State of California • Natural Resources Agency
Department of Conservation
Division of Oil, Gas, and Geothermal Resources
801 K Street • MS 18-05
Sacramento, CA 95814
(916) 445-9686 • FAX (916) 319-9533

Edmund G. Brown Jr., *Governor*
Kenneth A. Harris Jr., *State Oil and Gas Supervisor*

January 3, 2017

SENT VIA EMAIL

Mr. Rodger Schwecke
Vice President
Transmission and Storage
Southern California Gas Company
RSchwecke@semprautilities.com

FINDING THAT WELL FERNANDO FEE 38C (API NO. 03724232) PASSED TESTS REQUIRED TO ENSURE MECHANICAL INTEGRITY

Dear Mr. Schwecke:

I am writing in regard to the safety review test results for one of the 114 wells at the Aliso Canyon gas storage facility (Facility). Each of these wells are subject to the comprehensive safety review that State Oil and Gas Supervisor Order 1109 and SB 380[1] require to be completed before the Division of Oil, Gas, and Geothermal Resources (Division) may authorize resumption of injection operations at the Facility. Order 1109 describes two batteries of well tests. To complete the review, each well must (1) pass both batteries of tests, (2) pass the first battery of tests and be taken out of service and isolated from the underground gas storage reservoir, or (3) be properly plugged and abandoned.

The first battery of tests is an initial casing assessment that uses temperature and noise logs to ensure that there is no migration of fluids near the wellbore. The second battery of tests consists of a casing inspection using electromagnetic and ultra-sonic technologies, a multi-arm caliper inspection, a cement bond log, and a positive pressure test to ensure well integrity and the prevention of fluid and gas migration. The Division posts the current status and testing results for each of the 114 wells on its website at http://www.conservation.ca.gov/dog/AlisoCanyon/Pages/Well-Detail.aspx.

After receiving and evaluating all test results for the well, I find for purposes of Order 1109 and SB 380, that well Fernando Fee 38C (API No. 03724232) passed the first and second batteries of the comprehensive safety review testing regime and, as of April 5, 2016, the mechanical integrity of the well has been ensured. Accordingly, this well may be used for injection if and when I authorize injection operations to resume at the Facility, and if the well is in compliance with all other applicable requirements. I make this finding as of the date of this letter, and underscore that ongoing monitoring and testing are necessary to ensure the continued integrity of the well.

Sincerely,

Kenneth A. Harris Jr.,
State Oil and Gas Supervisor

[1] Senate Bill 380 (Pavley, Chapter 14, Statutes of 2016) codified in part at Public Resources Code section 3217.

NATURAL RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

Rec'd 12-12-16 DOGGR Ventura.

Workover SIMP
Start Date: 3/14/2016 - End Date: 4/9/2016

WELL SUMMARY REPORT

API No. 03724232

Operator	Well	
Southern California Gas Company	Fernando Fee 38 C	
Field (and Area, if applicable) Aliso Canyon	County Los Angeles	Sec 27, T3N, R16W, SBB&M
Location of well (Give surface location from property or section corner, street center line) N/S Dist (ft): 2,920.0 N, E/W Dist (ft): 480.0 E		Elevation of ground above sea level: 1,708
Lat./Long. in decimal degrees, to six decimal places, NAD 83 format: Lat: 34.30955922 Long: 118.54456969		

Was the well directionally drilled? ☐ Yes ☐ No If yes, show coordinates (from surface location) and true vertical depth at total depth.

Commenced drilling (date): 11/19/2001
Completed drilling (date): 12/5/2001
Commenced production/injection (date): ** See attached report

Total depth: (1st hole) (2nd) (3rd) ** See attached report

Present effective depth

Junk? Describe:

Production mode: ☐ Flowing ☐ Pumping ☐ Gas lift

Name of production/injection zone(s): ** See attached report

Depth measurements taken from top of: ☐ Derrick Floor ☐ Rotary Table ☒ Kelly Bushing
Which is 32 feet above ground.

GEOLOGICAL MARKERS	DEPTH
** See attached report	

Formation Name	Geologic Age
S4	

Base of fresh water

	Clean Oil (bbl per day)	API Gravity (clean oil)	Percent Water (including emulsion)	Gas (Mcf per day)	Tubing Pressure	Casing Pressure
Initial Production						
Production After 30 days						

CASING AND CEMENTING RECORD (Present Hole)

Size of Casing (Inches API)	Top of Casing	Depth of Shoe	Weight of Casing	Grade and Type of Casing	New (N) or Used (U)	Size of Hole Drilled	Number of Sacks or Cubic Feet of Cement	Depth of Cementing (if through perforations)	Top(s) of Cement in Annulus
** See attached report for CASING RECORD**									

PERFORATED CASING (Size, top, bottom, perforated intervals, size and spacing of perforations, and method.)

** See attached report

Logs/surveys run? ☐ Yes ☐ No If yes, list type(s) and depth(s).

** See attached report

In compliance with Sec. 3215, Division 3, of the *Public Resources Code*, the information given herewith is a complete and correct record of the present condition of the well and all work done thereon, so far as can be determined from all available records.

Name of person filing report	Telephone Number	Signature	Date
Tom McMahon	714-398-5020	Thomas J McMahon	12.14.16
Address: PO Box 2300, SC9365		City/State: Chatsworth, CA	Zip Code: 91313-2300
Individual to contact for technical questions: Tom McMahon	Telephone Number: 714-398-5020	E-Mail Address:	

OG100 (3/09)

SUBMIT IN DUPLICATE

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NATURAL RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

Rec'd 12-12-16 DOGGR Ventura.

WELL SUMMARY REPORT

API No. 03724232

Operator	Well	
Southern California Gas Company	**Fernando Fee 38 C**	
Field (and Area, if applicable) **Aliso Canyon**	County **Los Angeles**	Sec 27, T3N, R16W, SBB&M

Tubing Components

Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Len (ft)
Profile Nipple XN (2.313)	2 7/8	2.205		L-80	1.38
Tubing Pup Joint	2 7/8	2.441	6.50	L-80	10.19
Cross Over	2 7/8	2.441		L-80	1.03
Packer (Halliburton) G-6 (COE 6272.87')	8.51	3.983		L-80	5.38
Wireline Guide	8	3.983		L-80	0.68

11/22/2001 10:34:27 PM, Run Date: 11/22/2001

Wellbore	Set Depth (ftKB)	In Tubing String
	122,106	

Other In Hole

Wellbore	Des	Run Date	OD (in)	ID (in)	Top (ftKB)	Btm (ftKB)
Original Hole	Gravel packs	6/13/2003	8.681	5.500	6,813	7,279

PERFORATIONS

Wellbore	Date	Type	Zone	Nom Hole Dia (in)	Btm - Top (ftKB)	Top (ftKB)	Btm (ftKB)	Calculated Shot Total
Original Hole	2/26/2003	Perforated	Sesnon S04, Original Hole	0.500	21.0	7,065	7,086	127
Original Hole	2/26/2003	Perforated	Sesnon S06, Original Hole	0.500	29.0	7,098	7,127	175
Original Hole	5/14/2002	Perforated	Sesnon, Original Hole	0.500	70.0	7,160	7,230	421
Original Hole	2/26/2003	Perforated	Sesnon S14, Original Hole	0.500	13.0	7,244	7,257	79

LOGS

Wellbore	Date	Run #	Type	Top (ftKB)	Btm (ftKB)
Original Hole	12/1/2001				
Original Hole	12/1/2001		Platform Express		

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NATURAL RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
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Rec'd 12-12-16 DOGGR Ventura.

WELL SUMMARY REPORT

API No. 03724232

Operator	Well	
Southern California Gas Company	**Fernando Fee 38 C**	
Field (and Area, if applicable) **Aliso Canyon**	County **Los Angeles**	Sec 27, T3N, R16W, SBB&M

WELLBORES

Total Hole & Present Effective Depth

Wellbore Name	PBTD (All) (ftKB)
Original Hole	

Size (in)	Section Des	Act Btm (ftKB)	Act Btm (TVD) (ftKB)
17 1/2	Surface	870	870
12 1/4	Production	7,380	

ZONES

Wellbore	Zone Name	Top (ftKB)	Btm (ftKB)
Original Hole	MP (Caprock)	6,753	
Original Hole	Sesnon S01	6,978	7,015
Original Hole	Sesnon S02	7,015	7,065
Original Hole	Sesnon S04	7,065	7,096
Original Hole	Sesnon S06	7,096	7,139
Original Hole	Sesnon S08	7,139	7,160
Original Hole	Sesnon	7,160	7,230
Original Hole	Sesnon S10	7,160	7,210
Original Hole	Sesnon S12	7,210	7,243
Original Hole	Sesnon S14	7,243	7,260

FORMATIONS

Formation Name	Geologic Age	Final Top MD (ftKB)	Final Btm MD (ftKB)
S2			
S8			
MP			
S14			
S10			
S1			
S12			
CR			
Frew			
S6			
S4			

CASING RECORD (Present Hole)

Conductor, Run Date: 9/6/2001

Wellbore	OD (in)	ID (in)	Wt/Len (lb/ft)	String Grade	Top Connection	Top Depth (ftKB)	Set Depth (ftKB)	Set Depth (TV...
Original Hole	20	19.124	94.00	K-55		32	72	72

Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Len (ft)
Casing Joints	20	19.124	94.00	K-55	40.00

Surface, Run Date: 11/20/2001

Wellbore	OD (in)	ID (in)	Wt/Len (lb/ft)	String Grade	Top Connection	Top Depth (ftKB)	Set Depth (ftKB)	Set Depth (TV...
Original Hole	13 3/8	12.615	54.50	K-55		32	862	862

Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Len (ft)
Casing Joints	13 3/8	12.615	54.50	K-55	805.03
Float Collar	13 3/8				1.00
Casing Joints	13 3/8	12.615	54.50	K-55	22.57
Float Shoe	13 3/8				1.40

Liner, Run Date: 6/13/2003

Wellbore	OD (in)	ID (in)	Wt/Len (lb/ft)	String Grade	Top Connection	Top Depth (ftKB)	Set Depth (ftKB)	Set Depth (TV...
Original Hole	5 1/2	4.892	17.00		LT&C	6,805	7,279	7,217

Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Len (ft)
9-5/8" HPH liner packer	8.681				4.14
7", 23 # extension	7	6.366	23.00		4.50
9-5/8" x 5-1/2" drive on box	8.4	5.500			1.00

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NATURAL RESOURCES AGENCY OF CALIFORNIA
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Rec'd 12-12-16 DOGGR Ventura.

WELL SUMMARY REPORT

API No. 03724232

Operator: **Southern California Gas Company**
Well: **Fernando Fee 38 C**
Field (and Area, if applicable): **Aliso Canyon**
County: **Los Angeles**
Sec 27, T3N, R16W, SBB&M

Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Len (ft)
Landing nipple	5 1/2	4.892			1.70
5-1/2" blank pipe w/ 8-1/2' lugs	5 1/2	4.892	17.00		39.42
5-1/2" blank pipe w/ 8-1/2' lugs	5 1/2	4.892	17.00		38.26
5-1/2" blank pipe w/ 8-1/2' lugs	5 1/2	4.892	17.00		39.40
5-1/2" blank pipe w/ 8-1/2' lugs	5 1/2	4.892	17.00		38.51
Dura Grip 0.012" screen	5 1/2	4.892	17.00		24.90
Dura Grip 0.012" screen	5 1/2	4.892	17.00		40.47
Dura Grip 0.012" screen	5 1/2	4.892	17.00		39.95
Dura Grip 0.012" screen	5 1/2	4.892	17.00		40.10
Dura Grip 0.012" screen	5 1/2	4.892	17.00		39.92
Dura Grip 0.012" screen	5 1/2	4.892	17.00		39.76
Dura Grip 0.012" screen	5 1/2	4.892	17.00		40.19
Dura Grip 0.012" screen	5 1/2	4.892	17.00		40.36
Bull plug w/ plate and spade	5 1/2				1.41

Production, Run Date: 12/2/2001

Wellbore	OD (in)	ID (in)	Wt/Len (lb/ft)	String Grade	Top Connection	Top Depth (ftKB)	Set Depth (ftKB)	Set Depth (TV...
Original Hole	9 5/8	8.681	47.00	N-80	LT&C	32	7,326	7,263

Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Len (ft)
Casing hanger	9 5/8	8.681			1.00
Production casing	9 5/8	8.681	47.00	N-80	6,847.60
External Casing Packer	9 5/8	8.681	47.00	N-80	21.88
Production casing	9 5/8	8.681	47.00	N-80	328.78
Float collar	9 5/8	8.681			1.00
Production casing	9 5/8	8.681	47.00	N-80	92.10
Float Shoe	9 5/8	8.681			1.50

CEMENT RECORDS - Casing

Wellbore	Start Date	Stg #	Des	Top (ftKB)	Btm (ftKB)
Original Hole	11/20/2001	1	Lead Cement - Surface Casing	32	430
Original Hole	11/20/2001	2	Tail Cement - Surface Casing	430	862
Original Hole	12/3/2001	1	Lead Cement - Production Casing	33	4,911
Original Hole	12/3/2001	2	Tail Cement #1 - Production Casing	4,911	6,716
Original Hole	12/3/2001	3	Tail Cement #2 - Production Casing	6,716	7,326

CEMENT RECORDS - Other

Wellbore	Start Date	Stg #	Des	Top (ftKB)	Btm (ftKB)
Original Hole	12/3/2001	1	Float Equipment Plug	7,304	7,326

TUBING STRING (Present Hole)

Production Tubing, Run Date: 4/4/2016

Wellbore	Set Depth (ftKB)	String	Cut Pull Date	Depth Cut Pull (ftKB)
Original Hole	6,777	Production Tubing set at 6,777ftKB on 4/4/2016 00:00		

Tubing Components

Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Len (ft)
Tubing Hanger	11	2.441			0.50
Tubing Pup Joint	2 7/8	2.441	6.50	L-80	1.70
Tubing Pup Joint	2 7/8	2.441	6.50	L-80	10.20
Tubing	2 7/8	2.441	6.50	L-80	30.16
Cross Over	3 1/2	2.441		L-80	0.96
Tubing	3 1/2	2.992	9.30	L-80	6,617.05
Cross Over	3 1/2	2.441		L-80	0.94
Tubing	2 7/8	2.441	6.50	L-80	30.18
Sliding Sleeve (Halliburton) XD	2 7/8	2.313		L-80	4.06
Tubing	2 7/8	2.441	6.50	L-80	30.12

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NATURAL RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

Rec'd 12-12-16 DOGGR Ventura.

Workover SIMP
Start Date: 3/14/2016 - End Date: 4/9/2016

WELL SUMMARY REPORT

API No.: 03724232

Operator	Well	
Southern California Gas Company	**Fernando Fee 38 C**	
Field (and Area, if applicable) **Aliso Canyon**	County **Los Angeles**	Sec 27, T3N, R16W, SBB&M

WELLBORES

Total Hole & Present Effective Depth

Wellbore Name	PBTD (All) (ftKB)
Original Hole	

Size (in)	Section Des	Act Btm (ftKB)	Act Btm (TVD) (ftKB)
17 1/2	Surface	870	870
12 1/4	Production	7,380	

PRODUCTION METHOD

Method

PRODUCTION/INJECTION DETAILS

Start Date	Activity Type	Zone

ZONES

Zone Name	Wellbore	Top (ftKB)	Btm (ftKB)
MP (Caprock)	Original Hole	6,753	
Sesnon S01	Original Hole	6,978	7,015
Sesnon S02	Original Hole	7,015	7,065
Sesnon S04	Original Hole	7,065	7,096
Sesnon S06	Original Hole	7,096	7,139
Sesnon S08	Original Hole	7,139	7,160
Sesnon	Original Hole	7,160	7,230
Sesnon S10	Original Hole	7,160	7,210
Sesnon S12	Original Hole	7,210	7,243
Sesnon S14	Original Hole	7,243	7,260

FORMATIONS

Formation Name	Geologic Age	Final Top MD (ftKB)	Final Btm MD (ftKB)
S2			
S8			
MP			
S14			
S10			
S1			
S12			
CR			
Frew			
S6			
S4			

CASING RECORD (Present Hole)

Csg Des	Run Date	OD (in)	ID (in)	Wt/Len (lb/ft)	Grade	Top Thread	Top (ftKB)	Set Depth (ftKB)	Set Depth (TVD) (ftKB)
Conductor	9/6/2001	20	19.124	94.00	K-55		32	72	72
Surface	11/20/2001	13 3/8	12.615	54.50	K-55		32	862	862
Liner	6/13/2003	5 1/2	4.892	17.00		LT&C	6,805	7,279	7,217
Production	12/2/2001	9 5/8	8.681	47.00	N-80	LT&C	32	7,326	7,263

PERFORATIONS

Nom Hole Dia (in)	Btm - Top (ftKB)	Top (ftKB)	Btm (ftKB)	Calculated Shot Total	Zone	Wellbore	Type
0.500	21.0	7,065	7,086	127	Sesnon S04, Original Hole	Original Hole	Perforated
0.500	29.0	7,098	7,127	175	Sesnon S06, Original Hole	Original Hole	Perforated

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NATURAL RESOURCES AGENCY OF CALIFORNIA
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Workover SIMP
Start Date: 3/14/2016 - End Date: 4/9/2016

WELL SUMMARY REPORT

API No. 03724232

Operator
Southern California Gas Company

Well
Fernando Fee 38 C

Field (and Area, if applicable)
Aliso Canyon

County
Los Angeles

Sec 27, T3N, R16W, SBB&M

PERFORMATIONS

Nom Hole Dia (in)	Btm - Top (ftKB)	Top (ftKB)	Btm (ftKB)	Calculated Shot Total	Zone	Wellbore	Type
0.500	70.0	7,160	7,230	421	Sesnon, Original Hole	Original Hole	Perforated
0.500	13.0	7,244	7,257	79	Sesnon S14, Original Hole	Original Hole	Perforated

LOGS

Date	Run #	Type	Top (ftKB)	Btm (ftKB)	Wellbore

SURVEYS

Wellbore Name	Description	Date	Definitive?	Job

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

Rec'd 08-15-16 DOGGR Ventura.

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Fernando Fee 38 C
A.P.I. No. 03724232
Date: 7/25/2016
Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Field: Aliso Canyon County: Los Angeles
Surface Location: Sec 27, T3N, R16W, SBB&M
Name: Tom McMahon Title: SIMP Project Manager
(President, Secretary, or Agent)
Telephone Number: 714-398-5020
Signature: Thomas J McMahon
(Person Submitting Report)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment, with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, and initial production data.

Start Date	Ops this Report (DOGGR)
3/16/2016	Ensign monthly safety meeting. Held safety meeting. Service rig. Field pressure = 1055 psi, SITP = 450 psi, SICP = 0 psi. Rigged up (Weatherford) testers and rigged up BOP testing equipment. Pressure test BOP as per Gas Company Standard 224.05: Pressure tested pipe and blind rams, all lines and connections at 300 psi low / 5000 psi high for 20 min. each test. Annular preventer at 300 psi low / 3500 psi high for 20 min each test. Good test. Bled off pressure and rigged down (Weatherford) equipment. Pumped 40 bbl's of high viscosity polymer and displaced with 60 bbl's of 8.6 ppg, 56 vis polymer. Monitor well. Well dead. Backed out lock screws and tried to pull hanger. Could not pull hanger free. Worked hanger up to 140K. Secured well till the AM
3/17/2016	Held safety meeting. Service rig. Field pressure = 1030, SITP = 390 psi, SICP = 20 psi. Rigged up circulating equipment. Pumped 80 bbl's of 8.6 ppg, 56 vis polymer down the tubing and 50 bbl's down the casing. Well dead. Rigged down circulating equipment. Held pre job safety meeting with (Weatherford) and rigged up donut puller. Pulled 197K and hanger still stuck. Try to work hanger free. Rigged down (Weatherford) donut puller. Held pre job safety meeting with (Western wireline) and rigged up slickline unit. Ran in the hole with a 2.30" gauge ring. Tagged XN nipple at 6,748' and pulled out of the hole. Tagged fluid level at 3350'. Ran in the hole with shifting tool at 6,709'. Close sleeve and pulled out of the hole. Rigged down slickline unit. Rigged up (Weatherford) donut puller. Filled the annulus with 220 bbl's of 8.6 ppg, 56 vis polymer. Pulled 175K on hanger and pressured up on the annulus to 200 psi. Hanger came free. Rigged down (Weatherford) donut puller. Pulled up and released (Halliburton) G6 packer. Land down hanger. Pulled out of the slowly standing back (16) joints of 2 7/8", 6.5#, N-80 tubing. Ernie Blevins with the DOGGR inspect BOP equipment. Secure well till the AM.
3/18/2016	Held safety meeting. Service rig. Field pressure = 983 psi, SITP = 0 psi, SICP = 0 psi. Continued pulling out of the hole with (Halliburton) packer. Filling the hole every 10 stands with 8.6 ppg, 56 vis polymer. Pulled (142) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Laid down gas lift mandrel. Continued pulled out of the hole with (71) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Laid down sliding sleeve, (1) joints of 2 7/8", 6.5#, N-80, 8rd tubing and Halliburton on/off and G6 packer. Packer looked good. Both elements intact. Measured and picked up (Weatherford) 9 5/8", 47# scraper, bumper sub and ran in the hole on (216) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Tagged liner top at 6805'. Pulled out of the hole with scraper and stood back (216) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Filling the hole every 10 stands with 8.6 ppg, 56 vis polymer. Broke out and laid down scraper and bumper sub. Made up saw tooth collar and ran in the hole on (196) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Tubing tail at 6747'. Secure well till the AM.
3/19/2016	Held safety meeting. Service rig. Field pressure = 1005 psi, SITP = 0 psi, SICP = 0 psi. Pumped 50 bbl's of 8.6 ppg, 56 vis polymer down the casing. Open well. Continued running in the hole picking up 15 joints of 2 7/8", 6.5#, N-80, 8rd tubing. Saw liner top at 6806' while going into the 5 1/2" liner. Tagged down at 7276'. Bottom of liner at 7278'. Pulled out of the hole laying down 15 joints of 2 7/8", 6.5#, N-80, 8rd tubing. Continued pulling out of the hole standing back (186) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Filled the hole every 10 stands with 2 bbls of 8.6 ppg, 56 vis polymer. Tubing tail at 1913'. Secured well for the weekend.
3/21/2016	Held safety meeting. Service rig. Field pressure = 1022, SITP = 0 psi, SICP = 0 psi. Pumped 50 bbl's of 8.6 ppg, 56 vis polymer down the annulus. Open well. Continued pulling out of the hole with (60) 2 7/8", 6.5#, J-55, 8rd tubing. Held pre-job safety meeting with Western Wireline and Scientific Drilling. Rigged up (Western) wireline unit and lubricator. Tested lubricator to 500 psi. Scientific Drilling calibrated tools. Ran in the hole with Gyro log. Loggers tagged at 7,278' (wireline measurement) Logged gyro from 7,278' to surface. Rigged down (Western) wireline unit. Scientific preformed after calibrations. Picked up (Weatherford) 9 5/8", 47# Loc-Set Bridge plug and ran in the hole on (218) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Set bridge plug at 6,798' COE. Rigged up circulating equipment. Filled the hole with 108 bbl's of 8.6 ppg, 56 vis polymer. Tested bridge plug to 500 psi for 30 minutes. Dump 10' of sand and displaced with 38 bbl's of 8.6 ppg, 56 vis polymer. Pull out of the hole with bridge plug retrieving tool. Stood back (100) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Secure well till the AM.

RESOURCES AGENCY OF CALIFORNIA
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DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

Rec'd 08-15-16 DOGGR Ventura.

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Fernando Fee 38 C
A.P.I. No. 03724232
Date: 7/25/2016
Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Field: Aliso Canyon County: Los Angeles
Surface Location: Sec 27, T3N, R16W, SBB&M
Name: Tom McMahon Title: SIMP Project Manager
(President, Secretary, or Agent)
Telephone Number: 714-398-5020
Signature: _____
(Person Submitting Report)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment, with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, and initial production data.

Start Date	Ops this Report (DOGGR)
3/22/2016	Held safety meeting. Service rig. Field pressure = 1027 psi, SITP = 0 psi, SICP = 0 psi. Open well. Well standing full. Continued pulling out of the hole and stood back (116) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Filled the hole every 10 stands with 8.6 ppg, 56 vis polymer. Held pre-job safety meeting with (Schlumberger) Rigged up wireline unit. Made up and ran in the with USIT, CBL, Neutron, Gamma ray log. Logged from 6,778' to surface. Laid down Gamma ray, Neutron, CBL. Rigged up lubricator and logged USIT from 250' to surface. Rigged down lubricator, USIT and wireline unit. Ran in the hole with (40) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Tubing tail at 1,283'. Secured well till the AM.
3/23/2016 -Caliper hog - mag Flux	Held safety meeting. Service rig. Field pressure = 1047, SITP = 0 psi, SICP = 0 psi. Open well. Well standing full. Pulled out of the hole with (40) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Held pre-job safety meeting with (Baker) and rigged up wireline unit. Ran in the hole with caliper tool and log from 6,781' to surface. Laid down caliper tool. Ran in with Vertilog and logged from 6,781' to surface. Laid down tools and rigged down wireline unit. Made up and ran in with (Weatherford) 9 5/8", 47# Arrow Set packer on (32) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Try to set packer at 1,047'. Could not get packer to set. Upper slips no holding. Ran in to 1,147'. try to set again. Could not set. Pulled out of the hole with packer. Laid down packer. Ran in the hole with (40) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Secured well till the AM.
3/24/2016	Held safety meeting. Service rig. Field pressure = 1032 psi, SITP = 0 psi, SICP = 0 psi. Continued pulling out of the hole and stood back (40) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Picked up 9-5/8" 47# Arrow Set packer. Ran in on (20) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Set it at 668' and pressure test it at 500 psi for 10 minutes. Test Good. Bled off pressure and ran into 3495'. Set packer at 3,495'. Rigged up Pros Testing Equipment. Attempt to pressure test pumping down tubing from 3495' to 6781' at 2250 PSI noticed a leak on hose fitting. Bled off pressure and fix leak. Attempt to pressure test to 2250 PSI. Bled off 800 PSI in 10 Minutes. Decision was made to pull the packer. Rigged down pumping equipment. Made up and ran in the hole with 9-5/8" 47# Full Bore packer on (10) joints of 2 7/8", 6.5#, N-80, 8rd tubing, Set packer at 350', Pressure test it at 550 psi for 10 minutes, Continued to run in the hole on 2 7/8", 6.5#, N-80, 8rd tubing to 3,493'. Set Packer with COE @ 3493'. Attempt to pressure test from 3,493' to 6,781' to 2250 PSI. Bled off 500 PSI in 10 minutes. Pressure test Casing from 3493' to surface to 3300 PSI with no Leaks or bleed off. Release packer and continue to run in the hole with 9-5/8" 47# Full Bore Test Packer to 6,755'. Set Packer at 6,755'. Pressure test casing from 6755' to 6781'. Bled off 500 PSI in 10 minutes. Bleed off Pressure and Release packer. Set Packer at 6768' COE. Test casing from 6,768' to 6,781'. Bled down 500 PSI in 10 Minutes.Bled off pressure and released packer. Pressure test tubing and casing to 1900 PSI. Test good for 10 minutes with no leaks or bleed off. Pull out of the hole and stood back (10) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Secured well till the AM.
3/25/2016	Held safety meeting. Service rig. Field pressure = 1033 psi, SITP = 0 psi, SICP = 0 psi. Open well. Well standing full. Pressure tested manifold to 2000 PSI for 10 minutes with no leaks. Set Packer at 6,450'. Pressure tested casing from 6,450' to 6781' to 2,200 psi. Test good with no leaks or bleed off. Pressure tested casing from 6,450' to surface to 3300 PSI for 10 minutes with no leaks or bleed off. Bled off pressure. Release packer and pulled out of the hole with 2 7/8", 6.5#, N-80, 8rd tubing to 3,498'. Set Packer with COE at 3,498'. Pressure tested casing from 3,498' to 3,781' to 2200 psi for 10 minutes with no leaks or bleed off. Test Good. Bled off pressure and pressure test casing from 3,498' to surface to 3,200 PSI. Test Good with no leaks or bleed off. Bled off pressure. Held pre-job safety meeting with Pros. Rigged up (PROS) testing equipment. Pressure tested from 3,498' to 6,781' to 2250 psi for 1 hour. Bled off 15 psi in 1 hour. Bled off pressure. Pressure tested casing from 3,498' to surface to 3,625 psi for 1 hour. Bled off 42 psi in 1 hour. Bled off pressure and rigged down (PROS). DOGGR Rep Mark Davis witnessed the testing. Released (Weatherford) 9-5/8", 47# Full Bore packer . Pulled out of the hole and stood back 2 7/8", 6.5#, N-80, 8rd tubing. Filling the hole every 10 stands with 8.6 ppg, 56 vis polymer. Laid down packer. Ran in the hole with (40) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Tubing tail at 1,280'. Secure well till the AM.
3/26/2016	Held safety meeting. Service rig. Field pressure = 1030 psi, SITP = 0 psi, SICP = 0 psi. Open well. Well standing full. Pulled out of the hole with (40) joints of 2 7/8", 6.5#, N-80 8rd tubing. Filled the hole with 8.6 ppg, 56 vis polymer. Rigged down rig floor. Nippled down Annular, double gate BOP and lines. Bled down the surface casing. (Cameron) checked and bled down void on tubing spool. Pulled tubing spool and DSA. (Cameron) inspected casing stub and seal. Nippled up riser spool and double gate BOP. Fill the hole. Secure well for the weekend.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

Rec'd 08-15-16 DOGGR Ventura.

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Fernando Fee 38 C
A.P.I. No. 03724232
Date: 7/25/2016
Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Field: Aliso Canyon County: Los Angeles
Surface Location: Sec 27, T3N, R16W, SBB&M
Name: Tom McMahon Title: SIMP Project Manager
(President, Secretary, or Agent)
Telephone Number: 714-398-5020

Signature: _____
(Person Submitting Report)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment, with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, and initial production data.

Start Date	Ops this Report (DOGGR)
3/29/2016	Held safety meeting. Service rig. Field pressure = 1031 psi, SITP = 0 psi, SICP = 0 psi. Open well. Nippled down double gate BOP. Nippled up 13 5/8" 3M X 11" 5M tubing spool. Nippled up 11" 5M double gate and Annular. Pumped plastic into "P" seals. Attempted to test "P" seal to 3,800 psi. No good. Bled air and retest. No good. Pump in more plastic. Retest. Still bleeding off. Secure well till the AM.
3/30/2016	Held safety meeting. Service rig. Field pressure = 1015 psi, SICP = 0 psi. Open well. Well standing full. Continued test "P" seals and void on tubing spool to 3,800 psi. Bleed air and repair leak on Cameron test pump. Retested upper and lower "P" seals and lower and upper void to 3,800 psi high. Good test. Rigged out (Cameron). Filled BOP and tested 300 low and 1,500 high for 20 minutes. Good test. Made up (Weatherford) retrieving head and ran on (212) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Tail at 6,693'. Secured well till the AM.
3/31/2016	Held safety meeting. Service rig. Field pressure = 1029 psi, SITP = 0 psi, SICP = 0 psi. Ran in the hole with (4) joints of 2 7/8", 6.5#, N-80, 8rd. Tagged sand at 6,783'. Rigged up circulating equipment and reversed with 8.6 ppg, 56 vis polymer. Circulated out sand. Could not latch on to (Weatherford) 9 5/8", 47# Loc-Set bridge plug. Worked over BP. It felt as if we had latched the BP. Could not release BP, could not circulate and could not release from the BP. Continued working BP. Pulled free. Pulled out of the hole and stood back (214) joints of 2 7/8", 6.5#, N-80, 8rd tubing. filling the hole every 10 stands with 8.6 ppg, 56 vis polymer. Did not have the BP. Inspected retrieving head. Ran in the hole with (50) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Secured well till the AM.
4/1/2016	Held safety meeting. Service rig. Field pressure = 1033 psi, SITP = 0 psi, SICP = 0 psi. Pulled out of the hole with (50) joints of 2 7/8", 6.5#, N-80, 8rd. Filling the hole every 10 stands with 8.6 ppg, 56 vis polymer. Unloaded fishing tools. Made up and ran in the hole with 8 1/8" washover shoe, (2) extensions and crossover. Ran in the hole with (214) joints of 2 7/8", 6.5#, N-80, 8rd. Rigged up circulating equipment. Tagged down at 6,795'. Reverse circulated with 8.6 ppg, 56 vis polymer. Clean off the top of the BP 6,796'. Got some sand and a little metal back. Circulated clean with 3 tubing volumes. Rigged down circulating equipment. Pulled out of the hole and stood back (214) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Filling the hole every 10 stands with 8.6 ppg, 56 vis polymer. Laid down 8 1/8" washover shoe. Made up (Weatherford) retrieving head and ran in with (212) joints of 2 7/8", 6.5#, N-80, 8rd tubing. BOP drill (91) seconds. Secured well for the weekend.
4/2/2016	Held safety meeting. Service rig. Field pressure = 1044 psi, SITP = 0 psi, SICP = 0 psi. Open well. Rigged up circulating equipment. Broke circulation with 8.6 ppg, 56 vis polymer. Shutdown pump. Latched on to (Weatherford) 9 5/8", 47# Loc-Set bridge plug at 6,798'. Released bridge plug. Rigged down circulating equipment. Pulled out of the hole and stood back (214) joints of 2 7/8", 6.5#, N-80, 8rd tubing. Broke out and laid down bridge plug.Ran in the hole with (214) joints of 2 7/8", 6.5#, N-80, 8rd tubing open ended. Pulled out of the hole laying down (164) joints of 2 7/8", 6.5#, N-80 8rd tubing. (50) joints in the hole. Secured well for the weekend.
4/4/2016	Held safety meeting. Serviced rig. Field pressure = 1044 psi, SITP = 0 psi, SICP = 0 psi. Open well. Continued laying down (50) joints of 2 7/8", 6.5#, N-80, 8rd. Moved in and swapped out trailers. Changed out pipe rams from 2 7/8" to 3 1/2". Tested piper rams 300 psi low / 1000 psi high for 20 minutes each test. Made up (Halliburton) 4-1/2" Re-Entry Guide, 9-5/8" 32-40# G-6 packer, 4-1/2" X 2-7/8" Cross Over, (1) 2-7/8" X 10' 6.5#, L-80, 8rd tubing pup joint, 2-7/8" "XN" No Go nipple with plug in place (ID 2.313), (1) joint 2-7/8", 6.5#, L-80, 8rd tubing, 2-7/8" L-80 Sliding Sleeve (2.310 "XO"), (1) joint 2-7/8", 6.5#, L-80 8rd tubing, 2-7/8" X 3-1/2" Cross Over, (1) joint of 3-1/2" 9.3#, L-80, 8rd tubing and plug tested to 5,000 psi. Rigged up (Western) wireline unit and lubricator and pulled plug form "XN". Rigged down wireline unit. Picked up (2) joints of 3 1/2", 9.3#, L-80, 8rd tubing. Rigged up (Weatherford) bar tools and hydrotest to 5000 psi. Continued picking up and testing in with 3 1/2", 9.3#, L-80, 8rd tubing. Total of (40) joints. Tubing tail at 1,356'. Secure well till the AM.
4/5/2016	Held safety meeting. Service rig. Field pressure = 1034 psi, SITP = 0 psi, SICP = 0 psi. Pumped 50 bbl's of 8.6 ppg, 56 vis polymer down tubing. Open well. Continued tallying and picking up 3 1/2", 9.3#, L-80, 8rd tubing. Seal lube every connection. Hydrotesting to 5,000 psi. Picked up a total of (211) joints of 3 1/2", 9.3#, L-80 8rd tubing. Packer tail at 6,723'. Rigged down (Weatherford) testers. Secured well till further notice.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

Rec'd 08-15-16 DOGGR Ventura.

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Fernando Fee 38 C
A.P.I. No. 03724232
Date: 7/25/2016
Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Field: Aliso Canyon County: Los Angeles
Surface Location: Sec 27, T3N, R16W, SBB&M
Name: Tom McMahon Title: SIMP Project Manager
(President, Secretary, or Agent)
Telephone Number: 714-398-5020

Signature: _____
(Person Submitting Report)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment, with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, and initial production data.

Start Date	Ops this Report (DOGGR)
4/8/2016	Held safety meeting. Service rig. Field pressure = 1042 psi. SITP = 0 psi, SICP = 0 psi. Open well.Rigged up (Weatherford) hydrotester and Plug test 3 1/2" X 2 7/8" crossover, (1) joints of 2 7/8", 6.5#, L-80 8rd tubing, (10') 2 7/8", 6.5#, L-80 8rd pup joint, Fatigue nipple and Hanger. Tested to 5,000 psi. Good test. Rigged down Hydrotester. Set (Halliburton) 9 5/8", 32-40# G -6 packer in 10K compression. Landed hanger and screwed in lock screws. Rigged (Western) slickline unit. Ran in with a 2 7/8" PXN plug. Could not get through the sliding sleeve. Pulled out of the hole. Ran in with a 2.29" gauge ring and tagged "XN" at 6,757'. Pulled out of the hole. Ran in with PXN plug and hung up in the sleeve. Pulled out of the hole. Left plug. Ran in with retrieving tool and plug PXN plug. Set up PXN selectively and ran in the hole. Got through the sleeve. Pulled up lightly to cock the dogs and set in the sleeve. Pulled out of the hole. Left plug in the sleeve. Ran in with retrieving tool and pulled the PXN plug. Ran in with selective PXN plug. Got through the sleeve. Tried to cock the dogs, could not. Pulled up lightly to cock the dogs. Could not get back down through the sleeve. Pulled out of the hole. Ran in with retrieving tool and pulled the PXN plug. Secured well till the AM.
4/9/2016	Held safety meeting. Service rig. Field pressure = 1,053 psi, SITP = 0 psi, SICP = 0 psi. Open well. Rigged up circulating equipment. Pumped 80 bbl's of 3% KCL to clear the tubing of polymer. Rigged down circulating equipment. Rigged up (Western) wireline unit. Ran in the hole with a "PXN" plug and set in the "XN" at 6,757'. Pulled out of the hole. Ran in with the prong and set in "PXN" plug at 6,757'. Pulled out of the hole. Ran in the hole with shifting tool and opened sleeve (down) at 6,723'. Pulled out of the hole. Rigged up circulating equipment and filled the well with 225 bbl's of 8.6 ppg, 56 vis polymer. Rigged down circulating equipment. Ran in the hole with shifting tool and close sleeve (up) at 6,723'. Pulled out of the hole. Tested sleeve to 1000 psi to verified it was closed. Rigged down (Western) wireline. Rigged up (PROS) testers and tested casing / tubing annulus to 2,250 psi for one hour. Good test. Bled off pressure. Tested tubing to 3,625 psi for one hour. Good test. Bled off pressure. Ernie Blevins (DOGGR) witnessed both tests. Rigged down (PROS) tester. Rigged out rig floor. Nippled down 11" 5M annular and double gate BOP. Nippled up 2 9/16" 5M tree. (Cameron) tested tree to 330 psi low / 5000 psi high 20 minutes each. Secured well for the weekend. Halliburton "XD" sliding sleeve at 6,723' (CLOSED) Halliburton "XN" profile nipple at 6,757' (Plug in place) Halliburton 9 5/8", 47# G-6 packer at 6,773' (COE) Tail at 6,776'

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST-RECORDS RECEIVED AND WELL STATUS

Operator: **Southern California Gas Company** WELL DESIGNATION **"Fernando Fee" 38C**

API No. **03724232** SE **27** T: **3N** R.: **16W** , **SB** B. and M.

County: **Los Angeles** FIELD: **Aliso Canyon**

Type of Notice: **Rework** **Date** **3/9/2016** **Report Number:** **P216-0031**

RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)

	Date	OK	NEED	Remarks
Well Summary (OG100)				
History (OG103)				
E-Log				
Mud Log				
Dipmeter				
Directional				
Core and/or SWS				
MIT	3/10/16	✓		E. B. (W. & T.)
BOPE	3/17/16	✓		E. B.
SAPT	4/9/16	✓		E. B. (Tubing & Annulus)
Pressure Test	4/12/16	✓		A. Williams
Blank Testing	3/25/16	✓		M. D.

NEW STATUS

DATE: _____

NOTICE OF RECORDS DUE

DATE: _____

DATE: _____

DATE: _____

DATE: _____

WELL STATUS INQUIRY

DATE: _____

DATE: _____

Well Stat

Change Required: _____

Change Done: _____

ABANDONMENTS/REABANDONMENTS/DRILLS/REDRILLS

CalWims Abandonment Form: _____ SURFACE INSPECTION NEEDED _____ COMPLETED _____
Date and Inspector

FINAL LETTER NEEDED _____ COMPLETED _____ Calwims DRILL/REDRILL Form _____
(Date)

ENGINEER'S CHECK LIST

T-REPORT(S) ✓ OPERATOR'S NAME ✓ WELL DESIGNATION ✓ SIGNATURE ✓

Calwims Location _____ Calwims ELEVATION: _____ CONFIDENTIAL RELEASE DATE: _____ PERMIT REQUIREMENTS MET _____

CLERICAL CHECK LIST

LOCATION CHANGE (OG165) _____ ELEVATION CHANGE (OG165) _____ RELEASE OF BOND (OG150) _____

REMARKS

RECORDS SCANNED: _____
(Date)

RECORDS APPROVED: D. C.
(Date and Engineer)

Modfied OGD2

AOR Datbase _____

DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003-4458
Phone:(805) 654-4761 Fax:(805) 654-4765

No. T216-0096

REPORT ON OPERATIONS

GAS STORAGE PROJECT
"Sesnon-Frew" - Modelo (Miocene-Eocene)

Amy Kitson
Southern California Gas Company (S4700)
12801 Tampa Ave., SC9382
Northridge, CA 91326

Ventura, California
April 13, 2016

Your operations at well **"Fernando Fee" 38C**, A.P.I. No. **037-24232**, Sec. **27**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **4/16/2016** by , a representative of the supervisor.

The operations were performed for the purpose of **determining casing integrity.**

DECISION:

APPROVED

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By pp Jon Clausen For PAAbel
Patricia A. Abel
District Deputy

/tkc
OG109

State of California
Department of Conservation
Division of Oil, Gas, and Geothermal Resources

No. T 216-0096
16, 1

INTERNAL MECHANICAL INTEGRITY TEST (MIT)
(Standard Annulus Pressure Test-SAPT)

Operator: SOUTHERN CA GAS CO.				Well: "FERNANDO FEE" 38C	
Sec. 27	T. 3N	R. W 16	B.&M. SB	API No.: 037-24232	Field: ALISO CANYON
County: LOS ANGELES				Witnessed/Reviewed on: 3-25-2016	

MARK DAVIS, representative of the supervisor, was present from 0800 to 1300.

Also present were: JEFF SANDOVAL - GAS COMPANY

Casing record of the well:

The Internal MIT was performed for the purpose of pressure testing the 9 5/8" casing above 3498' (1,1%) (2) (prior to injecting fluid)

PACKER SET @ 3498' 3648PSI 1 HR. LOST 41#

☒ The Internal MIT is approved since it indicates that the 9 5/8" casing has mechanical integrity above 3498' at this time..

☐ The Internal MIT is not approved due to the following reasons: (specify)

INDICATE WHERE PACKER WAS SET AND HOW LONG PRESSURE WAS HELD ALONG WITH ANY BLEEDOFF DATA.

State of California
Department of Conservation
Division of Oil, Gas, and Geothermal Resources

No. T _____

16, 1

INTERNAL MECHANICAL INTEGRITY TEST (MIT)
(Standard Annulus Pressure Test-SAPT)

Operator: SOUTHERN CA GAS CO.					Well: "FERNANDO FEE" 38C
Sec. 27	T. 3N	R. 16	B.&M. SB	API No.: 037-24232	Field: ALISO CANYON
County: LOS ANGELES					Witnessed/Reviewed on: 3-25-2016

MARK DAVIS, representative of the supervisor, was present from 1300 to 1530

Also present were: JEFF SANDOVAL - GAS COMPANY

Casing record of the well:

The Internal MIT was performed for the purpose of pressure testing the 2 3/8 " ~~casing~~ TUBING above 6798' (2) (prior to injecting fluid)

BRIDGE PLUG SET @ 6798'. 2246# FOR 1 HR. LOST 15 PSI

☒ The Internal MIT is approved since it indicates that the 2 3/8 " ~~casing~~ TUBING has mechanical integrity above 6798' at this time..

☐ The Internal MIT is not approved due to the following reasons: (specify)

INDICATE WHERE PACKER WAS SET AND HOW LONG PRESSURE WAS HELD ALONG WITH ANY BLEEDOFF DATA.

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS AND GEOTHERMAL RESOURCES

PRESSURE BLOCK TEST

Operator SoCal Gas Well Designation Fernando Fee 38C

Sec. 27, T. 03N R. 16W, SB B.& M. API No. 037-24232 Field Aliso Canyon

County Las Angelas. Witnessed on 4/12/16. Addison T. Williams, representative

Supervisor, was present from 0530 to 1130.

Also present were _____

Casing record of the well Jeff Sandoval 661-301-7102

The operation were performed for the purpose of determining casing integrity. #16

Pressure Test Casing

Packer at PKR @ 6770' Tbg Plug @ 6757' Well Type GS

Casing Pressured With _____ Volume _____

Casing Pressure Start (psi)_____ Start Time _____

Casing Pressure End (psi) _____ End Time _____

Pressure Held _____ minutes. Total change in pressure _____ psi _____ %

Test results _____ Good _____ No Good _____ Inconclusive

Pressure Test Tubbing

Plug-Back to PKR @ 6770' Tbg Plug @ 6757' Well Type GS

Tubbing Pressured With Polimer 8 1/2# & Water Volume N/A

Tubbing Pressure Start (psi) Tbg 3787psi Start Time 0805

Tubbing Pressure End (psi) Tbg 3755psi End Time 0905

Pressure Held 60min minutes. Total drop in pressure 23 lb psi 0.0084 %

Test results X Good _____ No Good _____ Inconclusive

Remarks Chart recorder calibrated 2/26/16

Pressure Gage calibrated 2/26/16 ID 2105-10, ID 2000-0650C

Csg was tested on a previous date 3/25/16

DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003-4458
Phone:(805) 654-4761 Fax:(805) 654-4765

No. T216-0133

REPORT ON OPERATIONS

GAS STORAGE PROJECT
"Sesnon-Frew" - Modelo (Miocene-Eocene)

Amy Kitson
Southern California Gas Company (S4700)
12801 Tampa Ave., SC9382
Northridge, CA 91326

Ventura, California
April 22, 2016

Your operations at well **"Fernando Fee" 38C**, A.P.I. No. **037-24232**, Sec. **27**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **4/9/2016**. **Ernest Blevins**, a representative of the supervisor.

The operations were performed for the purpose of **determining casing integrity.**

DECISION:

APPROVED

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By
Patricia A. Abel
District Deputy

EB/tkc
OG109

State of California
Department of Conservation
Division of Oil, Gas, and Geothermal Resources

No. T 216-0133
1, 16

INTERNAL MECHANICAL INTEGRITY TEST (MIT)
(Standard Annulus Pressure Test-SAPT)

Operator: So CA Gas				Well: "Fernando Fee" 38C	
Sec. 27	T. 3N	R. 16W	B.&M. SB	API No.: 037-24232	Field: Aliso Canyon
County: Los Angeles				Witnessed/Reviewed on: 4-9-2016	

Ernie Blevins, representative of the supervisor, was present from 0930 to 1530.

Also present were: Jeff Sandoval - Consultant w/ So CA Gas

Casing record of the well:

9 5/8" Casing N-80 47#

3 1/2" Tubing

2-strands of 2 7/8" Tubing

The Internal MIT was performed for the purpose of pressure testing the 9 5/8" casing above 6773' (2) (prior to injecting fluid)

☒ The Internal MIT is approved since it indicates that the 9 5/8" casing has mechanical integrity above 6773' at this time..

☐ The Internal MIT is not approved due to the following reasons: (specify)

INDICATE WHERE PACKER WAS SET AND HOW LONG PRESSURE WAS HELD ALONG WITH ANY BLEEDOFF DATA.

Annulus - 1ST Test 2295 psi → 2375 psi
1140 am → 1240 pm
Packer @ 6773' 60 min (+80 psi) PASS

Tubing Plug @ XM @ 6757' 2nd Test
3664 psi → 3693 psi
1257 pm 60 min → 1357 pm (+29 psi) PASS

DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003-4458
Phone:(805) 654-4761 Fax:(805) 654-4765

No. T216-0069

REPORT ON OPERATIONS

GAS STORAGE PROJECT
"Sesnon-Frew" - Modelo (Miocene-Eocene)

Amy Kitson
Southern California Gas Company (S4700)
12801 Tampa Ave., SC9382
Northridge, CA 91326

Ventura, California
March 25, 2016

Your operations at well **"Fernando Fee" 38C**, A.P.I. No. **037-24232**, Sec. **27**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **3/17/2016**. **Ernest Blevins**, a representative of the supervisor.

The operations were performed for the purpose of **inspecting the blowout prevention equipment and installation.**

DECISION:

APPROVED

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By pp Jon Salmon For PAAbel
Patricia A. Abel
District Deputy

EB/tkc
OG109

API No. 037-24232 DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES T 216-0069

BLOWOUT PREVENTION EQUIPMENT MEMO 12, 1

Operator So CA GAS Well "Fernando Fee" 38C Sec. 27 T. 3N R. 16W
Field Aliso Canyon County Los Angeles Spud Date

VISITS:	Date	Engineer	Time	Operator's Rep.	Title
1st	3-17-16	Ernie Blevins	(0900 to 1230)		
2nd			(to)		

Contractor Ensign Rig # 341 Contractor's Rep. & Title
Casing record of well: Jeff Sandoval – Consultant; Art Alvira – R.S.S. Tool Pusher

OPERATION: Testing (inspecting) the blowout prevention equipment and installation. Critical well? Y ☐ N ☒
DECISION: The blowout prevention equipment and its installation on the 9 5/8" " casing are approved.

Proposed Well Opns: Rework . MACP: psi
Hole size: " fr. ' to ', " to ' & " to '

REQUIRED BOPE CLASS: III 5M

CASING RECORD OF BOPE ANCHOR STRING

Size	Weight(s)	Grade(s)	Shoe at	CP at	Cement Details	Top of Cement: Casing	Top of Cement: Annulus

BOP STACK

API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul
A		Hydril			5K	
Rd	2 7/8	NOV			↓	
Rd	CSO	NOV				

TEST DATA

Gal. to Close	Recov. Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
23.8			NOT witnessed		3/15/16	5K
3					↓	↓
3						

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure 2800 psi
Total Rated Pump Output gpm Fluid Level
Distance from Well Bore +50' ft. ½ shy

	Accum. Manufacturer	Capacity	Precharge
1	Weatherford	80 gal.	1550 psi
2		gal.	psi

CONTROL STATIONS	Elec.	Hyd.	Pneu.
✓ Manifold at accumulator unit		✓	
✓ Remote at Driller's station			✓
Other:			

EMERG. BACKUP SYSTEM

			Press.	Wkg. Fluid
4	N_2 Cylinders	1 L= "	2900	10.16 gal.
	Other:	2 L= "	2950	10.3 gal.
		3 L= "	2900	10.16 gal.
		4 L= "	2900	10.16 gal.
		5 L= "		gal.
		6 L= "		gal.
		TOTAL:		40.78 ga

HOLE FLUID MONITORING	Alarm Type: Audible	Alarm Type: Visual	Class
Calibrated Mud Pit			A
Pit Level Indicator			
Pump Stroke Counter			B
Pit Level Recorder			
Flow Sensor			C
Mud Totalizer			
Calibrated Trip Tank			
Other:			

TOTAL: 29.8

AUXILIARY EQUIPMENT

	No.	Size (in.)	Rated Press.	Connections: Weld	Connections: Flange	Connections: Thread	Test Press.
✓ Kill Line		2"	5K		✓		
Control Valve(s)							
Check Valve(s)							
Aux. Pump Connect.							
✓ Choke Line		3K	5K		✓		
Control Valve(s)							
Pressure Gauge							
Adjustable Choke(s)							
Bleed Line							
Upper Kelly Cock							
Lower Kelly Cock							
Standpipe Valve							
Standpipe Press. Gau.							
2 Pipe Safety Valve		2 7/8	5K				
1 Internal Preventer		2 7/8	5K				

Hole Fluid Type	Weight	Storage Pits (Type & Size)
KCl + Polymer mix	8.6#	600 bbls

REMARKS AND DEFICIENCIES:

OGD9 (9/00)

'PARTMENT OF CONSERVA)N

DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003-4458
Phone:(805) 654-4761 Fax:(805) 654-4765

No. T216-0086

REPORT ON OPERATIONS

GAS STORAGE PROJECT
"Sesnon-Frew" - Modelo (Miocene-Eocene)

Amy Kitson
Southern California Gas Company (S4700)
12801 Tampa Ave., SC9382
Northridge, CA 91326

Ventura, California
April 13, 2016

Your operations at well **"Fernando Fee" 38C**, A.P.I. No. **037-24232**, Sec. **27**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **3/10/2016**. **Ernest Blevins**, a representative of the supervisor.

The operations were performed for the purpose of **demonstrating that all of the injection fluid is confined to the approved zone.**

DECISION:

WITNESSED

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By For PA Abel
Patricia A. Abel
District Deputy

EB/tkc
OG109

DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003-4458
Phone:(805) 654-4761 Fax:(805) 654-4765

No. T216-0085

REPORT ON OPERATIONS

GAS STORAGE PROJECT
"Sesnon-Frew" - Modelo (Miocene-Eocene)

Amy Kitson
Southern California Gas Company (S4700)
12801 Tampa Ave., SC9382
Northridge, CA 91326

Ventura, California
April 13, 2016

Your operations at well **"Fernando Fee" 38C**, A.P.I. No. **037-24232**, Sec. **27**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **3/10/2016**. **Ernest Blevins**, a representative of the supervisor.

The operations were performed for the purpose of **demonstrating that all of the injection fluid is confined to the approved zone**.

DECISION:

WITNESSED

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By pp Jm Lum For PA Abel
Patricia A. Abel
District Deputy

EB/tkc
OG109

State of California
Department of Conservation
Division of Oil, Gas, and Geothermal Resources

No. T 216-0085 / 216-0086
15, 3

MECHANICAL INTEGRITY TEST (MIT)

Operator: So CA Gas					Well: Fernando Fee 38C
Sec. 27	T. 3N	R. 16W	B.&M. SB	API No.: 037-24232	Field: Aliso Canyon
County: Los Angeles					Witnessed/Reviewed on: 3-10-2016

Ernie Blevins, representative of the supervisor, was present from Temp survey 0545 to 0945.

Also present were: Dwayne & Greg w/ Welaco (Well Analysis Corp., Inc.)

Casing record of the well: Nick w/ InterACT

Noise survey
0945 - 1015
Bottom to top

5½ - 17# Slotted Liner - 6804' - 7279' depth

The MIT was performed for the purpose of

Temperature + Noise Survey.

☐ The MIT is approved since it indicates that all of the injection fluid is confined to the formations below _____ feet at this time.

☐ The MIT is not approved due to the following reasons: (specify)

Well: Fernando Fee 38 C	Date: 3-10-16	Time: 0840
Observed rate: Shut-in - Static B/D	Meter rate: Shut in - Static B/D	Fluid level: Gas Well Ø feet
Injection pressure: 1068 psi psi	MASP:	Pick-up depth: (7275') 7273' feet
Initial annulus pressure: 1068 psi = 1068 psi	Pressure after bleed-off: psi	
Casing vented during test (Y/N)	Survey company: Well Analysis Corp., Inc.	

SPINNER COUNTS

DEPTH	COUNTS	RATE	DEPTH	COUNTS	RATE

COMMENTS: spinner NOT used

TRACER CASING AND TUBING RATE CHECKS

Interval	Time (sec.)	Rate (B/D)

Background log: _____ to _____

COMMENTS:
Bottom Hole Temp: 145°
Temp Survey: 100'/min = Speed
No distinct a noticeable temperature anomolies.
Sliding Sleeve @ 6742' is open

TOP PERFORATION CHECK

Top perforation depth: (perfs in casing) (7065') Screen → 6971' | Wait at: for seconds | Beads: (Y/N)

Casing shoe at: 7326' | WSO holes at: | Arrival time: *Calculated* *Actual*

LOG FROM	TO	SLUG @	LOG FROM	TO	SLUG @	COMMENTS:

PACKER CHECK

Packer at: 6785' | Wait at: for seconds | Beads: (Y/N)

Tubing tail at: 6785' | Tubing size: 2 7/8" | 2nd Packer at: | Mandrel: Lift @ 4498'

LOG FROM	TO	SLUG @	LOG FROM	TO	SLUG @	COMMENTS:

COMMENTS: Noise survey: Run from bottom to top in 250' increments + 10' increments (stages).

...URAL RESOURCES AGENCY OF CALIFORN...
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003 - 4458

No. P 216-0031

Old	New
010	010
FIELD CODE	
00	00
AREA CODE	
30	30
POOL CODE	

PERMIT TO CONDUCT WELL OPERATIONS

Gas Storage
"Sesnon-Frew" - Modelo (Miocene-Eocene) Formation

Ventura, California
March 21, 2016

Amy Kitson, Agent
Southern California Gas Company (S4700)
12801 Tampa Ave., SC9382
Northridge, CA 91326

Your proposal to **Rework** well **"Fernando Fee" 38C**, A.P.I. No. **037-24232**, Section **27**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, **Any** area, **Sesnon-Frew** pool, **Los Angeles** County, dated **3/9/2016**, received **3/9/2016** has been examined in conjunction with records filed in this office. (Lat: **34.309668** Long: **-118.544513** Datum:**83**)

THE PROPOSAL IS APPROVED PROVIDED:

1. Blowout prevention equipment, as defined by this Division's publication No. M07, shall be installed and maintained in operating condition and meet the following minimum requirements:
   a. Class **III 5M** on the **9 5/8"** casing.
2. Hole fluid of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts shall be used.
3. Blowout prevention practice drills are conducted at least weekly and recorded on the tour sheet. A practice drill may be required at the time of the test/inspection.
4. A Temperature and Noise log are run on the well from the packer to surface.
5. **A Casing Wall Thickness Inspection, Cement Bond Log, and a Multi-Arm Caliper Inspection** shall be performed to demonstrate that the **9 5/8"**casing has integrity.
6. Prior to commencing injection, a pressure test is conducted to demonstrate the mechanical integrity of the **9 5/8"** casing.
7. Injection shall be through tubing and packer only. Injection and withdrawal through casing is not permitted.
8. This office shall be contacted by phone prior to making any program changes and no changes are made without Division approval.
9. **THIS DIVISION SHALL BE NOTIFIED TO:**
   a. Inspect the installed blowout prevention equipment prior to commencing **downhole** operations.
   b. Witness a pressure test of the tubing and **9 5/8"** casing prior to commencing injection.

Continued on Next Page

Blanket Bond Dated: 7/6/1999
UIC Project No. 0100006

Engineer Kris Gustafson
Office (805) 654-4761

KG/kg

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By _____ for Pat Abel
Patricia A. Abel, *District Deputy*

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended. Issuance of this permit does not affect the Operator's responsibility to comply with other applicable state, federal, and local laws, regulations, and ordinances.

NOTE:

1. The base of the freshwater zone is at **800'±**.
2. No operation shall be undertaken or continued that will contaminate or otherwise damage the environment.
3. This permit is being issued as part of Division Order No. 1109 dated March 4, 2016. Any well that fails any of the testing must be taken out of service and isolated from the storage reservoir pursuant to the Safety Review Testing Regime.
4. The required History of Oil or Gas Well (OG103) shall include a complete description of the required pressure testing. **An updated casing and tubing diagram shall be included with the well history.**
5. **A Well Summary Report (Form OG 100)** and **Well History (Form OG 103)** shall to be submitted to the Division within 60 days after the well is drilled, reworked, plugged and abandoned, or if the work is suspended. Any additional well work will require an additional notice to be submitted to this office prior to resuming well operations.

Enclosure: Attachment 1 to DOGGR Order 1109. Safety Review Testing Regime for the Aliso Canyon Natural Gas Storage Facility

ATTACHMENT 1
TO DOGGR ORDER 1109

SAFETY REVIEW TESTING REGIME
FOR THE ALISO CANYON NATURAL GAS STORAGE FACILITY

This document identifies the requirements of this comprehensive safety review that shall be completed by the Southern California Gas Company (Operator) and verified by the Department of Conservation, Division of Oil, Gas, and Geothermal Resources (Division). The Operator shall use accepted industry practices and procedures.

The Division has consulted with independent technical experts from the Lawrence Berkeley, Lawrence Livermore, and Sandia National Laboratories ("National Laboratories") to develop the requirements of this facility safety review. The National Laboratories experts independently reviewed and concurred with the testing requirements for the safety review detailed below.

This comprehensive safety review requires that each of the active injection wells in the Aliso Canyon Storage facility either pass a thorough battery of tests in order to resume gas injection or be taken out of operation and isolated from the underground gas storage reservoir. Several steps, detailed below, are required in this safety review. Documentation of all testing required under this comprehensive safety review shall be provided electronically to the Division within 72 hours of completion of a test in digital (i.e. LAS) and printed (i.e. pdf) form. All pressure tests required under this comprehensive safety review shall be witnessed by Division staff. A well that is properly plugged and abandoned in accordance with Public Resources Code section 3208 is not subject to testing under this comprehensive safety review. A well that does not pass all tests must be repaired, retested, and pass all tests, or be plug and abandoned.

REQUIRED TESTS FOR EACH WELL IN THE FACILITY

Step 1: The Operator shall perform an initial casing assessment on the well consisting of temperature and noise logs.

a. Temperature Log:
A temperature survey shall be run from the surface to the packer to measure the temperature within the wellbore. A temperature survey that demonstrates no unexplained anomalous temperature changes in the well is one indication of casing integrity.

b. Noise Log:
An acoustic sensor survey capable of detecting the sound of fluid flow will be conducted the length of the well above the packer to the surface. The survey will include stops at least every 250 feet and at the midpoint of any anomaly detected by the temperature survey. The absence of anomalous sound above the packer is an indication of well integrity

Step 2: The results of the Temperature Logs and Noise Logs will be independently reviewed by Division engineers. Any unexplained abnormal findings in this set of tests shall be addressed by the Operator in one of the following ways:

a. Conduct further investigation and demonstrate to the Division's satisfaction that the abnormal finding is not an indicator of a lack mechanical integrity;
b. Remediate the well to the Division's satisfaction; or
c. With Division review and approval, remove the well from operation and isolate the well from the underground gas storage reservoir in accordance with Steps 4b through 7b below.

Necessary actions to remediate any abnormalities revealed by these tests will be reviewed by Division engineers. Once repairs or mitigations are completed, the Temperature Log and Noise Log must then be repeated on the well and reviewed by Division engineers to ensure that there are no additional abnormal test results and to confirm the issue was repaired.

Step 3: After these tests are completed on the well, and all required action has been completed, the operator shall either:

a. Conduct the additional tests and evaluations on the well, outlined in Steps 4a through 7a below, in order to gain approval for injecting gas through that well; or
b. Remove the well from operation and isolate the well from the underground gas storage reservoir in accordance with Steps 4b through 7b below.

REQUIRED TESTS IF A WELL IS INTENDED TO RESUME OPERATIONS

If Temperature and Noise Logs have been completed on a well and they indicate well integrity, and the Operator designates the well to return to injection operations, then the Operator shall perform the additional testing outlined in Steps 4a through 7a. The results of these tests will be independently reviewed by Division engineers and posted publicly. Each of the following tests requires that the production tubing be removed from the well.

Step 4a: The Operator shall conduct a **Casing Inspection log.**
The Operator shall conduct a Casing Inspection log of the well that measures the thickness of the production casing, from the surface to the bottom of the gas storage reservoir cap rock. If the inspection reveals a reduction in wall thickness, the current minimum strength of the casing will be calculated. If the current minimum strength of the casing has diminished to the point that it cannot withstand authorized operating pressures for the well plus a built-in additional safety factor of pressure, the well has failed this test. *A passing test for a casing inspection log would show no thinning of the casing that diminishes the casing's ability to contain at least 115% of the well's maximum allowable operating pressure as authorized in the current Project Approval Letter.*

Step 5a: The Operator shall conduct a **Cement Bond Log** for the well.
The Operator shall conduct a Cement Bond Log (CBL) that measures the bonding between cement and the production casing of the well, and also the bonding between the annular cement and the formation. Cement should be solidly bonded to both the well's production casing and the geologic formation to ensure a seal that prevents fluids from migrating up or down the outside of the well. *A passing test for a cement bond log shows definitive bond, as demonstrated by sonic waveform,*

between cement and casing and between cement and the gas storage formation and/or cap rock for at least 100 feet above the top of the gas storage reservoir.

Step 6a: The Operator shall conduct a **Multi-Arm Caliper Inspection** of the well. The operator shall conduct an inspection that measures any internal degradation or significant changes to the well's geometry from the surface to the top of the gas storage reservoir, using a minimum 32-arm caliper tool. If the inspection reveals a thinning or deformity of the casing, the current strength of the casing will be calculated. If the current strength of the casing has diminished, such that it cannot withstand authorized operating pressures plus a built-in safety factor of additional pressure, the well fails this inspection. *A passing test for a Multi-Arm Caliper Inspection would show no deformation or thinning of the casing that diminishes the casing from being able to properly contain at least 115% of each well's maximum operating pressure.*

Step 7a: The Operator will conduct a **Pressure Test** of the production casing and of the well once the production tubing has been reinstalled. The Operator may conduct the casing pressure test prior to reinstalling the production tubing. Using a digital recorder, the operator will conduct a liquid-filled positive pressure test within the production tubing of the well, and in the annular space between the production tubing and the casing, to determine the well's ability to withstand normal operating pressures. The production tubing will be isolated and then pressure tested. The annular space between tubing and casing will be pressure tested. This testing also evaluates the integrity of any packers, which seal the annular space between the tubing and casing. The pressure test will be one hour and begin at a pressure of 115% of the maximum operating pressure or the minimum yield strength of the casing and tubing, whichever is less. *A passing pressure test is a pressure loss not exceeding 10% for any 30 minute period during the hour long test.*

After conducting the above tests, the Operator will conduct any indicated remediation so that the well can pass these tests. All remediation will be subject to the review of Division engineers. The well would then be required to undergo the tests once again to demonstrate well integrity.

If the well passes the Casing Wall Thickness Inspection, the Cement Bond Log, the Multi-Arm Caliper inspection and the Pressure Test to the Division's satisfaction, then the Division may clear the well for use for gas injections and withdrawal, once the Division has authorized resumption of injection into the gas storage reservoir. As noted below, wells approved for operation will only be permitted to inject or withdraw gas through the production tubing.

REQUIRED ACTIONS IF THE WELL IS TO BE TAKEN OUT OF OPERATION AND ISOLATED FROM THE GAS STORAGE RESERVOIR:

If the operator elects to take a well out of service, then the following steps shall be taken to isolate the well from the gas storage reservoir:

Step 4b: The Operator shall confirm the presence of cement outside the well's external casing in the section of the well that prevents the movement of gas from the underground gas storage reservoir to shallower geologic zones above the gas storage reservoir. Existing cement bond logs and well construction

records may be used to make this confirmation. This confirmation requires concurrence from Division engineers.

Step 5b: The Operator shall install a mechanical seal or "packer" within the well's production casing and install a mechanical plug within the well's production tubing, if applicable. These seals shall be set in place near the bottom of the well, within the portion of the well surrounded by cement. This kind of seal is an industry standard practice for isolating a well from reservoir gases or fluids and will further protect the casing from internal gas pressure.

Step 6b: The Operator shall fill the well with fluid to the well's surface in order to create appropriate downward hydrostatic pressure in the well that further contributes to the integrity of the well seal.

These measures will isolate a well from the underground gas reservoir, as confirmed by National Laboratory experts. Each of the above actions is subject to review and approval by Division Engineers.

Step 7b: Once the Operator has completed steps 4b, 5b, and 6b, and the seal is in place at the bottom of the well and the well is filled with fluid above the seal, the operator shall:

a. Conduct daily gas monitoring at the surface of the non-operational well, including monitoring the area around the well perimeter and in the annular space between the plugged casing string and the outmost casing;
b. Conduct noise log, temperature log and positive pressure test every six months;
c. Conduct weekly monitoring of fluid levels in the well or, install and operate real-time pressure monitors that provide immediate notification to the operator when pressures deviate from normal in the well's interior tubing and its annular space.

The above monitoring shall be reported to Division engineers and maintained as a part of the well file. Division engineers will review all submitted information for evaluation on a regular basis to ensure that the well taken out of service has maintained safety, and the operator shall take all necessary steps maintain the safety of the well.

Any well taken out of operation cannot be approved to resume operations and gas injection until the successful completion of the battery of tests outlined above in Steps 4a through 7a (Casing Wall Thickness Inspection, the Cement Bond Log, the Multi-Arm Caliper Extension and the Pressure Test) is completed. Those tests must be successfully completed within one year of completing step 6b. If a well cannot successfully complete all necessary steps required in this safety review after one year of completing step 6b, then the well shall be properly plugged and abandoned in accordance with Public Resources Code section 3208.

REQUIREMENTS FOR WELLS RESUMING OPERATIONS IN ALISO CANYON

The Division's authorization to resume injection in the Aliso Canyon Storage Facility will be contingent on the successful completion of this comprehensive safety review. The State Oil and Gas Supervisor must confirm in writing that all wells in the facility have either completed and passed the full battery of tests required in the safety review, been taken out of service and isolated from the underground gas storage reservoir, or been properly plugged and abandoned in accordance with Public Resources Code Section 3208.

Rec'd 03-09-16 DOGGR Ventura

NATURAL RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

FOR DIVISION USE ONLY		
	Forms	
Bond	~~OGD114~~	OGD121
	CALV WIMS	115V

P2/6-0031

NOTICE OF INTENTION TO REWORK / REDRILL WELL

Detailed instructions can be found at: www.conservation.ca.gov/dog/

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework ☒ / redrill ☐ (Check one) well Fernando Fee 38C, API No. 037-24232,

Sec. 27, T. 3N, R. 16W, S.B. B.&M., Aliso Canyon Field, Los Angeles County.

The complete casing record of the well (present hole), including plugs and perforations, is as follows: (Attach wellbore schematics diagram also.)

See attached wellbore schematic

The total depth is: 7366 feet. The effective depth is: 7270 feet.

Present completion zone(s): Sesnon (Name). Anticipated completion zone(s): Same (Name).

Present zone pressure: storage psi. Anticipated/existing new zone pressure: storage psi.

Is this a critical well as defined in the California Code of Regulations, Title 14, Section 1720(a) (see next page)? Yes☐ No☒

For redrilling or deepening only, is a California Environmental Quality Act (CEQA) document required by a local agency? Yes☐ No☒ If yes, see next page.

The proposed work is as follows: (A complete program is preferred and may be attached.)

See attached program

If well is to be redrilled or deepened, show proposed coordinates (from surface location) and true vertical depth at total depth: _____ feet _____ (Direction) and _____ feet _____ (Direction) Estimated true vertical depth: _____

Will the Field and/or Area change? Yes☐ No☒ If yes, specify New Field: _____ New Area: _____

The Division must be notified immediately of changes to the proposed operations. Failure to provide a true and accurate representation of the well and proposed operations may cause rescission of the permit.

Name of Operator			
Southern California Gas Company			
Address: P. O. Box 2300		City/State: Chatsworth	Zip Code: 91313-2300
Name of Person Filing Notice: Jovy Kroh	Telephone Number: 937-239-0279	Signature: Jovy Kroh	Date: 03/09/16
Individual to contact for technical questions: Jovy Kroh	Telephone Number: 937-239-0279	E-Mail Address: jkroh@semprautilities.com	

This notice and an indemnity or cash bond must be filed, and approval given, before the workover begins. (See the reverse side for bonding information.) If operations have not commenced within one year of the Division's receipt of the notice, this notice will be considered cancelled.

INFORMATION FOR COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970 (CEQA)

If an environmental document has been prepared by the lead agency, submit a copy of the ***Notice of Determination*** or ***Notice of Exemption*** with this notice. Please note that a CEQA determination by a local jurisdiction, if required, must be complete, or the Division may not issue a permit.

CRITICAL WELL DEFINITION

As defined in the California Code of Regulations, Title 14, Section 1720 (a), "Critical well" means a well within:

(1) 300 feet of the following:
  (A) Any building intended for human occupancy that is not necessary to the operation of the well; or
  (B) Any airport runway.
(2) 100 feet of the following:
  (A) Any dedicated public street, highway or the nearest rail of an operating railway that is in general use;
  (B) Any navigable body of water or watercourse perennially covered by water;
  (C) Any public recreational facility such as a golf course, amusement park, picnic ground, campground or any other area of periodic high-density population; or
  (D) Any officially recognized wildlife preserve.

WELL OPERATIONS REQUIRING BONDING

1. Drilling, redrilling, or deepening any well.
2. Milling out or removing a casing or liner.
3. Running and cementing casing or tubing.
4. Running and cementing liners and inner liners.
5. Perforating casing in a previously unperforated interval for production, injection, testing, observation, or cementing purposes.
6. Drilling out any type of permanent plug.
7. Reentering an abandoned well having no bond.

This form may be printed from the DOGGR website at www.conservation.ca.gov/dog/

WORKOVER PROJECT

Fernando Fee 38C – Well Inspection

DATE: March 9, 2016

OPERATOR: SOUTHERN CALIFORNIA GAS COMPANY

FIELD: ALISO CANYON

WELL: Fernando Fee 38C

API NUMBER: 037-24232

ELEVATION: All depths based on original KB, 32' above GL

SURFACE LOCATION: SEC 27, T3N, R16W, S.B. B&M

OBJECTIVE

The intent of this program is to inspect the well integrity and remediate identified conditions as part of the Storage Integrity Management Program (SIMP). This project will include pulling 2-7/8" completion string, running casing inspection logs and a gyro survey, pressure testing casing and well laterals, installing a new completion string, converting well to tubing flow, and installing pressure monitors. Baseline assessment data will be gathered on vertical casing pipe and other well components.

WELL RECORD

Current Status:	Active
TD:	7366' md; 7302' tvd
Special Conditions:	Last tag on 11/2/2015 at bottom of 5-1/2" liner at 7270'
Casing Record:	13-3/8", 54.5#, K-55 ST&C casing cemented at 862' with 243 sx 12.6ppg Class G cmt (65:35:6 PozMix) + 267 sx 15.8ppg Class G w/ 3% CaCl 9-5/8", 47#, N-80 LT&C casing cemented at 7326' with 758 sx 12 ppg Lead + 488 sx 15.8ppg Class G + 200 sx 15.8ppg Class G w/ latex 5-1/2", 17#, J-55 WWS landed at 7354', TOL at 7029' WFT 5-1/2"x9-5/8" Hydraulic Packer, Drive on Adapter, 4 joints blank, 8 joints 0.012" WWS & Bullplug Gravel packed w/ 64 cf 16-30 sand Perfs: 2002: 7160'-7230' w/ 6 spf 5/8" holes 2003: 7065'-7086', 7098'-7127', 7244'-7257' w/ 6spf
Tubing Record:	See attached mechanical as run on 6/18/2003

GEOLOGIC MARKERS

MP	6753'md	-4953'vss	S8	7139'md	-5331'vss
S1	6978'md	-5173'vss	S10	7160'md	-5352'vss
S2	7015'md	-5210'vss	S12	7210'md	-5401'vss
S4	7065'md	-5259'vss	S14	7243'md	-5433'vss
S6	7096'md	-5289'vss	CR	7271'md	-5461'vss

Estimated Field Pressure: 917 psi on 2/03/2016 (Variable)

Estimated Bottom-hole Temperature: 137°F (as per 11/03/2015 Temperature survey)

PROJECT NOTES

1. BOPE requirements in Gas Company Standard 224.05 shall be fully implemented at all times.

2. The storage reservoir pressures shall be monitored during the workover with a minimum of 300 psig overbalance for well control fluids.

3. Prepare the location by removing all relevant landscaping/lighting fixtures as well as surface piping and electrical components as needed. Locate rig anchors, reinstall if necessary.

4. DOGGR permit must be posted on site. Notify the DOGGR as required for BOPE testing as stated on permit.

PRE-RIG WORK

1. De-energize and remove all laterals. Install companion flanges for killing the well.

2. Complete slickline work as required to set up well for circulation.

WELLWORK PROGRAM

3. Move in production rig and rig pump with tank, shaker, and mixer.

4. Spot 500 bbl Baker tanks and load with 8.5 ppg KCl brine.

   - Connect pump to the tubing and vent the casing through the choke manifold to the SoCalGas withdrawal system.
   - Treat all brine with Biocide, 5 gals/100 bbls

5. Circulate well as required to kill well. The tubing volume is approximately 39 Bbls. and the tubing/casing annulus is approximately 443 Bbls. Use HEC polymer as required to minimize lost circulation.

   Note: Verify field surface pressure to ensure the proper kill fluid density is used prior to killing the well and for well control during workover operations.

6. Install back pressure valve in tubing hanger. Nipple down tree. Send-in wellhead and tree components to Cameron for inspection.

7. +++Install a Class III 5M BOPE per Gas Company Standard 224.05 and in accordance with the DOGGR permit. All connections and valves must be flanged and at least 5000 psig rated.

   - Pressure test the Class III 5M annular preventer to 3500 psig for 20 minutes. Test blind rams and the 2-7/8" pipe rams (see note) to 5000 psig for 20 minutes. Test all lines and connections to 5000 psig.
   - Perform a 300 psig low pressure test on the annular preventer, blind rams and pipe rams for 20 minutes. Test all lines and connections to 300 psig.

- All tests are to be charted and witnessed by a DOGGR representative.
- Pull back pressure valve from tubing hanger.

8. Pick up a 2-7/8", 6.5#, N-80 joint of tubing with safety valve, release the 9-5/8" G-6 packer at 6785' and POOH with the completion tubing, gas lift mandrel, sliding sleeve, XN nipple and packer.

9. Pick-up a 9-5/8", 47# casing scraper on production string and RIH to top of 5-1/2" liner at 6811'. Circulate well clean. POOH.

10. Make up and run a 9-5/8", 47# retrievable bridge plug (BP) on production string. Set at approximately 6800', fill hole and pressure test and sand off. POOH and lay down BP retrieving head.

11. Rig-up wireline unit(s) with lubricator as required to run the following logs:
    - Gyro survey from BP to surface
    - Ultrasonic imager from BP to surface
    - Magnetic flux leakage BP to surface
    - Multi-arm caliper log from BP to surface.
    - Cement bond log from BP to top of cement.
    - Casing inspection log from BP to surface.

12. RIH with a 9-5/8", 47# test packer and run a Pressure Integrity Test on 9-5/8" casing from surface to BP to a minimum 115% of the wells maximum allowable operating pressure (3625 psi) as per attached Pressure Test Schedule. POOH with test packer.

    a.) Engineering team to analyze log and pressure test results and recommend any additional remediation.

13. RIH with kill string and land on tubing hanger. Install BPV in tubing hanger. Nipple down 11" Class III 5 M BOPE, crossover spool, and primary pack-off.

    a.) Replace the pack-off seals and reinstall tubing head, refurbished as necessary. Install new wellhead and tree valves.
    b.) Pressure test all the wellhead seals to 3625 psig.
    c.) Reinstall the 11" Class III BOPE and function test.
    d.) Remove BPV.

14. Pick-up retrieving head for BP and RIH to top of sand. Circulate out sand. Release BP at approximately 7020', re-kill the well if necessary. POOH and laying down production string and BP.

15. RIH with new completion string as follows:

    a) Pup joint 3-1/2" 9.3# N-80 EUE 8RD tubing with guide shoe
    b) 3-1/2" x 9-5/8" hydraulic production packer with ball catcher seat
    c) 10' pup joint 3-1/2" 9.3# N-80 EUE 8RD tubing
    d) 3-1/2" XN EUE 8RD no-go nipple
    e) Full joint 3-1/2" 9.3# N-80 EUE 8RD tubing
    f) 3-1/2" EUE 8RD sliding sleeve

g) Full joint 3-1/2" 9.3# N-80 EUE 8RD tubing
h) 3-1/2" x 5-1/2" Crossover pup joint
i) 5-1/2" 20# N-80 EUE 8RD tubing to surface
j) Pup joints 5-1/2" 20# N-80 EUE 8RD tubing for space-out
k) Tubing hanger and fatigue nipple

16. Land tubing on tubing hanger as per vendor specification at approximately the same depths as prior completion string. **Note: amount of compression to set on packer will be determined by Force Analysis / Tube Move Calculations.**

17. Rig-up slickline unit and lubricator. Set a plug in the 3-1/2" XN profile.

18. Notifiy DOGGR to witness pressure tests of annulus to 2250 psi. and tubing to 3625 psi.

19. RIH and recover plug from XN nipple. RIH and shift the sliding sleeve open.

20. Rig-up nitrogen unit. Recover workover fluid by pumping down annulus taking returns up tubing. RIH with slickline and shift sliding sleeve closed. POOH and rig down slickline unit.

21. Install BPV in tubing hanger. Nipple down the Class III 5M BOPE and install the production tree and test to 5000 psig. Remove BPV.

22. Release production rig, rig down and move out.

WELL LATERAL HYDROTESTING

23. Per Gas Company Standard 182.0170, pressure test the tubing and casing kill laterals from the wellhead to the remote tie in to 3625 psig. Pressure test the tubing and casing withdrawal/injection laterals from wellhead to operating valves to 3625 psig.

24. Reinstall the hydro-tested laterals.

25. Install the well safety systems and instrumentation. Install pressure transmitters on tubing, casing, and surface casing.

26. Release well to operations.

EXTERNAL CORROSION PROTECTION

Per Gas Company Standard 167.30, remove any lead based paint and recoat wellhead, production tree, and laterals.

Tubing Detail as ran 6/18/2003

Quantity	Item	Length	Depth
1	KB to donut	32.00	32.00
1	Donut	0.50	32.50
1	2-7/8", EUE 8rd, N-80 pup joint	3.75	36.25
142	2-7/8", EUE 8rd, N-80 tbg.	4458.62	4494.87
1	2-7/8", EUE 8rd, N-80 pup joint	4.21	4499.08
1	2-7/8" Gas Lif Mandrel	6.09	4505.17
1	2-7/8", EUE 8rd, N-80 pup joint	1.66	4506.83
71	2-7/8", EUE 8rd, N-80 tbg.	2236.77	6743.60
1	XD Sliding Sleeve	3.20	6746.80
1	2-7/8", EUE 8rd, N-80 tbg.	31.05	6777.85
1	XL on/off tool	2.20	6780.05
1	2-7/8", EUE 8rd, N-80 pup joint	6.20	6786.25
1	9-5/8" 47# G-6 mechanical set packer	7.03	6793.28

Casing Pressure Test Schedule

Depth	Pressure	Tool
3500'	3625 psig	Test Packer
6800'	2250 psig	BP

Rec'd 03-09-16 DOGGR Ventura

Well

Fernando Fee 38C

API #: 04-037-24232-00
Sec 27, T3N, R16W

Operator: So. California Gas Co.

Lease: Fernando Fee
Field: Aliso Canyon
Status: Active Gas Storage
BFW:
USDW:

Ground Elevation: 1708' asl
Datum to Ground: 32' KB

Spud Date: 11/19/2001
Completion Date: 11/30/2001

Junk: None

13-3/8" ETOC Surface
9-5/8" ETOC Surface

17-1/2" Hole

Surface Casing
13-3/8", 54.5#, K-55
0' - 862'

CMT'D w/ 510 SKS

862'

Tubing
2-7/8"
0' - 6785'

Production Casing
9-5/8", 47#, N-80
0' - 7326'

CMT'D w/ 1446 SKS

12-1/4" Hole

PACKER 3498'

4498' GLM

6742' XD Sliding Sleeve (opens down)

6777' XL On/Off tool XN No/Go

6785' HES G-6 PCKR
6785' Tail

BP @ 6798'

9-5/8" Perfs:
7065' - 7086', 7098' - 7127',
7244' - 7257' (2/26/2003)
7160' - 7230'
Six (6) 5/8" HPF (5/14/2002)
(Perfs Frac'd in 2003)

7065'

Inner Liner Perfs:
(Interval Not Reported) Dura-Grip 0.012" WWS

Inner Liner
5-1/2", 17#
6811' - 7270'

Gravel Packed w/
64 CF 16-30

7230'

PBTD 7278'

TD 7366'
TD VSS (-5568')

7326'

Directionally Drilled: Yes (TD is 534' W, 364' N of Surf, 7316' TVD)

Top of Zone Markers		
MP	6753'	(-4953')
S1	6978'	(-5173')
S4	7065'	(-5259')
S8	7139'	(-5331')
CR	7271'	(-5461')

Prepared by: CAM (3/9/2016)

InterAct

Rec'd 03-09-16 DOGGR Ventura

		External Casing Backup Pressure			Pressure Test Net Burst Pressure @ Depth										Tubing Leak Net Burst Pressure @ Depth	Test Pressuree > 85% of Burst	Test Pressure < Tubing Leak - Net Burst (Gas-filled annulus)
Depth (TVD)	85% of Burst Strength	Fluid / Formation Pressure Gradient	External Casing Backup Pressure	Internal Water Hydrostatic	1	2	3	4	5	6	7	8	9	Final	Gas-Filled Annulus		
				Surface Test Pressure	3625									2250	3625		
				Test Packer Depth	3500												
				Bridge Plug Depth										6800			
0	5389	0.00	0	0	3625	0	0	0	0	0	0	0	0	2250	3625		
500	5389	0.00	0	221	3846	-	-	-	-	-	-	-	-	2471	3670		
1000	5389	0.00	0	442	4067	-	-	-	-	-	-	-	-	2692	3716		
1500	5389	0.00	0	663	4288	-	-	-	-	-	-	-	-	2913	3761		
2000	5389	0.00	0	884	4509	-	-	-	-	-	-	-	-	3134	3806		
2500	5389	0.00	0	1105	4730	-	-	-	-	-	-	-	-	3355	3852		
3000	5389	0.00	0	1326	4951	-	-	-	-	-	-	-	-	3576	3897		
3500	5389	0.00	0	1547	5172	-	-	-	-	-	-	-	-	3797	3942		
4000	5389	0.00	0	1768	-	-	-	-	-	-	-	-	-	4018	3988		
4500	5389	0.00	0	1989	-	-	-	-	-	-	-	-	-	4239	4033		
5000	5389	0.00	0	2210	-	-	-	-	-	-	-	-	-	4460	4078		
5500	5389	0.00	0	2431	-	-	-	-	-	-	-	-	-	4681	4123		
6000	5389	0.00	0	2652	-	-	-	-	-	-	-	-	-	4902	4169		
6500	5389	0.00	0	2873	-	-	-	-	-	-	-	-	-	5123	4214		
6800	5389	0.00	0	3006	-	-	-	-	-	-	-	-	-	5256	4241		
				0.442 psi/ft int. grad.											0.091 psi/ft int. grad.		

OPERATOR Texaco "CA Gas Co." A.P.I. 037- 24232

WELL NO. "Fernando Fee" 38C SECTION 27, T. 3 N, R. 16 W

MAP

INTENTION	Drill	REWORK				
NOTICE DATED	5-22-01	02/14/2003				
P-REPORT NUMBER	201-330	P203-31				
CHECKED BY/DATE						
MAP LETTER DATED						
SYMBOL						

	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED
NOTICE	9-17-01		02/14/03									
HISTORY	7-12-02		2-26-04									
SUMMARY	7-12-02											
E-LOG w/ DENSITY	2-11-02											
MUD LOG												
DIPMETER												
DIRECTIONAL	7-12-02											
CORE/SWS												
CBL			2-26-04									
PERF-MEMO	6-4-02											

ENGINEERING CHECK

T-REPORTS	✓					
OPERATOR'S NAME	✓					
WELL NO.	✓					
LOC & ELEV	✓					
SIGNATURE	✓					
SURFACE INSP.						
DRILL CARD						

RECORD'S COMPLETE 7-25-02 4-5-04 AA

FINAL LETTER OK

MAILED

RELEASED BOND

INJECTION BOOK

IDLE WELL LIST

SURFACE INSP. CARD

REMARKS:

OK TO RELEASE FROM CONFIDENTIAL

ABANDONED-REMOVED FROM E.D.P.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Fernando Fee 38 C
A.P.I. No. 037-24232

Field: Aliso Canyon County: Los Angeles
Surface Location: Sec 27, T3N, R16W, SBB&M

Matt Ortwein (Person Submitting Report) Title: Storage Field Engineer (President, Secretary, or Agent)

Date: 02/24/2004

Signature: Matt Ortwein for Ortwein

Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300 Telephone Number: 818.700.3802

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment, with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, and initial production data.

Start Date	Ops. DOGGR
06/05/2003	Rigged up choke manifold. Open well 2000 psi tubing and casing. Pumped 80 bbls polymer, killed well per schedule with 459 bbls. 3% KCL with no returns to surface. Pumped an addtional 150 bbls., no returns. Installed back pressure plug, nippled down production tree and nippled up class III BOPE. Tested and charted to 5000 psi. Removed back pressure plug. Released HES G-6 packer @ 7036'. Layed down tubing hanger. Attempted to fill well with 250 bbls. KCL.
06/06/2003	Pumped 80 bbls. of polymer down tubing and displaced with 41 bbls. of 3% KCL. Pulled out of the well to 3610'. Took gas kick, circulated out with 250 bbls. of 3% KCL. Found that on / off tool had released leaving bottom half of on / off tool, one four foot 2-7/8" tubing pup and 9-5/8" Halliburton packer in well. Ran back in the well with the on / off tool and found fish at 180'. Engauged fish with on / off tool and pulled out of the well. Made up 2-7/8", 45 degree collar and 9-5/8" scraper and ran in the well.
06/09/2003	Ran in well with 9-5/8" scraper tagged at 7073'. Cleaned out frac sand to 7160'. Unable to work down. Pulled out of well to kill string (3100').
06/10/2003	Pulled out of well with kill string. Made up 7-7/8" bit ran in well to 7160' tagged. Picked up power swivel attempt to work through tight spot. Unable to rotate past 7160'. Pulled out of well layed down bit. Made up 45 collar ran in well to 3700'.
06/11/2003	Ran in well with 45 collar to 7160' tagged. Worked through cleaned out frac sand to 7278' cicrulate clean, pulled to 7065' mix high viscosity pill. Ran in well to 7278' no fill, pumped 80 bbls. polymer pill. Pulled to 7160' did not find tight spot. Pulled out of well to 3120'.
06/12/2003	Pulled out of well with kill string. Nipple up shooting flange rigged up Baker Atlas. Ran in well with mininun ID log from surface to 7278'. Rigged down loggers. Made up 9-5/8" casing scraper and bumper sub. Ran in well to 7275' pulled out of well to 7065'.
06/13/2003	Ran in well with 9-5/8" scraper to 7275', (no fill). Pulled out of well with scraper. Picked up 5-1/2" bull plug, 8 joints of 5-1/2" 17 lb., Dura-Grip .012" sand screen with 6-5/8" armor shield and 4jts. 5-1/2", 17 lb. LT&C blank liner. Made up 453' 2-7/8" tubing tail. Made up landing nipple and gravel pack tools. Ran in well to 7270'. Rigged up gravel pack unit. Pumped tubing volume, gravel packed liner with 64 cu. ft. 16-30 sand. Reverse circulated 80 bbl. with no gravel returns. Restressed gravel with 1200 psi. Released gravel pack tool. Pulled above liner. Rigged down gravel pack unit.
06/16/2003	Opened well 1800 psi. tubing and 400 psi. casing. Circulated out gas. Pulled out of well with gravel pack tools. Made up Weatherford 5-1/2" x 9-5/8" hydrualic set packer. Ran in well to 6811', engaged drive over. Pulled 6000 lbs. over string wieght. Dropped ball, set packer. Packer did not set. Repressured tubing packer sheared out at 1500 psi. Dropped composite ball, pressured tubing to 2500 psi. to ensure packer is set. Reversed out composite ball. Released from running tool. Pulled out of well.
06/17/2003	Pulled out of well with running tool. Made up 7" cup, ran in well to 6811', stabbed in liner top. Tested packer to 500 psi. for 20 minutes. Dropped bar, knocked out plug. Pulled out of well to 3000'.
06/18/2003	Pulled out of well with test cups. Circulated out gas kick. Pulled out of well layed down test cups. Made up 9-5/8", HES, G-6 production packer. Ran in well made up on/off tool, sliding sleeve and gas lift mandrel. Set packer at 6792'. Landed tubing in tubing hanger with 6000# compression.
06/19/2003	Opened well, 2000 psi. tubing. Pumped tubing and casing volume. Installed back pressure plug. Nippled down Class III BOP nippled production tree. Tested production tree to 5000 psi. for 20 minutes. Rigged down and loaded out equipment.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. **T203-023**

Report on Operations

James D. Mansdorfer, Agent
SOUTHERN CALIFORNIA GAS COMPANY
9400 Oakdale Ave.
Chatsworth, CA 91313

Ventura, California
February 27, 2003

Your operations at well **"Fernando Fee" 38C,** API No. **037-24232,** Sec. **27,** T. **3N,** R.**16W,** S.B.B.&M. **Aliso Canyon** Field, in **Los Angeles** County, were witnessed on **02-19-2003. Anne Anderle,** representative of the supervisor, was present from **1430** to **1500**. There were also present **Jim McCuskey.**

Present condition of well: **13 3/8" cem 862'; 9 5/8" cem 7326', perf 7160'-7230'. TD 7380'.**

The operations were performed for the purpose of **testing the blowout prevention equipment and installation.**

DECISION:

The blowout prevention equipment and its installation on the 9 5/8" casing are approved.

tkc

Kenneth P. Henderson
Acting State Oil and Gas Supervisor

By _____
FOM
Patrick J. Kinnear
Deputy Supervisor

OG109 (Modified 2000)

6-5-08

Tim McCusker called
to alert of rt - installation
of BOP FOR RUN #16

Amelia Andela

API No. 037-24232 DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES T 203-033

BLOWOUT PREVENTION EQUIPMENT MEMO

Operator Southern Cal Gas Well "Fernando Fee" 38C Sec. 27 T. 3N R. 16W
Field Aliso Canyon County Los Angeles Spud Date

VISITS:	Date	Engineer	Time	Operator's Rep.	Title
1st	2-19-03	Anneliese Anderle	(1430 to 1500)		
2nd			(to)		

Contractor Pool Rig # 88 Contractor's Rep. & Title Jim McCusker
Casing record of well: 13 3/8" cem 86 1/2'; 9 5/8" cem 7326', Perf 7160'-7230'. TD 7380'.

OPERATION: Testing (inspecting) the blowout prevention equipment and installation. Critical well? Y ☐ N ☒
DECISION: The blowout prevention equipment and its installation on the 9 5/8 " casing are approved.

Proposed Well Opns: work over . MACP: psi
Hole size: " fr. ' to ', " to ' & " to '

REQUIRED BOPE CLASS: III 5M

CASING RECORD OF BOPE ANCHOR STRING					Cement Details	Top of Cement	
Size	Weight(s)	Grade(s)	Shoe at	CP at		Casing	Annulus
9 5/8							

BOP STACK

API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul
Ann	—	Hydril	GK		5M	2-18
rd	2 7/8				5M	"
rd	CSO				5M	"

TEST DATA

Gal. to Close	Recov. Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
					2-19	3000
					2-19	4500
					2-19	5000

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure 1500 psi
Total Rated Pump Output gpm Fluid Level
Distance from Well Bore 60 ft. 1000

	Accum. Manufacturer	Capacity	Precharge
1	Shaffer	80 gal.	psi
2		gal.	psi

CONTROL STATIONS	Elec.	Hyd.	Pneu.
Manifold at accumulator unit			
Remote at Driller's station			
Other:			

EMERG. BACKUP SYSTEM			Press.	Wkg. Fluid
N_2 Cylinders	1	L= "	1400	gal.
Other:	2	L= "	1950	gal.
	3	L= "	1750	gal.
	4	L= "	1800	gal.
	5	L= "		gal.
	6	L= "		gal.
	TOTAL:			ga

HOLE FLUID MONITORING	Alarm Type: Audible	Alarm Type: Visual	Class
Calibrated Mud Pit			A
Pit Level Indicator			
X Pump Stroke Counter	X	X	B
Pit Level Recorder			
Flow Sensor			C
Mud Totalizer			
Calibrated Trip Tank			
Other:			

TOTAL:

AUXILIARY EQUIPMENT

	No.	Size (in.)	Rated Press.	Connections: Weld	Connections: Flange	Connections: Thread	Test Press.
Fill-up Line							
X Kill Line							
X Control Valve(s)	3				X	X	5000
X Check Valve(s)	1						4500
X Aux. Pump Connect.							
X Choke Line		3"					
X Control Valve(s)	10					K	5000
X Pressure Gauge							
X Adjustable Choke(s)	2	3"					—
X Bleed Line							
Upper Kelly Cock							—
X Lower Kelly Cock							—
~~Standpipe Valve~~							
~~Standpipe Press. Gau.~~							
~~Pipe Safety Valve~~							
X Internal Preventer		3.5"					—

Hole Fluid Type	Weight	Storage Pits (Type & Size)
3% KCl	8.5	1000 BBL

REMARKS AND DEFICIENCIES:

500 Low Pressure test also

OGD9 (9/00)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

No. P203-31

PERMIT TO CONDUCT WELL OPERATIONS

010 (field code)
00 (area code)
30 (new pool code)
30 (old pool code)

Gas Storage

James D. Mansdorfer, Agent
Southern California Gas Co.
9400 Oakdale Ave.
Chatsworth CA 91313

Ventura, California
February 24, 2003

Your proposal to rework well "Fernando Fee" 38C,
A.P.I. No. 037-24232 Sec. 27, T. 3, R. 16, SB B.&M.,
Aliso Canyon field, ---------- area, Sesnon-Frew pool
Los Angeles County, dated 02-14-2003 received 02-14-2003 has been examined in conjunction with records filed in this office.

THE PROPOSAL, COVERING WORK ALREADY COMPLETED IN ACCORDANCE WITH PRIOR AGREEMENT, IS APPROVED.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

KENNETH P. HENDERSON
Acting State Oil & Gas Supervisor

By _____
Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

STEVE FIELDS —

RICHARD JACKSON IS ASKING YOU TO RESPOND "ELECTRONICALLY" TO HIS N.O.I. ON FERNANDO FEE #38C.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

NOTICE OF INTENTION TO REWORK / REDRILL WELL P203-31

C.E.Q.A. INFORMATION (when redrilling or deepening only)			
Exempt ☐	Neg. Dec. ☐	E.I.R. ☐	Document not required by local jurisdiction ☐
Class _____	S.C.H. No.	S.C.H. No.	
See Reverse Side			

FOR DIVISION USE ONLY			
	Forms		EDP Well
Bond	OGD114 ✓	OGD121 ✓	File
1,000,000.	111 ✓	115 ✓	

This notice and an indemnity or cash bond must be filed, and approval given, before the rework/redrill begins. *(See the reverse side for bonding information.)* If operations have not commenced within one year of receipt of the notice, this notice will be considered canceled.

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework well Fernando Fee #38C API No. 037-24232

Sec. 34 T3N R. 16W SB B.&M. Aliso Canyon Field

Los Angeles County.

1. The complete casing record of the well (present hole), including plugs and perforations, is as follows:
See attached completion program

GS

2. The total depth is: 7326 feet. The effective depth is: 7230 feet.

3. Present completion zone (s): Sesnon (Name) Anticipated completion zone (s): Sesnon (Name)

4. Present zone pressure: storage psi. Anticipated/existing new zone pressure: same psi.

5. Last produced: _____ (Date) _____ (Oil, B/D) _____ (Water, B/D) _____ (Gas, Mcf/D)

(or)

Last injected: _____ (Date) _____ (Water, B/D) _____ (Gas, Mcf/D) _____ (Surface pressure, psig)

6. Is this a critical well according to the definition on the reverse side of this form? Yes ☐ No X ☒

The proposed work is as follows: *(A complete program is preferred and may be attached.)*
See attached well work program.

verbal

RECEIVED
FEB 14 2003
By VTA DOGGR

For redrilling or deepening: _____ (Proposed bottom-hole coordinates) _____ (Estimated true vertical depth)

The division must be notified if changes to this plan become necessary.

Name of Operator	Telephone Number	
Southern California Gas Company	818 701 2351	
Address: 9400 Oakdale Ave.	City: Chatsworth	Zip Code: 91313
Name of Person Filing Notice: Richard Jackson	Signature: [signature]	Date: 14 February 2003

File In Duplicate

OG107 (7/97/GSR/5M)

COMPLETION/STIMULATION PROGRAM

(2 stage frac. No liner)

31 December 2002

Fernando Fee 38C

DATE: 31 December 2002

Revisions: 8 Jan 2003, 31 Jan 2003, 5 Feb. 2003

OPERATOR: **Southern California Gas Company**

FIELD: **Aliso Canyon**

WELL: **Fernando Fee 38C**

CONTRACTOR: **Pool**

OBJECTIVE: **Frac Stimulate and Complete well with Frac Packed Liner**

ACCOUNT: **GWO 95363 and the IO is 300237702**

ELEVATION: **Take all measurements from the original KB = 32' above GL.**

SAFETY: **Hard hats are to be worn by all personnel on or near a rig. No smoking is permitted within 100' of any wellhead or near any other flammable material.**

PRESENT CONDITIONS: Casing:

0' - 862'	13-3/8"	54.5#	K-55	Cemented
0' - 7326'	9-5/8"	47#	N-80	Cemented
E.D. – 7230'				E.D. not confirmed
7160'-7229'				Perforated 6 HPF (TVDTP=7100')
Tubing:				
226 Joints	2-7/8"	6.5#	N-80	EUE 8R
Packer				
Halliburton G-6	9-5/8"			Top at 7048'

Note: BOP requirements in 224.05 should be fully implemented. Class III should be followed. Reservoir is at high inventory and pressures should be monitored regularly.

Aliso Canyon is a Title V Facility: Check with Staff environmental specialist to assure all permits and procedures are properly recorded.

Work in this program will require approval from CaDOGGR

Notice of approval to be posted on site during well work operations. All provisions are to be followed.

WELL WORK PROGRAM FF38B

Pre rig:

Well kill procedure will use fluids which will provide a 500psi minimum overbalance at all open intervals in the well bore. At current inventory 3% KCl will provide adequate overbalance.

1) Remove instrumentation. Remove laterals and install companion flanges and valves for killing well.

2) Set 500 barrel closed top tank and fill with 3% KCl water. Treat all water with ucarcide, 5 gallons per 100 barrels. Set 2 additional frac tanks as required providing storage capacity for Frac procedure. Tanks to be fitted with 4" suction manifold and with 3" circulating line to back of tank.

3) Move in pump with 100b circulating tank, shaker and mixer. Well crew to provide labor for killing well and installing kill equipment.

4) Dead head 80 barrels of polymer KCl/salt water down tubing to provide required overbalance. Use aprox. 2#/barrel HEC polymer to achieve 60 sec minimum viscosity. Check wellhead pressure prior to pumping and calculate gradient using TVD=7100'. Weight as required.

5) Wait approximately 1 hour to see if tubing pressure returns. If no pressure or flow is observed, continue with BOPE installation. Perforate 4) ½" equalizing hole at Approximately 7000'. Avoid radioactive marker.

(Note: Annulus is filled with 3% KCl water. Use caution until equalized)

6) Fill 500 barrel closed top tank with 3% KCl water and sufficient Sodium Chloride for adequate fluid weight to obtain 500psi overbalance.

   a) Treat all water with ucarcide, 5 gallons per 100 barrels. Set Port-a-feed on location with drum of ucarcide.

   b) Connect pump to tubing and vent casing through choke manifold to Gas Co. system. Notify Aliso Operations prior to venting any gas to system.

7) Kill well per schedule: Maintain 500psi overbalance throughout kill.

a) Pump down casing and vent tubing bubble before starting kill schedule.

b) Vent gas through choke to Gas Co. system.

Rig work:

1) Move in Pool light work over rig capable of 300,000#. Rig up. Sub base will not be needed on this work. Use working floor.

2) Set 2-7/8" LH Shaffer BPV. Install Weatherford Class III BOPE directly on 11"-5000psi flange. Fit BOPE with 2-7/8" pipe rams and CSO. BOPE must have connection and valve below the blind rams. Fit with 5000psi valve.

3) Test BOPE system per Co. job instruction. Test to 5000psi. Notify DOGGR to witness testing.

4) Install 1 jt of 2-7/8" N-80 tubing in tubing hanger with Safety valve in top. Unland and work RH torque in tubing to get ¼ turn at packer. Pick up to equalize across packer. (4000# above string weight) Continue picking up to automatically "J" to running position. Allow element to relax then work up and down until free. Pull out of well with packer and TCP assembly. Lay down all tubing accessories. Call HES to handle guns, radioactive marker sub and to redress packer.

5) Run 9-5/8" –47# positive scraper on 2-7/8" tubing to top of cement reported to be at 7230'. Note: ED was not reported in this well. Reverse circulate clean. Lay down 2-7/8" tubing when pulling out. Change pipe rams to 3-1/2".

6) Run Baker Atlas cement bond log with neutron/collars, from ED or 7230' to 5000' or as directed by field engineer (log should be run above upper hydrocarbon interval). Use full lubricator.

7) Perforate remaining intervals: S-4 and S-6 (from 7065 to 7133').

   a) Use 4-5/8" carrier

   b) 6 jet holes per foot

8) Rig down loggers.

9) Rerun 9-5/8" –47# positive scraper on 3-1/2" tubing to top of cement. Run in well picking up 3-1/2" work string from Gas Co. stock.

10) Make up Baker opposed cup wash tool with 5' spacing. Test tubing to maximum working pressure against closed tool. Wash all perforations to assure holes are open. Use high rate from frac pump as required. Record: pressure vs. rate and plot to determine frac of formation. Wash all perforations at rate above frac pressure. Wait as directed at specified depths to observe closure pressure. Note blank between perforations and tie to tally. Monitor casing pressure and note communication.

11) Run in well with Baker Tandem Packers and accessories and set lower packer on blank at approximately 7145'. First stage of frac to take place through both packers with bottom packer set.

12) BJ Services to perform First stage of frac procedure per attached program. Use 12/20 Flex sand and 16/30 sand.

13) Release from lower packer and pull to 7045' and set upper Retriev-a-matic packer.

14) BJ Services to perform second phase of frac procedure per attached program Use 12/20 Flex sand and 16/30 sand. At completion of pumping, reverse clean, release packer and pull out of well with upper packer.

15) Pick up retrieving tool and reverse out sand to top of packer/BP at 7145'. Recover packer and pull out of well.

16) Clean out well to 7230'. If well will not reverse circulate use tubing bailer HEC polymer or nitrogen foam.

17) Lay down 3-1/2" tubing. Change rams to 2-7/8".

18) Set 9-5/8" X 2-7/8" HES packer (redressed from well) approximately 20' above of top perforation on completion tubing as follows:

a) HES packer

b) 2-7/8" N-80 X 6' pup joint

c) LH Release On/off tool with XN profile

d) 1 joint of 2-7/8" EUE 8R N-80 tubing

e) HES XD sliding sleeve (closed)

f) 2-7/8" EUE 8R N-80 tubing as required. Install Gas lift Mandrel at approximately 3000' loaded with dummy valve.

19) Set packer.

a) Land tubing in 10,000# compression or as recommended by HES.

b) Test packer to 1500psi for 20 minutes.

20) Install BPV and remove BOPE. Install tree and test to 5000psi. Remove BPV.

21) Release rig.

Post rig

1. Clean location and replace laterals and controls. Inspect probes and replace as required.
2. Open sliding sleeve and unload well.
3. Initially flow well up tubing through test trap at high rate to remove as much fluid as possible to avoid potential salt precipitation. Monitor for sand/proppant production.
4. Test well frequently to evaluate rate and sand production.

Richard Jackson 9 Jan 2003

Fernando Fee 38C Completion 12-02

RECEIVED
JUL 25 2002
By

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

WELL SUMMARY REPORT

API NO. 037- 24232

Operator	Well				
Southern California Gas Company	Fernando Fee 38 C				
Field	**County**	**Sec.**	**T.**	**R.**	**B.&M.**
Aliso Canyon	Los Angeles	27	3N	16W	S.B.

Location (Give surface location from property or section corner, street center line)
480' East and 2920' South from Station 84

Elevation of ground above sea level
1708'

California Coordinates (if known):

Was the well directionally drilled? ■ Yes ☐ No If yes, show coordinates at total depth.
7302' TVD, 362.68' N and 531.20' W

Commenced drilling (date) 11/19/01
Completed drilling (date) 11/30/01
Commenced production/injection (date)

Total depth: (1st hole) 7380' (2nd) (3rd)

Present effective depth 7231'

Production mode: ■ Flowing ☐ Pumping ☐ Gas lift

Junk: None

Name of production/injection zone(s): Lower Sesnon

Depth measurements taken from top of: ☐ Derrick Floor ☐ Rotary Table ■ Kelly Bushing
Which is 32 feet above ground

GEOLOGICAL MARKERS	DEPTH
MP	6753'
S4	7065'
Cretaceous	7271'

Formation and age at total depth: Cretaceous
Base of fresh water:

	Clean Oil (bbl per day)	API Gravity (clean oil)	Percent Water (including emulsion)	Gas (Mcf per day)	Tubing Pressure	Casing Pressure
Initial Production				Gas Storage	2200 psi.	2200 psi.
Production After 30 days						

CASING AND CEMENTING RECORD (Present Hole)

Size of Casing (API)	Top of Casing	Depth of Shoe	Weight of Casing	Grade and Type of Casing	New (N) or Used (U)	Size of Hole Drilled	Number of Sacks or Cubic Feet of Cement	Depth of Cementing (if through perforations)	Top(s) of Cement in Annulus
13-3/8"	33' KB	862' KB	54.5 #	N-80 SMLS	N	17-1/2"	510 sks.	Shoe	Surface
9-5/8"	33' KB	7326' KB	47 #	N-80 SMLS	N	12-1/4"	1446 sks.	Shoe	Surface

PERFORATED CASING (Size, top, bottom, perforated intervals, size and spacing of perforations, and method.)

7160' - 7230', 5/8" holes, six holes per foot, gun perforated.

Logs/surveys run? ■ Yes ☐ No If yes, list type(s) and depth(s).

Wellbore deviation survey 72' to TD. Platform Express array from 862' to 7366'.

In compliance with Sec. 3215, Division 3, of the *Public Resources Code*, the information given herewith is a complete and correct record of the present condition of the well and all work done thereon, so far as can be determined from all available records.

Name	Title	
Mike Dozier	Technical Specialist	
Address	**City/State**	**Zip Code**
P. O. Box 2300, M.L. SC 9365,	Chatsworth, CA	91313-2300
Telephone Number	**Signature**	**Date**
818.701.3235	Mike Dozier	July 5, 2002

OG100 (1/98/GSR/1M)
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SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Fernando Fee 38 C
A.P.I. No. 037-24232

Field: Aliso Canyon
County: Los Angeles
Surface Location: Sec 27, T3N, R16W, SBB&M

Mike Dozier (Person Submitting Report)
Title: (President, Secretary, or Agent)

Date: 7/11/2002

Signature: Mike Dozier

Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300
Telephone Number: (818) 701-3235

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment, with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, and initial production data.

Start Date	Ops This Rpt
11/17/2001	Moved from FF 38 B to FF 38 C.
11/18/2001	Spudded a 17-1/2" hole at 2 a.m. 11-19-01. Drilled to 125'.
11/19/2001	Drilled from 125' to 870'.
11/20/2001	Ran 13-3/8", 54.5#, K-55 casing. Set shoe @ 862' and cemented well, lead: 243 sacks, 141 bbls. of class G cement, 65:35:6 Pozmix cement of 12.4 ppg . Tail: 267 sacks, class G w/3% Cal, 14 bbls., of 15.8 ppg. cement, full returns to surface. Displaced w/ 14 bbls. fresh water. Cement in place @ 13:30 PM.
11/21/2001	Nippled up class III B.O.P. Pressure tested BOPE OK by Steve Mulqueen, CADOGGR. Drilled from 860' to 1010'.
11/22/2001	Drilled from 1010' to 2050'.
11/23/2001	Drilled from 2050' to 3186'.
11/24/2001	Drilled from 3166' to 3825'.
11/25/2001	Drilled from 3825' to 4735'.
11/26/2001	Drilled from 4735' to 5671'.
11/27/2001	Drilled from 5671' to 6320'.
11/28/2001	Drilled from 6320' to 6710'.
11/29/2001	Drilled from 6710' to 7366' TD'd well @ 06:00 11/30/2001.
11/30/2001	Ran Platform Express open hole log. Pulled out of hole.
12/1/2001	Ran in hole, spot reamed to TD, circulated clean and pulled out of hole.
12/2/2001	Ran 9-5/8, 47#, N-80 , LT&C casing. Set shoe at 7326'.
12/3/2001	Cemented 9 5/8" casing. Preceded cement with 50 barrels of pre fush. Lead: 758 sacks of 12 ppg. class G with 1.25% bwoc R-3 + 0.2% bwoc CD-32 + 0.2% bwoc FL-62 + 2 gals/100 sacks FP-6L + 2.5% bwoc Sodium Metasicilicate + 7.5% bwoc MPA-1 + 132.2% fresh water. Tail # 1: 488 sacks of 15.8 ppg. G with 0.5% bwoc R-3 + 0.4% bwoc FL-63 + 0.5% bwos CD-32 + 2 gals/100 sacks FP-6L + 0.3% bwoc Sodium Metasicilicate + 43.5% fresh water. Tail # 2: 200 sacks of class G with 1.5 gallons per sack BA-86L + 0.5% bwoc R-3 + 0.4% bwoc FL-63 + 0.5% bwoc CD-32 + 1 gal/100 sacks FP-6LO + 0.3% bwoc Sodium Metasicilicate + 30.3% fresh water.
12/4/2001	Changed well over to KCL. Laid down drill pipe.
12/5/2001	Nippled down BOPE, installed well head, released rig @ 5p.m. 12/5/2001.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Fernando Fee 38 C
A.P.I. No. 037-24232

Field: Aliso Canyon
County: Los Angeles
Surface Location: Sec 27, T3N, R16W, SBB&M

Mike Dozier
(Person Submitting Report)
Title: Storage Field Engineer
(President, Secretary, or Agent)

Date: 7/11/2002

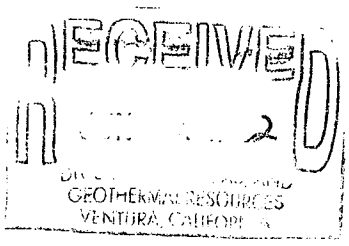
Signature: Mike Dozier

Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300
Telephone Number: (818) 701-3235

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment, with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, and initial production data.

Start Date	Ops This Rpt
5/13/2002	Picked up tubing conveyed guns, 70' of perforations and G-6 packer. Measured and picked up 2-7/8" N-80 tubing to 2500'. Filled tubing with lease water. Ran in well to 7249.84'. Shut in well till am.
5/14/2002	Ran depth control log. Put R/A tag on depth @ 7008'. Spaced out tubing, Set G-6 packer @ 7049'. Landed tubing hanger with 10K set on packer. Tubing up weight, 48K down weight, 36K, 2500' fluid in side 2-7/8" tubing. Installed and tested well head to 5000 psi. Droped bar @ 11.42 , guns fired @ 11:43, fluid to surface in 2-1/2 minutes. Shot 5/8" holes from 7160' to 7230'. Recovered 20 bbls. of fliud. Flowed well for 1-1/2 hours. Shut in well, closed all valves. Released rig @ 18:00

Perforating intervals Aliso canyon			
WELL NAME	TOP DEPTH	BOTTOM DEPTH	SHOT DENSITY / SIZE
Fernando Fee 38 A	7175'	7185'	12 spf – 1"
"	7195'	7212'	12 spf – 1"
"	7222'	7242'	12 spf – 1"
"	7247'	7345'	12 spf – 1"
"			
Fernando Fee 38 B	7035'	7100'	6 spf – 0.43"
Fernando Fee 38 C	7160'	7230'	6 spf – 0.43"
Porter 69 F	7645'	7790'	6 spf – 0.43"
Porter 69 G	7820'	7900'	6 spf – 0.43"
Porter 69 H	7605'	7670'	6 spf – 0.43"
"	7704'	7762'	6 spf – 0.43"
"	7785'	7850'	6 spf – 0.43"
Porter 69 J	7920'	8000'	6 spf – 0.43"
Porter 69 K	7975'	8050'	6 spf – 0.43"



Aliso Canyon
Fernando Fee, Slot 38C
38C - Original

SURVEY REPORT

5 December, 2001

Surface Coordinates: 1935482.00 N, 6397218.00 E (34° 18' 34.4132" N, 118° 32' 40.4509" W)
Surface Coordinates relative to Global Coordinates: 1935482.00 N, 6397218.00 E (Grid)
Surface Coordinates relative to Structure: 339.10 N, 188.69 W (Grid)
RKB: 1748.00ft above Mean Sea Level

sperry-sun
DRILLING SERVICES
A Halliburton Company

Survey Ref: svy36129

Aliso Canyon

Fernando Fee

Measured Depth (ft)	Incl.	Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)	Global Coordinates Northings (ft)	Global Coordinates Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
0.00	0.000	0.000	1748.00	0.00	0.00 N	0.00 E	1935482.00 N	6397218.00 E		0.00	
176.00	1.000	258.000	1572.01	175.99	0.32 S	1.50 W	1935481.68 N	6397216.50 E	0.568	1.06	
270.00	0.250	37.000	1478.01	269.99	0.33 S	2.18 W	1935481.67 N	6397215.82 E	1.277	1.62	
363.00	0.000	0.000	1385.01	362.99	0.16 S	2.06 W	1935481.84 N	6397215.94 E	0.269	1.61	
485.00	0.250	165.000	1263.01	484.99	0.42 S	1.99 W	1935481.58 N	6397216.01 E	0.205	1.41	
636.00	1.000	271.000	1112.02	635.98	0.72 S	3.22 W	1935481.28 N	6397214.78 E	0.726	2.26	
726.00	2.000	307.000	1022.05	725.95	0.24 N	5.26 W	1935482.24 N	6397212.74 E	1.476	4.49	
818.00	2.000	280.000	930.11	817.89	1.49 N	8.13 W	1935483.49 N	6397209.87 E	1.015	7.56	
885.00	2.100	280.500	863.15	884.85	1.91 N	10.48 W	1935483.91 N	6397207.52 E	0.152	9.75	
915.00	2.300	273.700	833.17	914.83	2.05 N	11.62 W	1935484.05 N	6397206.38 E	1.095	10.77	
945.00	2.300	268.400	803.19	944.81	2.08 N	12.83 W	1935484.08 N	6397205.17 E	0.709	11.78	
976.00	2.400	254.300	772.22	975.78	1.88 N	14.07 W	1935483.88 N	6397203.93 E	1.888	12.70	
1005.00	2.600	242.100	743.25	1004.75	1.41 N	15.24 W	1935483.41 N	6397202.76 E	1.956	13.40	
1035.00	2.700	231.700	713.28	1034.72	0.65 N	16.40 W	1935482.65 N	6397201.60 E	1.635	13.93	
1064.00	2.500	228.500	684.31	1063.69	0.19 S	17.41 W	1935481.81 N	6397200.59 E	0.852	14.29	
1094.00	2.000	223.500	654.33	1093.67	1.00 S	18.26 W	1935481.00 N	6397199.74 E	1.789	14.54	
1125.00	1.200	216.800	623.35	1124.65	1.65 S	18.82 W	1935480.35 N	6397199.18 E	2.646	14.64	
1155.00	0.600	219.800	593.35	1154.65	2.03 S	19.11 W	1935479.97 N	6397198.89 E	2.005	14.67	
1185.00	0.200	157.200	563.35	1184.65	2.20 S	19.19 W	1935479.80 N	6397198.81 E	1.794	14.64	
1216.00	0.600	74.700	532.35	1215.65	2.20 S	19.01 W	1935479.80 N	6397198.99 E	1.959	14.49	
1248.00	1.100	67.400	500.35	1247.65	2.04 S	18.57 W	1935479.96 N	6397199.43 E	1.596	14.21	
1278.00	1.400	74.600	470.36	1277.64	1.83 S	17.95 W	1935480.17 N	6397200.05 E	1.127	13.82	
1339.00	1.200	77.100	409.38	1338.62	1.49 S	16.61 W	1935480.51 N	6397201.39 E	0.341	12.90	
1401.00	1.200	73.600	347.39	1400.61	1.16 S	15.35 W	1935480.84 N	6397202.65 E	0.118	12.04	
1463.00	0.900	75.500	285.40	1462.60	0.86 S	14.26 W	1935481.14 N	6397203.74 E	0.487	11.31	
1525.00	0.900	78.800	223.41	1524.59	0.64 S	13.31 W	1935481.36 N	6397204.69 E	0.084	10.65	
1588.00	0.800	81.300	160.42	1587.58	0.48 S	12.39 W	1935481.52 N	6397205.61 E	0.169	9.98	
1649.00	0.800	84.100	99.42	1648.58	0.37 S	11.55 W	1935481.63 N	6397206.45 E	0.064	9.34	
1707.00	0.800	95.900	41.43	1706.57	0.37 S	10.74 W	1935481.63 N	6397207.26 E	0.284	8.67	
1768.00	0.600	96.900	-19.57	1767.57	0.45 S	10.00 W	1935481.55 N	6397208.00 E	0.328	8.01	

Aliso Canyon

Fernando Fee

Measured Depth (ft)	Incl.	Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)	Global Coordinates Northings (ft)	Global Coordinates Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
1831.00	0.400	114.600	-82.57	1830.57	0.58 S	9.47 W	1935481.42 N	6397208.53 E	0.399	7.50	
1892.00	0.300	98.700	-143.56	1891.56	0.70 S	9.12 W	1935481.30 N	6397208.88 E	0.228	7.15	
1986.00	0.100	114.400	-237.56	1985.56	0.77 S	8.80 W	1935481.23 N	6397209.20 E	0.219	6.85	
2078.00	0.300	94.900	-329.56	2077.56	0.82 S	8.49 W	1935481.18 N	6397209.51 E	0.227	6.56	
2170.00	0.200	115.700	-421.56	2169.56	0.91 S	8.10 W	1935481.09 N	6397209.90 E	0.145	6.19	
2262.00	0.200	46.300	-513.56	2261.56	0.87 S	7.84 W	1935481.13 N	6397210.16 E	0.248	6.00	
2355.00	0.400	45.400	-606.56	2354.56	0.53 S	7.50 W	1935481.47 N	6397210.50 E	0.215	5.90	
2449.00	0.400	10.600	-700.56	2448.56	0.02 N	7.20 W	1935482.02 N	6397210.80 E	0.255	5.97	
2541.00	0.200	53.900	-792.56	2540.56	0.43 N	7.01 W	1935482.43 N	6397210.99 E	0.314	6.04	
2634.00	0.100	118.100	-885.56	2633.56	0.49 N	6.81 W	1935482.49 N	6397211.19 E	0.194	5.91	
2726.00	0.300	153.900	-977.56	2725.56	0.23 N	6.63 W	1935482.23 N	6397211.37 E	0.246	5.62	
2815.00	0.300	167.000	-1066.56	2814.56	0.20 S	6.48 W	1935481.80 N	6397211.52 E	0.077	5.24	
2907.00	0.400	51.700	-1158.55	2906.55	0.24 S	6.17 W	1935481.76 N	6397211.83 E	0.645	4.97	
2999.00	0.600	66.900	-1250.55	2998.55	0.15 N	5.48 W	1935482.15 N	6397212.52 E	0.259	4.61	
3090.00	0.700	81.000	-1341.55	3089.55	0.42 N	4.49 W	1935482.42 N	6397213.51 E	0.206	3.95	
3183.00	0.800	81.500	-1434.54	3182.54	0.61 N	3.29 W	1935482.61 N	6397214.71 E	0.108	3.06	
3279.00	0.700	64.800	-1530.53	3278.53	0.96 N	2.09 W	1935482.96 N	6397215.91 E	0.249	2.27	
3372.00	0.100	97.800	-1623.53	3371.53	1.19 N	1.50 W	1935483.19 N	6397216.50 E	0.665	1.91	
3481.00	0.100	72.200	-1732.53	3480.53	1.20 N	1.31 W	1935483.20 N	6397216.69 E	0.041	1.76	
3575.00	0.040	281.800	-1826.53	3574.53	1.24 N	1.27 W	1935483.24 N	6397216.73 E	0.145	1.74	
3667.00	0.100	44.900	-1918.53	3666.53	1.30 N	1.24 W	1935483.30 N	6397216.76 E	0.137	1.76	
3729.00	0.300	321.600	-1980.53	3728.53	1.47 N	1.31 W	1935483.47 N	6397216.69 E	0.492	1.90	
3790.00	1.000	315.600	-2041.52	3789.52	1.97 N	1.78 W	1935483.97 N	6397216.22 E	1.151	2.58	
3854.00	1.600	309.500	-2105.50	3853.50	2.94 N	2.86 W	1935484.94 N	6397215.14 E	0.961	4.01	
3917.00	2.400	310.400	-2168.47	3916.47	4.35 N	4.54 W	1935486.35 N	6397213.46 E	1.271	6.20	
3980.00	2.800	307.100	-2231.40	3979.40	6.14 N	6.77 W	1935488.14 N	6397211.23 E	0.678	9.05	
4042.00	3.100	302.800	-2293.32	4041.32	7.96 N	9.39 W	1935489.96 N	6397208.61 E	0.601	12.24	
4104.00	3.800	297.600	-2355.21	4103.21	9.82 N	12.62 W	1935491.82 N	6397205.38 E	1.236	15.96	
4166.00	4.700	298.400	-2417.04	4165.04	11.98 N	16.67 W	1935493.98 N	6397201.33 E	1.455	20.52	
4229.00	5.400	297.400	-2479.79	4227.79	14.57 N	21.58 W	1935496.57 N	6397196.42 E	1.120	26.03	

Aliso Canyon

Fernando Fee

Measured Depth (ft)	Incl.	Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)	Global Coordinates Northings (ft)	Global Coordinates Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
4292.00	6.200	300.300	-2542.47	4290.47	17.65 N	27.15 W	1935499.65 N	6397190.85 E	1.352	32.37	
4355.00	7.200	303.700	-2605.04	4353.04	21.56 N	33.37 W	1935503.56 N	6397184.63 E	1.707	39.71	
4418.00	8.000	305.300	-2667.48	4415.48	26.28 N	40.23 W	1935508.28 N	6397177.77 E	1.313	48.05	
4481.00	8.900	305.400	-2729.80	4477.80	31.64 N	47.78 W	1935513.64 N	6397170.22 E	1.429	57.30	
4543.00	9.800	304.700	-2790.97	4538.97	37.42 N	56.03 W	1935519.42 N	6397161.97 E	1.463	67.37	
4639.00	10.700	306.100	-2885.44	4633.44	47.32 N	69.95 W	1935529.32 N	6397148.05 E	0.973	84.45	
4732.00	11.300	304.700	-2976.73	4724.73	57.60 N	84.41 W	1935539.60 N	6397133.59 E	0.706	102.19	
4826.00	12.200	305.100	-3068.76	4816.76	68.55 N	100.11 W	1935550.55 N	6397117.89 E	0.961	121.33	
4920.00	12.200	305.400	-3160.64	4908.64	80.01 N	116.33 W	1935562.01 N	6397101.67 E	0.067	141.19	
5014.00	12.000	304.800	-3252.55	5000.55	91.35 N	132.45 W	1935573.35 N	6397085.55 E	0.251	160.89	
5109.00	12.100	304.200	-3345.46	5093.46	102.58 N	148.80 W	1935584.58 N	6397069.20 E	0.169	180.73	
5203.00	12.000	303.000	-3437.39	5185.39	113.44 N	165.14 W	1935595.44 N	6397052.86 E	0.287	200.35	
5297.00	11.900	301.900	-3529.35	5277.35	123.88 N	181.57 W	1935605.88 N	6397036.43 E	0.265	219.80	
5391.00	11.800	305.200	-3621.35	5369.35	134.54 N	197.65 W	1935616.54 N	6397020.35 E	0.729	239.09	
5482.00	11.300	304.400	-3710.50	5458.50	144.94 N	212.61 W	1935626.94 N	6397005.39 E	0.577	257.31	
5575.00	11.600	304.100	-3801.65	5549.65	155.33 N	227.87 W	1935637.33 N	6396990.13 E	0.329	275.78	
5668.00	12.300	305.800	-3892.64	5640.64	166.37 N	243.64 W	1935648.37 N	6396974.36 E	0.842	295.03	
5745.00	12.300	305.300	-3967.87	5715.87	175.91 N	256.99 W	1935657.91 N	6396961.01 E	0.138	311.43	
5838.00	12.100	304.000	-4058.77	5806.77	187.08 N	273.16 W	1935669.08 N	6396944.84 E	0.365	331.08	
5933.00	12.000	303.200	-4151.68	5899.68	198.06 N	289.67 W	1935680.06 N	6396928.33 E	0.205	350.91	
5996.00	11.800	304.200	-4213.32	5961.32	205.26 N	300.48 W	1935687.26 N	6396917.52 E	0.456	363.90	
6088.00	12.100	304.000	-4303.33	6051.33	215.94 N	316.26 W	1935697.94 N	6396901.74 E	0.329	382.95	
6182.00	12.300	303.300	-4395.21	6143.21	226.95 N	332.79 W	1935708.95 N	6396885.21 E	0.265	402.81	
6276.00	12.100	302.800	-4487.08	6235.08	237.78 N	349.44 W	1935719.78 N	6396868.56 E	0.241	422.67	
6370.00	12.500	302.600	-4578.92	6326.92	248.60 N	366.29 W	1935730.60 N	6396851.71 E	0.428	442.69	
6465.00	12.400	302.300	-4671.69	6419.69	259.59 N	383.58 W	1935741.59 N	6396834.42 E	0.125	463.16	
6558.00	12.400	302.300	-4762.52	6510.52	270.26 N	400.46 W	1935752.26 N	6396817.54 E	0.000	483.12	
6652.00	12.000	305.600	-4854.40	6602.40	281.34 N	416.93 W	1935763.34 N	6396801.07 E	0.855	502.98	
6746.00	11.900	304.900	-4946.36	6694.36	292.58 N	432.83 W	1935774.58 N	6396785.17 E	0.187	522.44	
6840.00	12.000	309.400	-5038.33	6786.33	304.33 N	448.33 W	1935786.33 N	6396769.67 E	0.997	541.86	

Allso Canyon

Fernando Fee

Measured Depth (ft)	Incl.	Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)	Global Coordinates Northings (ft)	Global Coordinates Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
6934.00	11.700	314.000	-5130.33	6878.33	317.15 N	462.73 W	1935799.15 N	6396755.27 E	1.054	560.98	
7028.00	11.000	309.000	-5222.49	6970.49	329.41 N	476.56 W	1935811.41 N	6396741.44 E	1.284	579.31	
7122.00	11.000	304.400	-5314.76	7062.76	340.12 N	490.93 W	1935822.12 N	6396727.07 E	0.934	597.22	
7184.00	10.900	300.000	-5375.64	7123.64	346.40 N	500.89 W	1935828.40 N	6396717.11 E	1.357	608.98	
7301.00	10.900	297.400	-5490.53	7238.53	357.02 N	520.29 W	1935839.02 N	6396697.71 E	0.420	631.00	
7366.00	10.900	297.400	-5554.35	7302.35	362.68 N	531.20 W	1935844.68 N	6396686.80 E	0.000	643.20	TD Projections

All data is in Feet (US) unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100 feet (US).
Vertical Section is from Well and calculated along an Azimuth of 304.203° (Grid).

Based upon Minimum Curvature type calculations, at a Measured Depth of 7366.00ft.,
The Bottom Hole Displacement is 643.20ft., in the Direction of 304.323° (Grid).

Comments

Measured Depth (ft)	Station Coordinates TVD (ft)	Station Coordinates Northings (ft)	Station Coordinates Eastings (ft)	Comment
7366.00	7302.35	362.68 N	531.20 W	TD Projections

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. **T202-026**

Report on Operations

James D. Mansdorfer, Agent
SOUTHERN CALIFORNIA GAS COMPANY
9400 Oakdale Ave.
Chatsworth, CA 91313

Ventura, California
January 17, 2002

Your operations at well **"Fernando Fee"" 38C,** API No. **037-24232,** Sec. **27,** T. **3N,** R.**16W,** S.B.B.&M. **Aliso Canyon** Field, in **Los Angeles** County, were witnessed on **11-21-2001. Steve Mulqueen ,** representative of the supervisor, was present from **1800** to **2000.** There were also present **Calvin Morrow.**

Present condition of well: **13 3/8" cem 862'. TD 870' (drilling).**

The operations were performed for the purpose of **testing the blowout prevention equipment and installation.**

DECISION:

The blowout prevention equipment and its installation on the 13 3/8" casing are approved.

tkc

William F. Guerard, Jr.
State Oil and Gas Supervisor

By _____
FOA Patrick J. Kinnear
Deputy Supervisor

API No. 037-24232 DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES T 20S-020

11/28/01

BLOWOUT PREVENTION EQUIPMENT MEMO

Operator SOUTHERN CALIF. GAS CO. Well "FERNANDO FEE" 38 C Sec. 27 T. 3N R. 16W

Field ALISO CANYON County LOS ANGELES Spud Date 11-19-01 (0000)

VISITS:	Date	Engineer	Time	Operator's Rep.	Title
1st	11-21-01	S. MULQUEEN	(1800 to 2000)	CALVIN MORROW	FOREMAN
2nd			(to)		

Contractor KENAI DRILLING Rig # 6 Contractor's Rep. & Title CALVIN MORROW

Casing record of well: 13 3/8" cem 862'. TD 870' (drilling).

OPERATION: Testing ~~(inspecting)~~ the blowout prevention equipment and installation. Critical well? Y ___ N ✓

DECISION: The blowout prevention equipment and its installation on the 13 3/8 " casing are approved.

Proposed Well Opns: DRILL . MACP: ___ psi

Hole size: 12 1/2" fr. 70 ' to 870 ' , ___" to ___ ' & ___" to ___ '

REQUIRED BOPE CLASS: III B SM

CASING RECORD OF BOPE ANCHOR STRING

Size	Weight(s)	Grade(s)	Shoe at	CP at	Cement Details	Top of Cement: Casing	Top of Cement: Annulus
13 3/8	54.5	K-55	862'	—	LEAD 87 BBL (487 cf) "G" w/ 4% 35 POZ, TAIL 137 BBL "G" (14 BBL RETURNS) FLOAT @ 838	838'	0

BOP STACK

API Symb	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul
A	—	HYDRIL	GK	13 5/8	5000	
RD	5	SHAFFER	LWS	"	"	
RD	CSO	"	"	"	"	

TEST DATA

Gal. to Close	Recovery Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
					11-21	1800 *
					11-21	3000 *
					11-21	3000 *
*TEST PUMP			CHART			

TOTAL:

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure 3000 psi

Total Rated Pump Output ___ gpm Fluid Level

Distance From Well Bore 90 ft.

	Accum. Manufacturer	Capacity	Precharge
1	KOOMEY	152 gal	1000 psi
2		gal.	psi

CONTROL STATIONS

	Elec.	Hyd.	Pneu.
✓ Manifold at accumulator unit		✓	
✓ Remote at Driller's station			✓
Other:			

EMERG. BACKUP SYSTEM

		Press.	Wkg. Fluid
✓ N_2 Cylinders	1 L= "	2000	gal.
Other: N_2 Bottles 12 x 10 4 x 9	2 L= "	2000	gal.
	3 L= "	2000	gal.
	4 L= "		gal.
	5 L= "		gal.
	6 L= "		gal.
	TOTAL:		gal.

AUXILIARY EQUIPMENT

	No.	Size (in.)	Rated Press.	Connections: Weld	Connections: Flange	Connections: Thread	Test Press.
✓ Fill-up Line							
✓ Kill Line		2	5000	✓	✓	✓	3000
✓ Control Valve(s)	3		"		✓		3000
✓ Check Valve(s)	2		"		✓		3000
✓ Aux. Pump Connect.			"			✓	3000
✓ Choke Line		3+4	5000	✓	✓	✓	3000
✓ Control Valve(s)	12		"		✓		3000
✓ Pressure Gauge						✓	
✓ Adjustable Choke(s)	2	3	"		✓		—
✓ Bleed Line		3				✓	
✓ Upper Kelly Cock							3000
✓ Lower Kelly Cock		5	5000				3000
✓ Standpipe Valve							3000
✓ Standpipe Press. Gauge							
✓ Pipe Safety Valve		5	"				3000
✓ Internal Preventer		5	"				3000

HOLE FLUID MONITORING EQUIPMENT

	Alarm Type: Audible	Alarm Type: Visual	Class
✓ Calibrated Mud Pit		✓	A
✓ Pit Level Indicator	✓	✓	B
✓ Pump Stroke Counter		✓	B
✓ Pit Level Recorder		✓	B
✓ Flow Sensor	✓	✓	C
✓ Mud Totalizer		✓	C
Calibrated Trip Tank			C
Other:			C

Hole Fluid Type	Weight	Storage Pits (Type & Size)
CLAY GEL	9.2	680 BBL

REMARKS AND DEFICIENCIES:

OGD9 (1/96/GSR1/3M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

No. P201-220

PERMIT TO CONDUCT WELL OPERATIONS

010 (field code)
00 (area code)
30 (new pool code)
--- (old pool code)

Gas Storage Project

James D. Mansdorfer, Agent
Southern California Gas Company
9400 Oakdale Ave.
Chatsworth, CA. 91313

Ventura, California
October 3, 2001

Your proposal to drill well "Fernando Fee" 38C,
A.P.I. No. 037-24232 Sec. 27, T. 3N, R. 16W, SB B.&M.,
Aliso Canyon field, --- area, Sesnon-Frew pool
Los Angeles County, dated 5/22/2001 received 9/19/2001 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

Drilling Operations

1. Blowout prevention equipment conforming to DOGGR Class IIIB 5M equipment on the 13-3/8" casing and maintained in operating condition at all times during drilling.
2. Drilling fluid of a quality and in sufficient quantity is used to control all subsurface condition in order to prevent blowouts.
3. An approved blowout prevention and control plan shall be available during the proposed operations.
4. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
5. If extensive, unplanned drill pipe operations occur (such as fishing, milling, etc.) and there is a possibility of casing damage, the casing must be pressure tested prior to resuming normal operations. This Division must be notified to witness the tests
6. The spacing provisions of Section 3606 shall apply.
7. A subsurface directional survey is made and a plat of such survey is filled with this office within 15 days of completion of the well.
8. This office shall be consulted before sidetracking the well or running any additional casing.
9. This office shall be consulted before initiating any changes or additions to this proposed operation, or operations are to be suspended.
10. **THIS DIVISION SHALL BE NOTIFIED:**
    a. To witness a pressure test of the blowout prevention equipment prior to drilling out of the shoe of the 13-3/8" casing. Prior to notifying the Division engineer to witness the test, the blind rams must be tested. Information on the blind rams test must be entered on the tour sheet along with the signature of the person is charge

Continued on Page 2

SAF:sf
Super Blanket Bond

Engineer Steven A. Fields
Phone (805) 654-4761

WILLIAM F. GUERARD, JR., State Oil and Gas Supervisor
By
Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

Southern California Gas Company
October 3, 2001
P201-220

Completion Operations

1. Blowout prevention equipment conforming to DOGGR Class II 5M requirements shall be installed and maintained in operating conditions at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. Wire line operations are conducted through at least a 5M lubricator.
4. Requirements specified in our approval of the Gas Storage project dated July 26, 1989 shall apply.
5. **THIS DIVISION SHALL BE NOTIFIED:**
   a. To inspect the installed blowout prevention equipment prior to commencing downhole operations.

Note: The Division recommends, as a minimum, that carbon monoxide monitoring equipment and a vent line be installed and maintained operational during all extensive perforating operations.

P201-220

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

NOTICE OF INTENTION TO DRILL NEW WELL

SEP 19 2001
DIV. OF OIL, GAS & GEOTHERMAL RESOURCES
SANTA BARBARA, CALIFORNIA

C.E.Q.A. INFORMATION			
EXEMPT ☐ CLASS ____	NEG. DEC. ☐ S.C.H. NO. ____	E.I.R. ☐ S.C.H. NO. ____	DOCUMENT NOT REQUIRED BY LOCAL JURISDICTION ☐
See Reverse Side			

FOR DIVISION USE ONLY					
MAP	MAP BOOK	CARDS	BOND	FORMS 114	FORMS 121
254	9-22-01	✓	1,000,000	✓	✓

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to commence drilling well Fernando Fee 38C, well type Gas Storage, API No. 037-24232 (Assigned by Division)

Sec. 27, T. 3N, R. 16W, S.B. B.&M., Aliso Canyon Field, Los Angeles County.

Legal description of mineral-right lease, consisting of _____ acres (attach map or plat to scale), is as follows:
(See attached base map)

Do mineral and surface leases coincide? Yes ☒ No ☐. If answer is no, attach legal description of both surface and mineral leases, and map or plat to scale.

Location of well _____ feet _____ (Direction) along section ☐ / property ☐ (Check one) line and _____ feet _____ (Direction)

at right angles to said line from the _____ corner of section ☐ / property ☐ (Check one) _____ or

480' East and 2920' South from Station 84

Is this a critical well according to the definition on the next page of this form? Yes ☐ No ☒

If well is to be directionally drilled, show proposed coordinates (from surface location) and true vertical depth at total drilled depth:
650 feet West (Direction) and 820 feet North (Direction) Estimated true vertical depth _____. Elevation of ground above sea level 1708 feet. All depth measurements taken from top of KB (Derrick Floor, Rotary Table, or Kelly Bushing) that is 24 feet above ground.

PROPOSED CASING PROGRAM

SIZE OF CASING INCHES API	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS	CALCULATED FILL BEHIND CASING (Linear Feet)
13-3/8"	54.5 lb/ft	K55 ST&C	Surface	800	800	800
9-5/8"	47 lb/ft	N80 LT&C	Surface	7452	7452	7452

(A complete drilling program is preferred and may be submitted in lieu of the above program.)

Intended zone(s) of completion Sesnon, Frew (Name, depth, and expected pressure) Estimated total depth 7452 (Feet)

It is understood that if changes to this plan become necessary, we are to notify you immediately.

Name of Operator	Type of Organization (Corporation, Partnership, Individual, etc.)	
Southern California Gas Company	Corporation	
Address: 9400 Oakdale Avenue	City: Chatsworth	Zip Code: 91313
Telephone Number: 818-701-3251 / Name of Person Filing Notice: Dan Neville	Signature: Dan Neville	Date: 5/22/01

This notice and an indemnity or cash bond shall be filed, and approval given, before drilling begins. If operations have not commenced within one year of receipt of the notice, this notice will be considered cancelled.

OG105 (5/98)

Information for compliance with the California Environmental Quality Act of 1970 (C.E.Q.A.).

If an environmental document has been prepared by the lead agency, please submit a copy of the document with this notice *or* supply the following information:

Lead Agency: _____

Lead Agency Contact Person: _____

Address: _____

_____

Phone: ( ) _____

FOR DIVISION USE ONLY
District review of environmental document (if applicable)? Yes ☐ No ☐
Remarks:

CRITICAL WELL

As defined in the California Administrative Code, Title 14, Section 1720 (a), "Critical well" means a well within:

(1) 300 feet of the following:
(A) Any building intended for human occupancy that is not necessary to the operation of the well; or
(B) Any airport runway.
(2) 100 feet of the following:
(A) Any dedicated public street, highway, or nearest rail of an operating railway that is in general use;
(B) Any navigable body of water or watercourse perennially covered by water;
(C) Any public recreational facility such as a golf course, amusement park, picnic ground, campground, or any other area of periodic high-density population; or
(D) Any officially recognized wildlife preserve.

Exceptions or additions to this definition may be established by the supervisor upon his own judgment or upon written request of an operator. This written request shall contain justification for such an exception.