

Application of SOUTHERN CALIFORNIA GAS )  
COMPANY for authority to update its gas revenue )  
requirement and base rates )  
effective January 1, 2012 (U 904-G) )

Application No. 10-12-\_\_\_\_  
Exhibit No.: (SCG-04-WP)

WORKPAPERS TO  
PREPARED DIRECT TESTIMONY  
OF JAMES D. MANSDORFER  
ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

DECEMBER 2010



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2012 General Rate Case - APP  
**INDEX OF WORKPAPERS**

**Exhibit SCG-04 - SOCALGAS UNDERGROUND STORAGE**

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**Overall Summary For Exhibit No. SCG-04**

**Area: SOCALGAS UNDERGROUND STORAGE**

**Witness: Mansdorfer, James D**

Description	In 2009 \$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
<i>Non-Shared Services</i>	26,595	27,776	27,953	28,859
<i>Shared Services</i>	0	0	0	0
<b>Total</b>	26,595	27,776	27,953	28,859

Southern California Gas Company  
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 Non-Shared Service Workpapers

Area: SOCALGAS UNDERGROUND STORAGE  
 Witness: Mansdorfer, James D

**Summary of Non-Shared Services Workpapers:**

Description	In 2009 \$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
<i>A. Underground Storage</i>	26,595	27,776	27,953	28,859
<i>Total</i>	26,595	27,776	27,953	28,859

Southern California Gas Company  
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 Non-Shared Service Workpapers

Area: SOCALGAS UNDERGROUND STORAGE  
 Witness: Mansdorfer, James D  
 Category: A. Underground Storage  
 Workpaper: 2US000.000

**Summary for Category: A. Underground Storage**

	In 2009\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
Labor	12,517	12,517	12,839	12,991
Non-Labor	14,078	15,259	15,114	15,868
NSE	0	0	0	0
Total	26,595	27,776	27,953	28,859
FTE	147.1	147.1	151.1	153.1

**Workpapers belonging to this Category:  
 2US000.000 Underground Storage**

Labor	12,517	12,517	12,839	12,991
Non-Labor	14,078	15,259	15,114	15,868
NSE	0	0	0	0
Total	26,595	27,776	27,953	28,859
FTE	147.1	147.1	151.1	153.1

**Beginning of Workpaper**  
**2US000.000 - Underground Storage**

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Area: SOCALGAS UNDERGROUND STORAGE  
 Witness: Mansdorfer, James D  
 Category: A. Underground Storage  
 Category-Sub: 1. Underground Storage  
 Workpaper: 2US000.000 - Underground Storage

**Activity Description:**

Storage Operations is responsible for the safe, efficient, and economical operation of the underground natural gas storage facilities for SoCalGas. This work paper covers the supervision, engineering and operational costs associated with the operation of the underground storage fields. Activities associated with these costs include: reservoir engineering studies; well testing and pressure surveys; turning wells on and off; activities associated with maintaining and patrolling storage pipelines, valves, drips, measurement and regulation equipment, wells, wellheads and well cellars; operating and maintaining compressor station equipment; purifying, dehydrating and conditioning natural gas processed through the storage operations; Royalty payments associated with well and field locations; supervisory and engineering expense; compliance to environmental and air quality regulations; ongoing safety and technical training for operations personnel.

**Forecast Methodology:**

**Labor - Base YR Rec**

The 2009 base year was chosen as the most reasonable foundation for future forecasting since it reflects the most current actual operating conditions. Incremental adjustments will be applied to this base year foundation.

**Non-Labor - 5-YR Average**

The five year average cost was used as a basis for projections because storage non-labor O&M costs can fluctuate significantly from year to year. Over the 2005 to 2009 period, non-labor costs varied from a high of \$15.3 million to a low of \$14.1 million. One of the significant cost drivers for storage is the amount of gas throughput for the storage fields. This throughput volume is dependent on the weather and the national gas markets; the Storage Operations department has no control over these two elements. Incremental adjustments are made to this baseline level to reflect the additional funding requirements due to changes to these activities.

**NSE - 5-YR Average**

There are no Non-Standard Escalation expenses in this work group.

**Summary of Results:**

	In 2009\$ (000)								
	Adjusted-Recorded					Adjusted-Forecast			
Years	2005	2006	2007	2008	2009	2010	2011	2012	
Labor	11,720	12,219	12,414	12,215	12,517	12,517	12,839	12,991	
Non-Labor	14,067	14,941	15,308	15,177	14,078	15,259	15,114	15,868	
NSE	0	0	0	0	0	0	0	0	
Total	25,787	27,160	27,722	27,392	26,595	27,776	27,953	28,859	
FTE	142.9	148.1	147.2	145.0	147.1	147.1	151.1	153.1	

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 Non-Shared Service Workpapers

Area: SOCALGAS UNDERGROUND STORAGE  
 Witness: Mansdorfer, James D  
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 Workpaper: 2US000.000 - Underground Storage

**Forecast Summary:**

Forecast Method		In 2009 \$(000)								
		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		2010	2011	2012	2010	2011	2012	2010	2011	2012
Labor	Base YR Rec	12,517	12,517	12,517	0	322	474	12,517	12,839	12,991
Non-Labor	5-YR Average	14,714	14,714	14,714	545	400	1,154	15,259	15,114	15,868
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		27,231	27,231	27,231	545	722	1,628	27,776	27,953	28,859
FTE	Base YR Rec	147.1	147.1	147.1	0.0	4.0	6.0	147.1	151.1	153.1

**Forecast Adjustment Details:**

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010	0	100	0	100	0.0	1-Sided Adj
Electrical Costs - Contract Engineering Support, Power Engineers is working on various electrical studies to assist with system planning and maintenance. See supplemental workpaper 2US000.000_supp1.pdf						
2010	0	5	0	5	0.0	1-Sided Adj
Electrical Costs - Intrusive power pole testing. Contract and material costs. See supplemental workpaper 2US000.000_supp1.pdf						
2010	0	15	0	15	0.0	1-Sided Adj
Electrical Costs - increased requiremntns for Vegetation Management. See supplemental workpaper 2US000.000_supp1.pdf						
2010	0	200	0	200	0.0	1-Sided Adj
Electrical Costs - GO 95 Compliance. Detailed survey's and contract and materials work. See supplemental workpaper 2US000.000_supp1.pdf						
2010	0	75	0	75	0.0	1-Sided Adj
Red Flag Implementation - contract and materials associated with shut downs and equipment maintenance. See supplemental workpaper 2US000.000_supp1.pdf						
2010	0	50	0	50	0.0	1-Sided Adj
Goleta - Increased costs for vegetation management to comply with requirements of new annual and programmatic permits for work in the coastal zone and environmentally sensitive habitat areas.						
2010	0	100	0	100	0.0	1-Sided Adj

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 Non-Shared Service Workpapers

Area: SOCALGAS UNDERGROUND STORAGE  
 Witness: Mansdorfer, James D  
 Category: A. Underground Storage  
 Category-Sub: 1. Underground Storage  
 Workpaper: 2US000.000 - Underground Storage

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
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Goleta - Increased costs for catalyst and emissions testing to meet compliance requirements of the revised SBCAPCD Rule 333.

<b>2010 Total</b>	<b>0</b>	<b>545</b>	<b>0</b>	<b>545</b>	<b>0.0</b>	
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2011	152	0	0	152	0.0	1-Sided Adj
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GHG - Add 4 FTE's to perform additional leak survey, monitoring, and repairs and program administration, compliance monitoring, recordkeeping, reporting. Hire mid-year 2011. Aliso Canyon(1), Honor Rancho(1), La Goleta/Playa del Rey(1), Storage Technical Services(1). See supplemental workpaper 2US000.000\_supp3.pdf

2011	0	0	0	0	2.0	1-Sided Adj
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GHG - Add 4 FTE's to perform additional leak survey, monitoring, and repairs and program administration, compliance monitoring, recordkeeping, reporting. Hire mid-year 2011, only 2 net for 2011. Aliso Canyon(1), Honor Rancho(1), La Goleta/Playa del Rey(1), Storage Technical Services(1). See supplemental workpaper 2US000.000\_supp3.pdf

2011	0	50	0	50	0.0	1-Sided Adj
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Electrical Costs - Contract Engineering Support, Power Engineers is working on various electrical studies to assist with system planning and maintenance. See supplemental workpaper 2US000.000\_supp1.pdf

2011	0	5	0	5	0.0	1-Sided Adj
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Electrical Costs - Intrusive power pole testing. Contract and material costs. See supplemental workpaper 2US000.000\_supp1.pdf

2011	0	15	0	15	0.0	1-Sided Adj
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Electrical Costs - increased requiremnts for Vegetation Management. See supplemental workpaper 2US000.000\_supp1.pdf

2011	0	100	0	100	0.0	1-Sided Adj
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Electrical Costs - GO 95 Compliance. Detailed survey's and contract and materials work. See supplemental workpaper 2US000.000\_supp1.pdf

2011	0	75	0	75	0.0	1-Sided Adj
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Red Flag Implementation - contract and materials associated with shut downs and equipment maintenance. See supplemental workpaper 2US000.000\_supp1.pdf

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 Workpaper: 2US000.000 - Underground Storage

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2011	0	50	0	50	0.0	1-Sided Adj

Goleta - Increased costs for vegetation management to comply with requirements of new annual and programmatic permits for work in the coastal zone and environmentally sensitive habitat areas.

2011	0	100	0	100	0.0	1-Sided Adj
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Goleta - Increased costs for catalyst and emissions testing to meet compliance requirements of the revised SBCAPCD Rule 333.

2011	80	0	0	80	0.0	1-Sided Adj
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Incremental Labor expense in support of the newly installed gas dehydration facility at Playa del Rey Storage facility. Individual will manage the start-up and ongoing operation and maintenance activities associated with this new facility.

2011	0	0	0	0	1.0	1-Sided Adj
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Incremental FTE in support of the newly installed gas dehydration facility at Playa del Rey Storage facility. Individual will manage the start-up and ongoing operation and maintenance activities associated with this new facility.

2011	90	0	0	90	0.0	1-Sided Adj
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Storage Operations staff support personnel - Incremental FTE to support ongoing Storage Operations with the integration of newly developed enterprise-wide business solutions. Person would evaluate the new applications to determine how Underground Storage could most effectively leverage new technology and procedures. Additionally, person would evaluate current organization practices and procedures to determine if modifications are necessary to more readily integrate the new business solutions opportunities.

2011	0	5	0	5	0.0	1-Sided Adj
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Non-labor expense funding for new Storage Operations staff support personnel - Covers miscellaneous expenses such as travel mileage, mobile phone, travel, training.

2011	0	0	0	0	1.0	1-Sided Adj
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Storage Operations staff support personnel - Incremental FTE to support ongoing Storage Operations with the integration of newly developed enterprise-wide business solutions. Person would evaluate the new applications to determine how Underground Storage could most effectively leverage new technology and procedures. Additionally, person would evaluate current organization practices and procedures to determine if modifications are necessary to more readily integrate the new business solutions opportunities.

<b>2011 Total</b>	<b>322</b>	<b>400</b>	<b>0</b>	<b>722</b>	<b>4.0</b>	
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Area: SOCALGAS UNDERGROUND STORAGE  
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<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2012	304	0	0	304	0.0	1-Sided Adj
GHG - Add 4 FTE's to perform additional leak survey, monitoring, and repairs and program administration, compliance monitoring, recordkeeping, reporting. Aliso Canyon(1), Honor Rancho(1), La Goleta/Playa del Rey(1), Storage Technical Services(1). See supplemental workpaper 2US000.000_supp3.pdf						
2012	0	0	0	0	4.0	1-Sided Adj
GHG - Add 4 FTE's to perform additional leak survey, monitoring, and repairs and program administration, compliance monitoring, recordkeeping, reporting. Aliso Canyon(1), Honor Rancho(1), La Goleta/Playa del Rey(1), Storage Technical Services(1). See supplemental workpaper 2US000.000_supp3.pdf						
2012	0	754	0	754	0.0	1-Sided Adj
SCAQMD Rule 317 - non-attainment fees. The South Coast Air Quality Management District's Rule 317 imposes significant new fees on major combustion facilities, based on a provision of the 1990 Amendments to the Federal Clean Air Act. The 2012 payment under this rule is projected to be \$753,947. See supplemental workpaper 2US000.000_supp2.pdf						
2012	0	50	0	50	0.0	1-Sided Adj
Electrical Costs - Contract Engineering Support, Power Engineers is working on various electrical studies to assist with system planning and maintenance. See supplemental workpaper 2US000.000_supp1.pdf						
2012	0	5	0	5	0.0	1-Sided Adj
Electrical Costs - Intrusive power pole testing. Contract and material costs. See supplemental workpaper 2US000.000_supp1.pdf						
2012	0	15	0	15	0.0	1-Sided Adj
Electrical Costs - increased requiremnts for Vegetation Management. See supplemental workpaper 2US000.000_supp1.pdf						
2012	0	100	0	100	0.0	1-Sided Adj
Electrical Costs - GO 95 Compliance. Detailed survey's and contract and materials work. See supplemental workpaper 2US000.000_supp1.pdf						
2012	0	75	0	75	0.0	1-Sided Adj
Red Flag Implementation - contract and materials associated with shut downs and equipment maintenance. See supplemental workpaper 2US000.000_supp1.pdf						

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Area: SOCALGAS UNDERGROUND STORAGE  
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 Category: A. Underground Storage  
 Category-Sub: 1. Underground Storage  
 Workpaper: 2US000.000 - Underground Storage

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2012	0	50	0	50	0.0	1-Sided Adj

Goleta - Increased costs for vegetation management to comply with requirements of new annual and programmatic permits for work in the coastal zone and environmentally sensitive habitat areas.

2012	0	100	0	100	0.0	1-Sided Adj
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Goleta - Increased costs for catalyst and emissions testing to meet compliance requirements of the revised SBCAPCD Rule 333.

2012	80	0	0	80	0.0	1-Sided Adj
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Incremental Labor expense in support of the newly installed gas dehydration facility at Playa del Rey Storage facility. Individual will manage the start-up and ongoing operation and maintenance activities associated with this new facility.

2012	0	0	0	0	1.0	1-Sided Adj
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Incremental FTE in support of the newly installed gas dehydration facility at Playa del Rey Storage facility. Individual will manage the start-up and ongoing operation and maintenance activities associated with this new facility.

2012	90	0	0	90	0.0	1-Sided Adj
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Storage Operations staff support personnel - Incremental FTE to support ongoing Storage Operations with the integration of newly developed enterprise-wide business solutions. Person would evaluate the new applications to determine how Underground Storage could most effectively leverage new technology and procedures. Additionally, person would evaluate current organization practices and procedures to determine if modifications are necessary to more readily integrate the new business solutions opportunities.

2012	0	5	0	5	0.0	1-Sided Adj
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Non-labor expense funding for new Storage Operations staff support personnel - Covers miscellaneous expenses such as travel mileage, mobile phone, travel, training.

2012	0	0	0	0	1.0	1-Sided Adj
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Storage Operations staff support personnel - Incremental FTE to support ongoing Storage Operations with the integration of newly developed enterprise-wide business solutions. Person would evaluate the new applications to determine how Underground Storage could most effectively leverage new technology and procedures. Additionally, person would evaluate current organization practices and procedures to determine if modifications are necessary to more readily integrate the new business solutions opportunities.

<b>2012 Total</b>	<b>474</b>	<b>1,154</b>	<b>0</b>	<b>1,628</b>	<b>6.0</b>	
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Area: SOCALGAS UNDERGROUND STORAGE  
Witness: Mansdorfer, James D  
Category: A. Underground Storage  
Category-Sub: 1. Underground Storage  
Workpaper: 2US000.000 - Underground Storage

Year/Expl.      Labor      NLbr      NSE      Total      FTE      Adj Type

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Workpaper: 2US000.000 - Underground Storage

**Determination of Adjusted-Recorded:**

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	8,945	9,526	9,973	9,988	10,601
Non-Labor	13,020	14,368	14,731	15,556	12,678
NSE	0	0	0	0	0
Total	21,965	23,894	24,704	25,544	23,279
FTE	121.1	125.2	124.5	121.1	123.7
<b>Adjustments (Nominal \$) **</b>					
Labor	0	0	0	0	0
Non-Labor	-490	-574	-126	-341	1,400
NSE	0	0	0	0	0
Total	-490	-574	-126	-341	1,400
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	8,945	9,526	9,973	9,988	10,601
Non-Labor	12,530	13,794	14,605	15,215	14,078
NSE	0	0	0	0	0
Total	21,475	23,320	24,578	25,203	24,679
FTE	121.1	125.2	124.5	121.1	123.7
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	1,525	1,702	1,740	1,925	1,916
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	1,525	1,702	1,740	1,925	1,916
FTE	21.8	22.9	22.7	23.9	23.4
<b>Escalation to 2009\$</b>					
Labor	1,251	990	700	302	0
Non-Labor	1,538	1,147	703	-38	0
NSE	0	0	0	0	0
Total	2,788	2,137	1,403	264	0
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2009\$)</b>					
Labor	11,720	12,219	12,414	12,215	12,517
Non-Labor	14,067	14,941	15,308	15,177	14,078
NSE	0	0	0	0	0
Total	25,788	27,160	27,721	27,392	26,594
FTE	142.9	148.1	147.2	145.0	147.1

\* After company-wide exclusions of Non-GRC costs

\*\* Refer to "Detail of Adjustments to Recorded" page for line item adjustments

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Area: SOCALGAS UNDERGROUND STORAGE  
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**Summary of Adjustments to Recorded:**

In Nominal \$ (000)						
Year	2005	2006	2007	2008	2009	
Labor	0	0	0	0	0	
Non-Labor	-490	-574	-126	-341	1,400	
NSE	0	0	0	0	0	
Total	-490	-574	-126	-341	1,400	
FTE	0.0	0.0	0.0	0.0	0.0	

**Detail of Adjustments to Recorded:**

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From Cctr</u>	<u>RefID</u>
2005	0	16	0	0.0	1-Sided Adj	N/A	TP1RMC2010040 1145556050
Past due amounts (Yr. 2004 - \$10,630; Yr. 2005 - \$15,591; Yr 2006 - \$29,291) paid in year 2009 to Bureau Of Land Management (BLM) per Underground Gas Storage Agreeme							
2005	0	-99	0	0.0	1-Sided Adj	N/A	TPFGN20090923 132411967
TY2008 GRC Compressor Station fuel charged to Balancing Account IO300579719 starting year 2009							
2005	0	-375	0	0.0	1-Sided Adj	N/A	TPFGN20090923 132533217
YT2008 GRC Compressor Station fuel charged to Balancing Account IO300579719 starting year 2009							
2005	0	-31	0	0.0	1-Sided Adj	N/A	TPFGN20100611 153013323
This adjustment applies to the East whittier Storage facility. This facility is no longer necessary or usefull in providing utility service							
<b>2005 Total</b>	<b>0</b>	<b>-490</b>	<b>0</b>	<b>0.0</b>			
2006	0	-276	0	0.0	1-Sided Adj	N/A	TPFGN20090923 131947507
TY2008 GRC Compressor Station fuel charged to Balancing Account IO300579719 starting year 2009							
2006	0	-378	0	0.0	1-Sided Adj	N/A	TPFGN20090923 132113167
TY2008 GRC Compressor Station fuel charged to Balancing Account IO300579719 starting year 2009							

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<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2006	0	-4	0	0.0	1-Sided Adj	N/A	TPFGN20090923 132228667
TY2008 GRC Compressor Station fuel charged to Balancing Account IO300579719 starting year 2009							
2006	0	79	0	0.0	1-Sided Adj	N/A	TPFGN20090929 145724317
Honor Rancho Amended Lease Agreement Adjusted payment for 4th Quarter 2006 transferred from Cost Center 2200-0278 paid in year 2008							
2006	0	29	0	0.0	1-Sided Adj	N/A	TPFGN20091007 153127730
Past due amounts (Yr. 2004 - \$10,630; Yr. 2005 - \$15,591; Yr 2006 - \$29,291) paid in year 2009 to Bureau Of Land Management (BLM) per Underground Gas Storage Agreeme							
2006	0	-23	0	0.0	1-Sided Adj	N/A	TPFGN20100611 154653343
This adjustment applies to the East whittier Storage facility. This facility is no longer necessary or usefull in providing utility service							
<b>2006 Total</b>	<b>0</b>	<b>-574</b>	<b>0</b>	<b>0.0</b>			
2007	0	-197	0	0.0	1-Sided Adj	N/A	TPFGN20090923 131629723
TY2008 GRC Compressor Station fuel charged to Balancing Account IO300579719 starting year 2009							
2007	0	-272	0	0.0	1-Sided Adj	N/A	TPFGN20090923 131757490
TY2008 GRC Compressor Station fuel charged to Balancing Account IO300579719 starting year 2009							
2007	0	320	0	0.0	1-Sided Adj	N/A	TPFGN20090929 145902023
Honor Rancho Amended Lease Agreement new annual 2007 payment transferred from Cost Center 2200-0278 paid in year 2008							
2007	0	37	0	0.0	1-Sided Adj	N/A	TPFGN20091007 153646613
Past due amounts (Yr. 2007 - \$36,732; and 2008 - \$126,732) paid in year 2009 to Bureau Of Land Management (BLM) per Underground Gas Storage Agreeme							
2007	0	-13	0	0.0	1-Sided Adj	N/A	TPFGN20100611 154816207
This adjustment applies to the East whittier Storage facility. This facility is no longer necessary or usefull in providing utility service							

Southern California Gas Company  
 Test Year 2012 GRC - APP  
 Non-Shared Service Workpapers

Area: SOCALGAS UNDERGROUND STORAGE  
 Witness: Mansdorfer, James D  
 Category: A. Underground Storage  
 Category-Sub: 1. Underground Storage  
 Workpaper: 2US000.000 - Underground Storage

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
<b>2007 Total</b>	<b>0</b>	<b>-126</b>	<b>0</b>	<b>0.0</b>			
2008	0	107	0	0.0	CCTR Transf	From 2200-0431.000	TP1CSK2009092 4075847077
<p>VP cost center was initially used for tracking of costs incurred by Storage Operations for repair activities resulting from Firestorms. For GRC costs are being moved to Storage operations (NSS cost center 2200-0294) to align with other Storage operations expenditures.</p>							
2008	0	-53	0	0.0	1-Sided Adj	N/A	TPFGN20090914 153455113
<p>Transfer 2008 O&amp;M to Capital journal entry made in 2009</p>							
2008	0	-43	0	0.0	1-Sided Adj	N/A	TPFGN20090914 154233763
<p>Transfer 2008 O&amp;M to Capital journal entry made in 2009</p>							
2008	0	-169	0	0.0	1-Sided Adj	N/A	TPFGN20090914 154429093
<p>Transfer 2008 O&amp;M to Capital journal entry made in 2009</p>							
2008	0	-68	0	0.0	1-Sided Adj	N/A	TPFGN20090922 122137983
<p>Transfer 2008 O&amp;M to Capital journal entry made in 2009 back to 2008</p>							
2008	0	-513	0	0.0	1-Sided Adj	N/A	TPFGN20090922 122234750
<p>Transfer 2008 O&amp;M to Capital journal entry made in 2009 back to 2008</p>							
2008	0	-18	0	0.0	1-Sided Adj	N/A	TPFGN20090922 122346940
<p>Transfer 2008 O&amp;M to Capital journal entry made in 2009 back to 2008</p>							
2008	0	-61	0	0.0	1-Sided Adj	N/A	TPFGN20090923 131212577
<p>TY2008 GRC Compressor Station fuel charged to Balancing Account 300579719 starting year 2009</p>							
2008	0	-272	0	0.0	1-Sided Adj	N/A	TPFGN20090923 131439440
<p>TY2008 GRC Compressor Station fuel charged to Balancing Account IO300579719 starting year 2009</p>							
2008	0	-79	0	0.0	1-Sided Adj	N/A	TPFGN20090929 144236893
<p>Honor Rancho Amended Lease Agreement Adjusted Payment for 4th Quarter 2006 transferred to Honor Rcho Cost Center 2200-0290 in year 2006</p>							

Southern California Gas Company  
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 Non-Shared Service Workpapers

Area: SOCALGAS UNDERGROUND STORAGE  
 Witness: Mansdorfer, James D  
 Category: A. Underground Storage  
 Category-Sub: 1. Underground Storage  
 Workpaper: 2US000.000 - Underground Storage

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2008	0	-320	0	0.0	1-Sided Adj	N/A	TPFGN20090929 145445673
Honor Rancho Amended Lease Agreement new annual 2007 payment transferred to Honor Rancho cost center 2200-0290 in year 2007							
2008	0	127	0	0.0	1-Sided Adj	N/A	TPFGN20091007 153832990
Past due amounts (Yr. 2007 - \$36,732; and Yr 2008 - \$126,7232) paid in year 2009 to Bureau Of Land Management (BLM) per Underground Gas Storage Agreeeme							
2008	0	-65	0	0.0	1-Sided Adj	N/A	TPFGN20100611 154929470
This adjustment applies to the East whittier Storage facility. This facility is no longer necessary or usefull in providing utility service							
2008	0	1,088	0	0.0	CCTR Transf	From 2200-2092.000	TPKSV20090911 105808620
VP cost center was initially used for tracking of costs incurred by Storage Operations for repair activities resulting from Firestorms. For GRC, costs are being moved to Storage Operations (NSS cost center 2200-0294) to align with other Storage Operations expenditures.							
<b>2008 Total</b>	<b>0</b>	<b>-341</b>	<b>0</b>	<b>0.0</b>			

2009	0	23	0	0.0	CCTR Transf	From 2200-0431.000	TP1CSK2010030 1144545890
VP cost center was initially used for tracking of costs incurred by Storage Operations for repair activities resulting from Firestorms. For GRC costs are being moved to Storage operations (NSS cost center 2200-0294) to align with other Storage operations expenditures.							
2009	0	31	0	0.0	CCTR Transf	From 2200-0431.000	TP1CSK2010030 1144649890
VP cost center was initially used for tracking of costs incurred by Storage Operations for repair activities resulting from Firestorms. For GRC costs are being moved to Storage operations (NSS cost center 2200-0294) to align with other Storage operations expenditures.							
2009	0	169	0	0.0	1-Sided Adj	N/A	TPFGN20100301 114029207
Transfer 2008 O&M to Capital, journal entry made in 2009							
2009	0	53	0	0.0	1-Sided Adj	N/A	TPFGN20100301 114240160
Transfer 2008 O&M to Capital, journal entry made in 2009							
2009	0	43	0	0.0	1-Sided Adj	N/A	TPFGN20100301 114335180
Transfer 2008 O&M to Capital, journal entry made in 2009							

Southern California Gas Company  
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 Non-Shared Service Workpapers

Area: SOCALGAS UNDERGROUND STORAGE  
 Witness: Mansdorfer, James D  
 Category: A. Underground Storage  
 Category-Sub: 1. Underground Storage  
 Workpaper: 2US000.000 - Underground Storage

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2009	0	18	0	0.0	1-Sided Adj	N/A	TPFGN20100301 114445727
Transfer 2008 O&M to Capital, journal entry made in 2009							
2009	0	-56	0	0.0	1-Sided Adj	N/A	TPFGN20100301 114951873
Past due amounts (Yr. 2004 - \$10,630; Yr. 2005 - \$15,591; Yr. 2006 - \$29,291) paid in year 2009 to Bureau Of land management (BLM) per Underground Gas Storage Agreement							
2009	0	-163	0	0.0	1-Sided Adj	N/A	TPFGN20100301 115312800
Past due amounts (Yr. 2007 - \$36,732; Yr. 2008 - \$126,732) paid in year 2009 to Bureau Of land Management (BLM) per Underground Gas Storage Agreement							
2009	0	513	0	0.0	1-Sided Adj	N/A	TPFGN20100301 115426673
Transfer 2008 O&M to Capital, journal entry made in 2009							
2009	0	68	0	0.0	1-Sided Adj	N/A	TPFGN20100301 115515037
Transfer 2008 O&M to Capital, journal entry made in year 2009							
2009	0	-48	0	0.0	1-Sided Adj	N/A	TPFGN20100611 155044817
This adjustment applies to the East whittier Storage facility. This facility is no longer necessary or usefull in providing utility service							
2009	0	749	0	0.0	CCTR Transf	From 2200-2092.000	TPKSV20100303 085633223
VP cost center was initially used for tracking of costs incurred by Storage Operations for repair activities resulting from Firestorms. For GRC costs are being moved to Storage operations (NSS cost center 2200-0294) to align with other Storage operations expenditures.							
<b>2009 Total</b>	<b>0</b>	<b>1,400</b>	<b>0</b>	<b>0.0</b>			

**Supplemental Workpapers for Workpaper 2US000.000**

Replaces Page 18 of 22 in Exhibit SCG-04-WP

Southern California Gas Company -- Storage Operations -- Witness James D. Mansdorfer  
Supplemental Workpaper Discussion and Calculations for incremental costs related to GO 95 Compliance

CPUC General Order 95 (G.O. 95): Overhead Electrical Line Construction. This regulation defines safe practices for constructing and maintaining systems of utility poles and overhead wiring. SoCalGas owns over 500 poles and associated wire and transformers that are used only for its own operations. Because these systems do not provide electric service to customers, prior to 2009 they did not fall under regulations for electric utilities. However, changes in regulations that took effect during 2009 now require these systems to be maintained in compliance with General Order 95 “Rules for Overhead Electric Line Construction” regulations. Compliance with these regulations requires enhanced maintenance, testing, and more frequent replacement.

**Compliance Inspections:** Each year a contractor will be hired to perform a G.O. 95 inspection of our system and document findings for each pole, conductor span, and transformer setting. Deficiencies will be corrected in a timely manner. This work is necessary for the safe and reliable operation of our overhead electrical system and for fire prevention.

**Vegetation Management:** A vegetation management contractor will conduct an annual vegetation survey and document any areas where vegetation has grown within the required clearances from structures and/or conductors set forth in the codes mentioned above. All required vegetation clearances will be reestablished annually, typically after the spring growing season.

**Wood Pole Replacement Intrusive Inspection:** All wood power poles at Aliso Canyon will be inspected in accordance with the requirements of G.O. 165 every 10 years. Intrusive inspection includes sounding with a hammer at various locations above ground line and drilling a specified number of holes into the base of the pole above and below the ground line. The inspectors are skilled at examining the wood shavings produced from drilling and listening to the sounds from the hammer strikes to diagnose wood rot in the pole base. After inspection, fumigant will be applied and drilled holes will be plugged. Poles that fail the intrusive inspection will be replaced under a separate replacement project.

**Red Flag Shutdown/ Restoration:** Due to the frequency and severity of wildfires in recent years, SoCalGas has adopted new procedures designed to prevent wildfires associated with the electrical distribution system at the storage fields. These new procedures will require the overhead electrical system to be de-energized under certain dry, high wind conditions until the wind event subsides. Prior to re-energizing the electrical system, it must be inspected by a qualified contractor. Furthermore, certain infrastructure is required to maintain constant compliance with AQMD rules and regulations at the facility during the shutdowns, and that infrastructure requires maintenance.

**Electrical Engineering Support:** Engineering analysis of electrical systems throughout the storage fields is required to ensure compliance with G.O. 95 and the safe and reliable operation of the system. Typical evaluation/analysis includes protective device coordination studies, power factor evaluation, and voltage drop calculations. Examples of other documentation needed are a switching schedule/procedure, as-built circuit maps, and schematic diagrams

**Replaces Page 18 of 22 in Exhibit SCG-04-WP**

**Southern California Gas Company -- Storage Operations -- Witness James D. Mansdorfer  
Supplemental Workpaper Discussion and Calculations for incremental costs related to GO 95 Compliance**

**Forecasting Methodology:**

**Compliance Inspection:** 2009 actual's, used for 2010 forecast. 2011 - 2012 are anticipated to be 50% of 2010 spend level due to program maturing.

**Vegetaion Management:** Forecast based on contractor bid proposals

**Wood Pole Inspection:** Forecast based on 100 pole inspections per year, at a cost of \$50 per pole inspection.

**Red Flag Events:** Assume (5 events /year, 100 manhours per event, \$100/ hr) = \$50,000  
\$5,000 per event for program maintenance and miscellaneous incidental expenses. 5 x \$5,000 = \$25,000

**Engineering Support:** This project was estimated using costs of past engineering studies that are similar in scope and requirements.  
Costs are expected to decline in 2011 and 2012 since the computer models of the electrical system will be developed in 2010.  
Ongoing costs will remain at the lower level due to this efficiency gain utilizing technological solutions

Line #s	Expense Description	(Thousands or 2009 dollars)		
		2010	2011	2012
1	Compliance inspection	\$ 200	\$ 100	\$ 100
2	Vegetation Management	\$ 15	\$ 15	\$ 15
3	Wood Pole Inspection	\$ 5	\$ 5	\$ 5
4	Red Flag Event	\$ 75	\$ 75	\$ 75
5	Engineering Support	\$ 100	\$ 50	\$ 50
	<b>Total GO 95 expense</b>	<b>\$ 395</b>	<b>\$ 245</b>	<b>\$ 245</b>

**Replaces Page 19 of 22 in Exhibit SCG-04-WP**

**Southern California Gas Company -- Storage Operations -- Witness James D. Mansdorfer  
Supplemental Workpaper Discussion and Calculations for incremental costs related to Rule 317 Fees**

The South Coast Air Quality Management District (SCAQMD) Rule 317 (2010 passage pending) imposes significant new fees on major combustion facilities, based on a provision of the 1990 Amendments to the Federal Clean Air Act. The 2012 payment under this rule is projected to be approximately \$754,000.

Federal law mandates air districts that fail to meet the federal Clean Air Act's ozone standard by 2010 to levy mitigation fees on NOx and VOC facilities. It is virtually certain that the SCAQMD area will not meet the ozone standard. Major stationary sources with NOx and/or VOC emissions greater than 10 tons per year must demonstrate that its annual emissions, beginning in the year 2011, are below a baseline or threshold level (i.e., 2010 actual emissions or an alternative calculation based on production swings). If a major source produces emissions above 80% of the 2010 baseline level, a mitigation fee will be assessed for each excess ton of NOx/VOC above the 80% threshold. This calculation is performed annually until Clean Air Act standards are met.

SoCalGas has three storage facilities (Aliso Canyon, Honor Rancho, and Playa del Rey) that qualify under both the NOx and VOC provisions of Rule 317. The facilities are projected to exceed 80% of the baseline quantity by 83 tons in 2012. The SCAQMD estimates the fee to be \$9,080 per ton in 2012. The table below summarizes the fee calculation methodology, using 2008 actual NOx and VOC emissions as a proxy for the 2011 forecast emissions and historic averaging, for the 2010 Baseline quantity.

Line #s	Fees due in Year 2012							(Thousands of 2009 dollars)	
		Nox		VOC		Total			
		Tons	Fee	Tons	Fee	Tons	Fee		
1	<b>Aliso Canyon</b>	57.5	\$ 522	4.7	\$ 43	62.3	\$	565	
2	<b>Honor Rancho</b>	4.8	\$ 44	7.5	\$ 68	12.3	\$	112	
3	<b>PDR</b>	6.5	\$ 59	2	\$ 18	8.5	\$	77	
4	<b>SCG Total</b>	68.8	\$ 625	14.2	\$ 129	83	\$	754	

**Replaces Page 20 of 22 in Exhibit SCG-04-WP**

**Southern California Gas Company -- Storage Operations -- Witness James D. Mansdorfer  
Supplemental Workpaper Discussion and Calculations for incremental costs related to GHG Support Personnel**

The incremental increase to Storage Operations for GHG regulation support is as follows: one position each for Aliso Canyon and Honor Rancho, with another position supporting both Playa del Rey and La Goleta. These 3 positions will be responsible for the increased requirements for reporting and monitoring GHG emissions under AB32, 40 CFR 98.30 (Subpart C -- General Stationary Fuel Combustion emissions), 40 CFR 98.230 (Subpart W -- Petroleum and Natural Gas System fugitive emissions). Specific work will include, but not limited to:

- Oversight and data recording of continuous monitoring activities, for example fuel usage.
- Oversight and data recording of periodic monitoring activities such as station piping leak surveys, compressor seal leak measurement, etc.
- Capturing required operational data for GHG inventory, for example compressor or pipe blow downs.
- Assure Best Management Practices are being followed and all necessary data or information is recorded.
- Develop new management practices for reducing GHG emissions; evaluate potential projects for reductions.
- Collect data regarding leaks; quantify with field measurements, as required.
- Preparation of emission inventory reports.

The fourth position is planned for the Storage Technical Services department to provide technical oversight for the entire GHG program for Storage. This position would provide oversight and overall program support to the field-located positions. This would ensure consistent administration of program requirements, including the development and implementation of Best Management Practices amongst the fields, and the preparation of consolidated emission inventories, and required reporting. This position would also serve as the expert on the regulations and be the primary liaison to other departments in the company dealing with the GHG regulations.

**Methodology:** Zero Based labor incremental additions to Storage Operations:  
**Labor :** Four Project Specialists to be hire according to the schedule below. \$76,000 annual salary each.

Line #	GHG Support		(Thousands of 2009 dollars)			
			2009	2010	2011	2012
1	<b>Project Specialist #1</b>	Hire 2011	\$ -	\$ -	\$ 76	\$ 76
2	<b>Project Specialist #2</b>	Hire 2011	\$ -	\$ -	\$ 76	\$ 76
3	<b>Project Specialist #3</b>	Hire 2012	\$ -	\$ -	\$ -	\$ 76
4	<b>Project Specialist #4</b>	Hire 2012	\$ -	\$ -	\$ -	\$ 76
5	<b>Total</b>		\$ -	\$ -	\$ 152	\$ 304

Replaces Page 21 of 22 in Exhibit SCG-04-WP

Southern California Gas Company -- Storage Operations -- Witness James D. Mansdorfer  
 Supplemental Workpaper Discussion and Calculations for incremental costs related to La Goleta Expenses

**Increased costs for catalyst and emissions testing to meet compliance requirements of the revised SBCAPCD Rule 333** - Revisions to SBCAPCD Rule 333 resulted in changes to the monitoring/testing requirements for the eight main unit gas compressors at Goleta Station. The Rule now requires that failure of a quarterly test shifts the testing frequency to monthly. To ensure compliance with emissions limits the company plans to change out catalyst more frequently, and also expects an increase from 16 days per year of onsite emissions testing to 30 days per year.

**Increased costs for vegetation management to comply with requirements of new annual and programmatic permits for work in the coastal zone and environmentally sensitive habitat areas** - Santa Barbara County, California Coastal Commission, California Department of Fish and Game and other agency permits are now being required for routine vegetation management activities that were previously considered exempt. These activities now require environmental review, permitting, and onsite biological/environmental monitoring prior to, during and after performing the work. In addition, special work practices are required to ensure protection of the environment.

Forecasting Methodology and Assumptions:

**SBCAPCD Rule 333:**

- 7 additional sets of catalyst per year at \$10,000 per catalyst changeout = \$70,000.
  - 15 additional onsite emissions test days at \$2000 per day = \$30,000.
  - Total additional annual cost = \$100,000.

**Vegetaion Management:**

- Increase in governmental permitting/oversight costs, onsite biological/environmental monitoring costs, permit compliance monitoring costs totaling \$25,000 per year.
- Increase contract vegetation management costs of \$25,000 per year.
- Total additional annual cost = \$50,000.

Line #	Expense Description	(Thousands of 2009 dollars)		
		2010	2011	2012
1	Expense Description			
2	Rule 333 Compliance	\$ 100	\$ 100	\$ 100
3	Vegetation Management	\$ 50	\$ 50	\$ 50
4	Total Expense	\$ 150	\$ 150	\$ 150

Southern California Gas Company  
Test Year 2012 GRC - APP  
Non-Shared Service Workpapers

Area: GOUS - SOCALGAS UNDERGROUND STORAGE  
Witness: Mansdorfer, James D

**Appendix A: List of Non-Shared Cost Centers**

<b>Cost Center</b>	<b>Sub</b>	<b>Description</b>
2200-0278	000	STORAGE OPERATIONS DIRECTOR
2200-0279	000	STORAGE ENGINEERING
2200-0285	000	STORAGE PLAYA DEL REY
2200-0288	000	STORAGE TECHNICAL SERVICES
2200-0289	000	STORAGE LA GOLETA
2200-0290	000	STORAGE HONOR RANCHO
2200-0294	000	ALISO STORAGE OPS MANAGER
2200-0295	000	ALISO STORAGE STATION OPERATIONS
2200-0296	000	ALISO STATION MAINTENANCE
2200-0297	000	ALISO STORAGE AND FIELD MAINTENANCE
2200-0298	000	ALISO ENVIRONMENTAL O&M
2200-0299	000	ALISO FIELD MAINTENANCE OIL PRODUCTION
2200-2106	000	STORAGE EAST WHITTIER