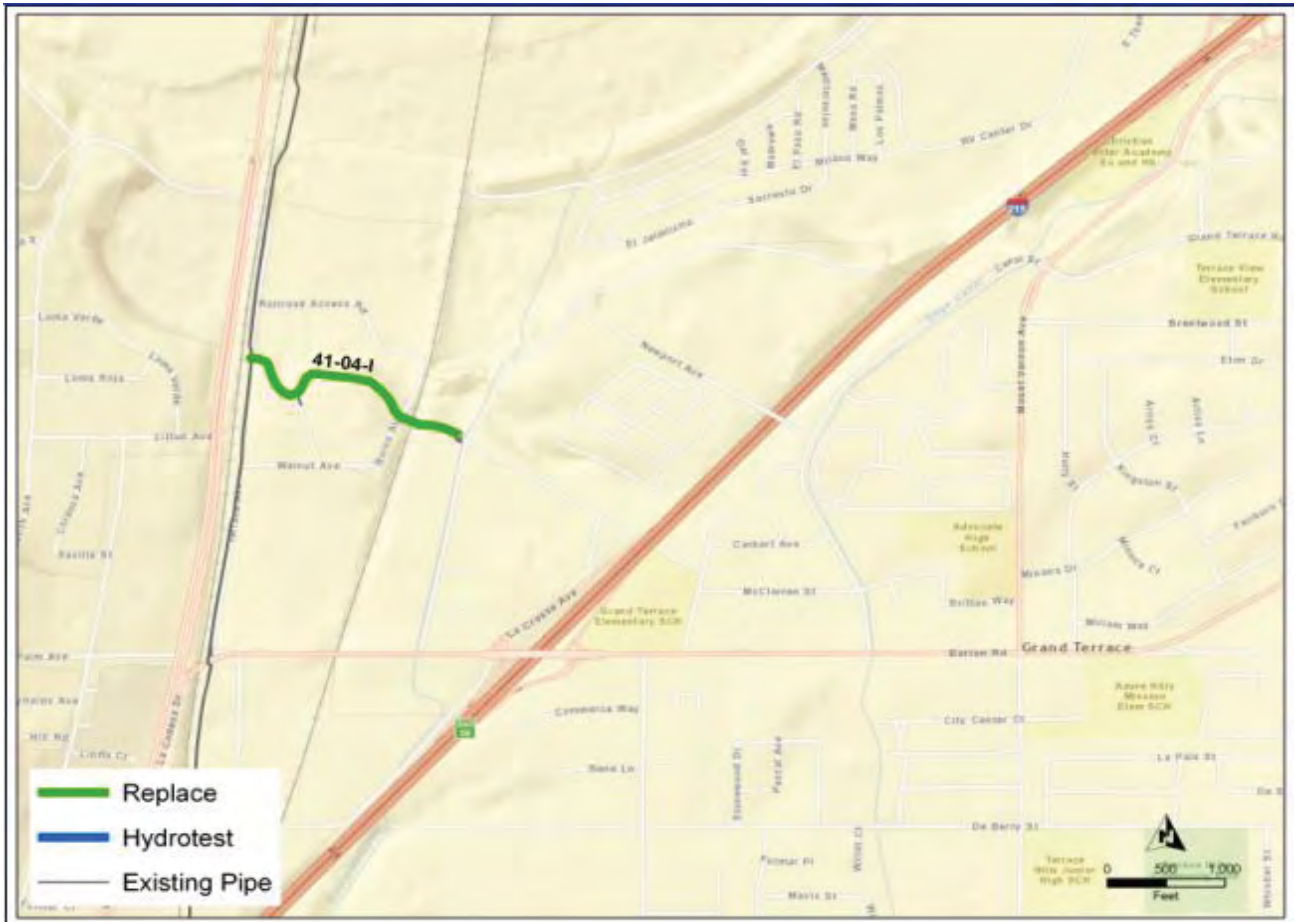
ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET				
Line 38-959			SPC SERVICES	Sheet 1 of 1				
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 6, 2011					
		STATUS OF DESIGN	SPEC Project Number					
		Complete	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								
	82385	Feet	\$ 44	\$ 3,648,008			\$ 3,648,008	Upsize to 12" per SCG
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	333	Each	\$ 1,833	\$ 610,502			\$ 610,502	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	3	Each	\$ 36,010	\$ 108,030			\$ 108,030	
FBE Coating (5/ft)			\$ 3.26	\$ 268,575			\$ 268,575	
Miscellaneous Materials (5%)	1	Lot					\$ 218,327	
Freight / Tax	12.5	%					\$ 606,680	
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 14 inch, STD. WT X-52								
	100	Feet	\$ 55	\$ 5,548			\$ 5,548	
Miscellaneous Materials (5%)	1	Lot					\$ 277.40	
Freight / Tax	12.5	%					\$ 728	
Total length	15.6	Miles						
Total Material Cost							\$ 5,466,700	
2 CONSTRUCTION (See Appendix for construction type definitions)								
12 inch pipe								
Pipe Install - Type 1	82385	Feet			\$ 175	\$ 14,417,375	\$ 14,417,375	Well off RD/R/W
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			\$ -	\$ -	\$ -	
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								
	2	Each			\$ 25,000	\$ 50,000	\$ 50,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	258824	SCF	\$ 0.19	\$ 49,177			\$ 49,177	
Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)	2275	CY			\$ 95	\$ 216,125	\$ 216,125	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 540,652	
Mobilization / Demobilization	2	Each			\$ 30,000	\$ 60,000	\$ 60,000	
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							\$ 15,400,400	
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	%				\$ 521,678	\$ 521,678	
Total SCG Labor / Inspection Cost							\$ 521,700	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%				\$ 2,086,710	\$ 2,086,710	
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				\$ 84,385	\$ 84,385	
Total Design / Engineering / Construction Cost							\$ 2,255,100	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%				\$ -	\$ -	
Projects > \$2 million - Contingency is 20%	20	%				\$ 4,728,780	\$ 4,728,780	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 28,372,700	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	41-04-1	0.346	0.031	0.378
Diameter (in.)	6.625, 8.625			

Cost Detail

Capital		O&M	
Direct Labor	\$ 78,200	Direct Labor	\$ -
Direct Non Labor	\$ 1,157,500	Direct Non Labor	\$ -
Total Direct Capital	\$ 1,235,700	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 4	0	7	0.0013	6.625	Replace		2	
Cat 4	7	1359	0.2561	8.625	Replace		2	
Cat 2	1359	1525	0.0314	8.625	Replace		2	Railroad crossing
Cat 4	1525	1995	0.0890	8.625	Replace		2	

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
7	1359	8.625	0.322	X-52	Replace 1352 feet of 8 inch.
1359	1525	8.625	0.322	X-52	Propose to replace 166 feet of 8 inch Category 2 pipeline
1525	1995	8.625	0.322	X-52	Replace 470 feet of 8 inch

ACTIVITY AND LOCATION:		SPECIFICATION NO.		A/E FIRM NAME		SHEET		
Line 41-04-1				SPC SERVICES		Sheet 1 of 1		
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:		SPEC Project Number		
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		July 6, 2011		5057		
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL
INPUT IN ALL GREEN CELLS								
1 MATERIALS								
Pipe	8 inch, STD. WT X-52	1995	Feet	\$ 26	\$ 51,411			\$ 51,411
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	11	Each	\$ 824	\$ 9,064			\$ 9,064
Pressure Rating	1/2 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -
	FBE Coating (5/ft)		\$	\$ 2.29	\$ 4,569			\$ 4,569
	Miscellaneous Materials (5%)	1	Lot					\$ 3,024
	Freight / Tax	12.5	%					\$ 8,508
Pipe	n/a	0	Feet	\$ -	\$ -			\$ -
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -
Pressure Rating	1/2 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	1/2 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	10 inch, STD. WT X-52	100	Feet	\$ 36	\$ 3,619			\$ 3,619
	Miscellaneous Materials (5%)	1	Lot					\$ 180,95
	Freight / Tax	12.5	%					\$ 475
	Total length	0.4	Miles					
Total Material Cost								\$ 80,900
2 CONSTRUCTION (See Appendix for construction type definitions)								
8 inch pipe								
	Pipe Install - Type 1	0	Feet			\$ 175	\$ -	\$ -
	Pipe Install - Type 2	1885	Feet			\$ 280	\$ 530,600	\$ 530,600
	Pipe Install - Type 3	0	Feet			\$ 450	\$ -	\$ -
	Pipe Install - Type 4	100	Feet			\$ 600	\$ 60,000	\$ 60,000
	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								
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	2788	SCF	\$ 0.19	\$ 530			\$ 530
	Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000
	95% Abandonment of Existing Pipeline (\$50/CY)	25	CY			\$ 95	\$ 2,375	\$ 2,375
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 22,148
	Mobilization / Demobilization	1	Each			\$ 30,000	\$ 30,000	\$ 30,000
	Contaminated Soil	0	CY			\$ -	\$ -	\$ -
	Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -
	Radiographic Inspection	6	Days	\$ 150	\$ 900	\$ 600	\$ 3,600	\$ 4,500
Construction period		14	days					
Total Construction Cost								\$ 700,200
3 SCG LABOR / INSPECTION								
	Projects < \$1 million - company labor is 10%	10	%				\$ 78,110	\$ 78,110
	\$1million <Projects < \$10 million - company labor is 5%	5	%				\$ -	\$ -
	Projects >\$10 million - company labor is 2.5%	2.5	%				\$ -	\$ -
Total SCG Labor / Inspection Cost								\$ 78,200
4 DESIGN / ENG. / CONST / ENVIRON.								
	Planning / Design / Eng / Coord / Procurement	10	%				\$ 78,110	\$ 78,110
	Construction Stake, As-Built Survey (2 man crew)	6	Days	\$ 100	\$ 600	\$ 1,400	\$ 8,400	\$ 9,000
	ROW Acquisition	0	LS				\$ -	\$ -
	Construction Permits	0	LS				\$ -	\$ -
	Environmental Permits	0	LS				\$ -	\$ -
	Environmental Monitoring	0	LS				\$ -	\$ -
	As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 3,995	\$ 3,995
Total Design / Engineering / Construction Cost								\$ 91,200
5 CONTINGENCY								
	Projects < \$2 million - Contingency is 30%	30	%				\$ 285,150	\$ 285,150
	Projects >\$2 million - Contingency is 20%	20	%				\$ -	\$ -
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 1,235,700

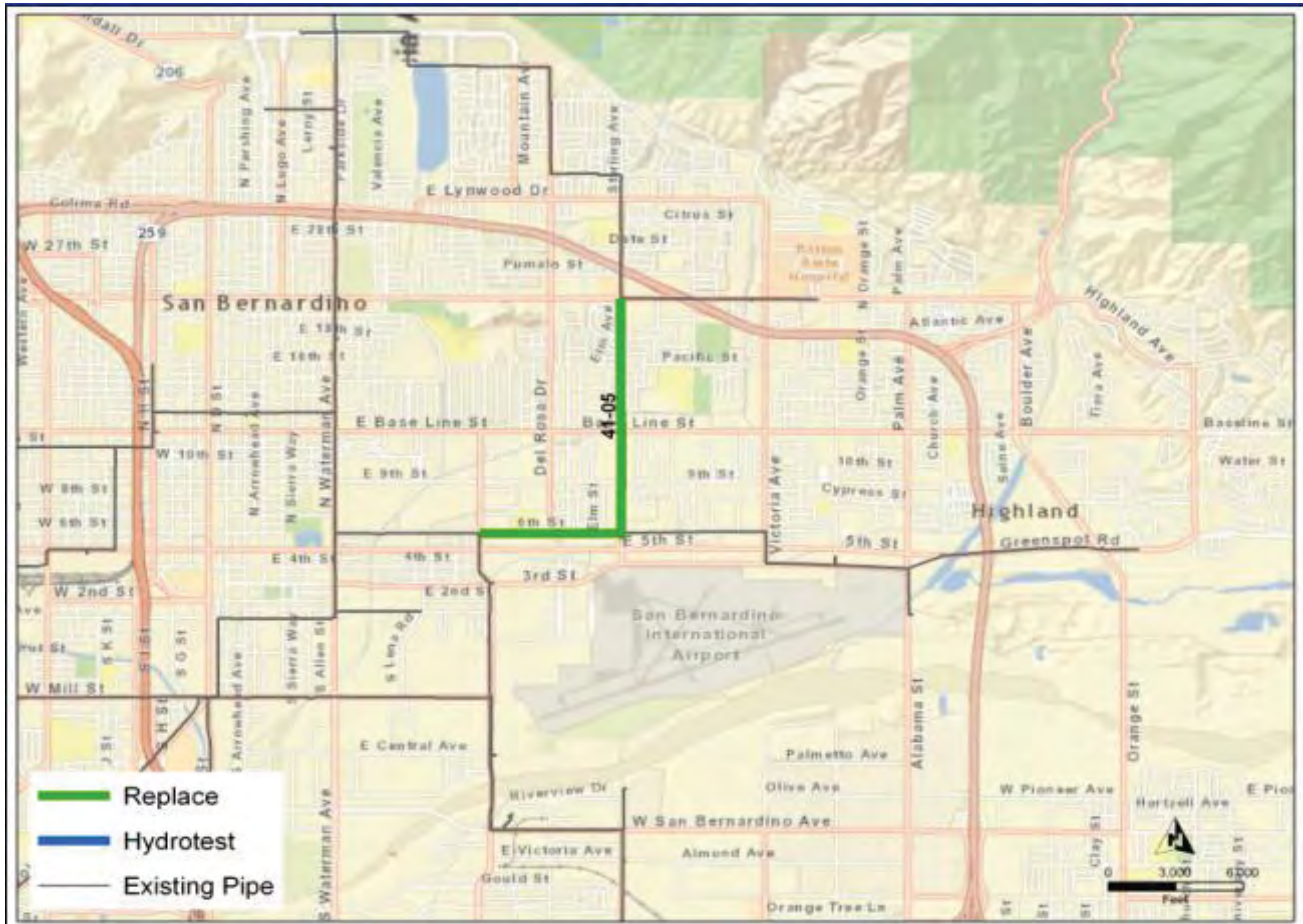
Comments
Replaced all segments pipe OD per Remediation Plan

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	41-05	2.760	0.017	2.777
Diameter (in.)	Multiple: 6.625 - 16			

Cost Detail

Capital		O&M	
Direct Labor	\$ 389,000	Direct Labor	\$ -
Direct Non Labor	\$ 10,460,600	Direct Non Labor	\$ -
Total Direct Capital	\$ 10,849,600	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		
	Start	Stop					Tree	Box	Comments
Cat 2	0	17	17	0.0032	6.625				
Cat 2	17	22	22	0.0009	12.75				
Cat 2	22	44	44	0.0042	12.75				
Cat 2	44	116	116	0.0136	12.75				
Cat 2	116	1696	1696	0.2992	12.75				
Cat 2	1696	1752	1752	0.0106	12.75				
Cat 2	1752	4850	4850	0.5867	12.75				
Cat 2	4850	4972	4972	0.0231	12.75				
Cat 2	4972	5412	5412	0.0833	12.75				
Cat 2	5412	5744	5744	0.0629	12.75				
Cat 2	5744	22003	22003	2.8818	12.75				
Cat 2	22003	22033	22033	-	12.75				
Cat 2	22033	23025	23025	0.0980	12.75				
Cat 2	23025	23359	23359	-	12.75				
Cat 2	23359	30656	30656	-	12.75				
Cat 2	30656	41389	41389	-	16				
Cat 2	41389	52153	52153	1.6498	12.75				
Cat 2	52153	52167	52167	0.0027	12.75				
Cat 2	52167	58874	58874	1.2703	12.75				
Cat 2	58874	63154	63154	0.3426	10.75				
Cat 2	63154	63248	63248	0.0178	10.75				
Cat 2	63248	63931	63931	0.1294	10.75				
Cat 2	63931	66912	66912	0.2479	10.75				
Cat 2	66912	69239	69239	0.1650	10.75				
Cat 2	69239	71415	71415	0.1792	10.75				
Cat 2	71415	71575	71575	0.0136	10.75				
Cat 2	71575	76080	76080	0.5250	10.75				
Cat 4	76080	86153	86153	1.9078	8.625	Replace	2		
Cat 2	86153	86193	86193	-	8.625	Replace	2		Warm Creek Channel

Cat 4	86193	90582	0.8313	8.625	Replace	2	State Highway 190 crossing (Highland Ave)
Cat 2	90582	90615	0.0104	8.625	Replace	2	State Highway 190 crossing (Highland Ave)
Cat 4	90615	90637	0.0195	8.625	Replace	2	State Highway 190 crossing (Highland Ave)
Cat 4	90637	90740	0.0011	6.625	Replace	2	State Highway 190 crossing (Highland Ave)
Cat 2	90740	90746	0.0280	6.625			
Cat 2	90746	90894	2.9019	10.75			
Cat 2	90894	106216	0.0008	10.75			
Cat 2	106216	106220	0.0191	10.75			
Cat 2	106220	106321	1.3795	10.75			
Cat 2	106321	114014	0.4915	10.75			
Cat 2	114014	116609	0.0008	12.75			
Cat 2	116609	116613	0.0852	12.75			
Cat 2	116613	117063	-	12.75			
Cat 2	117063	117081	1.8790	12.75			
Cat 2	117081	127002	0.0877	12.75			
Cat 2	127002	127472	0.6343	12.75			
Cat 2	127472	130821	5.6761	12.75			
Cat 2	130821	162785	-	16			
Cat 2	162785	162798	-	8.625			

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
76080	86153	10.75	0.365	X-52	Replace 10,073 feet of 8 inch with 10 inch.
86153	86193	10.75	0.365	X-52	Replace 40 feet of 8 inch Category 2 pipeline between Category 4
86193	90582	10.75	0.365	X-52	Replace 4,389 feet of 8 inch with 10 inch.
90582	90615	10.75	0.365	X-52	Replace 33 feet of 8 inch Category 2 pipeline between Category 4
90615	90637	10.75	0.365	X-52	Replace 22 feet of 8 inch with 10 inch.
90637	90740	10.75	0.365	X-52	Replace 103 feet of 6 inch with 10 in ch.

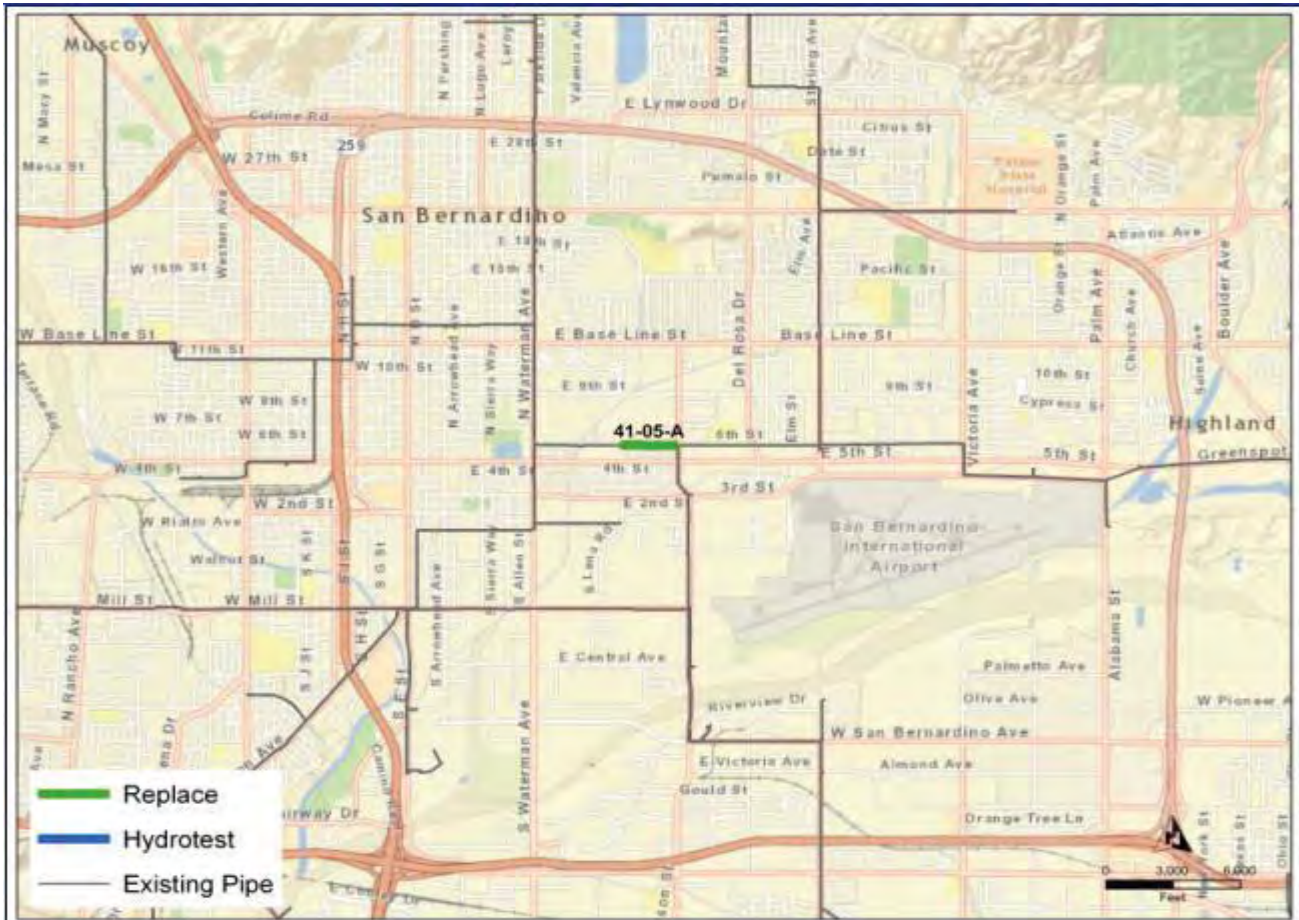
ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 41-05			SP&C SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 6, 2011						
		STATUS OF DESIGN	SPEC Project Number						
		Conceptual	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									
	14660	Feet	\$ 36	\$ 530,545				\$ 530,545	Replaced all segments pipe OD per remediation Plan
	62	Each	\$ 1,408	\$ 87,296				\$ 87,296	
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 28,405	\$ -				\$ -	
FBE Coating (5/ft)			\$ 2.86	\$ 41,928				\$ 41,928	
Miscellaneous Materials (5%)	1	Lot						\$ 30,892	
Freight / Tax	12.5	%						\$ 86,333	
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 12 inch, STD. WT X-52	158	Feet	\$ 44	\$ 6,996				\$ 6,996	
Miscellaneous Materials (5%)	1	Lot						\$ 349.81	
Freight / Tax	12.5	%						\$ 918	
Total length	2.8	Miles							
Total Material Cost								\$ 785,300	
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	14462	Feet		\$ 450	\$ 6,507,900	\$ -		\$ 6,507,900	
Pipe Install - Type 4	40	Feet		\$ 600	\$ 24,000	\$ -		\$ 24,000	
Pipe Install - Type 5	158	Feet		\$ 400	\$ 63,200	\$ -		\$ 63,200	
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)	31984	SCF	\$ 0.19	\$ 6,077				\$ 6,077	
Purging Labor	1	LS		\$ 25,000	\$ 25,000	\$ -		\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)	282	CY		\$ 95	\$ 26,790	\$ -		\$ 26,790	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%						\$ 247,316	
Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000	\$ -		\$ 30,000	
Contaminated Soil	0	CY		\$ -	\$ -	\$ -		\$ -	
Asbestos Abatement	0	Feet		\$ -	\$ -	\$ -		\$ -	
Radiographic Inspection	52	Days	\$ 150	\$ 7,800	\$ 600	\$ 31,200		\$ 39,000	
Construction period	60	days							
Total Construction Cost								\$ 6,994,300	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%	10	%				\$ -	\$ -	\$ -	
\$1million <Projects < \$10 million - company labor is 5%	5	%				\$ 388,980	\$ 388,980	\$ 388,980	
Projects >\$10 million - company labor is 2.5%	2.5	%				\$ -	\$ -	\$ -	
Total SCG Labor / Inspection Cost								\$ 389,000	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement	10	%				\$ 777,960	\$ 777,960	\$ 777,960	
Construction Stake, As-Built Survey (2 man crew)	52	Days	\$ 100	\$ 5,200	\$ 1,400	\$ 72,800	\$ 78,000	\$ 78,000	
ROW Acquisition	0	LS				\$ -	\$ -	\$ -	
Construction Permits	0	LS				\$ -	\$ -	\$ -	
Environmental Permits	0	LS				\$ -	\$ -	\$ -	
Environmental Monitoring	0	LS				\$ -	\$ -	\$ -	
As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 16,660	\$ 16,660	\$ 16,660	
Total Design / Engineering / Construction Cost								\$ 872,700	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%	30	%				\$ -	\$ -	\$ -	
Projects >\$2 million - Contingency is 20%	20	%				\$ 1,808,260	\$ 1,808,260	\$ 1,808,260	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 10,849,600	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	41-05-A	0.406	-	0.406
Diameter (in.)	8.625			

Cost Detail

Capital		O&M	
Direct Labor	\$ 79,400	Direct Labor	\$ -
Direct Non Labor	\$ 1,175,500	Direct Non Labor	\$ -
Total Direct Capital	\$ 1,254,900	Total Direct O&M	\$ -



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

Existing Segments

Category	Station Start	Station Stop	Criteria Miles	Diameter	Action	Decision Tree Box	Comments
Cat 4	0	2145	0.4063	8.625	Replace	2	

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
0	2145	8.625	0.322	X-52	Replace 2145 feet of 8 inch.

ACTIVITY AND LOCATION: 41-05-A	SPECIFICATION NO.	A/E FIRM NAME SPC SERVICES	SHEET Sheet 1 of 1
PROJECT TITLE AND CLIENT: UTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE	ESTIMATED BY: SPEC'D	DATE: July 6, 2011	
	STATUS OF DESIGN Conceptual	SPEC Project Number 5057	

SC		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	2145	Feet	\$ 26	\$ 55,277			\$ 55,277	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	12	Each	\$ 824	\$ 9,888			\$ 9,888	
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 24,779	\$ -			\$ -	
	FBE Coating (5/ft)			\$ 2.29	\$ 4,912			\$ 4,912	
	Miscellaneous Materials (5%)	1	Lot					\$ 3,258	
	Freight / Tax	12.5	%					\$ 9,167	
	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	0.4	Miles						
	Total Material Cost							\$ 82,600	
2 CONSTRUCTION	(See Appendix for construction type definitions)								
	8 inch pipe								
	Pipe Install - Type 1	0	Feet			\$ 175	\$ -	\$ -	
	Pipe Install - Type 2	2145	Feet			\$ 280	\$ 600,600	\$ 600,600	
	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 6	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)	2996	SCF	\$ 0.19	\$ 569			\$ 569	
	Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	27	CY			\$ 95	\$ 2,565	\$ 2,565	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 22,523	
	Mobilization / Demobilization	1	Each			\$ 30,000	\$ 30,000	\$ 30,000	
	Contaminated Soil	0	CY			\$ -	\$ -	\$ -	
	Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -	
	Radiographic Inspection	6	Days	\$ 150	\$ 900	\$ 600	\$ 3,600	\$ 4,500	
	Construction period	14	days						
	Total Construction Cost							\$ 710,800	
3 SCG LABOR / INSPECTION	Projects < \$1 million - company labor is 10%	10	%				\$ 79,340	\$ 79,340	
	\$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							\$ 79,400	
4 DESIGN / ENG. / CONST / ENVIRON.	Planning / Design / Eng / Coord / Procurement	10	%				\$ 79,340	\$ 79,340	
	Construction Stake, As-Built Survey (2 man crew)	6	Days	\$ 100	\$ 600	\$ 1,400	\$ 8,400	\$ 9,000	
	ROW Acquisition	0	LS				\$ -	\$ -	
	Construction Permits	0	LS				\$ -	\$ -	
	Environmental Permits	0	LS				\$ -	\$ -	
	Environmental Monitoring	0	LS				\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 4,145	\$ 4,145	
	Total Design / Engineering / Construction Cost							\$ 92,500	
5 CONTINGENCY	Projects < \$2 million - Contingency is 30%	30	%				\$ 289,590	\$ 289,590	
	Projects > \$2 million - Contingency is 20%	20	%				\$ -	\$ -	
	TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 1,254,900	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4	Accelerated	Total
Line Number	41-17	Criteria	1.889	3.575
Diameter (in.)	4.5, 6.6.25, 8.625	1.686		

Cost Detail

Capital		O&M	
Direct Labor	\$ 287,100	Direct Labor	\$ -
Direct Non Labor	\$ 7,722,700	Direct Non Labor	\$ -
Total Direct Capital	\$ 8,009,800	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	
	Start	Stop					Tree Box	Comments
Cat 1	-24	-17	-17	-	4.5			
Cat 1	-17	0	0	-	8.625			
Cat 1	0	3	3	-	8.625			
Cat 1	3	13014	13014	0.0254	8.625			
Cat 2	13014	13076	13076	-	8.625			
Cat 2	13076	30886	30886	-	8.625			
Cat 2	30886	30968	30968	-	8.625			
Cat 2	30968	34668	34668	-	8.625			
Cat 2	34668	35637.5	35637.5	-	8.625			
Cat 2	35637.5	35662	35662	-	8.625			
Cat 4	35662	35668	35668	-	8.625			
Cat 2	35668	39270	39270	-	8.625			
Cat 2	39270	42051	42051	-	8.625			
Cat 2	42051	42798	42798	-	8.625			
Cat 2	42798	42802	42802	-	8.625			
Cat 4	42802	43622	43622	-	8.625			
Cat 2	43622	43790	43790	-	8.625			
Cat 4	43790	52179	52179	0.0826	8.625	Replace	2	Potrero Creek Crossing; Possible environmental issues
Cat 2	52179	52224	52224	0.0040	8.625	Replace	2	
Cat 4	52224	52979	52979	0.1390	8.625	Replace	2	
Cat 2	52979	52980	52980	0.0002	8.625	Replace	2	
Cat 4	52980	53777.5	53777.5	0.1510	8.625	Replace	2	
Cat 2	53777.5	55708	55708	0.0041	8.625			
Cat 4	55708	62665	62665	1.3136	8.625	Replace	2	
Cat 2	62665	71527	71527	1.6784	8.625			
Cat 2	71527	71627	71627	0.0040	8.625			
Cat 2	71627	73031	73031	0.2619	8.625			
Cat 2	73031	73070	73070	0.0040	8.625			
Cat 2	73070	79707	79707	1.2530	6.625			

New Segments

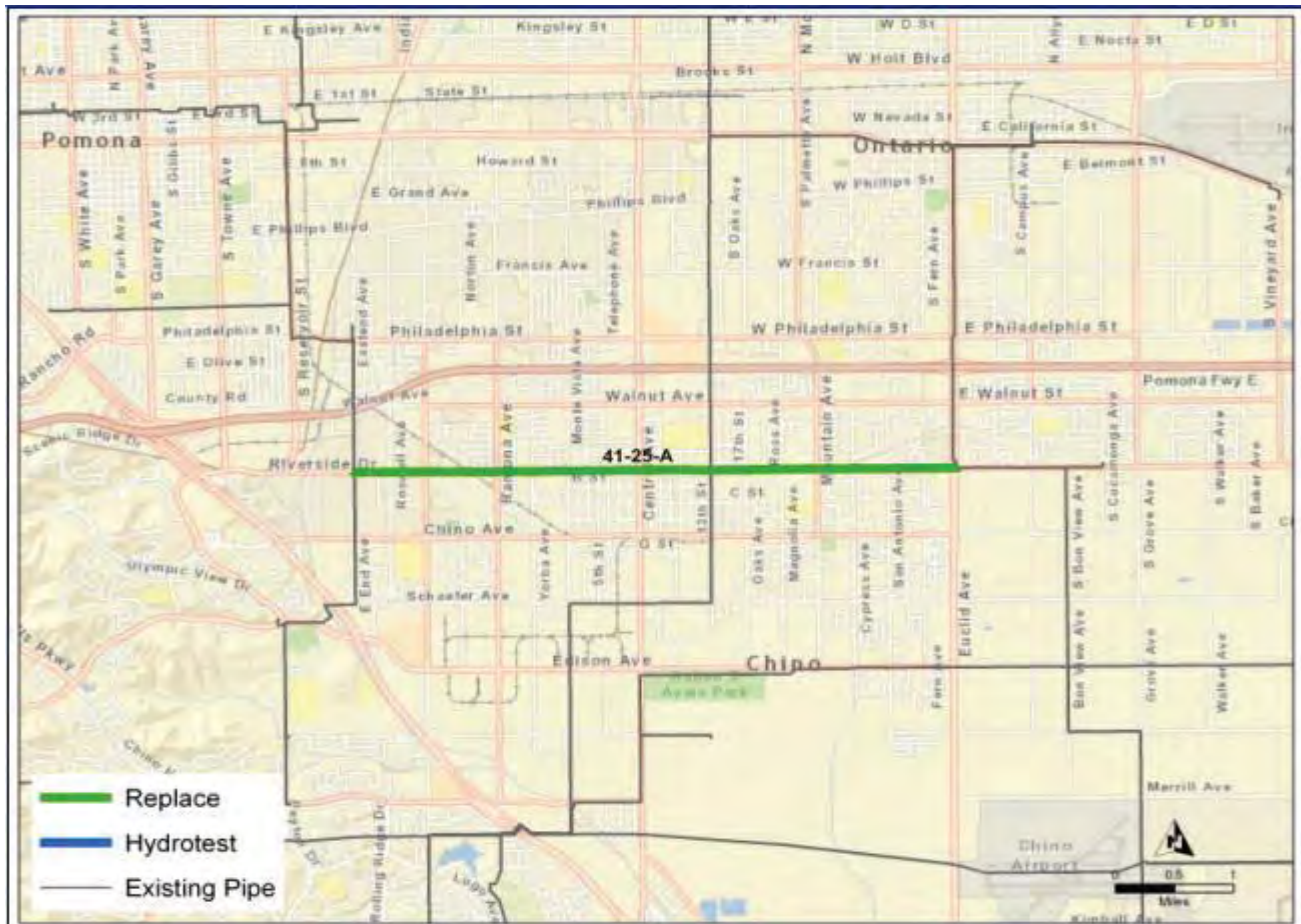
Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
43790	52179	8.625	0.322	X-52	Replace 8,389 feet of 8 inch.
52179	52224	8.625	0.322	X-52	Replace 45 feet of 8 inch Category 2 between Category 4.
52224	52979	8.625	0.322	X-52	Replace 755 feet of 8 inch.
52979	52980	8.625	0.322	X-52	Replace 1 foot of 8 inch Category 2 between Category 4.
52980	53777.5	8.625	0.322	X-52	Replace 797.5 feet of 8 inch.
55708	62665	8.625	0.322	X-52	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	41-25-A	4.783	0.038	4.821
Diameter (in.)	10.75, 12.75			

Cost Detail

Capital		O&M	
Direct Labor	\$ 345,200	Direct Labor	\$ -
Direct Non Labor	\$ 18,479,600	Direct Non Labor	\$ -
Total Direct Capital	\$ 18,824,800	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 2	0	6	-	10.75	Replace	2	
Cat 4	6	18496	3.5019	12.75	Replace	2	
Cat 2	18496	18691	0.0369	12.75	Replace	2	
Cat 4	18691	22530	0.7271	12.75	Replace	2	
Cat 4	22530	25454	0.5538	12.75	Replace	2	

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
6	18496	12.75	0.375	X-52	Replace 18,490 feet of 12 inch
18496	18691	12.75	0.375	X-52	Replace 195 feet of 12 inch
18691	22530	12.75	0.375	X-52	Replace 3839 feet of 12 inch
22530	25454	12.75	0.375	X-52	Replace 2924 feet of 12 inch

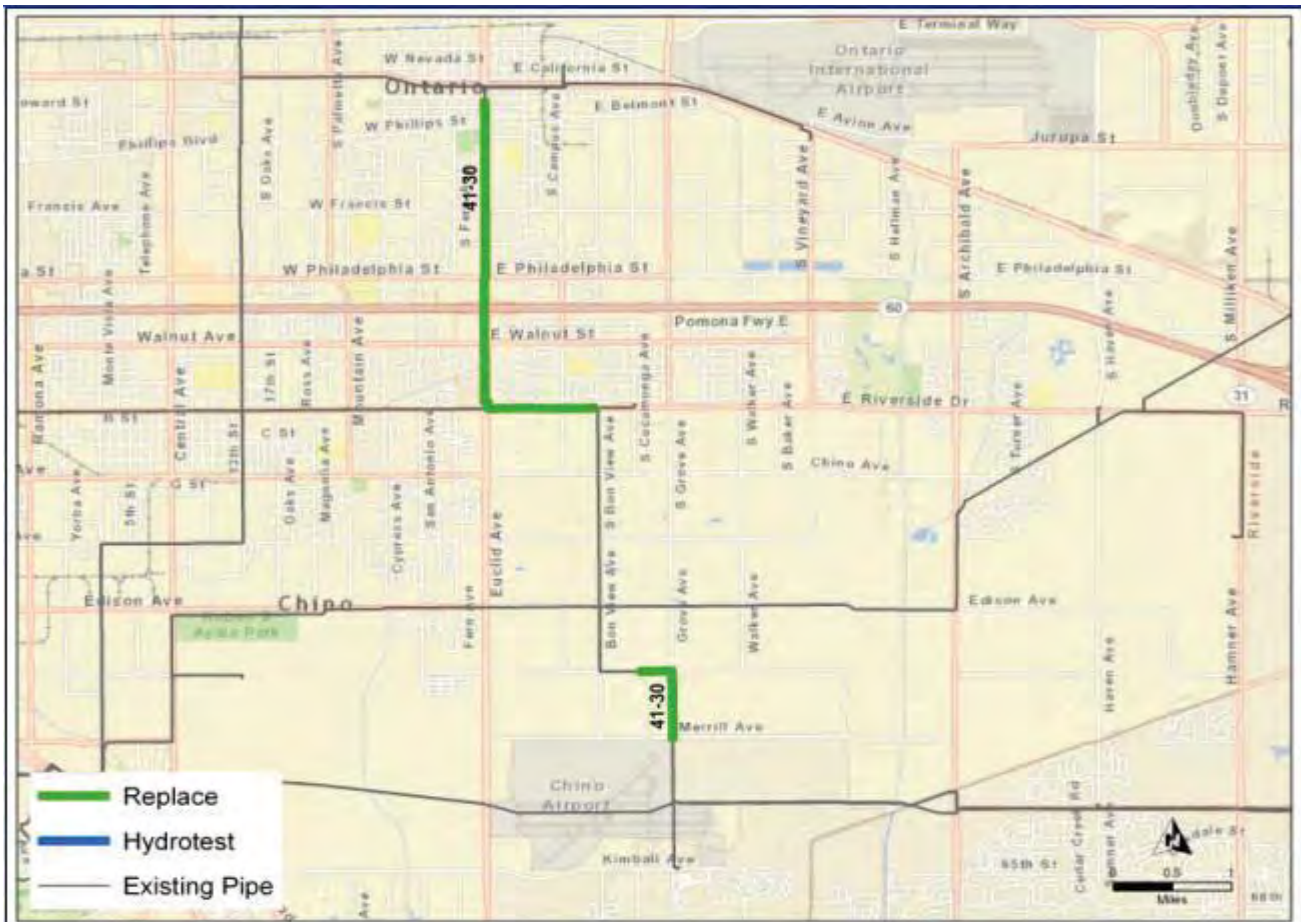
ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 41-25-A			SPEC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		July 6, 2011					
		STATUS OF DESIGN		SPEC Project Number					
		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									
		25454	Feet	\$ 44	\$ 1,127,103			\$ 1,127,103	Replaced segments pipeOD per Remediation Plan
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	105	Each	\$ 1,833	\$ 192,501			\$ 192,501	
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	1	Each	\$ 36,010	\$ 36,010			\$ 36,010	
	FBE Coating (5/ft)			\$ 3.26	\$ 82,980			\$ 82,980	
	Miscellaneous Materials (5%)	1	Lot					\$ 67,781	
	Freight / Tax	12.5	%					\$ 188,297	
	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	4.8	Miles						
	Total Material Cost							\$ 1,694,700	
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	25454	Feet			\$ 450	\$ 11,454,300	\$ 11,454,300	
	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)	79968	SCF	\$ 0.19	\$ 15,194			\$ 15,194	
	Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	703	CY			\$ 95	\$ 66,785	\$ 66,785	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 429,536	
	Mobilization / Demobilization	1	Each			\$ 30,000	\$ 30,000	\$ 30,000	
	Contaminated Soil	0	CY			\$ -	\$ -	\$ -	
	Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -	
	Radiographic Inspection	86	Days	\$ 150	\$ 12,900	\$ 600	\$ 51,600	\$ 64,500	
	Construction period	94	days						
	Total Construction Cost							\$ 12,110,400	
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	%				\$ 345,128	\$ 345,128	
	Total SCG Labor / Inspection Cost							\$ 345,200	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%				\$ 1,380,510	\$ 1,380,510	
	Construction Stake, As-Built Survey (2 man crew)	86	Days	\$ 100	\$ 8,600	\$ 1,400	\$ 120,400	\$ 129,000	
	ROW Acquisition	0	LS				\$ -	\$ -	
	Construction Permits	0	LS				\$ -	\$ -	
	Environmental Permits	0	LS				\$ -	\$ -	
	Environmental Monitoring	0	LS				\$ -	\$ -	
	As-Built Drawings (\$2000+\$1/ft)	1	LS				\$ 27,454	\$ 27,454	
	Total Design / Engineering / Construction Cost							\$ 1,537,000	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%				\$ -	\$ -	
	Projects > \$2 million - Contingency is 20%	20	%				\$ 3,137,460	\$ 3,137,460	
	TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 18,824,800	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	41-30	3.891	0.058	3.949
Diameter (in.)	Multiple: 2.375 - 12.75			

Cost Detail

Capital		O&M	
Direct Labor	\$ 342,500	Direct Labor	\$ -
Direct Non Labor	\$ 18,306,500	Direct Non Labor	\$ -
Total Direct Capital	\$ 18,649,000	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 2	0	2	-	4.5			
Cat 2	2	4	-	6.625			
Cat 2	4	5063	-	12.75			
Cat 4	5063	9198	0.7282	2.375	Replace	2	
Cat 2	9198	21212	2.2754	12.75			
Cat 4	21212	25185	0.7525	12.75	Replace	2	
Cat 4	25185	25255	0.0133	10.75	Replace	2	State Hwy 83 (Euclid Ave). Possible night work
Cat 4	25255	25455	0.0379	10.75	Replace	2	State Hwy 83 (Euclid Ave). Possible night work
Cat 4	25455	25519	0.0121	10.75	Replace	2	State Hwy 83 (Euclid Ave). Possible night work
Cat 2	25519	25537	0.0034	10.75	Replace	2	State Hwy 83 (Euclid Ave). Possible night work
Cat 4	25537	27072	0.2907	10.75	Replace	2	State Hwy 83 (Euclid Ave). Possible night work
Cat 4	27072	27109	0.0070	10.75	Replace	2	State Hwy 83 (Euclid Ave). Possible night work
Cat 4	27109	32925	1.1015	10.75	Replace	2	State Hwy 83 (Euclid Ave). Possible night work
Cat 4	32925	37927	0.9473	8.625	Replace	2	State Hwy 83 (Euclid Ave). Possible night work
Cat 2	37927	40678	0.5210	10.75	Replace	2	State Hwy 83 (Euclid Ave). Possible night work

New Segments

Station Start	Station Stop	Wall		Grade	Comments
		Diameter	Thickness		
5063	9198	12.75	0.375	X-52	Replace 4135 feet.
21212	25185	12.75	0.375	X-52	Replace 3973 feet.
25185	25255	12.75	0.375	X-52	Replace 70 feet.
25255	25455	12.75	0.375	X-52	Replace 200 feet. Realignment
25455	25519	12.75	0.375	X-52	Replace 64 feet. Realignment
25519	25537	12.75	0.375	X-52	Replace 18 feet of Category 2 pipe between Category 4 pipe.
25537	27072	12.75	0.375	X-52	Replace 1535 feet.
27072	27109	12.75	0.375	X-52	Replace 37 feet. Drop section
27109	32925	12.75	0.375	X-52	Replace 5816 feet.

32925 37927 12.75 0.375 X-52 Replace 5002 feet.

ACTIVITY AND LOCATION:		SPECIFICATION NO.		A/E FIRM NAME		SHEET		
Line 41-30				SPC SERVICES		Sheet 1 of 1		
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:		SPEC Project Number		
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		July 6, 2011		5057		
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL
INPUT IN ALL GREEN CELLS								
1 MATERIALS								
Pipe 12 inch, STD. WT X-52								
		20850	Feet	\$ 44	\$ 923,238			\$ 923,238
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	87	Each	\$ 1,833	\$ 159,501			\$ 159,501
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	1	Each	\$ 36,010	\$ 36,010			\$ 36,010
	FBE Coating (5/ft)			\$ 3.26	\$ 67,971			\$ 67,971
	Miscellaneous Materials (5%)	1	Lot					\$ 55,937
	Freight / Tax	12.5	%					\$ 155,332
	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	3.9	Miles					
	Total Material Cost							\$ 1,398,000
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	4195	Feet			\$ 450	\$ 1,860,750	\$ 1,860,750
	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	16715	Feet			\$ 585	\$ 9,778,275	\$ 9,778,275
	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 6	0	Feet			\$ -	\$ -	\$ -
	Pipe Install - Type 7	0	Feet			\$ -	\$ -	\$ -
	Tie-ins Crew Rates	2	Each			\$ 25,000	\$ 50,000	\$ 50,000
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	65504	SCF	\$ 0.19	\$ 12,446			\$ 12,446
	Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000
	95% Abandonment of Existing Pipeline (\$50/CY)	576	CY			\$ 95	\$ 54,720	\$ 54,720
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 436,463
	Mobilization / Demobilization	1	Each			\$ 30,000	\$ 30,000	\$ 30,000
	Contaminated Soil	0	CY			\$ -	\$ -	\$ -
	Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -
	Radiographic Inspection	71	Days	\$ 150	\$ 10,650	\$ 600	\$ 42,600	\$ 53,250
	Construction period	79	days					
	Total Construction Cost							\$ 12,301,000
3 SCG LABOR / INSPECTION								
	Projects < \$1 million - company labor is 10%	10	%			\$ -	\$ -	\$ -
	\$1million <Projects < \$10 million - company labor is 5%	5	%			\$ -	\$ -	\$ -
	Projects >\$10 million - company labor is 2.5%	2.5	%			\$ 342,475	\$ 342,475	\$ 342,475
	Total SCG Labor / Inspection Cost							\$ 342,500
4 DESIGN / ENG. / CONST / ENVIRON.								
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 1,369,900	\$ 1,369,900	\$ 1,369,900
	Construction Stake, As-Built Survey (2 man crew)	71	Days	\$ 100	\$ 7,100	\$ 1,400	\$ 99,400	\$ 106,500
	ROW Acquisition	0	LS			\$ -	\$ -	\$ -
	Construction Permits	0	LS			\$ -	\$ -	\$ -
	Environmental Permits	0	LS			\$ -	\$ -	\$ -
	Environmental Monitoring	0	LS			\$ -	\$ -	\$ -
	As-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 22,850	\$ 22,850	\$ 22,850
	Total Design / Engineering / Construction Cost							\$ 1,499,300
5 CONTINGENCY								
	Projects < \$2 million - Contingency is 30%	30	%			\$ -	\$ -	\$ -
	Projects >\$2 million - Contingency is 20%	20	%			\$ 3,108,160	\$ 3,108,160	\$ 3,108,160
	TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 18,649,000

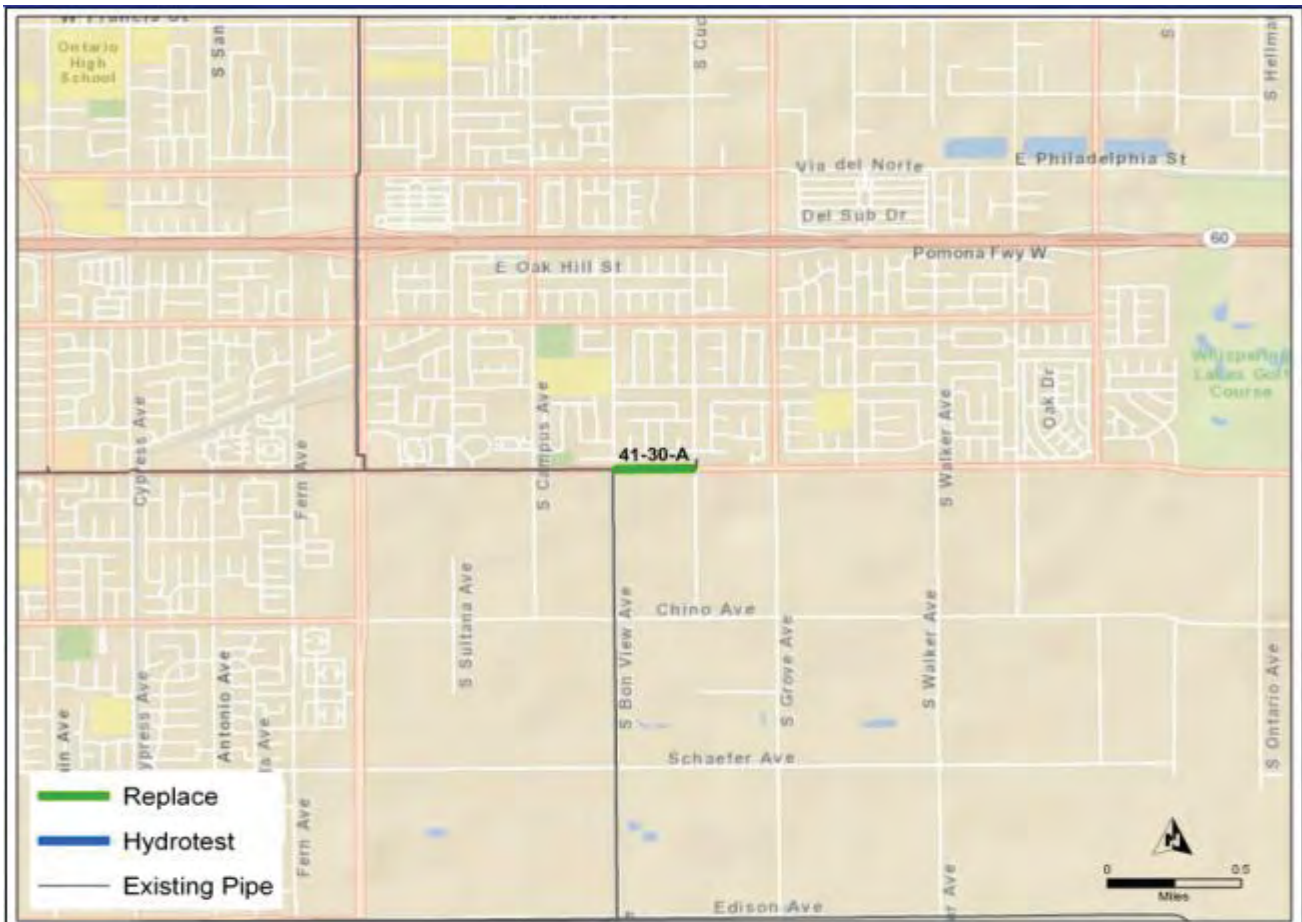
Comments
Replaced all segments pipe OD per Remediation Plan

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	41-30-A	0.259	-	0.259
Diameter (in.)	10.75, 12.75			

Cost Detail

Capital		O&M	
Direct Labor	\$ 67,500	Direct Labor	\$ -
Direct Non Labor	\$ 1,001,300	Direct Non Labor	\$ -
Total Direct Capital	\$ 1,068,800	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
Cat 4	0	1265	0.2396	12.75	Replace		2
Cat 4	1265	1360	0.0180	10.75	Replace		2
Cat 4	1360	1365	0.0009	10.75	Replace		2

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
1265	1360	4.5	0.247	X-52	Replace 95 feet of 10 inch with 4 inch.
1360	1365	4.5	0.247	X-52	Replace 5 feet of 10 inch with 4 inch.

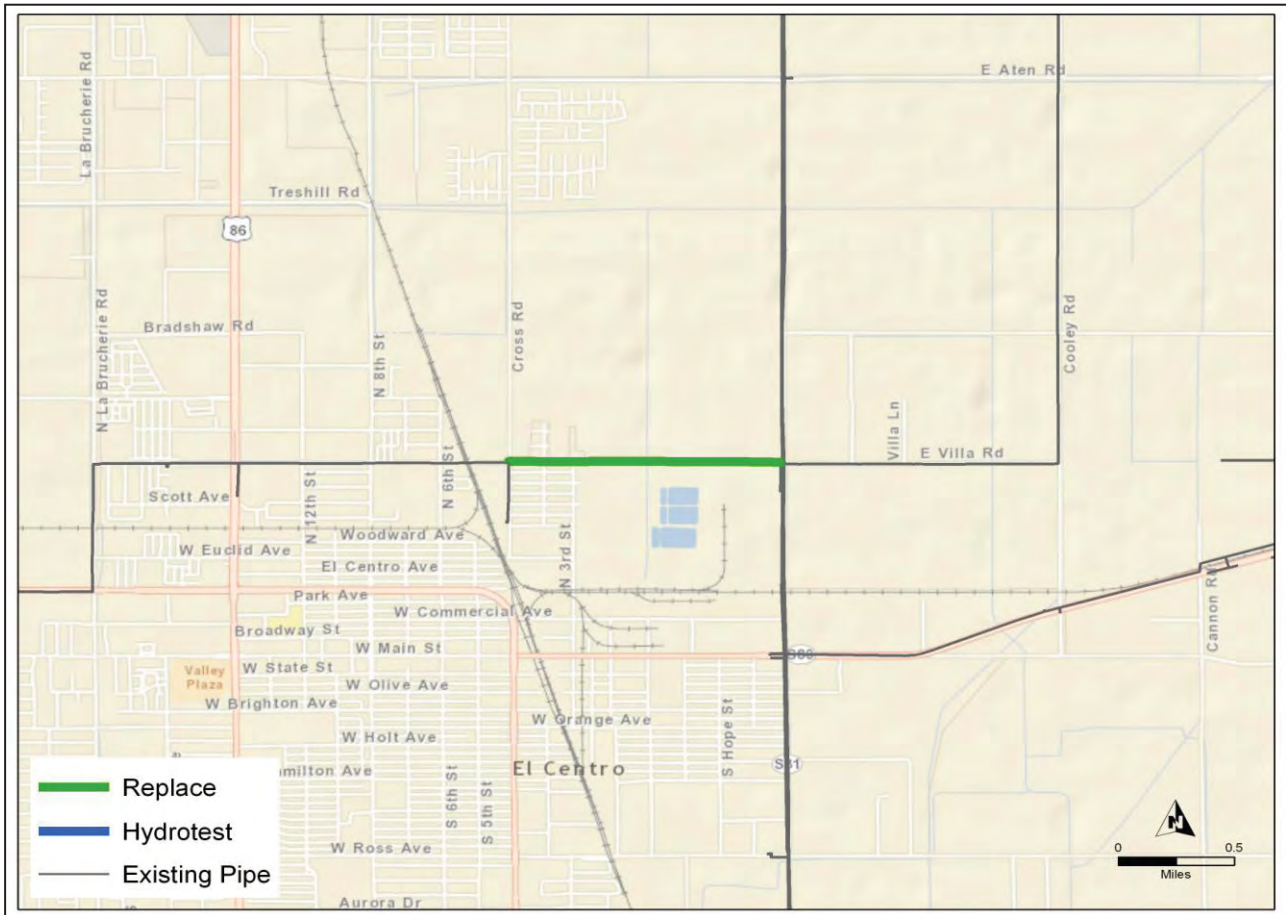
ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET						
Line 41-30-A			SPC SERVICES	Sheet 1 of 1						
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:							
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	June 30, 2011							
		STATUS OF DESIGN	SPEC Project Number							
		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 1365 inch. STD. WT X-52										
		1365	Feet	\$ 11	\$ 14,496			\$ 14,496	Replace all segments pipe OD per remediation plan	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		9	Each	\$ 353	\$ 3,180			\$ 3,180		
Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ 15,357	\$ -			\$ -		
FBE Coating (5/ft)				\$ 1.42	\$ 1,938			\$ 1,938		
Miscellaneous Materials (5%)		1	Lot					\$ 884		
Freight / Tax		12.5	%					\$ 2,562		
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										
		0	Feet	\$ -	\$ -			\$ -		
Miscellaneous Materials (5%)		1	Lot					\$ -		
Freight / Tax		12.5	%					\$ -		
Total length		0.3	Miles							
Total Material Cost								\$ 23,100		
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		1365	Feet		\$ 400	\$ 546,000	\$ -	\$ 546,000		
Pipe Install - Type 4		0	Feet		\$ 450	\$ -	\$ -	\$ -		
Pipe Install - Type 5		0	Feet		\$ 300	\$ -	\$ -	\$ -		
Pipe Install - Type 6		0	Feet		\$ -	\$ -	\$ -	\$ -		
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)		480	SCF	\$ 0.19	\$ 91			\$ 91		
Purging Labor		1	LS		\$ 25,000	\$ 25,000	\$ -	\$ 25,000		
95% Abandonment of Existing Pipeline (\$50/CY)		5	CY		\$ 95	\$ 475	\$ -	\$ 475		
5% Removal of Existing Pipeline (75% of Construction Labor Cost)		75	%					\$ 20,475		
Mobilization / Demobilization		1	Each		\$ 30,000	\$ 30,000	\$ -	\$ 30,000		
Contaminated Soil		0	CY		\$ -	\$ -	\$ -	\$ -		
Asbestos Abatement		0	Feet		\$ -	\$ -	\$ -	\$ -		
Radiographic Inspection		6	Days	\$ 150	\$ 900	\$ 600	\$ 3,600	\$ 4,500		
Construction period		14	days							
Total Construction Cost								\$ 651,600		
3 SCG LABOR / INSPECTION										
Projects < \$1 million - company labor is 10%		10	%			\$ 67,470	\$ -	\$ 67,470		
\$1million <Projects < \$10 million - company labor is 5%		5	%			\$ -	\$ -	\$ -		
Projects >\$10 million - company labor is 2.5%		2.5	%			\$ -	\$ -	\$ -		
Total SCG Labor / Inspection Cost								\$ 67,500		
4 DESIGN / ENG. / CONST / ENVIRON.										
Planning / Design / Eng / Coord / Procurement		10	%			\$ 67,470	\$ -	\$ 67,470		
Construction Stake, As-Built Survey (2 man crew)		6	Days	\$ 100	\$ 600	\$ 1,400	\$ 8,400	\$ 9,000		
ROW Acquisition		0	LS			\$ -	\$ -	\$ -		
Construction Permits		0	LS			\$ -	\$ -	\$ -		
Environmental Permits		0	LS			\$ -	\$ -	\$ -		
Environmental Monitoring		0	LS			\$ -	\$ -	\$ -		
As-Built Drawings (\$2000+\$1/ft)		1	LS			\$ 3,365	\$ -	\$ 3,365		
Total Design / Engineering / Construction Cost								\$ 79,900		
5 CONTINGENCY										
Projects < \$2 million - Contingency is 30%		30	%			\$ 246,630	\$ -	\$ 246,630		
Projects >\$2 million - Contingency is 20%		20	%			\$ -	\$ -	\$ -		
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 1,068,800		

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	41-84	0.827	0.176	1.003
Diameter (in.)	6.625, 8.625			

Cost Detail

Capital		O&M	
Direct Labor	\$ 137,100	Direct Labor	\$ -
Direct Non Labor	\$ 3,680,300	Direct Non Labor	\$ -
Total Direct Capital	\$ 3,817,400	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
Cat 4	0	29	0.0055	8.625	Replace	2	In progress replacement project (12 inch L-6918)
Cat 4	29	39	0.0019	8.625	Replace	2	In progress replacement project (12 inch L-6918)
Cat 4	39	5295	0.8195	8.625	Replace	2	In progress replacement project (12 inch L-6918) from station 39 to 1200. Remaining 4095 feet to be replaced on a new work order.
Cat 2	5295	13115	1.4877	8.625			
Cat 2	13115	13247	0.0250	8.625			
Cat 2	13247	67219	10.2220	8.625			
Cat 2	67219	100876	6.3744	6.625			
Cat 2	100876	101945	0.2025	6.625			

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
29	39	12.75	0.375	X-52	Replace 10 feet of 8 inch with 12 inch
39	5295	8.625	0.322	X-52	Replace 1161 feet of 8 inch with 12 inch. Remaining 4,095 feet of 8 inch to be replaced with 8 inch

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME		SHEET		
Line 41-84					Sheet 1 of 1		
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:		SPEC PROJECT NUMBER		
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		Spec	July 6, 2011		5057		
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST	
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL
						TOTAL	
INPUT IN ALL GREEN CELLS							
1 MATERIALS							
Pipe	8 inch, STD. WT X-52	4095	Feet	\$ 26	\$ 105,528		\$ 105,528
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	20	Each	\$ 824	\$ 16,480		\$ 16,480
Pressure Rating	300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 24,779	\$ -		\$ -
	FBE Coating (5/ft)			\$ 2.29	\$ 9,378		\$ 9,378
	Miscellaneous Materials (5%)	1	Lot				\$ 6,100
	Freight / Tax	12.5	%				\$ 17,186
Pipe	8 inch, STD. WT X-52	0	Feet	\$ 26	\$ -		\$ -
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 824	\$ 3,296		\$ 3,296
Pressure Rating	n/a lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -		\$ -
	FBE Coating (5/ft)			\$ 2.29	\$ -		\$ -
	Miscellaneous Materials (5%)	1	Lot				\$ 165
	Freight / Tax	12.5	%				\$ 433
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	0.8	Miles				
Total Material Cost							\$ 158,600
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	0	Feet		\$ 400	\$ -	\$ -
	Pipe Install - Type 7	4095	Feet		\$ 585	\$ 2,395,575	\$ 2,395,575
	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	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 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)	5720	SCF	\$ 0.19	\$ 1,087		\$ 1,087
	Purging Labor	1	LS		\$ 25,000	\$ 25,000	\$ 25,000
	95% Abandonment of Existing Pipeline (\$50/CY)	51	CY		\$ 95	\$ 4,845	\$ 4,845
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%				\$ 89,834
	Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000	\$ 30,000
	Contaminated Soil	0	CY		\$ -	\$ -	\$ -
	Asbestos Abatement	0	Feet		\$ -	\$ -	\$ -
	Radiographic Inspection	15	Days	\$ 150	\$ 2,250	\$ 600	\$ 9,000
	Construction period	23	days				
Total Construction Cost							\$ 2,582,600
3 SCG LABOR / INSPECTION							
	Projects < \$1 million - company labor is 10%	10	%			\$ -	\$ -
	\$1million <Projects < \$10 million - company labor is 5%	5	%			\$ 137,060	\$ 137,060
	Projects >\$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -
Total SCG Labor / Inspection Cost							\$ 137,100
4 DESIGN / ENG. / CONST / ENVIRON.							
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 274,120	\$ 274,120
	Construction Stake, As-Built Survey (2 man crew)	15	Days	\$ 100	\$ 1,500	\$ 1,400	\$ 21,000
	ROW Acquisition	0	LS			\$ -	\$ -
	Construction Permits	0	LS			\$ -	\$ -
	Environmental Permits	0	LS			\$ -	\$ -
	Environmental Monitoring	0	LS			\$ -	\$ -
	As-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 6,095	\$ 6,095
Total Design / Engineering / Construction Cost							\$ 302,800
5 CONTINGENCY							
	Projects < \$2 million - Contingency is 30%	30	%			\$ -	\$ -
	Projects >\$2 million - Contingency is 20%	20	%			\$ 636,220	\$ 636,220
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 3,817,400

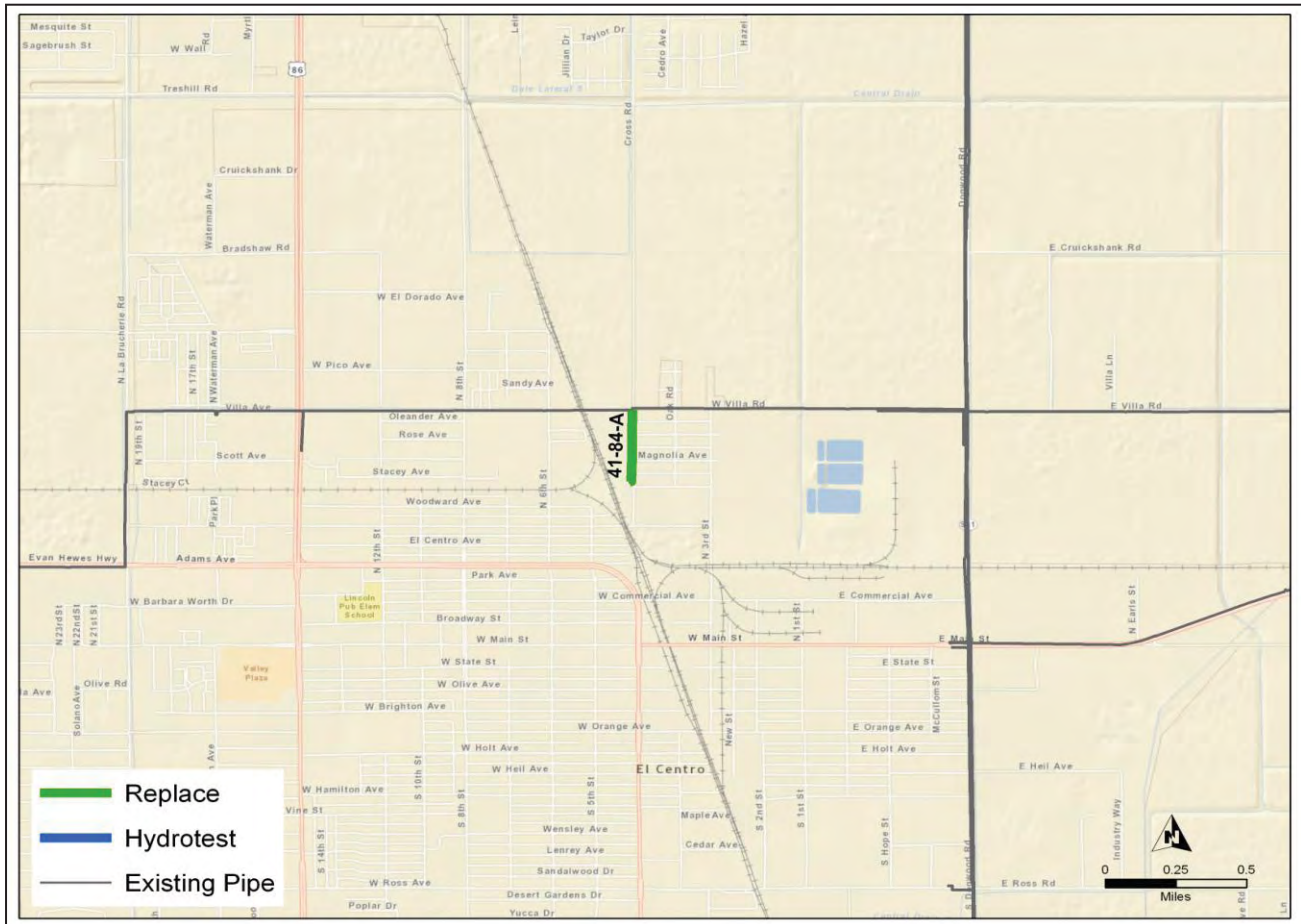
Comments
Part of the line is being replaced presently only 4095 Ft to be

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	41-84-A	0.225	0.001	0.227
Diameter (in.)	4.5, 6.625, 8.625			

Cost Detail

Capital		O&M	
Direct Labor	\$ 48,000	Direct Labor	\$ -
Direct Non Labor	\$ 712,200	Direct Non Labor	\$ -
Total Direct Capital	\$ 760,200	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 4	0	1190	0.2254	8.625	Replace		2	
Cat 2	1190	1194	-	6.625	Replace		2	
Cat 2	1194	1196	-	4.5	Replace		2	

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
1190	1194	8.625	0.322	X-52	RER 2011-0321 recommends the replacement
1194	1196	8.625	0.322	X-52	RER 2011-0321 recommends the replacement

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET					
Line 41-84-A			SP3C SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 6, 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									
		1196	Feet	\$ 26	\$ 30,821			\$ 30,821	Replaced all segments pipe OD per Remediation Plan
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	8	Each	\$ 824	\$ 6,592			\$ 6,592	
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 24,779	\$ -			\$ -	
	FBE Coating (5/ft)			\$ 2.29	\$ 2,739			\$ 2,739	
	Miscellaneous Materials (5%)	1	Lot					\$ 1,871	
	Freight / Tax	12.5	%					\$ 5,253	
	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	0.2	Miles						
	Total Material Cost							\$ 47,300	
2 CONSTRUCTION (See Appendix for construction type definitions)									
	8 inch pipe								
	Pipe Install - Type 1	0	Feet		\$ 175	\$ -	\$ -	\$ -	
	Pipe Install - Type 2	1196	Feet		\$ 280	\$ 334,880	\$ -	\$ 334,880	
	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)	1672	SCF	\$ 0.19	\$ 318			\$ 318	
	Purging Labor	1	LS		\$ 25,000	\$ 25,000	\$ -	\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	15	CY		\$ 95	\$ 1,425	\$ -	\$ 1,425	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 12,558	
	Mobilization / Demobilization	1	Each		\$ 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							\$ 432,200	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%			\$ 47,950	\$ -	\$ 47,950	
	\$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							\$ 48,000	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 47,950	\$ -	\$ 47,950	
	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			\$ 3,196	\$ -	\$ 3,196	
	Total Design / Engineering / Construction Cost							\$ 57,200	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%			\$ 175,410	\$ -	\$ 175,410	
	Projects > \$2 million - Contingency is 20%	20	%			\$ -	\$ -	\$ -	
	TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 760,200	

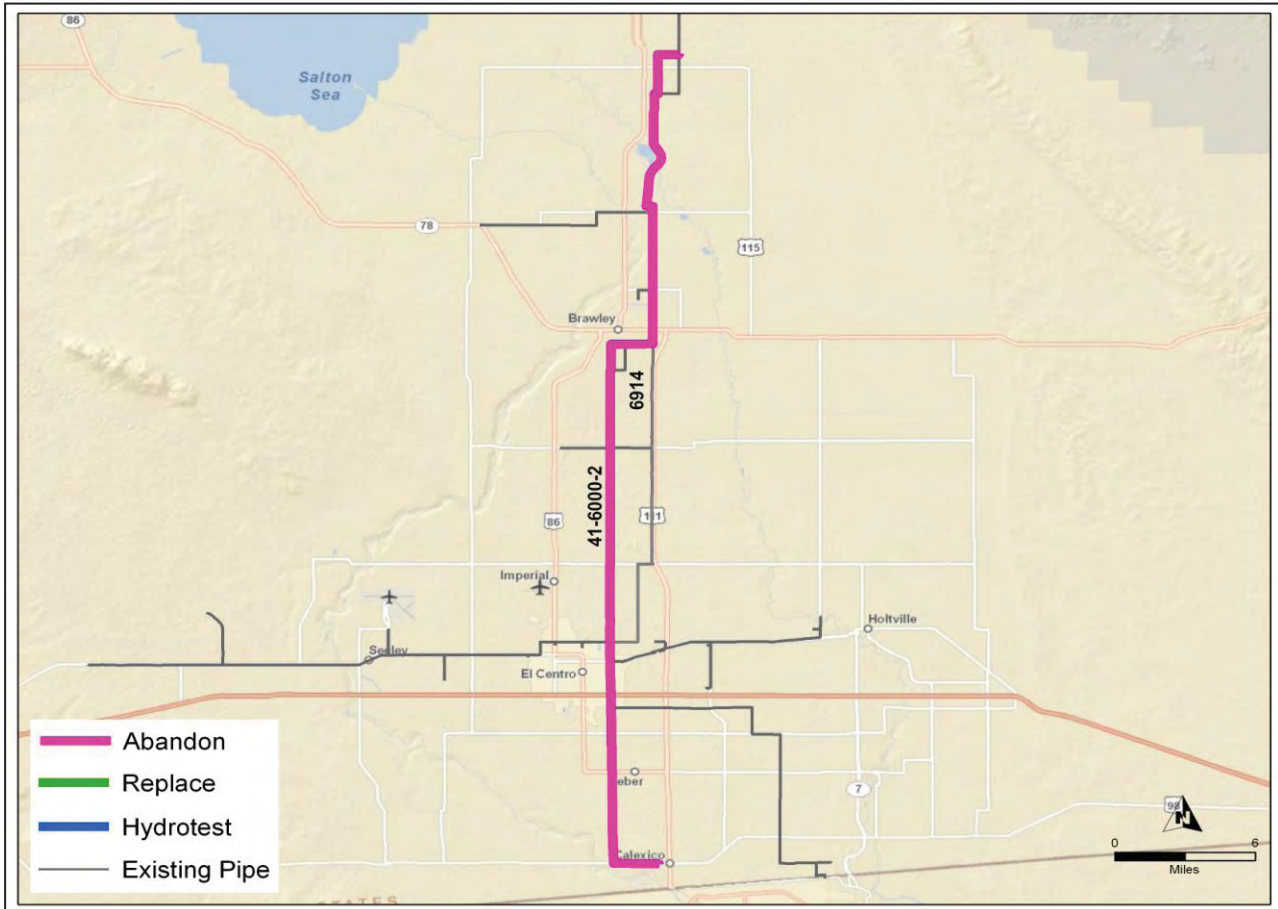
Southern California Gas Company
Pipeline Safety Enhancement Program - Workpaper Supporting Chapter IX

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	\$ 453,100	Direct Labor	\$ -
Direct Non Labor	\$ 24,361,700	Direct Non Labor	\$ -
Total Direct Capital *	\$ 24,814,800	Total Direct O&M	\$ -

* The extension of existing L-6914 will allow for the abandonment of 41-6000-2. Capital cost estimates provided cover installation of smaller diameter pipelines needed to tie L-6914 in to the existing pipeline system.



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

Existing Segments

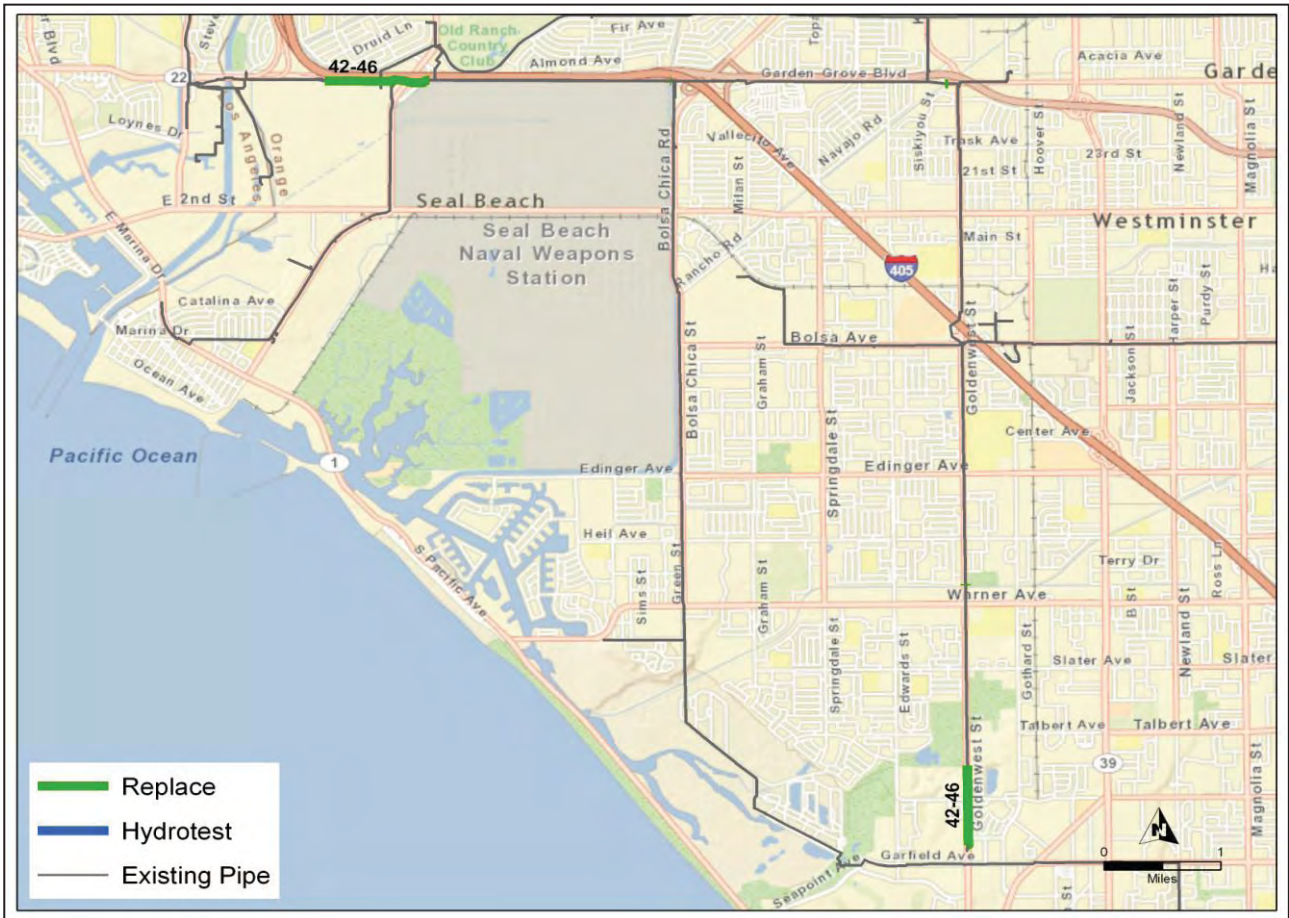
Category	Station Start	Station Stop	Criteria Miles	Diameter	Action	Decision Tree Box	Comments
Cat 1	-10.5	1	-	6.625	Abandon	2	
Cat 1	1	8	-	8.625	Abandon	2	
Cat 4	8	6711	0.8527	8.625	Abandon	2	
Cat 4	6711	17814	0.5763	10.75	Abandon	2	State Highway 115 crossing on Brown Ave, rail road crossing at Brown 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	
Cat 4	135172	145969	2.0449	6.625	Abandon	2	Railroad crossing on Imperial Ave.
Cat 2	145969	146412	0.0756	6.625	Abandon	2	Highway 8 crossing. Approx. 440 feet of Cat 2 in between Cat 4 segments.
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	

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

Company	SCG	Replacement Mileage			
Plant Category	Dist	Category 4	Accelerated	Total	
Line Number	42-46	Criteria	0.691	0.781	1.471
Diameter (in.)	Multiple: 4.5 - 16				

Cost Detail

Capital		O&M	
Direct Labor	\$ 224,800	Direct Labor	\$ -
Direct Non Labor	\$ 6,031,600	Direct Non Labor	\$ -
Total Direct Capital	\$ 6,256,400	Total Direct O&M	\$ -



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

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision	
	Start	Stop				Tree Box	Comments
Cat 2	0	7	-	6.625	Keep As Is		
Cat 2	7	9	-	8.625	Keep As Is		
Cat 2	9	45	-	10.75	Keep As Is		
Cat 4	45	2428	0.0006	16	Replace	2	City of Westminster
Cat 1	2428	2641	0.0403	16	Replace		
Cat 1	2641	2741	0.0184	16	Replace		
Cat 4	2741	4161	0.0006	16	Replace	2	Traffic Plan
Cat 1	4161	7146	0.5648	16	Keep As Is		
Cat 1	7146	13041	0.0006	16	Keep As Is		
Cat 4	13041	13083	0.0074	16	Replace	2	Caltrans
Cat 1	13083	13131	-	16	Keep As Is		
Cat 1	13131	13186	-	16	Keep As Is		
Cat 2	13186	13208	-	8.625	Keep As Is		
Cat 1	13208	14706	-	16	Keep As Is		
Cat 4	14706	14734	-	16	Keep As Is		
Cat 1	14734	15424	-	16	Keep As Is		
Cat 1	15424	16416	-	16	Keep As Is		
Cat 1	16416	23453	0.0006	16	Keep As Is		
Cat 4	23453	23557	0.0191	16	Replace	2	City of Huntington Beach
Cat 1	23557	25354	-	16	Keep As Is		
Cat 4	25354	26254	-	16	Keep As Is		
Cat 1	26254	31096	0.0006	16	Keep As Is		
Cat 1	31096	33251	0.4076	16	Keep As Is		
Cat 4	33251	34840	-	16	Keep As Is		
Cat 1	34840	34895	-	16	Keep As Is		
Cat 4	34895	34987	-	16	Keep As Is		
Cat 2	34987	34993	-	12.75	Keep As Is		
Cat 2	34993	34999	-	10.75	Keep As Is		
Cat 4	34999	35140	-	16	Keep As Is		

Cat 1	35140	44771	1.8205	16	Keep As Is	
Cat 4	44771	44838	0.0121	16	Replace	2 Flood control channel
Cat 1	44838	44956	0.0006	16	Keep As Is	
Cat 1	44956	45694	0.1398	16	Keep As Is	
Cat 1	45694	48836	0.5945	16	Keep As Is	
Cat 1	48836	52100	0.0006	16	Keep As Is	
Cat 4	52100	55539	0.6508	16	Replace	2 school, sports center
Cat 1	55539	55561	-	12.75	Keep As Is	
Cat 2	55561	55563	-	12.75	Keep As Is	
Cat 2	55563	55805	-	8.625	Keep As Is	
Cat 2	55805	55811	-	6.625	Keep As Is	
Cat 4	55811	55841	-	4.5	Keep As Is	

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
45	2428	16"	0.312	X-65	
2428	2641	16"	0.312	X-65	picking up extra 20% footage
2641	2741	16"	0.312	X-65	picking up extra footage
2741	4161	16"	0.312	X-65	
13041	13083	16"	0.312	X-65	
23453	23557	16"	0.312	X-65	
44771	44838	16"	0.312	X-65	
52100	55539	16"	0.312	X-65	

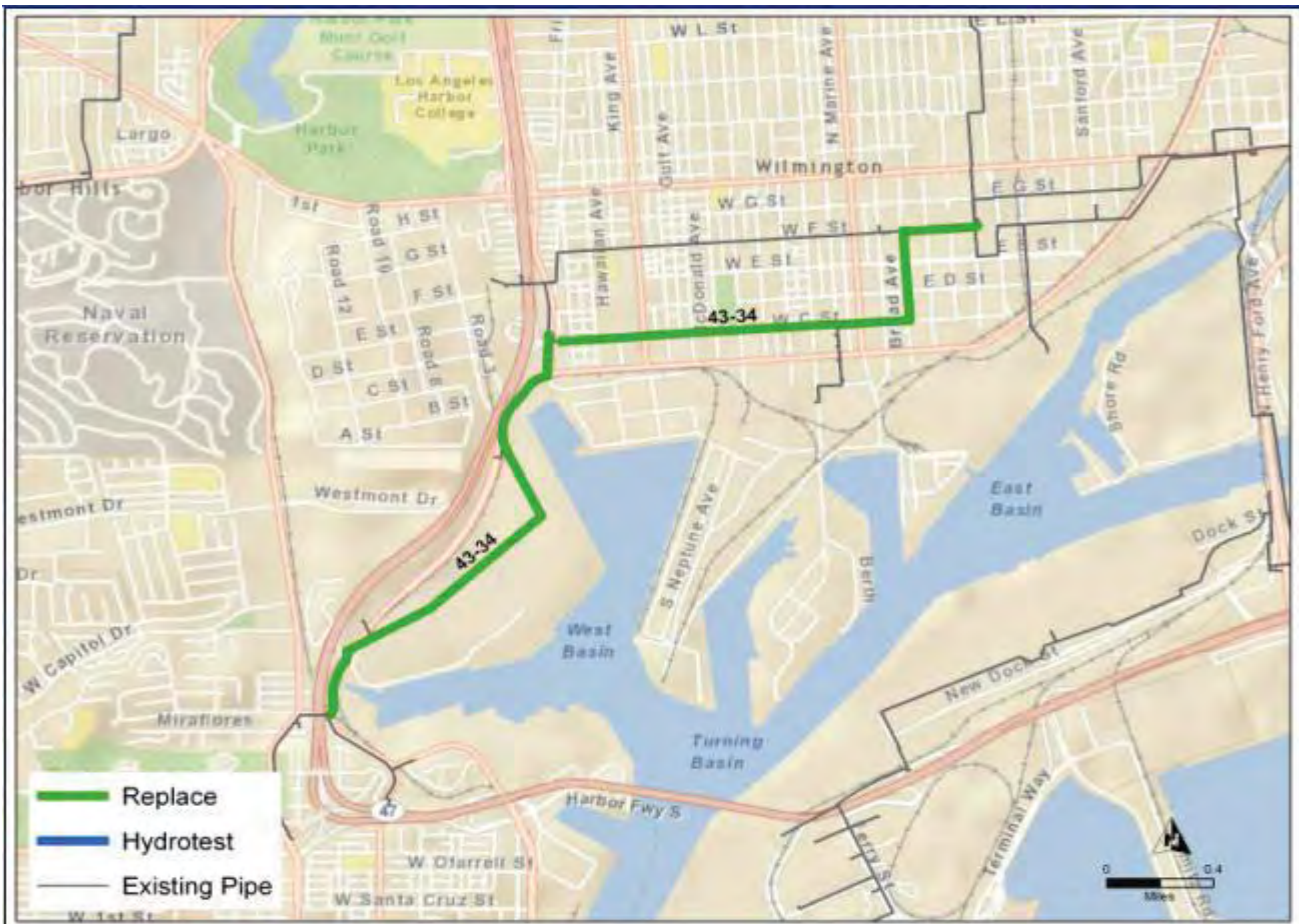
ACTIVITY AND LOCATION:		SPECIFICATION NO.	THE FIRM NAME	SHEET					
Line 42-46			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:	SPEC Project Number					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPC	June 30, 2011	5057					
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
1 MATERIALS									
INPUT IN ALL GREEN CELLS									
16 inch	Pipe	7768	Feet	\$ 57	\$ 445,572			\$ 445,572	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	35	Each	\$ 3,339	\$ 116,853			\$ 116,853	
	Pressure Rating	0	Each	\$ 55,508	\$ -			\$ -	
	1lb Block Valve w/Electric Actuator (one per 4 miles)								
	FBE Coating (\$/ft)			\$ 4.14	\$ 32,160			\$ 32,160	
	Miscellaneous Materials (5%)	1	Lot					\$ 28,121	
	Freight / Tax	12.5	%					\$ 77,838	
n/a	Pipe	0	Feet	\$ -	\$ -			\$ -	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
	Pressure Rating	0	Each	\$ -	\$ -			\$ -	
	1lb Block Valve w/Electric Actuator (one per 4 miles)								
	FBE Coating (\$/ft)								
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
n/a	Pipe	0	Feet	\$ -	\$ -			\$ -	
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
	Pressure Rating	0	Each	\$ -	\$ -			\$ -	
	1lb Block Valve w/Electric Actuator (one per 4 miles)								
	FBE Coating (\$/ft)								
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
n/a	Casing	0	Feet	\$ -	\$ -			\$ -	
	Miscellaneous Materials (5%)	1	Lot					\$ -	
	Freight / Tax	12.5	%					\$ -	
	Total length	1.5	Miles						
Total Material Cost								\$ 700,600	
2 CONSTRUCTION (See Appendix for construction type definitions)									
16 inch pipe									
	Pipe Install - Type 1	0	Feet			\$ 200	\$ -	\$ -	
	Pipe Install - Type 2	3585	Feet			\$ 320	\$ 1,147,200	\$ 1,147,200	
	Pipe Install - Type 3	4116	Feet			\$ 500	\$ 2,058,000	\$ 2,058,000	
	Pipe Install - Type 4	67	Feet			\$ 750	\$ 50,250	\$ 50,250	Flood Control Channel Crossing
	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 6	0	Feet			\$ -	\$ -	\$ -	
	Pipe Install - Type 7	0	Feet			\$ -	\$ -	\$ -	
	Tie-ins Crew Rates	4	Each			\$ 35,000	\$ 210,000	\$ 210,000	
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	43388	SCF	\$ 0.19	\$ 8,244			\$ 8,244	
	Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
	95% Abandonment of Existing Pipeline (\$50/CY)	382	CY			\$ 95	\$ 36,290	\$ 36,290	
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 122,079	
	Mobilization / Demobilization	4	Each			\$ 30,000	\$ 120,000	\$ 120,000	
	Contaminated Soil	0	CY			\$ -	\$ -	\$ -	
	Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -	
	Radiographic Inspection	23	Days	\$ 150	\$ 3,450	\$ 600	\$ 13,800	\$ 17,250	
	Construction period	31	days						
Total Construction Cost								\$ 3,794,400	
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%					\$ -	\$ -
	\$1 million - Projects < \$10 million - company labor is 5%	5	%					\$ 224,750	\$ 224,750
	Projects > \$10 million - company labor is 2.5%	2.5	%					\$ -	\$ -
Total SCG Labor / Inspection Cost								\$ 224,800	
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%					\$ 449,500	\$ 449,500
	Construction Stakes, AS-Built Survey (2 man crew)	23	Days	\$ 100	\$ 2,300	\$ 1,400	\$ 32,200	\$ 34,500	
	ROW Acquisition	0	LS					\$ -	\$ -
	Construction Permits	0	LS					\$ -	\$ -
	Environmental Permits	0	LS					\$ -	\$ -
	Environmental Monitoring	0	LS					\$ -	\$ -
	AS-Built Drawings (\$2000+\$1/ft)	1	LS					\$ 9,768	\$ 9,768
Total Design / Engineering / Construction Cost								\$ 493,800	
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%					\$ -	\$ -
	Projects > \$2 million - Contingency is 20%	20	%					\$ 1,042,720	\$ 1,042,720
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 6,256,400	

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	43-34	1.577	1.711	3.288
Diameter (in.)	Multiple: 4.5 - 20			

Cost Detail

Capital		O&M	
Direct Labor	\$ 447,800	Direct Labor	\$ -
Direct Non Labor	\$ 12,020,000	Direct Non Labor	\$ -
Total Direct Capital	\$ 12,467,800	Total Direct O&M	\$ -



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

Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision Tree Box	Comments
	Start	Stop					
Cat 4	0	23	0.0044	20	Replace	2	Conoco Phillips is critical customer
Cat 4	23	4069	0.7663	20	Replace	2	Conoco Phillips is critical customer
Cat 4	4069	8729	0.0068	12.75	Replace	2	Conoco Phillips is critical customer
Cat 4	8729	8879	-	12.75			
Cat 4	8879	17509	0.7996	16	Replace	2	Conoco Phillips is critical customer
Cat 4	17509	19666	-	10.75			
Cat 4	19666	19670	-	4.5			

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
23	4069	16	0.375	X-65	
4069	8729	16	0.375	X-65	
8879	17509	16	0.375	X-65	

ACTIVITY AND LOCATION:		SPECIFICATION NO.		A/E FIRM NAME		SHEET	
Line 43-34						Sheet 1 of 1	
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:			
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		June 30, 2011			
		STATUS OF DESIGN		SPEC Project Number			
		Conceptual		5057			
DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL
INPUT IN ALL GREEN CELLS							
1 MATERIALS							
Pipe	17359	Feet	\$ 57	\$ 995,712			\$ 995,712
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	73	Each	\$ 3,339	\$ 243,723			\$ 243,723
Pressure Rating	0	Each	\$ 55,508	\$ -			\$ -
FBE Coating (\$/ft)			\$ 4.14	\$ 71,866			\$ 71,866
Miscellaneous Materials (5%)	1	Lot					\$ 61,972
Freight / Tax	12.5	%					\$ 171,659
Pipe	0	Feet	\$ -	\$ -			\$ -
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -
Pressure Rating	0	Each	\$ -	\$ -			\$ -
lb Block Valve w/Electric Actuator (one per 4 miles)			\$ -	\$ -			\$ -
FBE Coating (\$/ft)			\$ -	\$ -			\$ -
Miscellaneous Materials (5%)	1	Lot					\$ -
Freight / Tax	12.5	%					\$ -
Pipe	0	Feet	\$ -	\$ -			\$ -
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -
Pressure Rating	0	Each	\$ -	\$ -			\$ -
lb Block Valve w/Electric Actuator (one per 4 miles)			\$ -	\$ -			\$ -
FBE Coating (\$/ft)			\$ -	\$ -			\$ -
Miscellaneous Materials (5%)	1	Lot					\$ -
Freight / Tax	12.5	%					\$ -
Casing	400	Feet	\$ 76	\$ 30,416			\$ 30,416
Miscellaneous Materials (5%)	1	Lot					\$ 1,520.80
Freight / Tax	12.5	%					\$ 3,992
Total length	3.3	Miles					
Total Material Cost							\$ 1,680,900
2 CONSTRUCTION (See Appendix for construction type definitions)							
16 inch pipe							
Pipe Install - Type 1	0	Feet		\$ 200	\$ -	\$ -	\$ -
Pipe Install - Type 2	10349	Feet		\$ 320	\$ 3,311,680		\$ 3,311,680
Pipe Install - Type 3	6610	Feet		\$ 500	\$ 3,305,000		\$ 3,305,000
Pipe Install - Type 4	0	Feet		\$ 750	\$ -		\$ -
Pipe Install - Type 5	400	Feet		\$ 600	\$ 240,000		\$ 240,000
Pipe Install - Type 6	0	Feet		\$ -	\$ -		\$ -
Pipe Install - Type 7	0	Feet		\$ 650	\$ -		\$ -
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 6	0	Feet		\$ -	\$ -		\$ -
Pipe Install - Type 7	0	Feet		\$ -	\$ -		\$ -
Tie-ins Crew Rates	2	Each		\$ 35,000	\$ 70,000		\$ 70,000
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	96952	SCF	\$ 0.19	\$ 18,421			\$ 18,421
Purging Labor	1	LS		\$ 25,000	\$ 25,000		\$ 25,000
95% Abandonment of Existing Pipeline (\$50/CY)	852	CY		\$ 95	\$ 80,940		\$ 80,940
5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 257,126
Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000		\$ 30,000
Contaminated Soil	0	CY		\$ -	\$ -		\$ -
Asbestos Abatement	0	Feet		\$ -	\$ -		\$ -
Radiographic Inspection	48	Days	\$ 150	\$ 7,200	\$ 600	\$ 28,800	\$ 36,000
Construction period	66	days					
Total Construction Cost							\$ 7,374,200
3 SCG LABOR / INSPECTION							
Projects < \$1 million - company labor is 10%	10	%			\$ -	\$ -	\$ -
\$1 million - Projects < \$10 million - company labor is 5%	5	%			\$ 447,755	\$ 447,755	\$ 447,755
Projects > \$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -	\$ -
Total SCG Labor / Inspection Cost							\$ 447,800
4 DESIGN / ENG. / CONST / ENVIRON.							
Planning / Design / Eng / Coord / Procurement	10	%			\$ 895,510	\$ 895,510	\$ 895,510
Construction Stakes, AS-Built Survey (2 man crew)	48	Days	\$ 100	\$ 4,800	\$ 1,400	\$ 67,200	\$ 72,000
ROW Acquisition	0	LS			\$ -	\$ -	\$ -
Construction Permits	0	LS			\$ -	\$ -	\$ -
Environmental Permits	0	LS			\$ -	\$ -	\$ -
Environmental Monitoring	0	LS			\$ -	\$ -	\$ -
AS-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 19,359	\$ 19,359	\$ 19,359
Total Design / Engineering / Construction Cost							\$ 986,900
5 CONTINGENCY							
Projects < \$2 million - Contingency is 30%	30	%			\$ -	\$ -	\$ -
Projects > \$2 million - Contingency is 20%	20	%			\$ 2,077,960	\$ 2,077,960	\$ 2,077,960
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 12,467,800

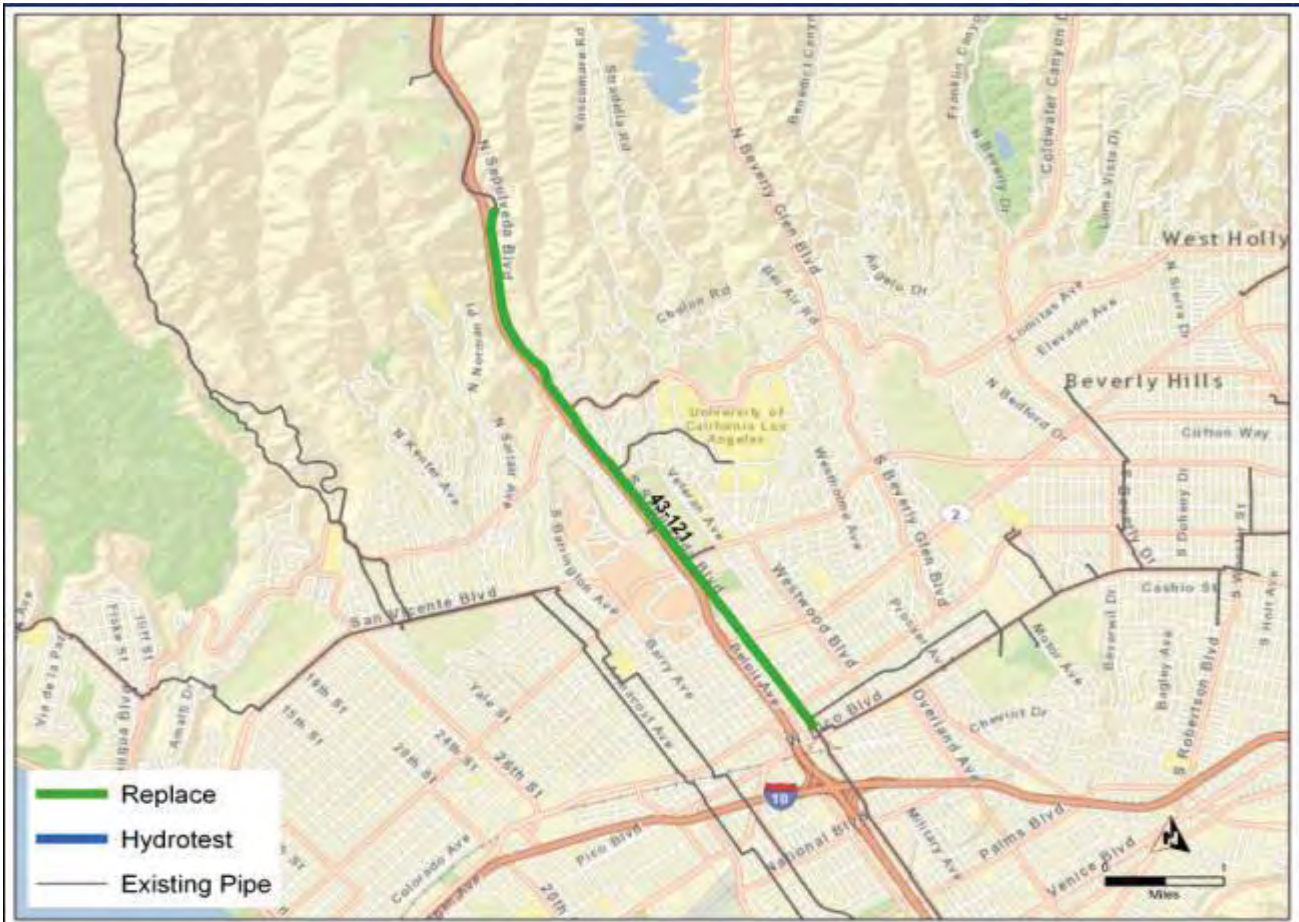
Comments
Replaced all segments pipe OD per Remediation Plan
RR casing pipe
RR crossing

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	43-121	2.766	1.645	4.411
Diameter (in.)	Multiple: 16 - 30			

Cost Detail

Capital		O&M	
Direct Labor	\$ 336,500	Direct Labor	\$ -
Direct Non Labor	\$ 17,992,100	Direct Non Labor	\$ -
Total Direct Capital	\$ 18,328,600	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 2	0	1890	-	24			
Cat 1	1890	4780	-	30			
Cat 4	4780	4836	-	30			
Cat 4	4836	6260	-	30			
Cat 1	6260	7850	-	30			
Cat 4	7850	9235	-	30			
Cat 1	9235	10125	-	30			
Cat 2	10125	12625	-	30			
Cat 1	12625	12710	-	30			
Cat 4	12710	13900	-	30			
Cat 4	13900	19150	0.3170	30	Replace	2	UCLA Cogen critical customer
Cat 4	19150	21830	0.4030	26	Replace	2	UCLA Cogen critical customer
Cat 1	21830	22380	0.1042	16	Replace	2	UCLA Cogen critical customer
Cat 4	22380	24330	0.0420	26	Replace	2	UCLA Cogen critical customer
Cat 2	24330	26120	0.3390	26	Replace	2	UCLA Cogen critical customer
Cat 4	26120	37188	2.0040	26	Replace	2	UCLA Cogen critical customer
Cat 4	37188	37570	-	26			
Cat 2	37570	43360	-	24			
Cat 4	43360	43548	-	26			
Cat 2	43548	50748	-	24			
Cat 4	50748	51198	-	26			
Cat 4	51198	53698	-	30			
Cat 4	53698	55578	-	26			
Cat 4	55578	59768	-	30			
Cat 1	59768	61728	-	30			
Cat 1	61728	63138	-	30			
Cat 1	63138	67498	-	26			
Cat 2	67498	67728	-	20			
Cat 1	67728	81118	-	26			

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
13900	19150	16	0.375	X-65	
19150	21830	16	0.375	X-65	
21830	22380	16	0.375	X-65	
22380	24330	16	0.375	X-65	
24330	26120	16	0.375	X-65	
26120	37188	16	0.375	X-65	

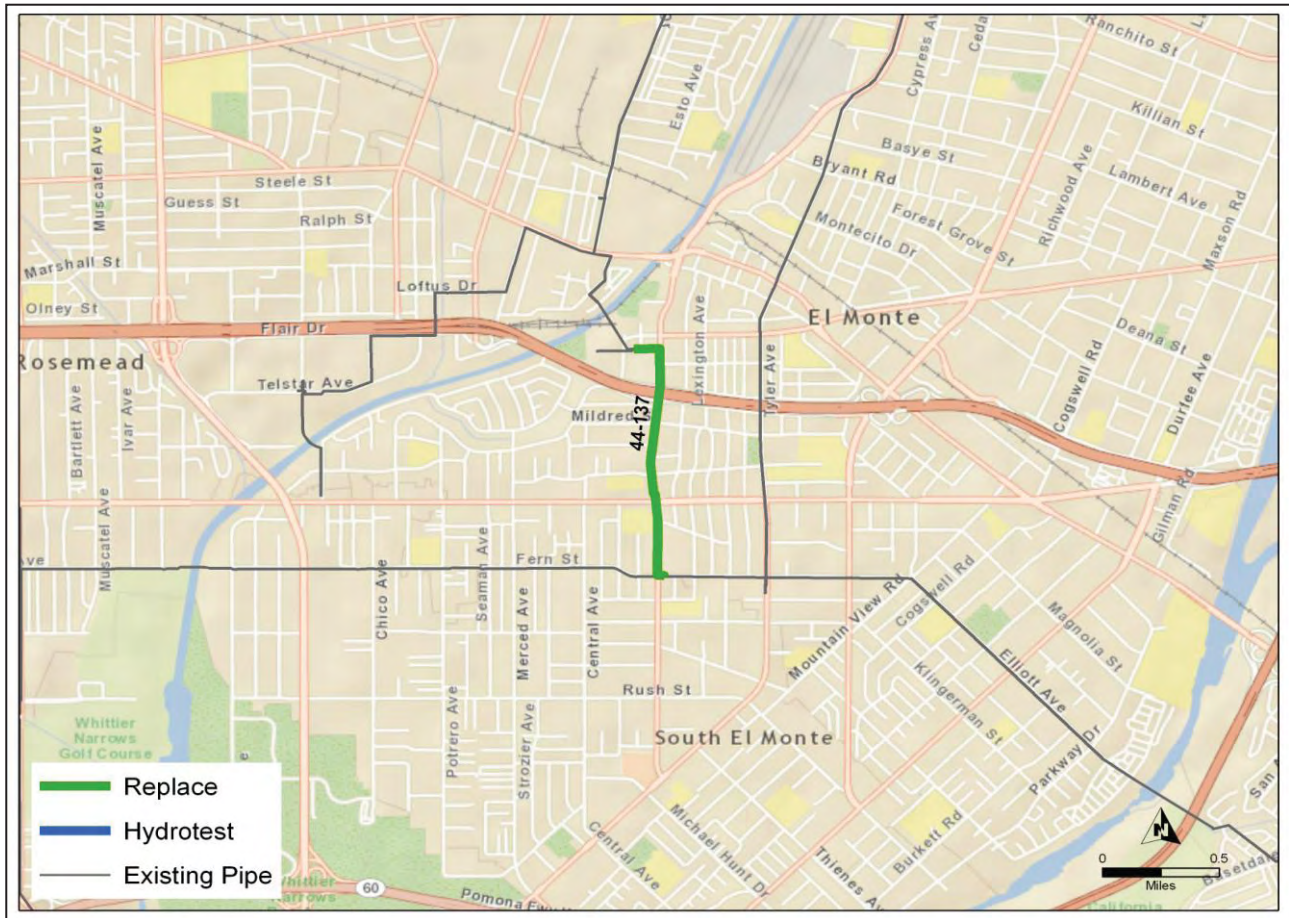
ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME	SHEET				
Line 43-121				Sheet 1 of 1				
PROJECT TITLE AND CLIENT:		ESTIMATED BY	DATE:					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	June 30, 2011					
		STATUS OF DESIGN	SPEC Project Number					
		Conceptual	5057					
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								
16 inch pipe								
16 inch pipe	21498	Feet	\$ 57	\$ 1,233,126			\$ 1,233,126	Replaced all segments pipe OD per Remediation Plan
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	89	Each	\$ 3,339	\$ 297,142			\$ 297,142	
Pressure Rating 16 lb Block Valve w/Electric Actuator (one per 4 miles)	1	Each	\$ 55,508	\$ 55,508			\$ 55,508	
FBE Coating (\$/ft)			\$	\$ 4,144			\$ 4,144	
Miscellaneous Materials (5%)	1	Lot					\$ 79,289	
Freight / Tax	12.5	%					\$ 219,258	
16 inch pipe	0	Feet	\$ -	\$ -			\$ -	
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating 16 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
16 inch pipe	0	Feet	\$ -	\$ -			\$ -	
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating 16 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
Casing 16 inch	0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
Total length	4.1	Miles						
Total Material Cost							\$ 1,973,400	
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	21498	Feet			\$ 500	\$ 10,749,000	\$ 10,749,000	
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	0	Feet			\$ -	\$ -	\$ -	
Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -	
Tie-ins Crew Rates	2	Each			\$ 35,000	\$ 70,000	\$ 70,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	120068	SCF	\$ 0.19	\$ 22,813			\$ 22,813	
Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)	1056	CY			\$ 95	\$ 100,320	\$ 100,320	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 403,088	
Mobilization / Demobilization	2	Each			\$ 30,000	\$ 60,000	\$ 60,000	
Contaminated Soil	0	CY			\$ -	\$ -	\$ -	
Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -	
Radiographic Inspection	73	Days	\$ 150	\$ 10,950	\$ 600	\$ 43,800	\$ 54,750	
Construction period	81	days						
Total Construction Cost							\$ 11,486,000	
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	%					\$ 336,460	
Total SCG Labor / Inspection Cost							\$ 336,500	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%					\$ 1,345,840	\$ 1,345,840
Construction Stake, As-Built Survey (2 man crew)	73	Days	\$ 100	\$ 7,300	\$ 1,400	\$ 102,200	\$ 109,500	
ROW Acquisition	0	LS					\$ -	
Construction Permits	0	LS					\$ -	
Environmental Permits	0	LS					\$ -	
Environmental Monitoring	0	LS					\$ -	
As-Built Drawings (\$2000-\$1/ft)	1	LS					\$ 23,498	\$ 23,498
Total Design / Engineering / Construction Cost							\$ 1,478,900	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%					\$ -	\$ -
Projects > \$2 million - Contingency is 20%	20	%					\$ 3,054,760	\$ 3,054,760
TOTAL PROJECT COST (See Appendix for assumptions/clearifications)							\$ 18,328,600	

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Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	44-137	0.996	0.007	1.004
Diameter (in.)	12.75, 20			

Cost Detail

Capital		O&M	
Direct Labor	\$ 156,900	Direct Labor	\$ -
Direct Non Labor	\$ 4,212,100	Direct Non Labor	\$ -
Total Direct Capital	\$ 4,369,000	Total Direct O&M	\$ -



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Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision	
	Start	Stop				Tree Box	Comments
Cat 4	-55	-30.5	-	12.75	Replace	2	
Cat 4	-3	0	-	12.75	Replace	2	
Cat 4	0	4707	0.8915	20	Replace	2	So. El Monte - church
Cat 4	4707	5271	0.1049	20	Replace	2	Fwy - Caltrans

New Segments

Station Start	Station Stop	Diameter	Wall		Grade	Comments
			Thickness	Thickness		
-55	-30.5	12"	0.375	0.375	X-52	Picking up extra 20% footage
-3	0	12"	0.375	0.375	X-52	Picking up extra 20% footage
0	4707	20"	0.312	0.312	X-65	
4707	5271	20"	0.312	0.312	X-65	

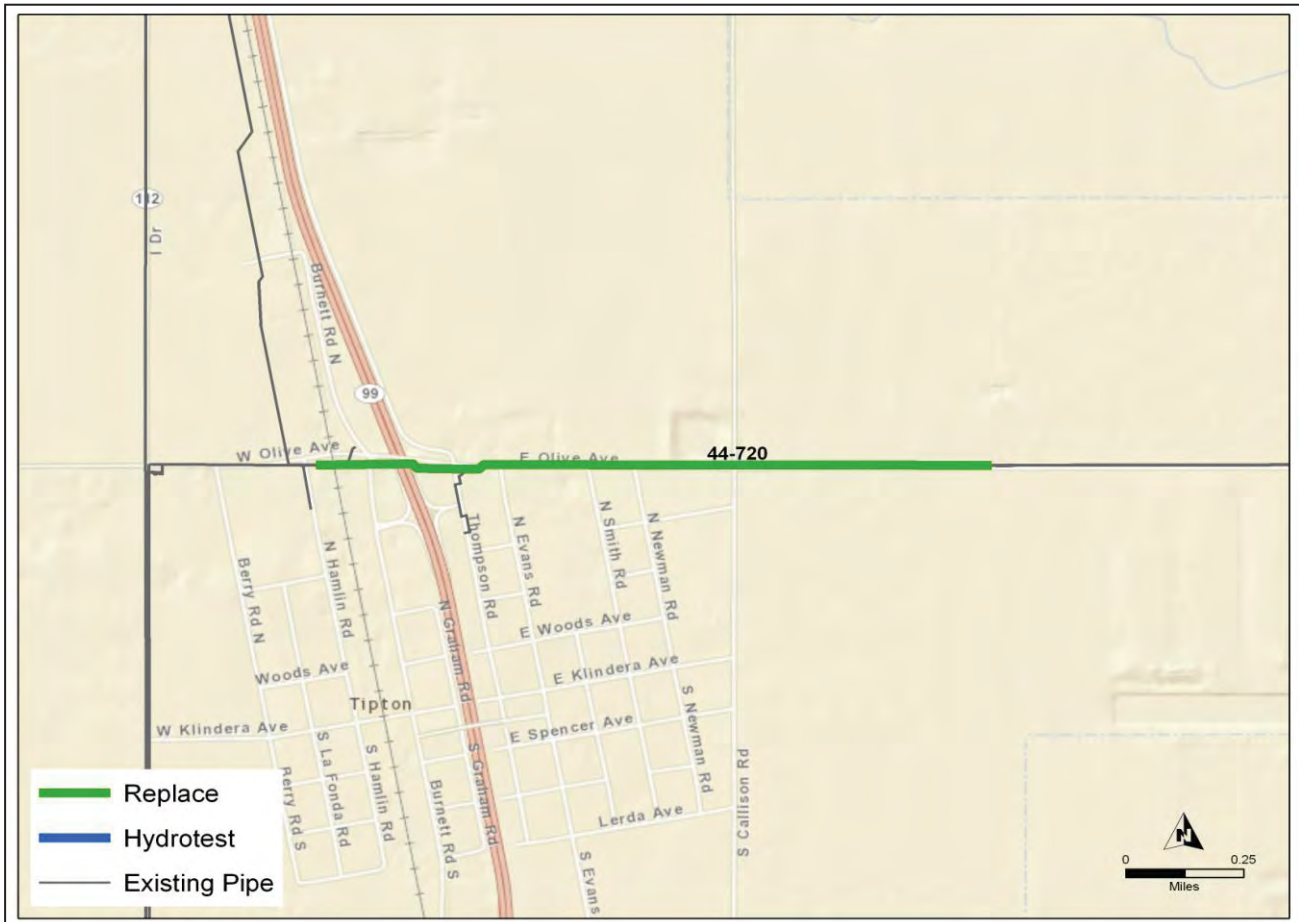
ACTIVITY AND LOCATION: Line 44-137		SPECIFICATION NO.	EST. FIRM NAME SPC SERVICES	SHEET Sheet 1 of 1				
PROJECT TITLE AND CLIENT: SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		ESTIMATED BY: SPEC	DATE: June 30, 2011					
		STATUS OF DESIGN Conceptual	SPEC Project Number 5057					
DESCRIPTION	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	20	inch, 312 WT X-65	5271	Feet	\$ 76	\$ 400,807		\$ 400,807
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	26	Each	\$ 5,679	\$ 147,645		\$ 147,645
Pressure Rating	2F	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 129,536	\$ -		\$ -
		FBE Coating (\$/ft)			\$ 5.32	\$ 28,042		\$ 28,042
		Miscellaneous Materials (5%)	1	Lot				\$ 27,423
		Freight / Tax	12.5	%				\$ 75,490
Pipe	12	inch, STD. WT X-52	28	Feet	\$ 44	\$ 1,240		\$ 1,240
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	5	Each	\$ 1,833	\$ 9,167		\$ 9,167
Pressure Rating	1F	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 36,010	\$ -		\$ -
		FBE Coating (\$/ft)			\$ 3.26	\$ 91		\$ 91
		Miscellaneous Materials (5%)	1	Lot				\$ 520
		Freight / Tax	12.5	%				\$ 1,377
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 (\$/ft)			\$ -	\$ -		\$ -
		Miscellaneous Materials (5%)	1	Lot				\$ -
		Freight / Tax	12.5	%				\$ -
Casing	24	inch, 375 WT X-65	564	Feet	\$ 92	\$ 51,724		\$ 51,724
		Miscellaneous Materials (5%)	1	Lot				\$ 2,586.72
		Freight / Tax	12.5	%				\$ 6,789
Total length	1.0	Miles						
Total Material Cost							\$ 763,000	
2 CONSTRUCTION (See Appendix for construction type definitions)								
20 inch pipe								
		Pipe Install - Type 1	0	Feet		\$ 225	\$ -	\$ -
		Pipe Install - Type 2	4707	Feet	\$ 360	\$ 1,694,520		\$ 1,694,520
		Pipe Install - Type 3	0	Feet	\$ 540	\$ -		\$ -
		Pipe Install - Type 4	0	Feet	\$ 850	\$ -		\$ -
		Pipe Install - Type 5	564	Feet	\$ 800	\$ 451,200		\$ 451,200
		Pipe Install - Type 6	0	Feet	\$ -	\$ -		\$ -
		Pipe Install - Type 7	0	Feet	\$ 702	\$ -		\$ -
12 inch pipe								
		Pipe Install - Type 1	0	Feet	\$ 175	\$ -		\$ -
		Pipe Install - Type 2	28	Feet	\$ 280	\$ 7,840		\$ 7,840
		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	\$ -	\$ -		\$ -
		Pipe Install - Type 8	0	Feet	\$ -	\$ -		\$ -
		Tie-ins Crew Rates	1	Each	\$ 34,947	\$ 34,947		\$ 34,947
		Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	46088	SCF	\$ 0.19	\$ 8,757		\$ 8,757
		Purging Labor	1	LS	\$ 25,000	\$ 25,000		\$ 25,000
		95% Abandonment of Existing Pipeline (\$50/CY)	405	CY	\$ 95	\$ 38,475		\$ 38,475
		5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%				\$ 80,759
		Mobilization / Demobilization	1	Each	\$ 30,000	\$ 30,000		\$ 30,000
		Contaminated Soil	0	CY	\$ -	\$ -		\$ -
		Asbestos Abatement	0	Feet	\$ -	\$ -		\$ -
		Radiographic Inspection	17	Days	\$ 150	\$ 2,550	\$ 600	\$ 10,200
		Construction period	25	days				
Total Construction Cost							\$ 2,384,300	
3 SCG LABOR / INSPECTION								
		Projects < \$1 million - company labor is 10%	10	%			\$ -	\$ -
		\$1 million - Projects < \$10 million - company labor is 5%	5	%			\$ 156,865	\$ 156,865
		Projects > \$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -
Total SCG Labor / Inspection Cost							\$ 156,900	
4 DESIGN / ENG. / CONST. / ENVIRON.								
		Planning / Design / Eng / Coord / Procurement	10	%			\$ 313,730	\$ 313,730
		Construction Stake, AS-Built Survey (2 man crew)	17	Days	\$ 100	\$ 1,700	\$ 1,400	\$ 23,800
		ROW Acquisition	0	LS			\$ -	\$ -
		Construction Permits	0	LS			\$ -	\$ -
		Environmental Permits	0	LS			\$ -	\$ -
		Environmental Monitoring	0	LS			\$ -	\$ -
		AS-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 7,299	\$ 7,299
Total Design / Engineering / Construction Cost							\$ 346,600	
5 CONTINGENCY								
		Projects < \$2 million - Contingency is 30%	30	%			\$ -	\$ -
		Projects > \$2 million - Contingency is 20%	20	%			\$ 728,160	\$ 728,160
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 4,369,000	

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Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	44-720	0.952	0.216	1.168
Diameter (in.)	8.625			

Cost Detail

Capital		O&M	
Direct Labor	\$ 91,100	Direct Labor	\$ -
Direct Non Labor	\$ 2,450,100	Direct Non Labor	\$ -
Total Direct Capital	\$ 2,541,200	Total Direct O&M	\$ -



**Southern California Gas Company
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Existing Segments

Category	Station		Criteria Miles	Diameter	Action	Decision	
	Start	Stop				Tree	Box
Cat 4	0	8	0.0015	8.625	Replace	2	
Cat 1	8	20	0.0023	8.625	Replace		
Cat 4	20	37.5	0.0033	8.625	Replace	2	
Cat 4	37.5	886	0.1607	8.625	Replace	2	RR crossing at Sta. 1+16 to 1+80. One reg station tap at 2+63
Cat 4	886	1550	0.1258	8.625	Replace	2	
Cat 4	1550	6166	0.6606	8.625	Replace	2	

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments	
					Comments	
0	8	10	0.365	X-52	Upgrading pipe size to match 10-inch downstream of Category 4 segments	
8	20	10	0.365	X-52	Include this Category 1 in replacement project since it sits between two Cat. 4 Criteria segments and it is only 12-feet	
20	37.5	10	0.365	X-52		
37.5	886	10	0.365	X-52		
886	1550	10	0.365	X-52		
1550	6166	10	0.365	X-52		

ACTIVITY AND LOCATION:		SPECIFICATION NO.		A/E FIRM NAME		SHEET		
Line 44-720				SPEC SERVICES		Sheet 1 of 1		
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:		SPEC Project Number		
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		July 6, 2011		5057		
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL
INPUT IN ALL GREEN CELLS								
1 MATERIALS								
Pipe 10 inch, STD. WT X-52								
		6166	Feet	\$ 36	\$ 223,148			\$ 223,148
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	28	Each	\$ 1,408	\$ 39,424			\$ 39,424
	Pressure Rating 300 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 28,405	\$ -			\$ -
	FBE Coating (5/ft)			\$ 2.86	\$ 17,635			\$ 17,635
	Miscellaneous Materials (5%)	1	Lot					\$ 13,129
	Freight / Tax	12.5	%					\$ 36,667
	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	1.2	Miles					
	Total Material Cost							\$ 330,100
2 CONSTRUCTION (See Appendix for construction type definitions)								
10 inch pipe								
	Pipe Install - Type 1	4600	Feet		\$ 175	\$ 805,000		\$ 805,000
	Pipe Install - Type 2	1266	Feet		\$ 280	\$ 354,480		\$ 354,480
	Pipe Install - Type 3	0	Feet		\$ 450	\$ -		\$ -
	Pipe Install - Type 4	300	Feet		\$ 600	\$ 180,000		\$ 180,000
	Pipe Install - Type 5	0	Feet		\$ 400	\$ -		\$ -
	Pipe Install - Type 6	0	Feet		\$ -	\$ -		\$ -
	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	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)	13456	SCF	\$ 0.19	\$ 2,557			\$ 2,557
	Purging Labor	1	LS		\$ 25,000	\$ 25,000		\$ 25,000
	95% Abandonment of Existing Pipeline (\$50/CY)	119	CY		\$ 95	\$ 11,305		\$ 11,305
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 50,231
	Mobilization / Demobilization	1	Each		\$ 30,000	\$ 30,000		\$ 30,000
	Contaminated Soil	0	CY		\$ -	\$ -		\$ -
	Asbestos Abatement	0	Feet		\$ -	\$ -		\$ -
	Radiographic Inspection	10	Days	\$ 150	\$ 1,500	\$ 600	\$ 6,000	\$ 7,500
	Construction period	18	days					
	Total Construction Cost							\$ 1,491,100
3 SCG LABOR / INSPECTION								
	Projects < \$1 million - company labor is 10%	10	%			\$ -	\$ -	\$ -
	\$1million <Projects < \$10 million - company labor is 5%	5	%			\$ 91,060	\$ 91,060	\$ 91,060
	Projects >\$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -	\$ -
	Total SCG Labor / Inspection Cost							\$ 91,100
4 DESIGN / ENG. / CONST / ENVIRON.								
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 182,120	\$ 182,120	\$ 182,120
	Construction Stake, As-Built Survey (2 man crew)	10	Days	\$ 100	\$ 1,000	\$ 1,400	\$ 14,000	\$ 15,000
	ROW Acquisition	0	LS			\$ -	\$ -	\$ -
	Construction Permits	0	LS			\$ -	\$ -	\$ -
	Environmental Permits	0	LS			\$ -	\$ -	\$ -
	Environmental Monitoring	0	LS			\$ -	\$ -	\$ -
	As-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 8,166	\$ 8,166	\$ 8,166
	Total Design / Engineering / Construction Cost							\$ 205,300
5 CONTINGENCY								
	Projects < \$2 million - Contingency is 30%	30	%			\$ -	\$ -	\$ -
	Projects >\$2 million - Contingency is 20%	20	%			\$ 423,520	\$ 423,520	\$ 423,520
	TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 2,541,200

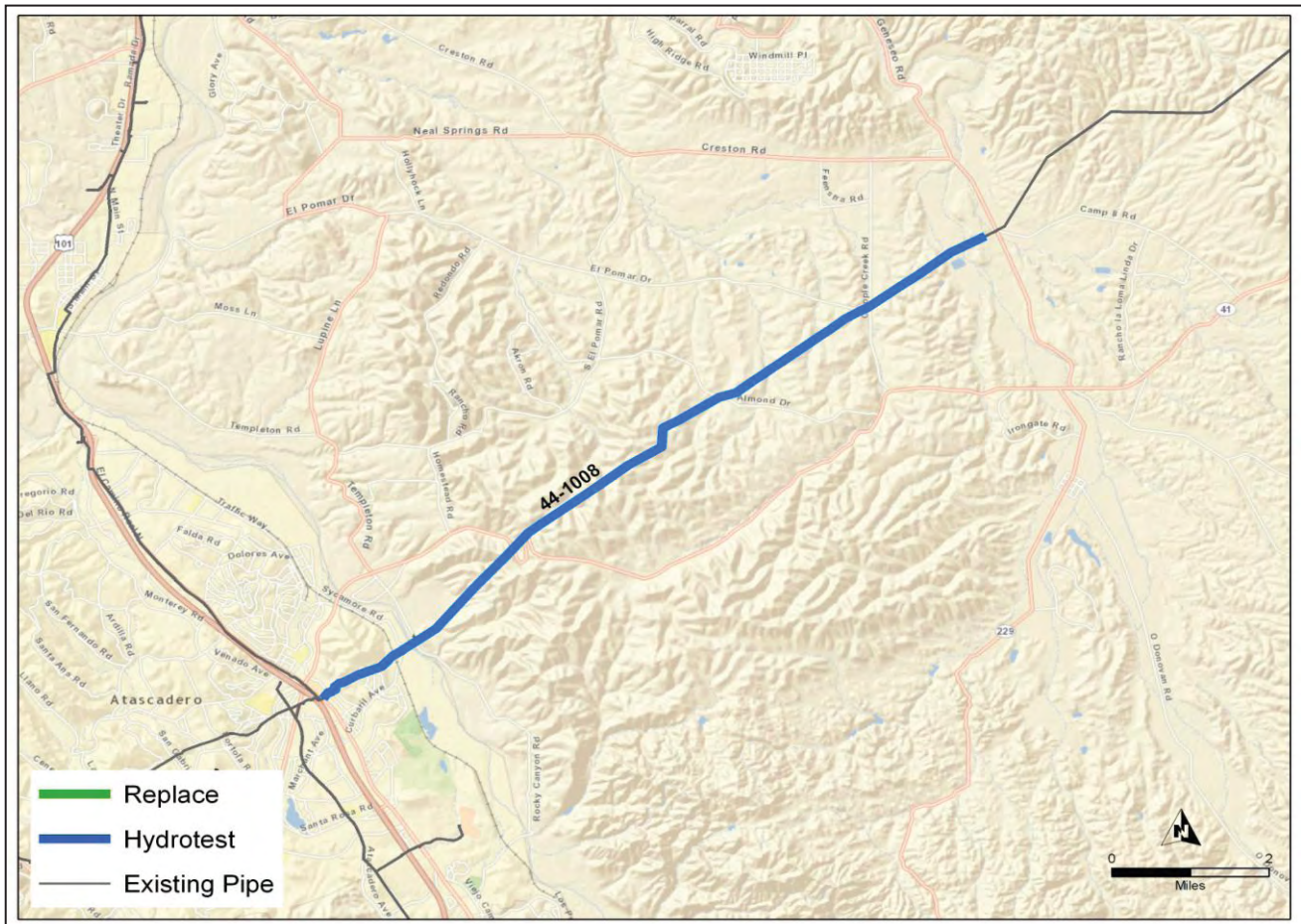
Comments
upsite to 10" per SCG Comment
RR Bore (100 ft), HWY Bore (200

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Company	SCG	Hydrotest Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	44-1008	1.876	8.187	10.063
Diameter (in.)	10.75			

Cost Detail

Capital		O&M	
		Hydrotest	
Direct Labor	\$ -	Direct Labor	\$ 23,100
Direct Non Labor	\$ -	Direct Non Labor	\$ 1,233,400
Total Direct Capital	\$ -	Total Hydrotest	\$ 1,256,500
		Repairs	
		Direct Labor	\$ 15,000
		Direct Non Labor	\$ 135,000
		Total Repairs	\$ 150,000



**Southern California Gas Company
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Existing Segments

Category	Station		Station Stop	Criteria Miles	Diameter	Action	Decision	
	Start	Stop					Tree Box	Comments
Cat 4	0	133050		-	10.75			
Cat 2	133050	133116		-	10.75			
Cat 4	133116	135015		-	10.75			
Cat 2	135015	138716		-	10.75			
Cat 2	138716	139122		-	10.75			
Cat 2	139122	139866		-	10.75			
Cat 4	139866	142637		-	10.75			
Cat 1	142637	144398		-	10.75			
Cat 1	144398	144904		-	10.75			
Cat 1	158257	159150		-	10.75			
Cat 1	159150	163875		-	10.75			
Cat 4	163875	164278		-	10.75			
Cat 1	164278	201851		-	10.75			
Cat 4	201851	202146		-	10.75			
Cat 2	202146	225058		-	10.75			
Cat 4	225058	225099		-	10.75			
Cat 4	144904	158257		-	10.75			
Cat 4	225099	264524		0.6225	10.75	Hydrotest		4
Cat 4	264524	265253		0.1381	10.75	Hydrotest		4
Cat 4	269617	270314		0.8265	10.75	Hydrotest		4
Cat 1	265253	269617		0.1320	10.75	Hydrotest		4
Cat 4	270547	270562		0.0441	10.75	Hydrotest		4
Cat 1	270314	270547		0.0028	10.75	Hydrotest		4
Cat 4	270562	270880		0.0602	10.75	Hydrotest		4

If grade of pipe cannot be verified then segment action would change to Replace from hydrotest

SHEET: Sheet 1 of 1
 DATE: July 28, 2011
 SPEC Project Number: 5057

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



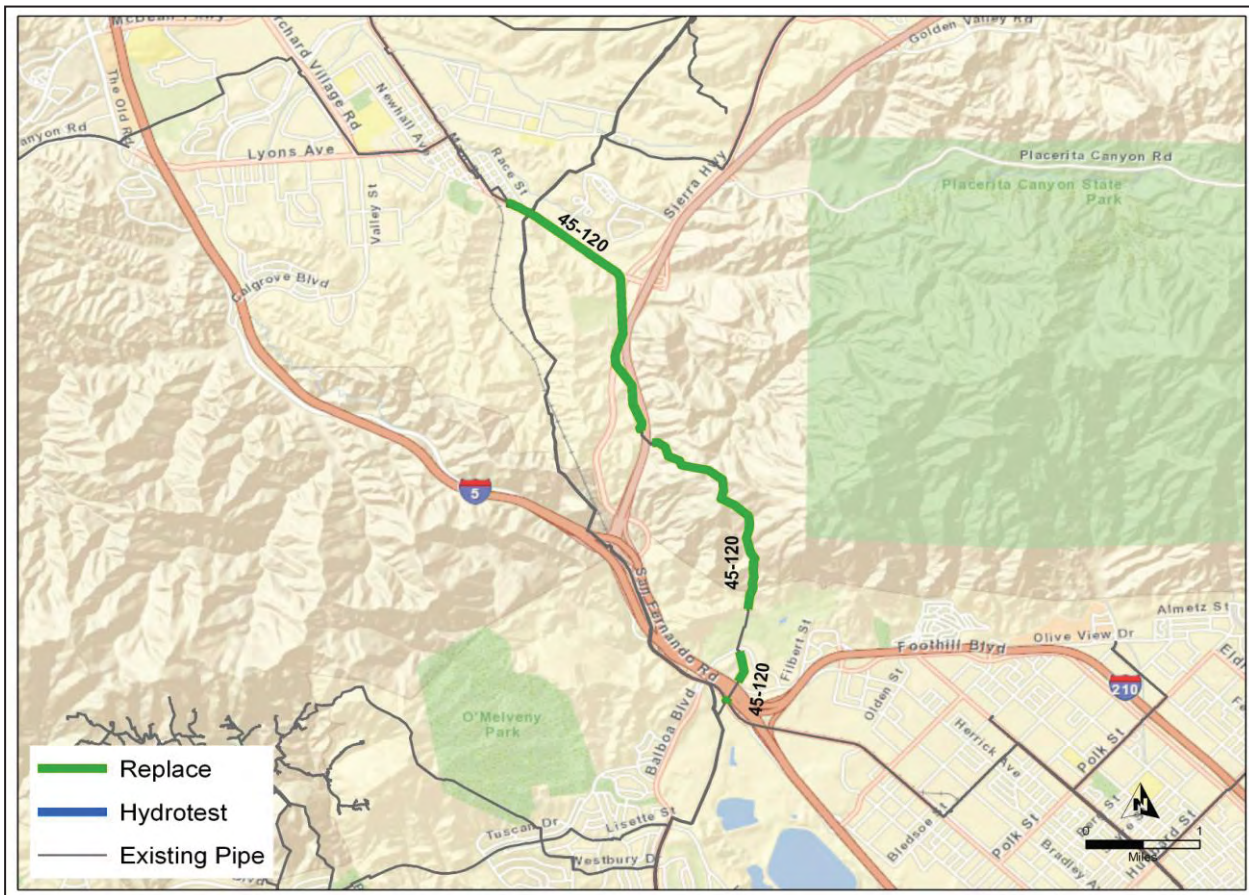
DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST	Comments
	NUMBER			UNIT COST	TOTAL	UNIT COST	TOTAL		
1 MATERIALS									
INPUT IN ALL BLUE CELLS									
Pipe 10.75 Actual OD (in)	5,488		bb/OD						
0.218 Wall Thickness (in)	1,829		bb/Segment						
53134 Length (FT)									
3 QTY									
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	10.1	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	110,243	SCF							
Temporary Pig Launcher/Receiver (one/ OD change)	1	LS							
Water Injection Pump & Filter (capacity 1200 gpm)	1	day(s)							
On-Site Vacuum Truck(s) (minimum one per/ test segment)	3	each							
Baker Tank(s) =X	4	each							
Total Baker Tank(s) Rental days (\$/day per tank) =>X*Z	80	day(s)							
Total Hydrotest Water (\$19/bbl)	5,488	bbl							
Water Disposal Vacuum Truck(s) =A	4	each							
Vacuum Truck Water Disposal loads (capacity 120 bbl) =B	46	loads							
Disposal Time =C*B/(A*10)	2	day(s)							
Total Vacuum Truck(s) Rental days (\$/day per truck) =D=C*A	8	day(s)							
Treated Water Disposal (\$55/bbl)	5,488	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	20	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	Dist	Category 4 Criteria	Accelerated	Total
Line Number	45-120	1.772	2.529	4.301
Diameter (in.)	12.75, 16, 22			

Cost Detail

Capital		O&M	
Direct Labor	\$ 328,900	Direct Labor	\$ -
Direct Non Labor	\$ 17,554,900	Direct Non Labor	\$ -
Total Direct Capital	\$ 17,883,800	Total Direct O&M	\$ -



**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 4	0	9	9	-	12.75	Replace	2	
Cat 4	9	55	55	-	16	Replace	2	
Cat 4	55	385	385	0.0625	22	Replace	2	
Cat 4	385	472	472	0.0165	22	Replace	2	
Cat 4	472	1115	1115	0.1218	22	Replace	2	
Cat 1	1115	1132	1132	0.0032	22	Replace	2	
Cat 4	1132	1275	1275	0.0271	22	Replace	2	
Cat 1	1275	1291	1291	0.0030	22	Replace	2	
Cat 4	1291	1650	1650	0.0680	22	Replace	2	
Cat 1	1650	1666	1666	0.0030	22	Replace	2	
Cat 4	1666	4695	4695	0.5737	22	Replace	2	
Cat 1	4695	4718	4718	0.0044	22	Replace	2	
Cat 4	4718	5005	5005	0.0544	22	Replace	2	
Cat 4	5005	5053	5053	0.0091	22	Replace	2	
Cat 4	5053	7990	7990	0.5563	22	Replace	2	
Cat 4	7990	8046	8046	0.0106	22	Replace	2	
Cat 4	8046	8606	8606	0.0028	22	Replace	2	
Cat 4	8606	8647	8647	-	22	Replace	2	
Cat 4	8647	11840	11840	-	22	Replace	2	
Cat 1	11840	12658	12658	-	22	Replace	2	
Cat 4	12658	14268	14268	-	22	Replace	2	
Cat 4	14268	16812	16812	-	22	Replace	2	
Cat 4	16812	21961	21961	-	22	Replace	2	
Cat 2	21961	22002	22002	-	22	Replace	2	
Cat 4	22002	22008	22008	-	22	Replace	2	
Cat 2	22008	23824	23824	0.3439	24	Replace	2	
Cat 4	23824	24244	24244	0.0795	22	Replace	2	
Cat 1	24244	24285	24285	0.0078	22	Replace	2	
Cat 4	24285	25158	25158	0.1653	22	Replace	2	

Cat 1	25158	25928	0.0070	22
Cat 4	25928	26153	0.0246	22
			Replace	2

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
0	9	12.75	0.375	X-52	Replace piping inside Newhall Station
9	55	16	0.312	X-65	Replace piping inside Newhall Station
55	385	24	0.375	X-65	upgrade pipe size since 22-inch pipe and ftgs comes at a premium
385	472	24	0.375	X-65	upgrade pipe size since 22-inch pipe and ftgs comes at a premium
472	1115	24	0.375	X-65	upgrade pipe size since 22-inch pipe and ftgs comes at a premium
1115	1132	24	0.375	X-65	Picking up Cat. 1 criteria miles since it is between Cat. 4 criteria miles
1132	1275	24	0.375	X-65	upgrade pipe size since 22-inch pipe and ftgs comes at a premium
1275	1291	24	0.375	X-65	Picking up Cat. 1 criteria miles since it is between Cat. 4 criteria miles
1291	1650	24	0.375	X-65	upgrade pipe size since 22-inch pipe and ftgs comes at a premium
1650	1666	24	0.375	X-65	Picking up Cat. 1 criteria miles since it is between Cat. 4 criteria miles
1666	4695	24	0.375	X-65	upgrade pipe size since 22-inch pipe and ftgs comes at a premium
4695	4718	24	0.375	X-65	Picking up Cat. 1 criteria miles since it is between Cat. 4 criteria miles
4718	5005	24	0.375	X-65	upgrade pipe size since 22-inch pipe and ftgs comes at a premium
5005	5053	24	0.375	X-65	upgrade pipe size since 22-inch pipe and ftgs comes at a premium
5053	7990	24	0.375	X-65	upgrade pipe size since 22-inch pipe and ftgs comes at a premium
7990	8046	24	0.375	X-65	upgrade pipe size since 22-inch pipe and ftgs comes at a premium
8046	8606	24	0.375	X-65	upgrade pipe size since 22-inch pipe and ftgs comes at a premium
8606	8647	24	0.375	X-65	Picking up zero Cat. 4 mileage because it is only 41 feet.
8647	11840	24	0.375	X-65	Would only replace to remove Cat. 4 pipeline.
12658	14268	24	0.375	X-65	Would only replace to remove Cat. 4 pipeline.
14268	16812	24	0.375	X-65	Would only replace to remove Cat. 4 pipeline.
16812	21961	24	0.375	X-65	Would only replace to remove Cat. 4 pipeline.
22002	22008	24	0.375	X-65	Would only replace to remove Cat. 4 pipeline.
23824	24244	24	0.375	X-65	upgrade pipe size since 22-inch pipe and ftgs comes at a premium
24244	24285	24	0.375	X-65	Picking up Cat. 1 criteria miles since it is between Cat. 4 criteria miles
24285	25158	24	0.375	X-65	upgrade pipe size since 22-inch pipe and ftgs comes at a premium
25928	26153	24	0.375	X-65	upgrade pipe size since 22-inch pipe and ftgs comes at a premium

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME:		SHEET		
Line 45-120			SPEC SERVICES		Sheet 1 of 1		
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:		SPEC Project Number		
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 6, 2011		5057		
STATUS OF DESIGN		SHEET					
Conceptual		5057					
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST	TOTAL COST
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL
INPUT IN ALL GREEN CELLS							
1 MATERIALS							
Pipe 24 inch, .375 WT X-65		22653	Feet	\$ 92	\$ 2,077,507		\$ 2,077,507
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		94	Each	\$ 7,229	\$ 679,558		\$ 679,558
Pressure Rating N/A lb Block Valve w/Electric Actuator (one per 4 miles)		1	Each	\$ -	\$ -		\$ -
FBE Coating (5/ft)				\$ 6.58	\$ 149,057		\$ 149,057
Miscellaneous Materials (5%)		1	Lot				\$ 137,853
Freight / Tax		12.5	%				\$ 380,497
Pipe 16 inch, .312 WT X-65		46	Feet	\$ 57	\$ 2,639		\$ 2,639
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ 3,339	\$ 13,355		\$ 13,355
Pressure Rating N/A lb Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ -	\$ -		\$ -
FBE Coating (5/ft)				\$ 4.14	\$ 190		\$ 190
Miscellaneous Materials (5%)		1	Lot				\$ 800
Freight / Tax		12.5	%				\$ 2,123
Pipe 12 inch, STD. WT X-52		9	Feet	\$ 44	\$ 399		\$ 399
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	\$ 29		\$ 29
Miscellaneous Materials (5%)		1	Lot				\$ 387
Freight / Tax		12.5	%				\$ 1,018
Casing N/A		0	Feet	\$ -	\$ -		\$ -
Miscellaneous Materials (5%)		1	Lot				\$ -
Freight / Tax		12.5	%				\$ -
Total length		4.3	Miles				
Total Material Cost							\$ 3,452,800
2 CONSTRUCTION		(See Appendix for construction type definitions)					
24 inch pipe							
Pipe Install - Type 1		10953	Feet			\$ 225	\$ 2,464,425
Pipe Install - Type 2		2000	Feet			\$ 360	\$ 720,000
Pipe Install - Type 3		6500	Feet			\$ 540	\$ 4,590,000
Pipe Install - Type 4		0	Feet			\$ 850	\$ -
Pipe Install - Type 5		1200	Feet			\$ 800	\$ 960,000
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		46	Feet			\$ 320	\$ 14,720
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		9	Feet			\$ 280	\$ 2,520
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		5	Each			\$ 34,996	\$ 174,980
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)		284952	SCF	\$ 0.19	\$ 54,141		\$ 54,141
Purging Labor		1	LS			\$ 25,000	\$ 25,000
95% Abandonment of Existing Pipeline (\$50/CY)		2505	CY			\$ 95	\$ 237,975
5% Removal of Existing Pipeline (75% of Construction Labor Cost)		75	%				\$ 328,187
Mobilization / Demobilization		3	Each			\$ 30,000	\$ 90,000
Contaminated Soil		0	CY			\$ -	\$ -
Asbestos Abatement		0	Feet			\$ -	\$ -
Radiographic Inspection		53	Days	\$ 150	\$ 7,950	\$ 600	\$ 31,800
Construction period		61	days				
Total Construction Cost							\$ 9,701,700
3 SCG LABOR / INSPECTION		Projects < \$1 million - company labor is 10%					
		10	%			\$ -	\$ -
		5	%			\$ -	\$ -
		2.5	%			\$ 328,863	\$ 328,863
Total SCG Labor / Inspection Cost							\$ 328,900
4 DESIGN / ENG. / CONST / ENVIRON.		Planning / Design / Eng / Coord / Procurement					
		10	%			\$ 1,315,450	\$ 1,315,450
		53	Days	\$ 100	\$ 5,300	\$ 1,400	\$ 74,200
		0	LS			\$ -	\$ -
		0	LS			\$ -	\$ -
		0	LS			\$ -	\$ -
		0	LS			\$ -	\$ -
		0	LS			\$ -	\$ -
		1	LS			\$ 24,708	\$ 24,708
Total Design / Engineering / Construction Cost							\$ 1,419,700
5 CONTINGENCY		Projects < \$2 million - Contingency is 30%					
		30	%			\$ -	\$ -
		20	%			\$ 2,980,620	\$ 2,980,620
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 17,883,800

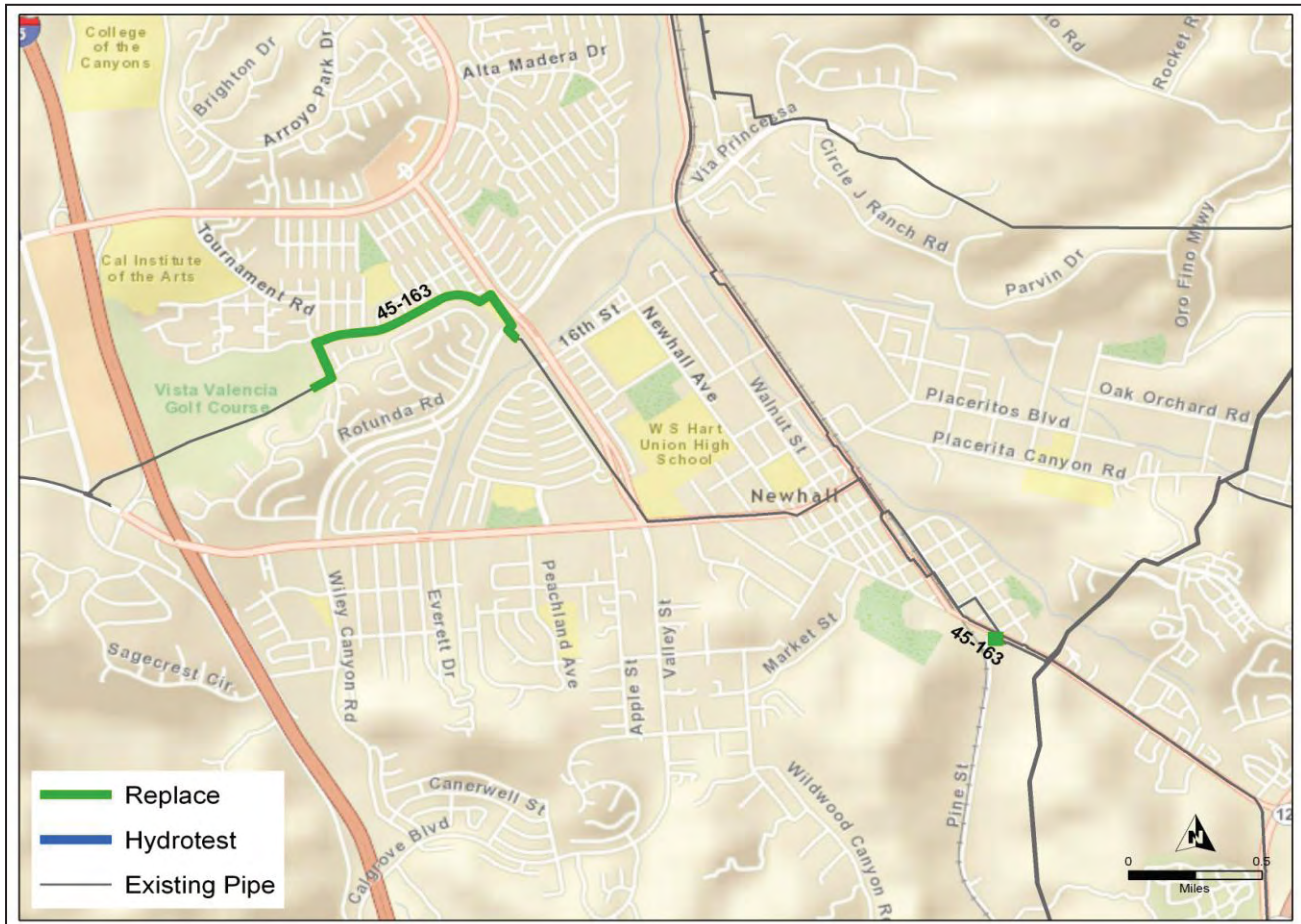
Comments
Replaced segments pipeOD per Remediation Plan
HWY HHD Xing (2)

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

Company	SCG	Replacement Mileage		
Plant Category	Dist	Category 4		
		Criteria	Accelerated	Total
Line Number	45-163	0.787	0.122	0.909
Diameter (in.)	8.625, 12.75, 16			

Cost Detail

Capital		O&M	
Direct Labor	\$ 129,700	Direct Labor	\$ -
Direct Non Labor	\$ 3,475,900	Direct Non Labor	\$ -
Total Direct Capital	\$ 3,605,600	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 Tree Box	Comments
	Start	Stop					
Cat 1	0	113	0.0214	12.75			
Cat 4	113	139	0.0049	8.625	Replace	2	
Cat 1	139	4560	0.8373	16			
Cat 2	4560	4580	0.0038	16			
Cat 1	4580	6757	0.4123	16			
Cat 1	6757	7151	0.0746	16			
Cat 1	7151	8071	0.1742	16			
Cat 1	8071	8101	0.0057	16			
Cat 1	8101	11381	0.6212	16			
Cat 2	11381	11796	0.0786	16			
Cat 4	11796	12171	0.0710	16	Replace	2	
Cat 1	12171	12816	0.1222	16	Replace		
Cat 4	12816	16572	0.7114	16	Replace	2	
Cat 1	16572	20703	0.7703	16			
Cat 1	20703	21116	0.0782	16			
Cat 1	21116	26091	0.9422	16			
Cat 2	26091	26461	0.0701	16			
Cat 1	26461	26481	0.0038	16			
Cat 2	26481	28846	0.4479	16			
Cat 2	28846	33649	0.0250	16			
Cat 1	33649	34019	-	16			
Cat 4	34019	45826	-	16			

New Segments

Station Start	Station Stop	Diameter	Wall Thickness	Grade	Comments
113	139	16	0.312	X-65	This section is in a vault. If 16-inch is too large, may need to replace vault or keep same size Replace the Cat. 1 segment between two Cat. 4 segments to reduce tie-in points
11796	12171	16	0.312	X-65	
12171	12816	16	0.312	X-65	
12816	16572	16	0.312	X-65	

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

Company SCG
Plant Category Dist

Summary of remaining pipelines grouped by segment action (replacement, hydrotest, abandon)

Line Number	Replacement Mileage			Capital Cost Detail		
	Category 4 Criteria	Accelerated	Total	Direct Labor	Direct Non Labor	Total Direct Capital
30-09-A	0.001	-	0.001	\$ -	\$ -	\$ -
30-6200	0.020	0.001	0.021	\$ 14,800	\$ 221,800	\$ 236,600
30-6209	0.033	-	0.033	\$ -	\$ -	\$ -
30-6292	0.010	-	0.010	\$ 11,200	\$ 169,700	\$ 180,900
30-6543	0.076	-	0.076	\$ -	\$ -	\$ -
30-6799	0.017	-	0.017	\$ -	\$ -	\$ -
30-6799BR1	0.003	-	0.003	\$ -	\$ -	\$ -
32-90	0.035	-	0.035	\$ -	\$ -	\$ -
35-20-N	0.010	-	0.010	\$ 10,900	\$ 164,500	\$ 175,400
35-40	0.145	0.088	0.233	\$ 47,500	\$ 705,000	\$ 752,500
35-6405	0.113	0.017	0.130	\$ 38,900	\$ 579,000	\$ 617,900
35-6405-BR1	0.005	-	0.005	\$ 9,500	\$ 145,400	\$ 154,900
35-6416	0.059	0.074	0.133	\$ 42,100	\$ 624,800	\$ 666,900
35-6520	0.001	0.025	0.026	\$ 14,400	\$ 216,100	\$ 230,500
36-1001	0.120	2.133	2.254	\$ -	\$ -	\$ -
36-1002	0.071	0.138	0.209	\$ 45,900	\$ 681,500	\$ 727,400
36-37	0.022	-	0.022	\$ 29,400	\$ 434,700	\$ 464,100
36-7-04	0.002	-	0.002	\$ -	\$ -	\$ -
36-8-01-C	0.164	-	0.164	\$ 46,800	\$ 693,600	\$ 740,400
36-9-21BR1	0.003	0.281	0.284	\$ -	\$ -	\$ -
37-15	0.007	-	0.007	\$ -	\$ -	\$ -
37-18-J	0.012	-	0.012	\$ 14,200	\$ 213,600	\$ 227,800
37-6180	0.020	-	0.020	\$ 10,600	\$ 161,000	\$ 171,600
38-514	0.174	4.098	4.273	\$ 402,300	\$ 10,817,600	\$ 11,219,900
41-101	0.010	-	0.010	\$ 9,700	\$ 147,900	\$ 157,600
41-116	0.003	0.003	0.006	\$ 10,800	\$ 163,200	\$ 174,000
41-116-BP1	0.002	-	0.002	\$ 9,400	\$ 142,600	\$ 152,000
41-117	0.001	0.003	0.004	\$ 8,900	\$ 135,700	\$ 144,600
41-141	0.006	-	0.006	\$ 8,800	\$ 134,600	\$ 143,400
41-17-A2	0.003	-	0.003	\$ 8,800	\$ 135,000	\$ 143,800
41-17F	0.033	-	0.033	\$ 12,600	\$ 189,600	\$ 202,200
41-181	0.002	-	0.002	\$ 9,300	\$ 141,200	\$ 150,500
41-19	0.011	-	0.011	\$ 18,200	\$ 271,700	\$ 289,900
41-198	0.008	0.005	0.014	\$ -	\$ -	\$ -
41-199	0.007	0.001	0.008	\$ 9,500	\$ 144,700	\$ 154,200
41-201	0.001	0.007	0.008	\$ -	\$ -	\$ -
41-55	0.007	-	0.007	\$ 9,500	\$ 144,600	\$ 154,100
41-6001-2	0.005	-	0.005	\$ 9,700	\$ 147,400	\$ 157,100
41-6045	0.009	-	0.009	\$ 9,600	\$ 146,300	\$ 155,900
41-80	0.014	1.822	1.836	\$ 139,500	\$ 3,763,500	\$ 3,903,000


Line Number	Replacement Mileage			Capital Cost Detail		
	Category 4 Criteria	Accelerated	Total	Direct Labor	Direct Non Labor	Total Direct Capital
42-46-F	0.154	1.649	1.803	\$ 102,100	\$ 2,747,500	\$ 2,849,600
42-57	0.010	-	0.010	\$ -	\$ -	\$ -
42-66-1	0.036	-	0.036	\$ 18,100	\$ 269,800	\$ 287,900
42-66-2	0.026	0.002	0.028	\$ 14,500	\$ 218,500	\$ 233,000
43-1106	0.145	-	0.145	\$ 53,000	\$ 782,300	\$ 835,300
44-654	0.010	-	0.010	\$ 10,100	\$ 153,900	\$ 164,000
44-687	0.055	0.170	0.225	\$ 48,000	\$ 711,900	\$ 759,900
45-120X01	0.002	0.006	0.008	\$ 11,600	\$ 175,600	\$ 187,200

Line Number	Hydrotest Mileage			Capital Cost Detail		
	Category 4 Criteria	Accelerated	Total	Direct Labor	Direct Non Labor	Total Direct Capital
36-9-06 F	-	0.308	0.308	\$ 7,700	\$ 184,700	\$ 192,400
41-25	0.1214	-	0.1214	\$ 7,700	\$ 191,100	\$ 198,800
41-90	0.0004	-	0.0004	\$ 7,700	\$ 188,000	\$ 195,700

Line Number	Abandonment Mileage		
	Category 4 Criteria	Accelerated	Total
30-02U	0.023	0.034	0.057
35-39	0.030	-	0.030
38-351	3.33	0.000	3.330
41-04-ST1	0.001	-	0.001
41-17-FST1	0.001	-	0.001
41-35-1-KST2	0.000	-	0.000
41-83	0.001	-	0.001
41-128	0.001	-	0.001
42-12	0.009	0.154	0.163

ACTIVITY AND LOCATION: Line 30-6200	SPECIFICATION NO.	A/E FIRM NAME SPEC SERVICES	SHEET Sheet 1 of 1
PROJECT TITLE AND CLIENT: SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE	ESTIMATED BY SPEC	DATE: August 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								
12 inch Pipe #12	82	Feet	\$ 44	\$ 3,631			\$ 3,631	
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 1,833	\$ 7,333			\$ 7,333	
Pressure Rating #2#	0	Each	\$ 36,010	\$ -			\$ -	
FBE Coating (\$/ft)			\$ 3.26	\$ 267			\$ 267	
Miscellaneous Materials (5%)	1	Lot					\$ 548	
Freight / Tax	12.5	%					\$ 1,472	
10 inch Pipe #10	14	Feet	\$ 36	\$ 507			\$ 507	
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 1,408	\$ 5,632			\$ 5,632	
Pressure Rating #2#	0	Each	\$ 28,405	\$ -			\$ -	
FBE Coating (\$/ft)			\$ 2.86	\$ 40			\$ 40	
Miscellaneous Materials (5%)	1	Lot					\$ 307	
Freight / Tax	12.5	%					\$ 811	
8 inch Pipe #8	0	Feet	\$ -	\$ -			\$ -	
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating #2#	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
6 inch Casing #6	0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
Total length	0.0	Miles						
Total Material Cost							\$ 20,600	
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	82	Feet			\$ 450	\$ 36,900	\$ 36,900	
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	\$ -	\$ -	
10 inch pipe								
Pipe Install - Type 1	0	Feet			\$ 175	\$ -	\$ -	
Pipe Install - Type 2	0	Feet			\$ 280	\$ -	\$ -	
Pipe Install - Type 3	14	Feet			\$ 450	\$ 6,300	\$ 6,300	
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			\$ -	\$ -	\$ -	
Tie-ins Crew Rates	1	Each			\$ 25,000	\$ 25,000	\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	292	SCF	\$ 0.19	\$ 55			\$ 55	
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	%					\$ 1,620	
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							\$ 126,700	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%				\$ 14,730	\$ 14,730	
\$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							\$ 14,800	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%				\$ 14,730	\$ 14,730	
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				\$ 2,096	\$ 2,096	
Total Design / Engineering / Construction Cost							\$ 19,900	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%				\$ 54,600	\$ 54,600	
Projects > \$2 million - Contingency is 20%	20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 236,600	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	THE FIRM NAME	SHEET						
Line 30-6292				Sheet 1 of 1						
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:	SPEC Project Number						
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	August 12, 2011	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	n/a	inch, STD, WT X-52	52	Feet	\$ 26	\$ 1,340			\$ 1,340	
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 824	\$ 3,296			\$ 3,296	
Pressure Rating	n/a	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 23,384	\$ -			\$ -	
		FBE Coating (\$/ft)			\$ 2,29	\$ 119			\$ 119	
		Miscellaneous Materials (5%)	1	Lot					\$ 232	
		Freight / Tax	12.5	%					\$ 623	
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 (\$/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 (\$/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									\$ 6,700	
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	52	Feet		\$ 450	\$ 23,400		\$ 23,400	
		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 6	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)	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	%					\$ 878	
		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									\$ 106,900	
3 SCG LABOR / INSPECTION										
		Projects < \$1 million - company labor is 10%	10	%			\$ 11,160	\$ 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	\$ 11,160	
		Construction Stakes, 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			\$ 2,052	\$ 2,052	\$ 2,052	
Total Design / Engineering / Construction Cost									\$ 16,300	
5 CONTINGENCY										
		Projects < \$2 million - Contingency is 30%	30	%			\$ 41,730	\$ 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.	EST. FIRM NAME	SHEET					
Line 35-20-N			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:	SPEC. PROJECT NUMBER					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 5, 2011	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 6 inch, STD. WT X-52		18	Feet	\$ 17	\$ 313			\$ 313	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ 580	\$ 2,320			\$ 2,320	
Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ 21,999	\$ -			\$ -	
FBE Coating (\$/ft)				\$ 1.73	\$ 31			\$ 31	
Miscellaneous Materials (5%)		1	Lot					\$ 132	
Freight / Tax		12.5	%					\$ 349	
Pipe 4 inch, STD. WT X-52		33	Feet	\$ 11	\$ 350			\$ 350	
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	\$ 15,357	\$ -			\$ -	Used 4.5 pipe instead of 3.5
FBE Coating (\$/ft)				\$ 1.42	\$ 47			\$ 47	
Miscellaneous Materials (5%)		1	Lot					\$ 88	
Freight / Tax		12.5	%					\$ 237	
Pipe n/a		0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ -	\$ -			\$ -	
Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/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								\$ 6,300	
2 CONSTRUCTION (See Appendix for construction type definitions)									
6 Inch pipe									
Pipe Install - Type 1		0	Feet		\$ 150	\$ -	\$ -	\$ -	
Pipe Install - Type 2		0	Feet		\$ 240	\$ -	\$ -	\$ -	
Pipe Install - Type 3		19	Feet		\$ 400	\$ 7,200		\$ 7,200	
Pipe Install - Type 4		0	Feet		\$ 450	\$ -	\$ -	\$ -	
Pipe Install - Type 5		0	Feet		\$ 300	\$ -	\$ -	\$ -	
Pipe Install - Type 6		0	Feet		\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7		0	Feet		\$ 520	\$ -	\$ -	\$ -	
4 Inch pipe									
Pipe Install - Type 1		0	Feet		\$ 150	\$ -	\$ -	\$ -	
Pipe Install - Type 2		0	Feet		\$ 240	\$ -	\$ -	\$ -	
Pipe Install - Type 3		33	Feet		\$ 400	\$ 13,200		\$ 13,200	
Pipe Install - Type 4		0	Feet		\$ 450	\$ -	\$ -	\$ -	
Pipe Install - Type 5		0	Feet		\$ 300	\$ -	\$ -	\$ -	
Pipe Install - Type 6		0	Feet		\$ -	\$ -	\$ -	\$ -	
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		\$ -	\$ -	\$ -	\$ -	
Tie-ins Crew Rates		1	Each		\$ 25,000	\$ 25,000		\$ 25,000	
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	%					\$ 765	
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								\$ 102,800	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%		10	%				\$ 10,810	\$ 10,810	
\$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								\$ 10,900	
4 DESIGN / ENG. / CONST / ENVIRON.									
Planning / Design / Eng / Coord / Procurement		10	%				\$ 10,810	\$ 10,810	
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	%				\$ 40,470	\$ 40,470	
Projects > \$2 million - Contingency is 20%		20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 176,400	

ACTIVITY AND LOCATION: Line 35-40	SPECIFICATION NO.	SEE OTHER SHEETS SPC SERVICES	SHEET Sheet 1 of 1
PROJECT TITLE AND CLIENT: SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE	ESTIMATED BY: SPEC	DATE: June 30, 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 n/a	inch, STD, WT X-52	768	Feet	\$ 26	\$ 19,791			\$ 19,791
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	7	Each	\$ 824	\$ 5,768			\$ 5,768
Pressure Rating n/a	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 24,779	\$ -			\$ -
	FBE Coating (\$/ft)			\$ 2.29	\$ 1,759			\$ 1,759
	Miscellaneous Materials (5%)	1	Lot					\$ 1,278
	Freight / Tax	12.5	%					\$ 3,575
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 (\$/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 (\$/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								\$ 32,200
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	768	Feet		\$ 450	\$ 345,600		\$ 345,600
	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 6	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)	1076	SCF	\$ 0.19	\$ 204			\$ 204
	Purging Labor	1	LS		\$ 25,000	\$ 25,000		\$ 25,000
	95% Abandonment of Existing Pipeline (\$50/CY)	10	CY		\$ 95	\$ 950		\$ 950
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 12,960
	Mobilization / Demobilization	1	Each		\$ 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								\$ 442,800
3 SCG LABOR / INSPECTION								
	Projects < \$1 million - company labor is 10%	10	%			\$ 47,500		\$ 47,500
	\$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								\$ 47,500
4 DESIGN / ENG. / CONST / ENVIRON.								
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 47,500		\$ 47,500
	Construction Stakes, 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			\$ 2,768		\$ 2,768
Total Design / Engineering / Construction Cost								\$ 66,300
5 CONTINGENCY								
	Projects < \$2 million - Contingency is 30%	30	%			\$ 173,640		\$ 173,640
	Projects > \$2 million - Contingency is 20%	20	%			\$ -		\$ -
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 752,500

ACTIVITY AND LOCATION:		SPECIFICATION NO.	THE FIRM NAME	SHEET					
Line 35-6405				Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:	SPEC Project Number					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 5, 2011	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									
578	Feet			\$ 36	\$ 20,918			\$ 20,918	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
6	Each			\$ 1,408	\$ 8,448			\$ 8,448	
Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)									
0	Each			\$ 28,405	\$ -			\$ -	
FBE Coating (\$/ft)									
				\$ 2,86	\$ 1,653			\$ 1,653	
Miscellaneous Materials (5%)									
1	Lot							\$ 1,468	
Freight / Tax									
12.5	%							\$ 4,061	
6 inch, STD. WT X-52									
1	Feet			\$ 17	\$ 17			\$ 17	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
4	Each			\$ 580	\$ 2,320			\$ 2,320	
Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)									
0	Each			\$ 21,990	\$ -			\$ -	
FBE Coating (\$/ft)									
				\$ 1,73	\$ -2			\$ -2	
Miscellaneous Materials (5%)									
1	Lot							\$ 117	
Freight / Tax									
12.5	%							\$ 307	
n/a									
0	Feet			\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)									
4	Each			\$ -	\$ -			\$ -	
Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)									
0	Each			\$ -	\$ -			\$ -	
FBE Coating (\$/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								\$ 39,400	
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									
478	Feet				\$ 450	\$ 215,100		\$ 215,100	
Pipe Install - Type 4									
0	Feet				\$ 600	\$ -	\$ -	\$ -	
Pipe Install - Type 5									
100	Feet				\$ 400	\$ 40,000		\$ 40,000	
Pipe Install - Type 6									
0	Feet				\$ -	\$ -	\$ -	\$ -	
Pipe Install - Type 7									
0	Feet				\$ 585	\$ -	\$ -	\$ -	
6 inch pipe									
Pipe Install - Type 1									
0	Feet				\$ 150	\$ -	\$ -	\$ -	
Pipe Install - Type 2									
0	Feet				\$ 240	\$ -	\$ -	\$ -	
Pipe Install - Type 3									
1	Feet				\$ 400	\$ 400		\$ 400	
Pipe Install - Type 4									
0	Feet				\$ 450	\$ -	\$ -	\$ -	
Pipe Install - Type 5									
0	Feet				\$ 300	\$ -	\$ -	\$ -	
Pipe Install - Type 6									
0	Feet				\$ -	\$ -	\$ -	\$ -	
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				\$ -	\$ -	\$ -	\$ -	
Tie-ins Crew Rates									
1	Each				\$ 25,000	\$ 25,000		\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)									
1264	SCF			\$ 0.19	\$ 240			\$ 240	
Purging Labor									
1	LS				\$ 25,000	\$ 25,000		\$ 25,000	
95% Abandonment of Existing Pipeline (\$50/CY)									
12	CY				\$ 95	\$ 1,140		\$ 1,140	
5% Removal of Existing Pipeline (75% of Construction Labor Cost)									
75	%							\$ 9,581	
Mobilization / Demobilization									
1	Each				\$ 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								\$ 349,600	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%									
10	%					\$ 38,890	\$ 38,890	\$ 38,890	
\$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								\$ 38,900	
4 DESIGN / ENG. / CONST. / ENVIRON.									
Planning / Design / Eng / Coord / Procurement									
10	%					\$ 38,890	\$ 38,890	\$ 38,890	
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					\$ 2,579	\$ 2,579	\$ 2,579	
Total Design / Engineering / Construction Cost								\$ 47,600	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%									
30	%					\$ 142,590	\$ 142,590	\$ 142,590	
Projects > \$2 million - Contingency is 20%									
20	%					\$ -	\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 617,900	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	THE FIRM NAME	SHEET					
Line 36-1002			SPC SERVICES	Sheet 1 of 1					
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:	SPEC Project Number					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	August 11, 2011	5057					
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST	Comments
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL	
1 MATERIALS									
INPUT IN ALL GREEN CELLS									
1	MATERIALS								
	Pipe	10	inch, STD, WT X-52	870	Feet	\$ 36	\$ 31,485		\$ 31,485
			Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	7	Each	\$ 1,408	\$ 9,856		\$ 9,856
	Pressure Rating	150	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 28,405	\$ -		\$ -
			FBE Coating (\$/ft)			\$ 2,86	\$ 2,488		\$ 2,488
			Miscellaneous Materials (5%)	1	Lot				\$ 2,067
			Freight / Tax	12.5	%				\$ 5,737
	Pipe	8	inch, STD, WT X-52	120	Feet	\$ 26	\$ 3,092		\$ 3,092
			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	\$ -	\$ -		\$ -
			FBE Coating (\$/ft)			\$ 2,29	\$ 275		\$ 275
			Miscellaneous Materials (5%)	1	Lot				\$ 319
			Freight / Tax	12.5	%				\$ 873
	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 (\$/ft)			\$ -	\$ -		\$ -
			Miscellaneous Materials (5%)	1	Lot				\$ -
			Freight / Tax	12.5	%				\$ -
	Casing	10	inch, STD, WT X-52	120	Feet	\$ 36	\$ 4,343		\$ 4,343
			Miscellaneous Materials (5%)	1	Lot				\$ 217,14
			Freight / Tax	12.5	%				\$ 570
	Total length	0.2	Miles						
	Total Material Cost								\$ 64,700
2 CONSTRUCTION									
(See Appendix for construction type definitions)									
	10 inch pipe								
	Pipe Install - Type 1	0	Feet			\$ 175	\$ -	\$ -	\$ -
	Pipe Install - Type 2	870	Feet			\$ 280	\$ 243,600	\$ -	\$ 243,600
	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	\$ -	\$ -	\$ -
	8 inch pipe								
	Pipe Install - Type 1	0	Feet			\$ 175	\$ -	\$ -	\$ -
	Pipe Install - Type 2	0	Feet			\$ 280	\$ -	\$ -	\$ -
	Pipe Install - Type 3	120	Feet			\$ 450	\$ 54,000	\$ -	\$ 54,000
	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			\$ -	\$ -	\$ -	\$ -
	Tie-ins Crew Rates	1	Each			\$ 25,000	\$ 25,000	\$ -	\$ 25,000
	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	2068	SCF	\$ 0.19	\$ 393				\$ 393
	Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ -	\$ 25,000
	95% Abandonment of Existing Pipeline (\$50/CY)	19	CY			\$ 95	\$ 1,805	\$ -	\$ 1,805
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%						\$ 11,160
	Mobilization / Demobilization	1	Each			\$ 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								\$ 394,000
3 SCG LABOR / INSPECTION									
	Projects < \$1 million - company labor is 10%	10	%				\$ 45,870	\$ -	\$ 45,870
	\$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								\$ 45,900
4 DESIGN / ENG. / CONST / ENVIRON.									
	Planning / Design / Eng / Coord / Procurement	10	%				\$ 45,870	\$ -	\$ 45,870
	Construction Stakes, 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			\$ -	\$ 2,990	\$ -	\$ 2,990
	Total Design / Engineering / Construction Cost								\$ 64,900
5 CONTINGENCY									
	Projects < \$2 million - Contingency is 30%	30	%				\$ 167,850	\$ -	\$ 167,850
	Projects > \$2 million - Contingency is 20%	20	%				\$ -	\$ -	\$ -
	TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 727,400

ACTIVITY AND LOCATION: Line 36-37 Revised	SPECIFICATION NO.	THE 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 29, 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 16 inch, 312 WT X-65	116	Feet	\$ 57	\$ 6,654			\$ 6,654	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 3,339	\$ 13,355			\$ 13,355	
Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 94,320	\$ -			\$ -	
FBE Coating (\$/ft)			\$ 4.14	\$ 480			\$ 480	
Miscellaneous Materials (5%)	1	Lot					\$ 1,000	
Freight / Tax	12.5	%					\$ 2,686	
Pipe n/a	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a 150 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/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 150 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/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							\$ 24,200	
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	10	Feet			\$ 500	\$ 5,000	\$ 5,000	
Pipe Install - Type 4	0	Feet			\$ 750	\$ -	\$ -	
Pipe Install - Type 5	0	Feet			\$ 600	\$ -	\$ -	
Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -	
Pipe Install - Type 7	106	Feet			\$ 650	\$ 68,900	\$ 68,900	Night work
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 6	0	Feet			\$ -	\$ -	\$ -	
Pipe Install - Type 7	0	Feet			\$ -	\$ -	\$ -	
Tie-ins Crew Rates	3	Each			\$ 35,000	\$ 105,000	\$ 105,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	648	SCF	\$ 0.19	\$ 123			\$ 123	
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	%					\$ 2,771	
Mobilization / Demobilization	2	Each			\$ 30,000	\$ 60,000	\$ 60,000	
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							\$ 266,900	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%				\$ 29,310	\$ 29,310	
\$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							\$ 29,400	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%				\$ 29,310	\$ 29,310	
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				\$ 2,116	\$ 2,116	
Total Design / Engineering / Construction Cost							\$ 34,600	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%				\$ 107,100	\$ 107,100	
Projects > \$2 million - Contingency is 20%	20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 464,100	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	THE FIRM NAME	SHEET				
Line 41-101			SPEC SERVICES	Sheet 1 of 1				
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 6, 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	4	inch, STD. WT X-52	51	Feet	\$ 11	\$ 542		\$ 542
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 353	\$ 1,413		\$ 1,413
Pressure Rating	n/a	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -		\$ -
		FBE Coating (\$/ft)			\$ 1.42	\$ 72		\$ 72
		Miscellaneous Materials (5%)	1	Lot				\$ 98
		Freight / Tax	12.5	%				\$ 266
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 (\$/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 (\$/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								\$ 2,400
2 CONSTRUCTION (See Appendix for construction type definitions)								
4 Inch pipe								
		Pipe Install - Type 1	0	Feet		\$ 150	\$ -	\$ -
		Pipe Install - Type 2	51	Feet		\$ 240	\$ 12,240	\$ 12,240
		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	0	Feet		\$ -	\$ -	\$ -
		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 6	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)	20	SCF	\$ 0.19	\$ 4		\$ 4
		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	%				\$ 459
		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
		Construction period	10	days				
Total Construction Cost								\$ 94,300
3 SCG LABOR / INSPECTION								
		Projects < \$1 million - company labor is 10%	10	%			\$ 9,670	\$ 9,670
		\$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								\$ 9,700
4 DESIGN / ENG. / CONST / ENVIRON.								
		Planning / Design / Eng / Coord / Procurement	10	%			\$ 9,670	\$ 9,670
		Construction Stakes, AS-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800
		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								\$ 14,800
5 CONTINGENCY								
		Projects < \$2 million - Contingency is 30%	30	%			\$ 36,360	\$ 36,360
		Projects > \$2 million - Contingency is 20%	20	%			\$ -	\$ -
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 157,600

ACTIVITY AND LOCATION: Line 41-116BP1	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 6, 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								
6 inch pipe								
Inch, STD. WT X-52	4	Feet	\$ 17	\$ 69			\$ 69	
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 580	\$ 2,320			\$ 2,320	
Pressure Rating #2								
lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 21,999	\$ -			\$ -	
FBE Coating (\$/ft)			\$ 1.73	\$ 7			\$ 7	
Miscellaneous Materials (5%)	1	Lot					\$ 119	
Freight / Tax	12.5	%					\$ 314	
4 inch pipe								
Inch, STD. WT X-52	7	Feet	\$ 11	\$ 74			\$ 74	
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 353	\$ 1,413			\$ 1,413	
Pressure Rating #3								
lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 15,357	\$ -			\$ -	
FBE Coating (\$/ft)			\$ 1.42	\$ 10			\$ 10	
Miscellaneous Materials (5%)	1	Lot					\$ 74	
Freight / Tax	12.5	%					\$ 197	
n/a								
Inch, STD. WT X-52	0	Feet	\$ -	\$ -			\$ -	
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating #3								
lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
Casing #1/2								
Inch, STD. WT X-52	0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
Total length	0.0	Miles						
Total Material Cost							\$ 4,600	
2 CONSTRUCTION								
(See Appendix for construction type definitions)								
6 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	\$ -	\$ -	
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	7	Feet			\$ 600	\$ 4,200	\$ 4,200	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 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	%					\$ 248	
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							\$ 88,500	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%				\$ 9,310	\$ 9,310	
\$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							\$ 9,400	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%				\$ 9,310	\$ 9,310	
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-\$1ft)	1	LS				\$ 2,011	\$ 2,011	
Total Design / Engineering / Construction Cost							\$ 14,400	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%				\$ 35,070	\$ 35,070	
Projects > \$2 million - Contingency is 20%	20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 152,000	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	A/E FIRM NAME:	SHEET
Line 41-117			SPC SERVICES	Sheet 1 of 1
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:	
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 6, 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								
4 Pipe	19	Feet	\$ 11	\$ 202				
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 353	\$ 1,413				
Pressure Rating	0	Each	\$ 15,357	\$ -				Used 4 pipe instead of 3.5
1lb Block Valve w/Electric Actuator (one per 4 miles)			\$ -	\$ -				
FBE Coating (\$/ft)			\$ 1.42	\$ 27				
Miscellaneous Materials (5%)	1	Lot					\$ 81	
Freight / Tax	12.5	%					\$ 215	
n/a Pipe	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating	0	Each	\$ -	\$ -			\$ -	
1lb Block Valve w/Electric Actuator (one per 4 miles)			\$ -	\$ -			\$ -	
FBE Coating (\$/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
n/a Pipe	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating	0	Each	\$ -	\$ -			\$ -	
1lb Block Valve w/Electric Actuator (one per 4 miles)			\$ -	\$ -			\$ -	
FBE Coating (\$/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
n/a Casing	0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
Total length	0.0	Miles						
Total Material Cost							\$ 2,000	
2 CONSTRUCTION								
(See Appendix for construction type definitions)								
4 inch pipe								
Pipe Install - Type 1	0	Feet			\$ 150	\$ -	\$ -	
Pipe Install - Type 2	19	Feet			\$ 240	\$ 4,560	\$ 4,560	
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	0	Feet			\$ -	\$ -	\$ -	
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)	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	%					\$ 171	
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							\$ 86,400	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%				\$ 8,840	\$ 8,840	
\$1million <Projects < \$10 million - company labor is 5%	5	%				\$ -	\$ -	
Projects >\$10 million - company labor is 2.5%	2.5	%				\$ -	\$ -	
Total SCG Labor / Inspection Cost							\$ 8,900	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%				\$ 8,840	\$ 8,840	
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-\$1ft)	1	LS				\$ 2,019	\$ 2,019	
Total Design / Engineering / Construction Cost							\$ 13,900	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%				\$ 33,360	\$ 33,360	
Projects >\$2 million - Contingency is 20%	20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 144,600	

ACTIVITY AND LOCATION:		SPECIFICATION NO:		SHEET				
Line 41-17-A2				Sheet 1 of 1				
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:				
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		July 6, 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	4	inch, STD, WT X-52	17	Feet	\$ 11	\$ 181		\$ 181
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 353	\$ 1,413		\$ 1,413
Pressure Rating	n/a	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -		\$ -
		FBE Coating (\$/ft)			\$ 1.42	\$ 24		\$ 24
		Miscellaneous Materials (5%)	1	Lot				\$ 80
		Freight / Tax	12.5	%				\$ 212
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 (\$/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 (\$/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								\$ 2,000
2 CONSTRUCTION (See Appendix for construction type definitions)								
4 Inch pipe								
		Pipe Install - Type 1	0	Feet		\$ 150	\$ -	\$ -
		Pipe Install - Type 2	17	Feet		\$ 240	\$ 4,080	\$ 4,080
		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	0	Feet		\$ -	\$ -	\$ -
		Pipe Install - Type 7	0	Feet		\$ 520	\$ -	\$ -
		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 6	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)	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	%				\$ 153
		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
		Construction period	10	days				
Total Construction Cost								\$ 86,900
3 SCG LABOR / INSPECTION								
		Projects < \$1 million - company labor is 10%	10	%			\$ 8,790	\$ 8,790
		\$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								\$ 8,800
4 DESIGN / ENG. / CONST. / ENVIRON.								
		Planning / Design / Eng / Coord / Procurement	10	%			\$ 8,790	\$ 8,790
		Construction Stakes, AS-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800
		ROW Acquisition	0	LS			\$ -	\$ -
		Construction Permits	0	LS			\$ -	\$ -
		Environmental Permits	0	LS			\$ -	\$ -
		Environmental Monitoring	0	LS			\$ -	\$ -
		AS-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 2,017	\$ 2,017
Total Design / Engineering / Construction Cost								\$ 13,900
5 CONTINGENCY								
		Projects < \$2 million - Contingency is 30%	30	%			\$ 33,180	\$ 33,180
		Projects > \$2 million - Contingency is 20%	20	%			\$ -	\$ -
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 143,800

ACTIVITY AND LOCATION:		SPECIFICATION NO.	EST. FIRM NAME	SHEET				
Line 41-17-F			SPC SERVICES	Sheet 1 of 1				
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:					
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 6, 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	9	Feet	\$ 26	\$ 232		
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 824	\$ 3,296	\$	232
Pressure Rating	1/4	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -	\$	3,296
		FBE Coating (\$/ft)			\$ 2,29	\$ 21	\$	-
		Miscellaneous Materials (5%)	1	Lot			\$	21
		Freight / Tax	12.5	%			\$	176
							\$	466
Pipe	4	inch, STD, WT X-52	16	Feet	\$ 11	\$ 170		
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 353	\$ 1,413	\$	170
Pressure Rating	1/4	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -	\$	1,413
		FBE Coating (\$/ft)			\$ 1,42	\$ 23	\$	-
		Miscellaneous Materials (5%)	1	Lot			\$	23
		Freight / Tax	12.5	%			\$	79
							\$	211
Pipe	2	inch, STD, WT X-52	116	Feet	\$ 5	\$ 531		
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 240	\$ 960	\$	531
Pressure Rating	1/4	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -	\$	960
		FBE Coating (\$/ft)			\$ 1,23	\$ 143	\$	-
		Miscellaneous Materials (5%)	1	Lot			\$	143
		Freight / Tax	12.5	%			\$	75
							\$	214
Casing	1/4		0	Feet	\$ -	\$ -	\$	-
		Miscellaneous Materials (5%)	1	Lot			\$	-
		Freight / Tax	12.5	%			\$	-
							\$	-
Total length			0.0	Miles				
Total Material Cost							\$ 8,100	
2 CONSTRUCTION (See Appendix for construction type definitions)								
8 Inch pipe								
		Pipe Install - Type 1	0	Feet		\$ 175	\$ -	\$ -
		Pipe Install - Type 2	9	Feet		\$ 280	\$ 2,520	\$ 2,520
		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	\$ -	\$ -
4 Inch pipe								
		Pipe Install - Type 1	0	Feet		\$ 150	\$ -	\$ -
		Pipe Install - Type 2	16	Feet		\$ 240	\$ 3,840	\$ 3,840
		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	0	Feet		\$ -	\$ -	\$ -
		Pipe Install - Type 7	0	Feet		\$ 520	\$ -	\$ -
2 Inch pipe								
		Pipe Install - Type 1	0	Feet		\$ 150	\$ -	\$ -
		Pipe Install - Type 2	116	Feet		\$ 240	\$ 27,840	\$ 27,840
		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	0	Feet		\$ -	\$ -	\$ -
		Pipe Install - Type 7	0	Feet		\$ 520	\$ -	\$ -
		Tie-ins Crew Rates	1	Each		\$ 25,000	\$ 25,000	\$ 25,000
		Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	32	SCF	\$ 0.19	\$ 6	\$ -	\$ 6
		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	%				\$ 1,283
		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
		Construction period	10	days				
Total Construction Cost							\$ 117,100	
3 SCG LABOR / INSPECTION								
		Projects < \$1 million - company labor is 10%	10	%			\$ 12,520	\$ 12,520
		\$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	%			\$ 12,520	\$ 12,520
		Construction Stakes, AS-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800
		ROW Acquisition	0	LS			\$ -	\$ -
		Construction Permits	0	LS			\$ -	\$ -
		Environmental Permits	0	LS			\$ -	\$ -
		Environmental Monitoring	0	LS			\$ -	\$ -
		AS-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 2,141	\$ 2,141
Total Design / Engineering / Construction Cost							\$ 17,700	
5 CONTINGENCY								
		Projects < \$2 million - Contingency is 30%	30	%			\$ 46,650	\$ 46,650
		Projects > \$2 million - Contingency is 20%	20	%			\$ -	\$ -
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 202,200	

ACTIVITY AND LOCATION: Line 41-181	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 6, 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 n/a	13	Feet	\$ 26	\$ 335			\$ 335	
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 824	\$ 3,296			\$ 3,296	
Pressure Rating n/a	0	Each	\$ -	\$ -			\$ -	
1lb Block Valve w/Electric Actuator (one per 4 miles)								
FBE Coating (\$/ft)			\$ 2.29	\$ 30			\$ 30	
Miscellaneous Materials (5%)	1	Lot					\$ 182	
Freight / Tax	12.5	%					\$ 480	
Pipe n/a	0	Feet	\$ -	\$ -			\$ -	
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a	0	Each	\$ -	\$ -			\$ -	
1lb Block Valve w/Electric Actuator (one per 4 miles)								
FBE Coating (\$/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
Pipe n/a	0	Feet	\$ -	\$ -			\$ -	
Bonds, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a	0	Each	\$ -	\$ -			\$ -	
1lb Block Valve w/Electric Actuator (one per 4 miles)								
FBE Coating (\$/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							\$ 4,400	
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	13	Feet			\$ 450	\$ 5,850	\$ 5,850	
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)	20	SCF	\$ 0.19	\$ 4			\$ 4	
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	%					\$ 219	
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							\$ 87,700	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%				\$ 9,210	\$ 9,210	
\$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	%				\$ 9,210	\$ 9,210	
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-\$1ft)	1	LS				\$ 2,013	\$ 2,013	
Total Design / Engineering / Construction Cost							\$ 14,300	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%				\$ 34,710	\$ 34,710	
Projects > \$2 million - Contingency is 20%	20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 150,500	

ACTIVITY AND LOCATION: Line 41-55	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 6, 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								
6 inch pipe								
Inch, STD. WT X-52	37	Feet	\$ 17	\$ 643			\$ 643	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 580	\$ 2,320			\$ 2,320	
Pressure Rating n/a								
lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/ft)			\$ 1.73	\$ 64			\$ 64	
Miscellaneous Materials (5%)	1	Lot					\$ 148	
Freight / Tax	12.5	%					\$ 397	
n/a								
6 inch pipe								
Inch, 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 (\$/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
n/a								
6 inch pipe								
Inch, 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 (\$/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							\$ 3,600	
2 CONSTRUCTION								
(See Appendix for construction type definitions)								
6 inch pipe								
Pipe Install - Type 1	0	Feet			\$ 150	\$ -	\$ -	
Pipe Install - Type 2	37	Feet			\$ 240	\$ 8,880	\$ 8,880	
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	0	Feet			\$ -	\$ -	\$ -	
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)	32	SCF	\$ 0.19	\$ 6			\$ 6	
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	%					\$ 333	
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							\$ 90,900	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%				\$ 9,450	\$ 9,450	
\$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							\$ 9,500	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%				\$ 9,450	\$ 9,450	
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				\$ 2,037	\$ 2,037	
Total Design / Engineering / Construction Cost							\$ 14,500	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%				\$ 35,550	\$ 35,550	
Projects > \$2 million - Contingency is 20%	20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 154,100	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	THE FIRM NAME	SHEET				
Line 41-6001-2			SPEC SERVICES	Sheet 1 of 1				
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:				
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		July 6, 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	24	Feet	\$ 36	\$ 869		
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 1,408	\$ 5,632		
Pressure Rating	n/a	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -		
		FBE Coating (\$/ft)			\$ 2.86	\$ 69		
		Miscellaneous Materials (5%)	1	Lot			\$ 325	
		Freight / Tax	12.5	%			\$ 862	
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 (\$/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 (\$/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							\$ 7,800	
2 CONSTRUCTION (See Appendix for construction type definitions)								
10 inch pipe								
		Pipe Install - Type 1	0	Feet		\$ 175	\$ -	\$ -
		Pipe Install - Type 2	24	Feet		\$ 280	\$ 6,720	\$ 6,720
		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 6	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)	56	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	%				\$ 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
		Construction period	10	days				
Total Construction Cost							\$ 86,600	
3 SCG LABOR / INSPECTION								
		Projects < \$1 million - company labor is 10%	10	%			\$ 9,640	\$ 9,640
		\$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							\$ 9,700	
4 DESIGN / ENG. / CONST / ENVIRON.								
		Planning / Design / Eng / Coord / Procurement	10	%			\$ 9,640	\$ 9,640
		Construction Stake, AS-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800
		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							\$ 14,700	
5 CONTINGENCY								
		Projects < \$2 million - Contingency is 30%	30	%			\$ 36,240	\$ 36,240
		Projects > \$2 million - Contingency is 20%	20	%			\$ -	\$ -
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 157,100	

ACTIVITY AND LOCATION: Line 41-6045	SPECIFICATION NO.	ESTIMATE BY: SPC SERVICES	SHEET Sheet 1 of 1
PROJECT TITLE AND CLIENT: SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE	ESTIMATED BY: SPEC	DATE: July 6, 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 2	50	Feet	\$ 5	\$ 229			\$ 229	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 240	\$ 960			\$ 960	
Pressure Rating 1/2	0	Each	\$ 13,505	\$ -			\$ -	
FBE Coating (\$/ft)			\$ 1.23	\$ 62			\$ 62	
Miscellaneous Materials (5%)	1	Lot					\$ 59	
Freight / Tax	12.5	%					\$ 164	
Pipe n/a	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating n/a	0	Each	\$ -	\$ -			\$ -	
1/2 Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/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	0	Each	\$ -	\$ -			\$ -	
1/2 Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/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							\$ 1,600	
2 CONSTRUCTION (See Appendix for construction type definitions)								
2 Inch pipe								
Pipe Install - Type 1	0	Feet			\$ 150	\$ -	\$ -	
Pipe Install - Type 2	50	Feet			\$ 240	\$ 12,000	\$ 12,000	
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	0	Feet			\$ -	\$ -	\$ -	
Pipe Install - Type 7	0	Feet			\$ 520	\$ -	\$ -	
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 6	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)	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	%					\$ 450	
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							\$ 94,100	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%				\$ 9,560	\$ 9,560	
\$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							\$ 9,600	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%				\$ 9,560	\$ 9,560	
Construction Stakes, 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							\$ 14,700	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%				\$ 35,970	\$ 35,970	
Projects > \$2 million - Contingency is 20%	20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 155,900	

ACTIVITY AND LOCATION:		SPECIFICATION NO.	EST. FIRM NAME	SHEET				
Line 41-80			SPEC SERVICES	Sheet 1 of 1				
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:	SPEC Project Number				
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	July 6, 2011	5057				
DESCRIPTION		QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST
		NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL
INPUT IN ALL GREEN CELLS								
1 MATERIALS								
Pipe	6 inch, STD, WT X-52	9693	Feet	\$ 17	\$ 168,367			\$ 168,367
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	42	Each	\$ 580	\$ 24,360			\$ 24,360
Pressure Rating	1/2 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 21,999	\$ -			\$ -
	FBE Coating (\$/ft)			\$ 1.73	\$ 16,769			\$ 16,769
	Miscellaneous Materials (5%)	1	Lot					\$ 9,636
	Freight / Tax	12.5	%					\$ 27,392
Pipe	n/a	0	Feet	\$ -	\$ -			\$ -
	Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -
Pressure Rating	1/2 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -
	FBE Coating (\$/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	1/2 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -
	FBE Coating (\$/ft)			\$ -	\$ -			\$ -
	Miscellaneous Materials (5%)	1	Lot					\$ -
	Freight / Tax	12.5	%					\$ -
Casing	8 inch, STD, WT X-52	100	Feet	\$ 26	\$ 2,577			\$ 2,577
	Miscellaneous Materials (5%)	1	Lot					\$ 128,85
	Freight / Tax	12.5	%					\$ 338
	Total length	1.8	Miles					
Total Material Cost								\$ 249,600
2 CONSTRUCTION (See Appendix for construction type definitions)								
6 Inch pipe								
	Pipe Install - Type 1	0	Feet			\$ 150	\$ -	\$ -
	Pipe Install - Type 2	9593	Feet			\$ 240	\$ 2,302,320	\$ 2,302,320
	Pipe Install - Type 3	0	Feet			\$ 400	\$ -	\$ -
	Pipe Install - Type 4	100	Feet			\$ 450	\$ 45,000	\$ 45,000
	Pipe Install - Type 5	0	Feet			\$ 300	\$ -	\$ -
	Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -
	Pipe Install - Type 7	0	Feet			\$ 520	\$ -	\$ -
	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 6	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)	7616	SCF	\$ 0.19	\$ 1,447			\$ 1,447
	Purging Labor	1	LS			\$ 25,000	\$ 25,000	\$ 25,000
	95% Abandonment of Existing Pipeline (\$50/CY)	67	CY			\$ 95	\$ 6,365	\$ 6,365
	5% Removal of Existing Pipeline (75% of Construction Labor Cost)	75	%					\$ 88,025
	Mobilization / Demobilization	1	Each			\$ 30,000	\$ 30,000	\$ 30,000
	Contaminated Soil	0	CY			\$ -	\$ -	\$ -
	Asbestos Abatement	0	Feet			\$ -	\$ -	\$ -
	Radiographic Inspection	22	Days	\$ 150	\$ 3,300	\$ 600	\$ 13,200	\$ 16,500
	Construction period	30	days					
Total Construction Cost								\$ 2,539,700
3 SCG LABOR / INSPECTION								
	Projects < \$1 million - company labor is 10%	10	%			\$ -	\$ -	\$ -
	\$1 million - Projects < \$10 million - company labor is 5%	5	%			\$ 139,465	\$ 139,465	\$ 139,465
	Projects > \$10 million - company labor is 2.5%	2.5	%			\$ -	\$ -	\$ -
Total SCG Labor / Inspection Cost								\$ 139,600
4 DESIGN / ENG. / CONST / ENVIRON.								
	Planning / Design / Eng / Coord / Procurement	10	%			\$ 278,930	\$ 278,930	\$ 278,930
	Construction Stakes, AS-Built Survey (2 man crew)	22	Days	\$ 100	\$ 2,200	\$ 1,400	\$ 30,800	\$ 33,000
	ROW Acquisition	0	LS			\$ -	\$ -	\$ -
	Construction Permits	0	LS			\$ -	\$ -	\$ -
	Environmental Permits	0	LS			\$ -	\$ -	\$ -
	Environmental Monitoring	0	LS			\$ -	\$ -	\$ -
	AS-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 11,693	\$ 11,693	\$ 11,693
Total Design / Engineering / Construction Cost								\$ 323,700
5 CONTINGENCY								
	Projects < \$2 million - Contingency is 30%	30	%			\$ -	\$ -	\$ -
	Projects > \$2 million - Contingency is 20%	20	%			\$ 650,500	\$ 650,500	\$ 650,500
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 3,903,000

Comments
Replacement of Line NTSB # 378 380 is included in 41-6000 2 replacement

ACTIVITY AND LOCATION:		SPECIFICATION NO.	FIRM NAME		SHEET		
Line 42-46-F			SPEC SERVICES		Sheet 1 of 1		
PROJECT TITLE AND CLIENT:		ESTIMATED BY:	DATE:		SPEC Project Number		
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC	August 11, 2011		5057		
		STATUS OF DESIGN					
		Conceptual					
DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		TOTAL COST
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	TOTAL
INPUT IN ALL GREEN CELLS							
1 MATERIALS							
Pipe	10	inch, STD, WT X-52	3681	Feet	\$ 36	\$ 133,215	\$ 133,215
		Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	18	Each	\$ 1,408	\$ 25,344	\$ 25,344
Pressure Rating	1	lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 26,508	\$ -	\$ -
		FBE Coating (\$/ft)		\$	\$ 2,86	\$ 10,528	\$ 10,528
		Miscellaneous Materials (5%)	1	Lot			\$ 7,928
		Freight / Tax	12.5	%			\$ 22,127
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 (\$/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 (\$/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	0.7	Miles					
Total Material Cost							\$ 199,200
2 CONSTRUCTION (See Appendix for construction type definitions)							
10 inch pipe							
	0	Pipe Install - Type 1			\$ 175	\$ -	\$ -
	0	Pipe Install - Type 2			\$ 280	\$ -	\$ -
	3681	Pipe Install - Type 3			\$ 450	\$ 1,656,450	\$ 1,656,450
	0	Pipe Install - Type 4			\$ 600	\$ -	\$ -
	0	Pipe Install - Type 5			\$ 400	\$ -	\$ -
	0	Pipe Install - Type 6			\$ -	\$ -	\$ -
	0	Pipe Install - Type 7			\$ 585	\$ -	\$ -
n/a	0	Pipe Install - Type 1			\$ -	\$ -	\$ -
	0	Pipe Install - Type 2			\$ -	\$ -	\$ -
	0	Pipe Install - Type 3			\$ -	\$ -	\$ -
	0	Pipe Install - Type 4			\$ -	\$ -	\$ -
	0	Pipe Install - Type 5			\$ -	\$ -	\$ -
	0	Pipe Install - Type 6			\$ -	\$ -	\$ -
	0	Pipe Install - Type 7			\$ -	\$ -	\$ -
n/a	0	Pipe Install - Type 1			\$ -	\$ -	\$ -
	0	Pipe Install - Type 2			\$ -	\$ -	\$ -
	0	Pipe Install - Type 3			\$ -	\$ -	\$ -
	0	Pipe Install - Type 4			\$ -	\$ -	\$ -
	0	Pipe Install - Type 5			\$ -	\$ -	\$ -
	0	Pipe Install - Type 6			\$ -	\$ -	\$ -
	0	Pipe Install - Type 7			\$ -	\$ -	\$ -
	2	Tie-ins Crew Rates			\$ 25,000	\$ 50,000	\$ 50,000
	8032	Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)		SCF	\$ 0.19	\$ 1,526	\$ 1,526
	1	Purging Labor		LS	\$ 25,000	\$ 25,000	\$ 25,000
	71	95% Abandonment of Existing Pipeline (\$50/CY)		CY	\$ 95	\$ 6,745	\$ 6,745
	75	5% Removal of Existing Pipeline (75% of Construction Labor Cost)		%			\$ 62,117
	1	Mobilization / Demobilization		Each	\$ 30,000	\$ 30,000	\$ 30,000
	0	Contaminated Soil		CY	\$ -	\$ -	\$ -
	0	Asbestos Abatement		Feet	\$ -	\$ -	\$ -
	14	Radiographic Inspection		Days	\$ 150	\$ 2,100	\$ 2,100
	22	Construction period		days			
Total Construction Cost							\$ 1,842,400
3 SCG LABOR / INSPECTION							
	10	Projects < \$1 million - company labor is 10%		%		\$ -	\$ -
	5	\$1 million - Projects < \$10 million - company labor is 5%		%		\$ 102,080	\$ 102,080
	2.5	Projects >\$10 million - company labor is 2.5%		%		\$ -	\$ -
Total SCG Labor / Inspection Cost							\$ 102,100
4 DESIGN / ENG. / CONST / ENVIRON.							
	10	Planning / Design / Eng / Coord / Procurement		%		\$ 204,160	\$ 204,160
	14	Construction Stake, AS-Built Survey (2 man crew)		Days	\$ 100	\$ 1,400	\$ 1,400
	0	ROW Acquisition		LS	\$ -	\$ -	\$ -
	0	Construction Permits		LS	\$ -	\$ -	\$ -
	0	Environmental Permits		LS	\$ -	\$ -	\$ -
	0	Environmental Monitoring		LS	\$ -	\$ -	\$ -
	1	AS-Built Drawings (\$2000+\$1/ft)		LS		\$ 5,681	\$ 5,681
Total Design / Engineering / Construction Cost							\$ 230,900
5 CONTINGENCY							
	30	Projects < \$2 million - Contingency is 30%		%		\$ -	\$ -
	20	Projects >\$2 million - Contingency is 20%		%		\$ 474,920	\$ 474,920
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 2,849,600

ACTIVITY AND LOCATION: Line 42--66-1	SPECIFICATION NO.	THE 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: August 11, 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 12 inch, STD. WT X-52	110	Feet	\$ 44	\$ 4,871			\$ 4,871	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 1,833	\$ 7,333			\$ 7,333	
Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 36,010	\$ -			\$ -	
FBE Coating (\$/ft)			\$ 3.26	\$ 359			\$ 359	
Miscellaneous Materials (5%)	1	Lot					\$ 610	
Freight / Tax	12.5	%					\$ 1,647	
Pipe 4 inch, STD. WT X-52	69	Feet	\$ 11	\$ 733			\$ 733	
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	\$ 15,357	\$ -			\$ -	
FBE Coating (\$/ft)			\$ 1.42	\$ 98			\$ 98	
Miscellaneous Materials (5%)	1	Lot					\$ 107	
Freight / Tax	12.5	%					\$ 294	
Pipe n/a	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating 150 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/ft)			\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)	1	Lot					\$ -	
Freight / Tax	12.5	%					\$ -	
Casing 14 inch, STD. WT X-52	44	Feet	\$ 55	\$ 2,441			\$ 2,441	
Miscellaneous Materials (5%)	1	Lot					\$ 122,06	
Freight / Tax	12.5	%					\$ 320	
Total length	0.0	Miles						
Total Material Cost							\$ 20,400	
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	66	Feet			\$ 450	\$ 29,700	\$ 29,700	
Pipe Install - Type 4	0	Feet			\$ 600	\$ -	\$ -	
Pipe Install - Type 5	44	Feet			\$ 400	\$ 17,600	\$ 17,600	
Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -	
Pipe Install - Type 7	0	Feet			\$ 585	\$ -	\$ -	RR Crossing
4 inch pipe								
Pipe Install - Type 1	0	Feet			\$ 150	\$ -	\$ -	
Pipe Install - Type 2	0	Feet			\$ 240	\$ -	\$ -	
Pipe Install - Type 3	69	Feet			\$ 400	\$ 27,600	\$ 27,600	
Pipe Install - Type 4	0	Feet			\$ 450	\$ -	\$ -	
Pipe Install - Type 5	0	Feet			\$ 300	\$ -	\$ -	
Pipe Install - Type 6	0	Feet			\$ -	\$ -	\$ -	
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			\$ -	\$ -	\$ -	
Tie-ins Crew Rates	1	Each			\$ 25,000	\$ 25,000	\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	372	SCF	\$ 0.19	\$ 71			\$ 71	
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	%					\$ 2,809	
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							\$ 169,700	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%					\$ 18,010	\$ 18,010
\$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							\$ 18,100	
4 DESIGN / ENG. / CONST / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%					\$ 18,010	\$ 18,010
Construction Stake, AS-Built Survey (2 man crew)	2	Days	\$ 100	\$ 200	\$ 1,400	\$ 2,800	\$ 3,000	
ICOW Acquisition	0	LS			\$ -	\$ -	\$ -	
Construction Permits	0	LS			\$ -	\$ -	\$ -	
Environmental Permits	0	LS			\$ -	\$ -	\$ -	
Environmental Monitoring	0	LS			\$ -	\$ -	\$ -	
AS-Built Drawings (\$2000+\$1/ft)	1	LS			\$ 2,179	\$ 2,179	\$ 2,179	
Total Design / Engineering / Construction Cost							\$ 23,200	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%					\$ 66,420	\$ 66,420
Projects > \$2 million - Contingency is 20%	20	%					\$ -	\$ -
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 287,900	

ACTIVITY AND LOCATION:		SPECIFICATION NO.		FIRM NAME		SHEET			
Line 42-66-2				SPC SERVICES		Sheet 1 of 1			
PROJECT TITLE AND CLIENT:		ESTIMATED BY:		DATE:		SPEC PROJECT NUMBER:			
SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE		SPEC		August 11, 2011		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									
12 inch, STD. WT X-52		125	Feet	\$ 44	\$ 5,535			\$ 5,535	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ 1,833	\$ 7,333			\$ 7,333	
Pressure Rating 15 lb Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ 36,010	\$ -			\$ -	
FBE Coating (\$/ft)				\$ 3.26	\$ 408			\$ 408	
Miscellaneous Materials (5%)		1	Lot					\$ 643	
Freight / Tax		12.5	%					\$ 1,740	
8 inch, STD. WT X-52		1	Feet	\$ 26	\$ 26			\$ 26	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ 824	\$ 3,296			\$ 3,296	
Pressure Rating 15 lb Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ 24,770	\$ -			\$ -	
FBE Coating (\$/ft)				\$ 2.29	\$ -2			\$ -2	
Miscellaneous Materials (5%)		1	Lot					\$ 166	
Freight / Tax		12.5	%					\$ 436	
4 inch, STD. WT X-52		10	Feet	\$ 11	\$ 106			\$ 106	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)		4	Each	\$ 353	\$ 1,413			\$ 1,413	
Pressure Rating 15 lb Block Valve w/Electric Actuator (one per 4 miles)		0	Each	\$ 15,357	\$ -			\$ -	
FBE Coating (\$/ft)				\$ 1.42	\$ 14			\$ 14	
Miscellaneous Materials (5%)		1	Lot					\$ 76	
Freight / Tax		12.5	%					\$ 201	
Casing 17/8" -		0	Feet	\$ -	\$ -			\$ -	
Miscellaneous Materials (5%)		1	Lot					\$ -	
Freight / Tax		12.5	%					\$ -	
Total length		0.0	Miles						
Total Material Cost								\$ 21,400	
2 CONSTRUCTION (See Appendix for construction type definitions)									
12 inch pipe									
Pipe Install - Type 1		86	Feet			\$ 175	\$ 15,050	\$ 15,050	
Pipe Install - Type 2		0	Feet			\$ 280	\$ -	\$ -	
Pipe Install - Type 3		0	Feet			\$ 450	\$ -	\$ -	
Pipe Install - Type 4		39	Feet			\$ 600	\$ 23,400	\$ 23,400	RR Bore
Pipe Install - Type 5		0	Feet			\$ 400	\$ -	\$ -	
Pipe Install - Type 6		0	Feet			\$ -	\$ -	\$ -	
Pipe Install - Type 7		0	Feet			\$ 585	\$ -	\$ -	
8 inch pipe									
Pipe Install - Type 1		1	Feet			\$ 175	\$ 175	\$ 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		0	Feet			\$ -	\$ -	\$ -	
Pipe Install - Type 7		0	Feet			\$ 585	\$ -	\$ -	
4 inch pipe									
Pipe Install - Type 1		10	Feet			\$ 150	\$ 1,500	\$ 1,500	
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		0	Feet			\$ -	\$ -	\$ -	
Pipe Install - Type 7		0	Feet			\$ 520	\$ -	\$ -	
Tie-ins Crew Rates		1	Each			\$ 25,000	\$ 25,000	\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)		400	SCF	\$ 0.19	\$ 76			\$ 76	
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	%					\$ 1,505	
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								\$ 123,600	
3 SCG LABOR / INSPECTION									
Projects < \$1 million - company labor is 10%		10	%				\$ 14,500	\$ 14,500	
\$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	%				\$ 14,500	\$ 14,500	
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			\$ 2,136	\$ 2,136	\$ 2,136	
Total Design / Engineering / Construction Cost								\$ 19,700	
5 CONTINGENCY									
Projects < \$2 million - Contingency is 30%		30	%				\$ 53,760	\$ 53,760	
Projects > \$2 million - Contingency is 20%		20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)								\$ 233,000	

ACTIVITY AND LOCATION: Line 45-120X01	SPECIFICATION NO.	THE FIRM NAME SPEC SERVICES	SHEET Sheet 1 of 1
PROJECT TITLE AND CLIENT: SOUTHERN CALIFORNIA GAS COMPANY PIPE REPLACEMENT COST ESTIMATE	ESTIMATED BY: SPEC	DATE: July 7, 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 12 inch, STD. WT X-52	37	Feet	\$ 44	\$ 1,638			\$ 1,638	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 1,833	\$ 7,333			\$ 7,333	
Pressure Rating 15 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 36,010	\$ -			\$ -	
FBE Coating (\$/ft)			\$ 3.26	\$ 121			\$ 121	
Miscellaneous Materials (5%)	1	Lot					\$ 449	
Freight / Tax	12.5	%					\$ 1,193	
Pipe 8 inch, STD. WT X-52	4	Feet	\$ 26	\$ 103			\$ 103	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ 824	\$ 3,296			\$ 3,296	
Pressure Rating 15 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ 24,770	\$ -			\$ -	
FBE Coating (\$/ft)			\$ 2.29	\$ 9			\$ 9	
Miscellaneous Materials (5%)	1	Lot					\$ 170	
Freight / Tax	12.5	%					\$ 447	
Pipe n/a	0	Feet	\$ -	\$ -			\$ -	
Bends, 3R-Forged (minimum of 4, plus 1 bend/250 feet)	4	Each	\$ -	\$ -			\$ -	
Pressure Rating 15 lb Block Valve w/Electric Actuator (one per 4 miles)	0	Each	\$ -	\$ -			\$ -	
FBE Coating (\$/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							\$ 14,800	
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	27	Feet		\$ 450	\$ 16,650	\$ -	\$ 16,650	
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	\$ -	\$ -	\$ -	
8 inch pipe								
Pipe Install - Type 1	0	Feet		\$ 175	\$ -	\$ -	\$ -	
Pipe Install - Type 2	0	Feet		\$ 280	\$ -	\$ -	\$ -	
Pipe Install - Type 3	4	Feet		\$ 450	\$ 1,800	\$ -	\$ 1,800	
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		\$ -	\$ -	\$ -	\$ -	
Tie-ins Crew Rates	1	Each		\$ 25,000	\$ 25,000	\$ -	\$ 25,000	
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line)	124	SCF	\$ 0.19	\$ 24	\$ -	\$ -	\$ 24	
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	%					\$ 692	
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							\$ 100,900	
3 SCG LABOR / INSPECTION								
Projects < \$1 million - company labor is 10%	10	%				\$ 11,570	\$ 11,570	
\$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							\$ 11,600	
4 DESIGN / ENG. / CONST. / ENVIRON.								
Planning / Design / Eng / Coord / Procurement	10	%				\$ 11,570	\$ 11,570	
Construction Stakes, 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				\$ 2,041	\$ 2,041	
Total Design / Engineering / Construction Cost							\$ 16,700	
5 CONTINGENCY								
Projects < \$2 million - Contingency is 30%	30	%				\$ 43,200	\$ 43,200	
Projects > \$2 million - Contingency is 20%	20	%				\$ -	\$ -	
TOTAL PROJECT COST (See Appendix for assumptions/clarifications)							\$ 187,200	



STATUS OF DESIGN: Conceptual

DESCRIPTION	QUANTITY	UNIT	MATERIAL COST		LABOR COST		TOTAL COST	TOTAL COST	Comments
			UNIT COST	TOTAL	UNIT COST	TOTAL			
1 MATERIALS									
INPUT IN ALL BLUE CELLS									
Pipe 6.625 Actual OD (in)	62	bbi / OD							
Water Volume									
Baker Tank Volume									
Hydrotest Test Segment 1 QTY	62	bbi / Segment							
Hydrotest Test Segment 0 QTY	0	bbi / Segment							
Hydrotest Test Segment 0 QTY	0	bbi / Segment							
Hydrotest Test Segment 0 QTY	0	bbi / Segment							
Total Hydrotest Length 0.3 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	13,495	SCF	\$ 0.19	\$ 2,564			\$ 2,564		
Temporary Pig Launcher/Receivers (over OD change)	1	LS	\$ 25,000	\$ 25,000			\$ 25,000		
Water Injection Pump Fiber (capacity 1200 gpm)	1	day(s)	\$ 466	\$ 466			\$ 466		
On-Site Vacuum Trucks (minimum one per test segment)	1	each	\$ 5,000	\$ 5,000			\$ 5,000		
Baker Tank(s) X	7	each							
Total Baker Tank(s) Rental days (\$/day per tank) Y X		day(s)	\$ 1,600	\$ 11,200			\$ 11,200		
Total Hydrotest Trailer (\$1200)	62	bbi	\$ 19,000	\$ 1,171			\$ 1,171		
Water Disposal Vacuum Trucks A	1	each							
Vacuum Truck Water Disposal loads (capacity 120 bbl) B	1	loads							
Disposal Time C B/(A * D)	1	day(s)							
Total Vacuum Truck(s) Rental days (\$/day per truck) D C A		day(s)	\$ 5,000	\$ 5,000			\$ 5,000		
Treated Water Disposal (\$35/bbl)	62	bbi	\$ 55	\$ 3,390			\$ 3,390		
Miscellaneous Materials	5	%					\$ 2,691		
2 CONSTRUCTION									
Construction Labor (25 / test segment)	1	LS	\$ 25,000	\$ 25,000			\$ 25,000		
Hydrotest Labor (10 / 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		
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	%					\$ -		
3 SCG LABOR / INSPECTION									
Total SCG Labor / Inspection Cost									
4 DESIGN / ENG / CONST / ENVIRON									
Total SCG Labor / Inspection Cost									
Planning / Design / Eng / Coord / Procurement	5	%					\$ 6,680		
ROW Acquisition	0	LS					\$ -		
Construction Permits	0	LS					\$ -		
Environmental Permits	0	LS					\$ -		
Environmental Monitoring	0	LS					\$ -		
5 CONTINGENCY									
Total Design / Engineering / Construction Cost									
Projects < \$2 million - Contingency is 30%	30	%					\$ 44,400		
Projects > \$2 million - Contingency is 20%	20	%					\$ -		
TOTAL PROJECT COST (See Appendix for assumptions/certifications)									
							\$ 192,400		

ACTIVITY AND LOCATION:		DESCRIPTION	QUANTITY	UNIT	MATERIAL COST	LABOR COST	TOTAL COST	COMMENTS
LINE NO.	DESCRIPTION	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	
1. MATERIALS INPUT IN ALL BLUE CELLS								
1.075	Actual OD (in)	58	bbi / OD					
0.125	Wall Thickness (in)	58	bbi / Segment					
5.41	Length (ft)							
1	QTY							
Hydrotest Test Segment Water Volume: Baker Tank Volume:								
0	Actual OD (in)	0	bbi / OD					
0.000	Wall Thickness (in)	0	bbi / Segment					
0	Length (ft)							
0	QTY							
Hydrotest Test Segment Water Volume: Baker Tank Volume:								
0	Actual OD (in)	0	bbi / OD					
0.000	Wall Thickness (in)	0	bbi / Segment					
0	Length (ft)							
0	QTY							
Hydrotest Test Segment Water Volume: Baker Tank Volume:								
0	Actual OD (in)	0	bbi / OD					
0.000	Wall Thickness (in)	0	bbi / Segment					
0	Length (ft)							
0	QTY							
Total Hydrotest Length Total Hydrotest Segment(s)								
0.1	Miles							
1	QTY							
2. CONSTRUCTION								
Purging Volume of Nitrogen (to obtain 3 atm (44 psig) on line), minimum 4 miles per test segment Temporary Pig Launcher/Receivers (over OD change) Water Injection Pump - Fiber (capacity 1200 gpm) On-Site Vacuum Trucks (minimum one per test segment) Baker Tank(s) - X Total Baker Tank(s) Rental days (\$/day per tank) - Y X Total Hydrotest Trailer (\$7200) Water Disposal Vacuum Trucks - A Vacuum Truck Water Disposal loads (capacity 120 bbl) - B Disposal Time - C - B(A * 10) Total Vacuum Truck(s) Rental days (\$/day per truck) - D C A Treated Water Disposal (\$35/bbl) Miscellaneous Materials								
3. SCG LABOR / INSPECTION								
Construction Labor (25 / test segment) Hydrotest Labor (10 / test segment) Dewater / Dry Pipeline (\$15,000 / test segment) Tie-Ins Crew Rates (\$25,000 / test segment) 3rd Party Witness (\$2,000 / test segment)								
4. DESIGN / ENG. / CONST. / ENVIRON.								
Planning / Design / Eng / Coord / Procurement ROW Acquisition Construction Permits Environmental Permits Environmental Monitoring								
5. CONTINGENCY								
Projects < \$1 million - Contingency is 30% Projects \$2 million - Contingency is 20%								
TOTAL PROJECT COST (See Appendix for assumptions/certifications)								
WP-IX-1-B239								



DESCRIPTION	QUANTITY		UNIT	MATERIAL COST		LABOR COST		TOTAL COST	TOTAL COST	Comments
	NUMBER	QTY		UNIT COST	TOTAL	UNIT COST	TOTAL			
1. MATERIALS										
INPUT IN ALL BLUE CELLS										
Pipe	12.75	Actual OD (in)	Water Volume							
	0.375	Wall Thickness (in)	Baker Tank Volume							
Hydrotest Test Segment	1	QTY								
Pipe	n/a	Actual OD (in)	Water Volume							
	0.000	Wall Thickness (in)	Baker Tank Volume							
Hydrotest Test Segment	0	QTY								
Pipe	n/a	Actual OD (in)	Water Volume							
	0.000	Wall Thickness (in)	Baker Tank Volume							
Hydrotest Test Segment	0	QTY								
Total Hydrotest Length	0.0004	Miles								
Total Hydrotest Segment(s)	1	QTY								
Purging Volume of Nitrogen (to obtain 3 atm (44 psf) on line) minimum 4 miles per test segment	49,763	SCF		\$ 0.19	\$ 9,455			\$ 9,455		
Temporary Pig Launcher/Receivers (over OD change)	1	LS		\$ 25,000	\$ 25,000			\$ 25,000		
Water Injection Pump - Fiber (capacity 1200 gpm)	1	day(s)		\$ 466	\$ 466			\$ 466		
On-Site Vacuum Trucks (minimum one per test segment)	1	each		\$ 5,000	\$ 5,000			\$ 5,000		
Baker Tank(s) - X	7	each								
Total Baker Tank(s) Rental days (\$/day per tank) - Y X	7	day(s)		\$ 1,600	\$ 11,200			\$ 11,200		
Total Hydrotest Trailer (\$/24hr)	0	bbf		\$ 19,000	\$ 0			\$ 0		
Water Disposal Vacuum Trucks - A	1	each								
Vacuum Truck Water Disposal loads (capacity 120 bbl) - B	1	loads								
Disposal Time - C - B(A x D)	1	day(s)								
Total Vacuum Truck(s) Rental days (\$/day per truck) - D C A	1	day(s)		\$ 5,000	\$ 5,000			\$ 5,000		
Treated Water Disposal (\$/55bbl)	0	bbf		\$ 55	\$ 0			\$ 0		
Miscellaneous Materials	5	%						\$ 2,809		
SCG Post Estimate Changes										
Additional Baker Tanks:	0	QTY								
Additional Test Segments:	0	QTY								
Total Material Cost										
2. CONSTRUCTION										
Construction Labor (25 / test segment)	1	LS		\$ 25,000	\$ 25,000			\$ 25,000		
Hydrotest Labor (10 / 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										
Projects < \$1 million - company labor is 10%	10	%						\$ 7,700		
\$1 million - Projects < \$10 million - company labor is 5%	5	%						\$ 0		
Projects > \$10 million - company labor is 2.5%	2.5	%						\$ 0		
Total SCG Labor / Inspection Cost										
4 DESIGN LENG./CONST/ENVIRON.										
Planning / Design / Eng / Coord / Procurement	5	%						\$ 6,800		
ROW Acquisition	0	LS						\$ 0		
Construction Permits	0	LS						\$ 0		
Environmental Permits	0	LS						\$ 0		
Environmental Monitoring	0	LS						\$ 0		
Total Design / Engineering / Construction Cost										
Projects < \$2 million - Contingency is 30%	30	%						\$ 45,150		
Projects > \$2 million - Contingency is 20%	20	%						\$ 0		
TOTAL PROJECT COST (See Appendix for assumptions/certifications)										
								\$ 195,700		

WP-IX-1-B240