

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

No. P 216-0166

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

**PERMIT TO CONDUCT WELL OPERATIONS**

Gas Storage  
 Plugback and Suspend for One Year  
 "Sesnon-Frew" - Modelo (Miocene-Eocene) Formation

Ventura, California  
 August 05, 2016

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

Your proposal to **Rework** well "Fernando Fee" 32D, A.P.I. No. 037-21356, Section 27, T. 03N, R. 16W, SB B. & M., Aliso Canyon field, Any area, Sesnon-Frew pool, Los Angeles County, dated 7/29/2016, received 8/1/2016 has been examined in conjunction with records filed in this office. (Lat: 34.313204 Long: -118.540032 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 I **Note: work to be completed without the removal of the injection assembly.**
2. Hole fluid of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts shall be used.
3. A pressure test is conducted to demonstrate the mechanical integrity of the 8 5/8" casing.
4. This well is to be taken out of service and isolated from the storage reservoir. The well shall be re-evaluated or abandoned within 1 year of the completion of the pressure testing pursuant to Order #1109 and its amendments.
5. In all other respects, the provisions of Division Order #1109 and its amendments shall remain in effect.
6. This office shall be contacted by phone prior to making any program changes and no changes are made without Division approval.
7. **THIS DIVISION SHALL BE NOTIFIED TO:**
  - a. Witness a pressure test of the 8 5/8" casing and the tubing plug.

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 Clifford Knight for  
 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.

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Well #: "Fernando Fee" 32D

API #: 037-21356

Permit : P 216-0166

Date: August 05, 2016

**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.



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

FOR DIVISION USE ONLY		
Bond	Forms	
	OGD11*	OGM21
CAL WIMS	115V	

P216-0166

## NOTICE OF INTENTION TO REWORK / REDRILL WELL

Detailed instructions can be found at: [www.conservation.ca.gov/dog/](http://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  well Fernando Fee 32D, API No. 037-21356,  
 (Check one)

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: 7358 feet. The effective depth is: 7241 feet.  
 Present completion zone(s): Sesnon. Anticipated completion zone(s): Same.  
 (Name) (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 and \_\_\_\_\_ feet. Estimated true vertical depth: \_\_\_\_\_  
 (Direction) (Direction)

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 A.J. Alshammasi	Telephone Number: (818) 700-3887	Signature 	Date 7/29/16
Individual to contact for technical questions: Mike Giuliani	Telephone Number: (805) 290-2074	E-Mail Address: mike.giuliani@interactprojects.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, re-drilling, 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. Re-entering an abandoned well having no bond.

This form may be printed from the DOGGR website at [www.conservation.ca.gov/dog/](http://www.conservation.ca.gov/dog/)

# Well Fernando Fee 32D

API #: 04-037-21356-00  
Sec 27, T3N, R16W

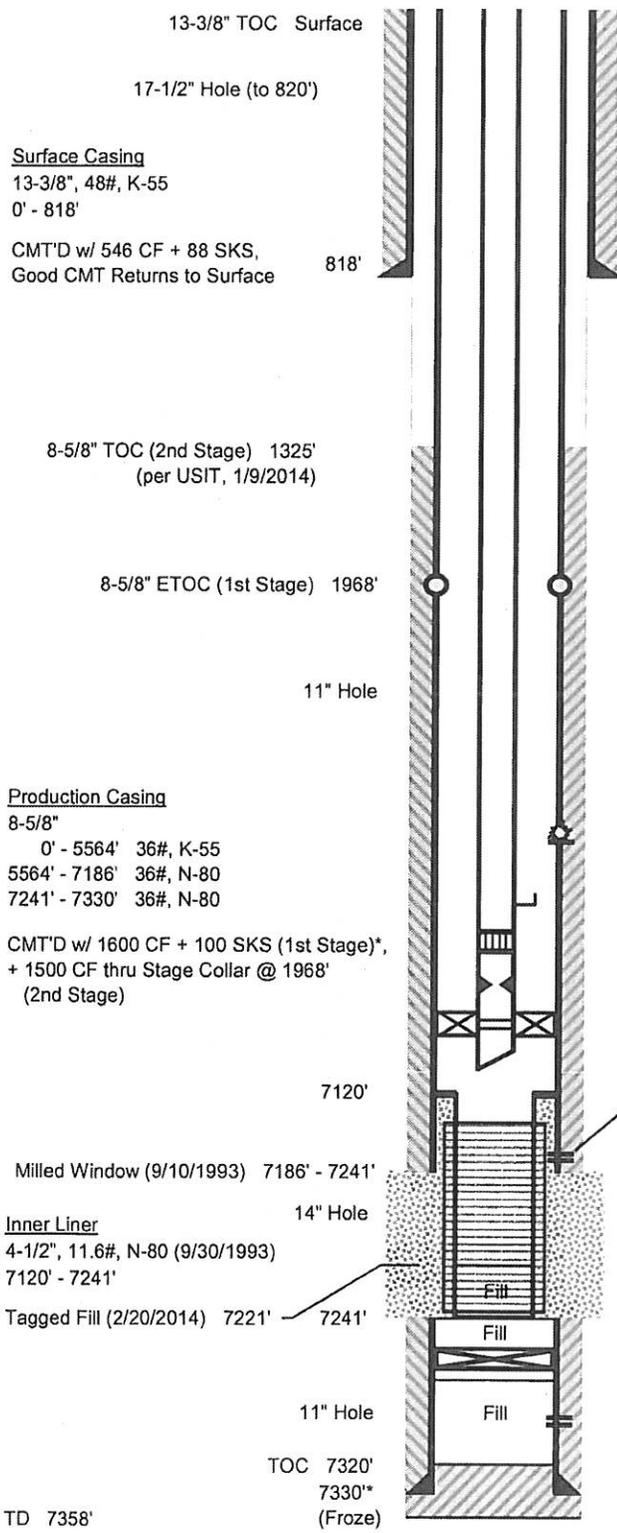
Operator: So. California Gas Co.

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

Ground Elevation: 1995' asl  
Datum to Ground: 15' KB

Spud Date: 4/5/1973  
Completion Date: 5/14/1973  
Last Rework Date: 2/25/2014

Junk: None



Tubing  
2-7/8", 6.5#, L-80 (2/25/2014)  
0' - 7072'

Surface Casing  
13-3/8", 48#, K-55  
0' - 818'

CMT'D w/ 546 CF + 88 SKS,  
Good CMT Returns to Surface

8-5/8" TOC (2nd Stage) 1325'  
(per USIT, 1/9/2014)

8-5/8" ETOC (1st Stage) 1968'

1968' Stage Collar

Production Casing  
8-5/8"  
0' - 5564' 36#, K-55  
5564' - 7186' 36#, N-80  
7241' - 7330' 36#, N-80

CMT'D w/ 1600 CF + 100 SKS (1st Stage)\*,  
+ 1500 CF thru Stage Collar @ 1968'  
(2nd Stage)

6314' - 6319' 8-5/8" CSG Leak (1/24/2014)<sup>†</sup>  
6317' Eight (8) 1/2" Holes @ 6317' (1/27/2014)<sup>†</sup>

6920' BST GLMA w/ 1.0 Dummy  
6959' WEA WXO Sliding Sleeve  
6993' WEA WXN No-Go Nipple (w/ 2.205" No-Go)  
7032' WEA 1X PCKR (2/25/2014)  
7072' Tail

7179' Four (4) Holes (CMT SQZ'D, 5/3/1973  
+ 28 SKS CMT SQZ'D Away, 5/4/1973)\*\*  
7180' Four (4) Holes WSO (5/6/1973)\*\*

*Tbs Plus @  
6993'. 1CG  
8/5/2016*

Milled Window (9/10/1993) 7186' - 7241'

Inner Liner  
4-1/2", 11.6#, N-80 (9/30/1993)  
7120' - 7241'

Liner Perfs:  
7169' - 7239' 0.012" WWS

Gravel Packed w/ 70 CF (62 CF Calc'd) 20-40

Tagged Fill (2/20/2014) 7221' - 7241'

7241' Cleaned Out Fill To (9/29/1993)

7265' Bridge Plug (6/18/1975)  
7271' Top of Fill (6/17/1975)

7304' - 7306' Four (4) HPF (Prod.  
Test, 5/6/73, 10 SKS CMT SQZ'D  
Away, Co. WSO, 5/10/1973)

TD 7358'  
TVD (7337')

Directionally Drilled: Yes (TD is 367' W, 182' S of Surf)

**Notes**  
\*Casing froze. Circulated 15 minutes prior to CMT'ing & lost circulation. Partial circulation at end of job (1st Stage)  
\*\*SQZ'D Holes @ 7180' & 7179' w/ 100 SKS + 69 SKS CMT SQZ'D Away, 5/7/1973. WSO Approved for holes @ 7179' & 7180', 5/9/1973.  
<sup>†</sup>90 CF + 90 CF CMT SQZ'D 1/29/2014

Top of Zone Markers md (tvd)		
LDA	6555'	(6535')
MP	6846'	(6826')
S1	7115'	(7094')
S4	7191'	(7170')
S8	7268'	(7247')
S10	7307'	(7286')

Prepared by: CAM (7/29/2016)

Completed Work Summary - Fernando Fee 32D		
Step	Work Completed	Date
4b	USIT log shows TOC at 1325' and good bond between MP and S1 from 6900'-7020' (bottom of log).	1/9/2014
5b	Packer set at 7032'.	2/25/2014

**Casing Pressure Test Safety Check (1000 psi)**

Well	Packer Depth MD/TVD	Casing Size/Grade/Weight	Depth MD	Burst PSI	85% of Burst PSI	Pressure at Depth w/1000 psi Surface Pressure	Press < 85% of Burst
Porter 32	7438'/7390'	7", 23#, J-55	3489	4360	3706	2542	Yes
		7", 23#, N-80	5238	6340	5389	3315	Yes
		7", 26#, N-80	6828	7240	6154	4018	Yes
		7", 29#, N-80	7438	8160	6936	4288	Yes
Porter 32A	7160'/7142'	8-5/8", 36#, K-55	5848	4460	3791	3585	Yes
		8-5/8", 36#, N-80	7160	6490	5517	4165	Yes
Porter 39	8400'/8346'	7", 29#, N-80	60	8160	6936	1027	Yes
		7", 23#, J-55	4070	4360	3706	2799	Yes
		7", 23#, N-80	5775	6340	5389	3553	Yes
		7", 26#, N-80	7268	7240	6154	4212	Yes
		7", 29#, N-80	8400	8160	6936	4713	Yes
Fernando Fee 32B	7350'/6863'	8-5/8", 36#, K-55	5863	4460	3791	3591	Yes
		8-5/8", 36#, N-80	6810	6490	5517	4010	Yes
		6-5/8", 28#, K-55*	7350	6970	5925	4249	Yes
Fernando Fee 32D	7032'/7012'	8-5/8", 36#, K-55	5564	4460	3791	3459	Yes
		8-5/8", 36#, N-80	7032	6490	5517	4108	Yes
Fernando Fee 34BR	7350'/7217'	8-5/8", 36#, K-55	7350	4460	3791	4249	No

\* Actual pipe in well is a non-API grade so assumed closest size, weight & grade of API pipe

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST-RECORDS RECEIVED AND WELL STATUS

Operator: So Cal Gas WELL DESIGNATION "Fernando Fee" 32D

API No. 037-21356 SE 27 T: 3N R: 16W , SB B. and M.

County: Los Angeles FIELD: Aliso Canyon

Type of Notice: \_\_\_\_\_ Date \_\_\_\_\_ Report Number: \_\_\_\_\_

**RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)**

**NEW STATUS**

	Date	OK	NEED	Remarks
Well Summary (OG100)				
History (OG103)				
E-Log				
Mud Log				
Dipmeter				
Directional				
Core and/or SWS				
MIT (Noise & Temp)	3/10/16	✓		E.B. Approval Defered to Senick

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) \_\_\_\_\_

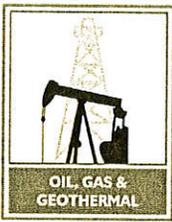
**REMARKS**

RECORDS SCANNED: \_\_\_\_\_

(Date)

RECORDS APPROVED: D. e.

(Date and Engineer)



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. T216-0089

**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 18, 2016

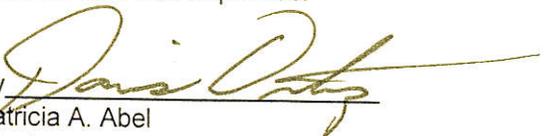
Your operations at well "**Fernando Fee**" 32D, A.P.I. No. **037-21356**, Sec. 27, T. 03N, R. 16W, SB B. & M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **3/10/2016**. **Ernest Blevins**, a representative of the supervisor.

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

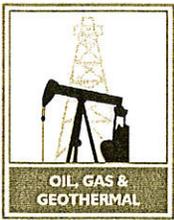
**DECISION:**

WITNESSED

Kenneth A. Harris Jr.  
State Oil and Gas Supervisor

By   
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  
**REPORT ON OPERATIONS**

No. T216-0088

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 18, 2016

Your operations at well "**Fernando Fee**" 32D, A.P.I. No. **037-21356**, 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   
Patricia A. Abel  
District Deputy

EB/tkc  
OG109

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

216 0088  
No. T 216-0089  
15,3

### MECHANICAL INTEGRITY TEST (MIT)

Operator: <i>So CA Gas</i>				Well: <i>Fernando Fee 32 D</i>	
Sec. <i>27</i>	T. <i>3N</i>	R. <i>16w</i>	B.&M. <i>3B</i>	API No.: <i>037-21356</i>	Field: <i>Aliso Canyon</i>
County: <i>Los Angeles</i>				Witnessed/Reviewed on: <i>3-10-16</i>	
<i>Ernie Blevins</i> , representative of the supervisor, was present from <i>1350</i> to <i>1415</i> . <i>Temp Surveys</i>					
Also present were: <i>Sergio w/ well Analysis Corp. FAC.</i>					
Casing record of the well: <i>Noise Survey: 1415-1545</i>					
The MIT was performed for the purpose of demonstrating that all the injection fluid is confined to the approved zone. <i>Temp &amp; Noise Surveys</i>					
<input type="checkbox"/> The MIT is approved since it indicates that all of the injection fluid is confined to the formations below _____ feet at this time.					
<input type="checkbox"/> The MIT is not approved due to the following reasons: (specify)					

Well: <i>Fernando Fee 32 D</i>	Date: <i>3-10-16</i>	Time: <i>1400</i>
Observed rate: <i>Static - Shut-in</i> B/D	Meter rate: <i>Static - Shut-in</i> B/D	Fluid level: <i>—</i> feet
Injection pressure: <i>1064</i> psi	MASP: <i>—</i>	Pick-up depth: <i>7114</i> feet
Initial annulus pressure: <i>587</i> psi	psi	Pressure after bleed-off: <i>—</i> psi
Casing vented during test (Y/N) <i>(N)</i>	Survey company: <i>Well Analysis Corp. FAC.</i>	

SPINNER COUNTS						
DEPTH	COUNTS	RATE	DEPTH	COUNTS	RATE	COMMENTS:
<i>—</i>			<i>—</i>			<i>Spinner Not Used</i>

TRACER CASING AND TUBING RATE CHECKS			
Interval	Time (sec.)	Rate (B/D)	Background log: _____ to _____
			COMMENTS: <i>Bottom Hole Temp: 151 °F</i> <i>Sliding Sleeve @ 6959'</i>

**TOP PERFORATION CHECK**

Top perforation depth: <i>Liner = 7119'</i>	Wait at: _____ for _____ seconds	Beads: (Y/N) <i>(N)</i>
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Casing shoe at: <i>7358'</i>	WSO holes at: _____	Arrival time: <i>Calculated</i> _____ <i>Actual</i> _____
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LOG FROM	TO	SLUG @	LOG FROM	TO	SLUG @	COMMENTS:

**PACKER CHECK**

Packer at: <i>7032'</i>	Wait at: _____ for _____ seconds	Beads: (Y/N) <i>(N)</i>
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Tubing tail at: <i>7047'</i>	Tubing size: <i>2 7/8"</i>	2nd Packer at: _____	Mandrel: _____
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LOG FROM	TO	SLUG @	LOG FROM	TO	SLUG @	COMMENTS:

COMMENTS: *Temp Discrep: 5300' - 6400' Anomaly*      *Hypothesis: this is the area of the Aliso Cyn. water flood = outside influence.*

Division of Oil, Gas and Geothermal Resources  
 Checklist-Records Received and Well Status

Operator: Southern California Gas Company

Well Designation: "Fernando Fee" 32D

A.P.I. No.: 03721356

SE 27

T.: 3N

R.: 16W

County: Los Angeles

Field: Aliso Canyon

SB B and M

Type of Notice: Rework

Date: 12/13/2013

Report No.:

P213-0455

Intention				
Notice Dated				
P-Report Number	<u>213-0455</u>			
Checked By/Date				
Map Letter Dated				
Symbol				

	Rec'd	Need	Rec'd	Need	Rec'd	Need	Rec'd	Need
Notice								
History	<u>5-2-14</u>							
Summary								
E-Log								
Mud Log								
Dipmeter								
Directional								
Core/SWS								
CBL								

**\*\*NEW STATUS:** \_\_\_\_\_

Notice of Records Due \_\_\_\_\_

Well Status Inquiry \_\_\_\_\_

**ABANDONMENTS / REABANDONMENTS / DRILLS / REDRILLS**

CalWIMS Abandonment Form: \_\_\_\_\_ Surface Inspection Needed \_\_\_\_\_ Completed \_\_\_\_\_  
 (Date and Inspector)

FINAL LETTER NEEDED \_\_\_\_\_ COMPLETED \_\_\_\_\_ CalWIMS Drill/Re-Drill 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? \_\_\_\_\_

**REMARKS**

RECORDS SCANNED: \_\_\_\_\_  
 (Date)

RECORDS APPROVED: 5-28-14 DA  
 (Date and Engineer)

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

Rec'd 05-02-14 DOGGR D2 Ventura

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
Well: Fernando Fee 32 D  
A.P.I. No. 03721356

Field: Aliso Canyon

County: Los Angeles

Surface Location:

Todd Van de Putte

Title: Storage Engineering...

(President, Secretary, or Agent)

Date: 5/2/2014

Signature: 

(Person Submitting Report)

Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Telephone Number: 818-701-3339

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, balling tests, and initial production data.

Start Date	Ops. DOGGR Rpt.
12/26/2013	Held safety meeting with the rig crew. Rigged up the Onyx separator unit. Opened the well with 2102 psig surface pressure on the tubing and the casing. Pumped 50 bbl of high vis HEC polymer displaced with 43 bbls of 8.5 ppg KCl brine. Killed the well per schedule with 480 bbl of 8.5 ppg KCl brine. Installed the BPV and nipped down the production tree. Nipped up the Class III 5M BOPE, removed the BPV and secured the well.
12/27/2013	Rigged up the 3" choke line and the auxiliary kill line. Rigged up the WEA test truck. Pressure tested the blind rams to 300 psig (low) and 5000 psig (high) for twenty minutes (test good). Pressure tested the pipe rams to 300 psig (low) and 5000 psig (high) for twenty minutes (test good). Pressure tested the Hydril annular preventer to 300 psig (low) and 3600 psig (high) for twenty minutes (test good). Pressure tested the choke manifold and all the control valves to 300 psig (low) and 5000 psig (high) for twenty minutes (All tests good). Rigged and pumped 360 bbl of 8.5 ppg KCl brine to kill the well. Circulated the well and secured the well.
12/30/2013	Opened the well with 1200 psig surface pressure on the casing and 350 psig on the tubing. Rigged up and pumped 50 bbl of hi-vis HEC polymer and displaced with 41 bbls of 8.5 ppg KCl brine. Pumped 356 bbl of annular volume and circulated out the gas cut fluids and secured the well.
12/31/2013	Rigged up and pumped a 50 bbl HEC polymer pill with 7 ppb of calcium carbonate. Displaced with 41 bbl of 8.5 ppg KCl brine. Killed the well per schedule with 356 bbl of 8.5 ppg KCl brine and the well remained dead. Backed out the hold hold down studs on the wellhead and unlanded the completion tubing. Attempted to release from the Otis permanent packer at 7054' and secured the well.
1/2/2014	Opened the well with 0 psig surface pressure on the tubing and 50 psig on the casing. Filled the well with 97 bbl of 8.5 ppg KCl brine. Moved in and rigged up the Tiger wireline unit and made up 2-7/8" tubing cutter. Ran in the well, correlated and cut the 2-7/8" tubing at 7029'. Rigged down and moved out the wireline unit. Pulled out of the well and laid down the 2-7/8", 6.5# J-55 production tubing to a kill string at 2375' and secured the well.
1/3/2014	Filled the well with 79 bbl of 8.5 ppg KCl brine. Pulled out of well and continued to lay down the 2-7/8" production tubing. Changed trailers and made up an 5-3/4" overshot with 2.875' grapple, a bumper sub and tubing jars on the 2-7/8", 6.5# P-110 workstring. Measured and picked up the 2-7/8", 6.5#, P-110 TKC workstring and made up to Tuboscope specs. Measured and pick up the 2-7/8" workstring to 3162' and secured the well.
1/6/2014	Opened the well with 1000 psig surface pressure on the tubing and 100 psig on the casing. Rigged up and bled down the casing and filled the well with 150 bbl of 8.5 ppg KCl brine and circulated out the gas cut brine. Continued measuring and picking up 2-7/8" TKC workstring to the top of the fish at 7029'. Engaged the fish and attempted to release from the Otis packer at 7050'. Worked and jarred on the Otis seal assembly at 100,000 lb (60,000 lb over string weight). Worked and jarred on the fish, pulled free, pulled out of the well to a kill string at 3828' and secured the well.
1/7/2014	Opened the well with 0 psig surface pressure on the tubing and the casing. Filled the well with 105 bbl of 8.5 ppg KCl brine. Pulled out of the well to the fish (recovered 10' cut off and the Otis seal assembly). Laid down the fishing tools and made up a WEA 8-5/8" casing scraper and a bumper sub on the 2-7/8" workstring. Ran in the well to the top of the Otis packer at 7042'. Pulled out of the well to a kill string at 2400' and secured the well.
1/8/2014	Filled the well with 100 bbl of 8.5 ppg KCl brine. Pulled out of the well and laid down the 8-5/8" casing scraper. Made up a WEA 8-5/8" bridge plug on the 2-7/8" workstring and ran in the well to 2224'. Set the bridge plug, filled the well and attempted to pressure test (pumped away at 2 bpm @ 300 psig). Ran in the well to 2800' set the bridge plug, filled the well and attempted to pressure test (pumped away at 2 bpm @ 300 psig). Pulled out of the well to 1088', set the bridge plug, filled the well and pressure tested to 500 psig. Ran in the well to 7042', set the bridge plug, filled the well and attempted to pressure test (pumped at 2 bpm @ 300 psig). Dumped 15' sand on top of the bridge plug, pulled out of the well to 5700' and secured the well.
1/9/2014	The well required 83 bbl of 8.5 ppg KCl brine to fill. Pulled out of the well and laid down the 8-5/8" casing scraper. Nipped up the shooting flange on the BOPE. Moved in and rigged up the Schlumberger wireline unit. Made up the USIT tools, ran in the well to 7042' and ran USIT log to the surface. Rigged down and moved out the Schlumberger wireline unit. Made up a WEA 8-5/8" test packer on the 2-7/8" workstring. Ran in the well to 2100' and secured the well.

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

Rec'd 05-02-14 DOGGR D2 Ventura

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company

Field: Aliso Canyon

County: Los Angeles

Well: Fernando Fee 32 D

Surface Location:

A.P.I. No. 03721356

Todd Van de Putte

Title: Storage Engineering...

(President, Secretary, or Agent)

Date: 5/2/2014

Signature: 

(Person Submitting Report)

Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Telephone Number: 818-701-3339

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 Rpt
1/10/2014	Filled the well with 79 bbl of 8.5 ppg KCl brine. Set the WEA 8-5/8" test packer at 2106' and pressure tested below the test packer to the bridge plug at 7042' to 500 psig (pumped 1 bpm @ 500 psig). Released the test packer and ran in the well to 5017', set the test packer and pressure tested to 500 psig (pumped 1 bpm @ 500 psig). Released the test packer, ran in the well to 6000', set the test packer and pressure tested to 500 psig (pumped 0.5 bpm @ 500 psig). Released the test packer, ran in the well to 6500', set the test packer and pressure tested to 500 psig (pumped 0.5 bpm @ 500 psig). Released the test packer ran in the well to 6694', set the test packer and pressure tested to 500 psig (pumped 0.5 bpm @ 500 psig). Released the test packer and pulled out of the well. Made up an WEA 8-5/8" packer/bridge plug combo on the 2-7/8 workstring. Ran in the well to 2517' and secured the well.
1/13/2014	Filled the well with 25 bbl of 8.5 ppg KCl brine. With the 8-5/8" bridge plug at 7012', pulled to 6000' and pressure tested to 500 psig (bottom hole pressure 3152 psig; test no good). Released the test packer, ran in the well to 6503', set the test packer and pressure tested to 500 psig (test good). Released the test packer and pulled to 6410', set the test packer and pressure tested to 500 psig (test good). Released the test packer and pulled to 6282', set the test packer and pressure tested to 500 psig (test no good). Released the test packer and moved to 6354', set the test packer and pressure tested to 500 psig (test good). Released the test packer and moved up the hole to 6314', set the test packer and pressure tested to 500 psig (no good). Released the test packer and moved to 6330', set the test packer and pressure tested to 500 psig (test good). Moved the retrieveable bridge plug to 6300', set the test packer at 6282' and pressure tested to 500 psig (test good). Leak in the 8-5/8" production casing located between 6310' to 6330'. Moved the retrieveable bridge plug to 6000' and the test packer to 5000', pressure tested to 800 psig (test good). Released the packer and secured the well.
1/14/2014	Filled the well with 25 bbl of 8.5 ppg KCl brine. Moved the 8-5/8" retrieveable bridge plug to 5000', set the bridge plug, moved the test packer to 4000', set the test packer and pressure tested to 1200 psig for 10 minutes (good test). Ran in the well, released the bridge plug, moved to 4000'. Pulled to 3000' and set the test packer and pressure tested to 1650 psig for ten minutes (good test). Ran in the well, released the retrieveable bridge plug and moved to 3000'. Pulled the test packer to 1979', set the test packer and pressure tested to 2100 psig (good test). Moved the test packer to 1960', set the test packer and pressure tested to 2100 psig (communication with tubing). Moved the test packer to 1979', set the test packer and pressure tested to 2100 psig (good test). Secured the well with the test packer at 2400'.
1/15/2014	Filled the well with 32 bbl of 8.5 ppg KCl brine. Pulled out of the well with the 8-5/8" test packer (found the packer elements damaged). Made up a new 8-5/8" test packer on the 2-7/8" workstring. Ran in the well to 1000', set the test packer and pressure tested the workstring x casing annulus to 2700 psig for ten minutes (test good). Ran in the well to 1959', set the test packer and pressure tested the workstring x casing annulus to 2200 psig for ten minutes (test good). Ran in the well to 3000', retrieved the bridge plug and pulled to 1986', set the bridge plug. Pulled to 1960', set the test packer and pressure tested to 2200 psig (no test). Ran in the well to 1986' retrieved the bridge plug and pulled out of the well. Found packer element stuck in the tool. Ran in the well to a kill string at 2500' and secured the well.
1/16/2014	The well required 33 bbl of 8.5 KCl brine to fill. Pulled out of the well with a kill string and made up an 8-5/8" retrieveable bridge plug on the 2-7/8" workstring. Ran in the well to 550', set the bridge plug and attempted to pressure test (No test). Released the bridge plug and moved up the hole to 1040', set the bridge plug and attempted to pressure test (No test). Pulled out of the well and laid down the 8-5/8" retrieveable bridge plug. Made up a new 8-5/8" retrieveable bridge plug on the 2-7/8" workstring. Ran in the well to 550', set the bridge plug and attempted to pressure test (No test). Ran in the well with the retrieveable bridge plug to 1960', set the bridge plug and attempted to pressure test (No test). Pulled out of the well and laid down the 8-5/8" retrieveable bridge plug. Made up an 8-5/8" test packer on the 2-7/8" workstring. Ran in the well to 550', filled the well and pressure tested the 8-5/8" production casing to 2000 psig for ten minutes (Good test). Ran in the well to 1960', set the test packer and pressure tested the workstring x production casing annulus to 2000 psig for ten minutes (Good test). Released the test packer and secured the well.

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Rec'd 05-02-14 DOGGR D2 Ventura

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company

Field: Aliso Canyon

County: Los Angeles

Well: Fernando Fee 32 D

Surface Location:

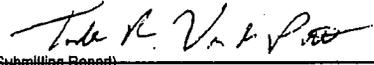
A.P.I. No. 03721356

Todd Van de Putte

Title: Storage Engineering...

(President, Secretary, or Agent)

Date: 5/2/2014

Signature: 

(Person Submitting Report)

Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Telephone Number: 818-701-3339

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Start Date	Ops. DOGGR Rpt
1/17/2014	Filled the well with 100 bbl of 8.5 ppg KCl brine. Pulled out of the well with the 8-5/8" test packer and laid down the test packer. Made up an 8-5/8" Arrowset retrievable bridge plug on the 2-7/8" workstring. Ran in the well to 480', set the bridge plug, filled the well and pressure tested to 500 psig. Released the retrievable bridge plug, ran in the well to 2030', set the bridge plug, released from the setting tool and pulled out of the well. Made up an 8-5/8" test packer on the 2-7/8" workstring. Ran in the well to 1980', set the test packer and pressure tested to 2000 psig for twenty minutes (Test good). Released the test packer and pressure tested to surface to 2000 psig for twenty minutes (Test good). Pulled out of the well, laid down the test packer and made up a bridge plug retrieving tool on the 2-7/8" workstring. Ran in the well to 2030', released the bridge plug and ran in the hole to a kill string at 2450' and secured the well.
1/21/2014	Filled the well with 67 bbl of 8.5 ppg KCl brine. Pulled out of the well with the 8-5/8" retrievable bridge plug (Left the retrievable bridge plug in the hole). Ran in the well to 2000', engaged the retrievable bridge plug, pulled out of the well and laid down the bridge plug. Made up a retrieving tool on the 2-7/8" workstring. Ran in the well to the sand at 7027', nipped up the PGSR and secured the well.
1/22/2014	Filled the well with 55 bbl of 8.5 ppg KCl brine. Rigged up and reverse circulated the sand out the well and rubber pieces from the top of the bridge plug at 7042' and circulated the well clean. Released the bridge plug and pulled out of the well (Bridge plug hanging up on rubber pieces). Laid down the bridge plug. Made up the new 8-5/8" Arrowset bridge plug on the 2-7/8" workstring. Ran in the well to a kill string at 2600' and secured the well,
1/23/2014	The well was filled with 53 bbl of 8.5 ppg KCl brine. Ran in the well to 3720', set the bridge plug and pressure tested to 600 psig for ten minutes (Test good). Ran in the well to 7040', set the bridge plug, and pressure tested to 600 psig (Pumped away at 1 bpm @ 400 psig). Rigged up and place 15 cuft of sand with the top of the bridge plug with the top of the sand at 7025'. Pulled out of the well and made up an 8-5/8" test packer on the 2-7/8" workstring. Ran in the well to 1000', set the test packer, filled the well and pressure tested to 3000 psig for ten minutes (Test good). Released the test packer and ran in the well to 2010', set the test packer, filled the well and pressure tested to 2500 psig for ten minutes. Released the test packer, ran in the well to 3022' and secured the well.
1/24/2014	Filled the well with 61 bbl of 8.5 ppg KCl brine. Ran in the well to 3022', set the test packer, filled the well and pressure tested the workstring x casing annulus to 2100 psig (3400 psig bottom hole) for ten minutes (Test good). Released the test packer, ran in the well to 4035', set the test packer, filled the well and pressure tested the workstring x casing annulus to 1700 psig (3400 psig bottom hole) for ten minutes (Test good). Released the test packer, ran in the well to 5048', set the test packer and pressure tested the workstring x casing annulus to 1200 psig (3400 psig bottom hole) for ten minutes (Test good). Released the test packer, ran in the well to 6314', filled the well, and pressure tested the workstring x casing annulus to 700 psig for ten minutes (Test good). Pressure tested below the test packer (pump in rate at 1 bpm @ 500 psig). Released the test packer and moved it to 6319'. Pressure tested below the test packer to 500 psig for ten minutes (Test good). Casing leak located from approximately 6314' to 6319'. Pulled to a kill string at 2550' and secured the well.
1/27/2014	Filled the well with 62 bbl of 8.5 ppg KCl brine. Pulled out of the well and rigged up the Tiger wireline unit. Made up a 4" perforating gun on wireline and ran in the well, correlated and shot 8, 0.5" holes at 6317'. Rigged down and moved out the Tiger wireline unit. Pumped into the perforations at 2.5 bpm @ 400 psig. Made up (10) joints, 2-7/8" tubing tail and a 8-5/8" squeeze packer, ran in the well to 5300' and secured the well.
1/28/2014	Filled the well with 65 bbl of 8.5 ppg KCl brine. Ran in the well with the 8-5/8" squeeze packer to 6033', with tubing tail at 6340'. Set the test packer, filled the well and pressure tested the workstring x casing annulus to 500 psig for ten minutes. Released the test packer and secured the well.
1/29/2014	The well was filled well with 62 bbl of 8.5 ppg KCl brine. Rigged up the Halliburton cementing equipment and pressure tested the same. With the 2-7/8" tubing tail at 6339' mixed and pumped 16 bbls. (90 cuft, 50 sx) of 14.8 ppg, Class "G" cement with additives and displaced with 34 bbl of 8.5 ppg KCl brine (estimated top of cement at 6058'). Pulled out of the well to 5964' rigged up and reverse circulated with 50 bbl of KCl brine. (Trace of cement to surface). Rigged up and squeezed with 200 psig surface pressure, pressure bled off and secured the well.

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## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
Well: Fernando Fee 32 D  
A.P.I. No. 03721356

Field: Aliso Canyon

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Start Date	Ops. DOGGR Rpt
1/30/2014	Filled the well with 8 bbl of 8.5 ppg KCl brine. Rigged up and pressure tested to 700 psig (Pumped away at 0.4 bpm). Ran in the well to 6317', rigged up and reverse circulated with 50 bbl of 8.5 ppg of KCl brine (trace of cement to surface). Set the test packer and pressure tested to 500 psig (Bled down to 0 psig in 30 seconds). Released the test packer and pulled out of well. Laid down the test packer and the tubing tail. Made up a mule shoe on the 2-7/8" workstring. Ran in the well to 6367' and secured the well.
1/31/2014	Filled the well with 8 bbl of 8.5 ppg KCl brine. Moved in and rigged up Halliburton cementing equipment and pressure tested same. With the tubing tail at 6366', mixed and pumped 16 bbl (90 cu. ft. 50 sx.) of 14.8 ppg Class "G" cement with additives and displaced with 33 bbl of KCl brine (Estimated top of the cement at 6094'). Pulled out of the well to 5889', rigged up and reverse circulated with 50 bbl of KCl brine (Trace of cement to the surface). Rigged up and filled the well with 2 bbl of 8.5 ppg KCl brine and squeezed from the surface with 1000 psig surface pressure. Monitored and secured the well.
2/4/2014	Opened the well with 200 psig on the tubing and the casing. The well was standing full of KCl brine. Ran in the well and tagged cement at 6205'. Rigged up and pressure tested to 600 psig (Test good). Pulled out of the well. Measured and picked up a 7-5/8" bit, a bit sub, and (4) 4-3/4" drill collars on the 2-7/8" workstring. Ran in the well to 6200', nipples up the PGSR, picked up the power swivel and secured the well.
2/4/2014	Opened the well with 0 psig surface pressure on the tubing and the casing. The well was standing full of 8.5 ppg KCl brine. Cleaned out the cement from 6205' to 6327', pressure tested to 600 psig for ten minutes (Test good). Cleaned out the cement to 6350' and circulated the well clean. Ran in the well to the top of the sand at 7030' and reverse circulated the well clean. Pressure tested the casing to 600 psig for ten minutes (Test good). Rigged down and moved out the power swivel and secured the well.
2/5/2014	The well was standing full of 8.5 ppg KCl brine. Nipped down the PGSR and pulled out of the well. Laid down the (4) 4-3/4" drill collars, the bit sub and the 7-5/8" bit. Rigged down the tubing equipment and the working floor. Cleaned the cellar, attempted to remove the wellhead bolts and secured the well.
2/6/2014	Nipped down the Class III 5M BOPE. Attempted to loosen the remaining well head bolts (Gas co issued hot work permit). Attempted to cut and grind wellhead bolts from the wellhead equipment. Nipped up the production tree and attempted to remove the tubing head and secured the well.
2/7/2014	Pulled a hot work permit for the wellhead work. Continued cutting the wellhead bolts from the wellhead equipment. Removed the tubing head and the primary seals. Nipped up a crossover spool and the Class III 5M BOPE. Rigged up the working floor and installed a shooting flange and secured the well.
2/10/2014	The well was standing full of 8.5 ppg KCl brine. Rigged up the Schlumberger wireline unit. Made up the 8-5/8" USIT tools, ran in well to 7026' and ran the USIT/Neutron log from 7026' to 5500'. Pulled out of the well and rigged down and moved out the Schlumberger logging unit. Rigged down the working floor and secured the well.
2/11/2014	Held safety meeting with crews work as directed labor only
2/18/2014	The well was standing full of 8.5 ppg KCl brine. Nipped down the Class III 5M BOPE and the cross over spool. Installed a new primary seal, a refurbished seal flange and a refurbished tubing head. Pressure tested the primary seals, the seal flange and the secondary seal to 3200 psig for twenty minutes (All tests good). Nipped up the Class III 5M BOPE and function tested. Rigged up the working floor and the tubing equipment. Made up a bridge plug retrieving head on the 2-7/8" workstring. Ran in the well to 1000' and secured the well.
2/19/2014	Ran in the well with the bridge plug retrieving tool to the bridge plug at 7033'. Rigged up and reverse circulated the sand from the top of the bridge plug and circulated the well clean. Opened the unloader, equalized the wellbore fluids and released the bridge plug. Pulled out of the well to a kill string at 2200' and secured the well.
2/20/2014	Pumped 20 bbl of 8.5 ppg KCl brine to fill the well. Pulled out of the well and laid down the bridge plug. Measured and picked up (10) joints of 2-1/16" tubing ran in the well with the 2-7/8" workstring and 2-1/16" tail and tagged at 7221' (TD at 7241'; 20' of fill). Pulled out of the well laying down the 2-7/8" TKC workstring to 4000' and secured the well.
2/21/2014	Continued to pull out of the well laying down the 2-7/8" TKC workstring. Pulled out of well and laid down the (10) joints of 2-1/16" tubing. Ran in well to 1600' with a kill string and secured the well.

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

Rec'd 05-02-14 DOGGR D2 Ventura

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
 Well: Fernando Fee 32 D  
 A.P.I. No. 03721356

Field: Aliso Canyon

County: Los Angeles  
 Surface Location:

Todd Van de Putte

Title: Storage Engineering...

(President, Secretary, or Agent)

Date: 5/2/2014

Signature:



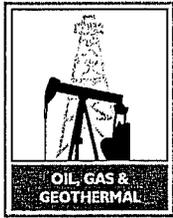
(Person Submitting Report)

Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Telephone Number: 818-701-3339

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 Rpt
2/24/2014	Filled the well 30 bbl of 8.5 ppg KCl brine. Pulled out of the well and laid down the 50 joints of the kill string. Measured and picked up (1) joint of new 2-7/8", 6.5#, L-80 tubing, a WEA 8-5/8" production packer, (1) jt of new 2-7/8", 6.5# L-80 tubing, a WEA WXN no/go nipple, (1) jt of new 2-7/8" tubing, a WEA sliding sleeve, (1) jt of 2-7/8" tubing, a gas lift mandrel. Measured and picked up 2-7/8", 6.5#, L-80 tubing to 4300' and secured the well.
2/25/2014	Pumped 20 bbl of 8.5 ppg KCl brine to fill the well. Measured and picked up 2-7/8" tubing to 7036', made up the tubing hanger and landed the completion with 12,000 lb compression. Filled the well with 138 bbl of 8.5 ppg KCl brine and pressure tested the tubing x casing annulus to 500 psig surface pressure for twenty minutes. Nipped down the Class III 5M BOPE. Nipped up the production tree and secured the well.
2/26/2014	Held a safety meeting with crews and rigged down the pump and the associated rig equipment. Rigged down the hoist and prepare to move to FF 36. Installed the laterals. Loaded the BOPE and cleaned the location.



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  
**REPORT ON OPERATIONS**

No. T214-0001

**GAS STORAGE PROJECT**  
Sesnon - Frew Pools

Thomas W. Schroeder  
Southern California Gas Company (S4700)  
9400 Oakdale Avenue  
Chatsworth, CA 91313

Ventura, California  
January 14, 2014

Your operations at well "**Fernando Fee**" 32D, A.P.I. No. **037-21356**, Sec. **27**, T. **03N**, R. **16W**, **SB B. & M.**, **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **1/2/2014**. **Kris Gustafson**, a representative of the supervisor.

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

**DECISION:**

APPROVED

Tim Kustic  
State Oil and Gas Supervisor

By   
\_\_\_\_\_  
Bruce Hesson  
District Deputy

KG/tkc  
OG109

**BLOWOUT PREVENTION EQUIPMENT MEMO**

# 12

Operator Spud Cal Gas Well Fernando Fer 32D Sec. 27 T. D3N R. 16W  
 Field Aliso Canyon County Los Angeles Spud Date \_\_\_\_\_  
 VISITS: Date \_\_\_\_\_ Engineer \_\_\_\_\_ Time \_\_\_\_\_ Operator's Rep. \_\_\_\_\_ Title \_\_\_\_\_  
 1st 1/02/14 K. Carlson (0945 to 1000) \_\_\_\_\_  
 2nd \_\_\_\_\_ ( \_\_\_\_\_ to \_\_\_\_\_ ) \_\_\_\_\_  
 Contractor Ensign Rig # 321 Contractor's Rep. & Title Ron Carlson w/ Ensign  
 Casing record of well: \_\_\_\_\_  
Toolpusher

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

Proposed Well Opns: Pull string & cut hog. MACP: \_\_\_\_\_ psi REQUIRED BOPE CLASS: 5M  
 Hole size: \_\_\_\_\_ " fr. \_\_\_\_\_ to \_\_\_\_\_ " to \_\_\_\_\_ " & \_\_\_\_\_ " to \_\_\_\_\_ " 5M

CASING RECORD OF BOPE ANCHOR STRING					Cement Details		Top of Cement	
Size	Weight(s)	Grade(s)	Shoe at	CP at			Casing	Annulus
<u>8 5/8</u>	<u>36#</u>	<u>K-55</u>	<u>5564</u>					

BOP STACK							TEST DATA						
API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul	Gal. to Close	Recov. Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
<u>#</u>	<u>C50</u>	<u>Hydril</u>	<u>GK</u>	<u>11</u>	<u>5M</u>	<u>X</u>	<u>23.00</u>						<u>3.5</u>
<u>Kd</u>	<u>27/8</u>	<u>Shaffer</u>	<u>LXT</u>	<u>11</u>	<u>5M</u>	<u>X</u>	<u>3.0</u>						<u>5M</u>
<u>Kd</u>	<u>C50</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>5M</u>	<u>X</u>	<u>3.0</u>						<u>5M</u>

ACTUATING SYSTEM				TOTAL: <u>79.00</u>		AUXILIARY EQUIPMENT						
Accumulator Unit(s) Working Pressure <u>2900</u> psi						Connections						
Total Rated Pump Output _____ gpm		Fluid Level _____ ft.				No.	Size (in.)	Rated Press	Weld	Flange	Thread	Test Press.
Distance from Well Bore <u>50</u> ft.		Precharge _____ psi		Fill-up Line								
Accum. Manufacturer <u>Koomey Type</u>		Capacity <u>810</u> gal.		Kill Line			<u>2</u>	<u>5M</u>				<u>5M</u>
1		Precharge _____ psi		Control Valve(s)		<u>2</u>		<u>5M</u>				
2				Check Valve(s)		<u>1</u>		<u>5M</u>				
CONTROL STATIONS		Elec. Hyd. Pneu.		Aux. Pump Cnct.								
<input checked="" type="checkbox"/> Manifold at accumulator unit				Choke Line			<u>3"</u>					
<input type="checkbox"/> Remote at Driller's station				Control Valve(s)		<u>2</u>						
Other:				Pressure Gauge								

EMERG. BACKUP SYSTEM				TOTAL: <u>± 35.3</u> gal.		HOLE FLUID MONITORING EQUIPMENT	
N <sub>2</sub> Cylinders		Press.	Wkg. Fluid			Alarm Type	
4		<u>2700</u>	<u>8.9</u> gal.	Audible	Visual	Class	
Other:							
1		<u>2450</u>	<u>8.0</u> gal.				
2		<u>2750</u>	<u>9.5</u> gal.				
3		<u>2700</u>	<u>8.9</u> gal.				
4							
5							
6							

HOLE FLUID MONITORING EQUIPMENT		Hole Fluid Type		Weight	Storage Pits (Type & Size)	
<input checked="" type="checkbox"/> Calibrated Mud Pit		<u>3916 KCL</u>		<u>8.5</u>	<u>800 Lbs</u>	
<input checked="" type="checkbox"/> Pit Level Indicator						
<input checked="" type="checkbox"/> Pump Stroke Counter						
<input checked="" type="checkbox"/> Pit Level Recorder						
<input checked="" type="checkbox"/> Flow Sensor						
<input checked="" type="checkbox"/> Mud Totalizer						
<input checked="" type="checkbox"/> Calibrated Trip Tank						
<input checked="" type="checkbox"/> Other:						

REMARKS AND DEFICIENCIES:  
S control valve on choke.  
All tested & confirmed via check test. Not witnessed by DOSGR.



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

No. **P 213-0455**

**PERMIT TO CONDUCT WELL OPERATIONS**

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

Gas Storage  
 Sesnon - Frew Pools

Ventura, California  
 December 17, 2013

Thomas W. Schroeder, Agent  
 Southern California Gas Company (S4700)  
 9400 Oakdale Avenue  
 Chatsworth, CA 91313

Your proposal to **Rework** well "**Fernando Fee**" 32D, A.P.I. No. **037-21356**, Section **27**, T. **03N**, R. **16W**, **SB B. & M.**, **Aliso Canyon** field, **Sesnon-Frew** pool, **Los Angeles** County, dated **12/13/2013**, received **12/13/2013** has been examined in conjunction with records filed in this office. (Lat: **34.313204** Long: **-118.540032** Datum:**83**)

**THE PROPOSAL IS APPROVED PROVIDED:**

1. Blowout prevention equipment, as defined by this Division's publication No. MO7, shall be installed and maintained in operating condition and meet the following minimum requirements: **Class III 5M**
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. This office shall be contacted by phone prior to making any program changes and no changes are made without Division approval.
4. **THIS DIVISION SHALL BE NOTIFIED TO:**
  - a. Inspect the installed blowout prevention equipment prior to commencing downhole operations.

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

Engineer Bruce Hesson  
 Office (805) 654-4761

BH/bh

\_\_\_\_\_  
 Tim Kustic  
 State Oil and Gas Supervisor

By   
 Bruce Hesson, 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.



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

Rec'd 12-13-13 DOGGR D2 Ventura  
**FOR DIVISION USE ONLY**

Bond	Forms	
	<del>OGD 11</del>	OGD 21
	CAL WWS	115V

0101 00/ 70

**NOTICE OF INTENTION TO REWORK / REDRILL WELL**

Detailed instructions can be found at: [www.conservation.ca.gov/dog/](http://www.conservation.ca.gov/dog/)

P213-0455

SE SNOW - FRENCH ES

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework  / redrill  well "Fernando Fee" 32D, API No. 037-21356  
(Check one)

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.)

- 13-3/8", 48# J-55 at 818' (cemented to surface)
- 8-5/8", 36# K-55 (0-5564'), 36# N-80 (5564'-7358') (cemented) Section milled csg and underreamed to 14" hole from 7186'-7241'.
- 4-1/2", 11.6#, N-80 from 7120'-7241' 0.012" WWS from 7169'-7239'. Gravel packed with 70 cf of 20-40 sand. Bridge Plug @ 7265', PBD = 7320'

The total depth is: 7358 feet.

The effective depth is: 7241 feet.

Present completion zone(s): Sesnon (Storage)  
(Name)

Anticipated completion zone(s): Sesnon (Storage)  
(Name)

Present zone pressure: Varies psi.

Anticipated/existing new zone pressure: Variable 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) : Nipple up a Class III 5M BOPE
- Pull the 2-7/8" tubing string/scrape the 8-5/8" production casing
- Run USIT log, pressure test 8-5/8" production casing, perforate and squeeze 8-5/8" production casing if necessary.
- Clean out fill to the bottom of the 4-1/2" liner at 7241'(+/-)
- Run a new 2-7/8" completion string and test.
- Nipple down the Class III 5M BOPE

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

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 9400 Oakdale Ave.		City/State Chatsworth, CA	Zip Code 91311-6511
Name of Person Filing Notice Todd Van de Putte	Telephone Number: 661-305-5387	Signature 	Date 12-13-2013
Individual to contact for technical questions: Todd Van de Putte	Telephone Number: 661-305-5387	E-Mail Address: tvandeputte@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, re-drilling, 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/](http://www.conservation.ca.gov/dog/)

## Workover Program

**DATE:** December 13, 2013  
**OPERATOR:** Southern California Gas Company  
**FIELD:** Aliso Canyon  
**WELL:** Fernando Fee 32D  
**CONTRACTOR:** Ensign #321  
**OBJECTIVE:** Repair a suspected production casing leak: Pull existing 2-7/8" completion string and inspect/test the 8-5/8" production casing. Perform a cement squeeze on the 8-5/8" production casing, if required. Run a new 2-7/8" completion string.  
**API Number:** 037-21356  
**ELEVATION:** Take all measurements from the original KB = 15' above GL (GL@ 1995').  
**SURFACE LOCATION:** Sec 27, T3N, R16W, S.B. B&M (34.313204, -118.540032)

**PRESENT WELL CONDITION (See attached wellbore schematic):**

0' - 812'	13-3/8"	54.5#	K-55	Cemented (surface)
0'-5564'	8-5/8"	36#	K-55	Cemented - Section milled from 7186'-7241' and underreamed 14" hole. Bridge Plug @ 7265' PBTD @7320'
5564'-7358'		36#	N-80	
7120' - 7241'	4-1/2"	11.6#	N-80	Liner - 0.012" WWS from 7169'-7239'. Gravel packed w/ 70 cf of 20-40 sand.

**Estimated Wellbore Top of Geologic Markers:**

MP: 6846' MD / 6825' TVD

S1: 7115' MD / 7093' TVD

S4: 7191' MD / 7169' TVD

S8: 7268' MD / 7246' TVD

Estimated Surface Pressure: 2000 psig (variable)

Estimated Bottomhole Static Temperature: 190 deg F

Estimated Formation Fracture Gradient: 0.80 psi/ft

**Pre Rig Notes:**

Locate the rig anchors and reinstall if necessary.

The wellbore is essentially vertical.

There is currently a wireline plug in the XN profile @ 7010' MD

**WELL WORK PROGRAM**

1. Move in and rig up the Ensign #321 production rig and associated equipment. Spot the pump and the closed top, 500 bbl Baker tanks.
2. If the hole is not standing full of brine, then kill the well with an HEC polymer pill and with approximately 8.6 ppg KCl brine. Tubing volume is approximately 41 bbl and the tubing casing annulus is approximately 362 bbl. Note: Verify the current field surface pressure to confirm the proper kill fluid density prior to killing the well and for well control fluids during the workover operation.
3. Install an 11" Class III 5M BOPE with a cross over to the 9" 5M tubing head flange and per Gas Company instructions. All connections and valves must be flanged and at least 5000 psig rated.
  - a. Pressure test the 11" 5M annular preventer to 3500 psig for 15 minutes. Test Blind Rams and the 2-7/8" Pipe Rams to 5000 psig for 15 minutes. Test all lines and connections to 5000 psig.
  - b. Perform a 300 psig low pressure test on the annular preventer, blind rams and pipe rams for 15 minutes.
  - c. All tests are to be charted and witnessed by a DOGGR representative.
4. Pick up a 2-7/8" N-80 joint of tubing with safety valve, unland the 2-7/8", 6.5#, J-55 tubing string and pull out of the hole with the completion tubing, and the GLM. Lay down the 2-7/8" J-55 tubing and pick up a 2-7/8", 6.5# workstring.
5. If there is difficulty in releasing the completion/seals from the Otis permanent packer profile then run in the hole with a wireline chemical cutter and cut the completion string between the XN nipple and the seal units. Remove and lay down the 2-7/8", J-55 completion string and run in the hole with a fishing BHA on the 2-7/8" workstring, engage the tubing stub and attempt to release the permanent packer seals from the profile.
6. Pick up an 8-5/8" casing scraper and run to the top of the Otis WB permanent packer seal assembly at 7044'. Circulate the hole clean.
7. Rig up a the wireline unit and run a USIT/Neutron log in the 8-5/8" production casing from the top of the permanent packer profile at 7043' to the surface. Rig down the wireline unit and the associated equipment.
8. Make up a cleanout BHA with a 2-1/16" tubing tail and run in the hole, tag fill and make an attempt to clean out the 4-1/2", 11.6# liner to 7241'(+/-).
9. If the USIT log shows poor cement/quality near the permanent packer profile in the 8-5/8" production casing, then pick up a 8-5/8" retrievable bridge plug, set, pressure test to 1000 psig and sand off above the bridge plug running tool. If the USIT log shows reasonable cement then Skip to Step 13.

10. Rig up the wireline unit and run a perforating gun, correlate the depth and shoot 8, 1/2" holes/per foot in the 8-5/8" production casing at a depth determined from the USIT log. Notify the DOGGR of the squeeze/ perforation depth. Perform a pump in test to determine the effectiveness of the perforations.
11. Pick up and run a 8-5/8" test packer on 2-7/8" tubing with an aluminum tail and squeeze (50 sxs/minimum delivery) 14.8 ppg, Class "G" cement with additives into the perforations. Release the 8-5/8" test packer and pull 1500' above the squeeze holes and clear the tubing. Wait on the cement at least 8-12 hrs.
12. Lay down the 8-5/8" test packer and pick up and run a 7-1/2" mill tooth bit on a cleanout BHA and clean out the cement from the 8-5/8" production casing. Circulate the sand from the top of the 8-5/8" retrievable bridge plug.
13. Pressure test the 8-5/8" production casing to 1000 psig surface pressure to verify the cemented perforation integrity. Continue to pressure test the 8-5/8" production casing to the surface as per the pressure testing schedule.
14. Set an additional 8-5/8" retrievable bridge plug at 1000' (+/-) and nipple down the 11" Class III 5M BOPE, remove the 9" x 11" 5M tubing head, remove the 11" 5M x 13-5/8" 5M seal flange, install a crossover spool and reinstall the 11" Class III 5M BOPE and function test. Send in the tubing head and seal flange in for redress/refurbishment. Note: all the wellhead valves were recently replaced so no new wellhead valves will be required.
15. Remove the 11" Class III 5M BOPE, the crossover spool, the primary packoff and replace the seals. Reinstall the 11" x 13-5/8" 5M seal flange, the 9" x 11" 5M tubing head and pressure test all the wellhead seals to 5000 psig. Reinstall the 11" Class III 5M BOPE on the tubing head and function test.
16. Run in the hole and remove the 8-5/8" retrievable bridge plugs at 1000'(+/-) and 7000'(+/-)
17. Pick up a new 2-7/8", 6.5# L-80 tubing string with a MMA GLM, 2-7/8" Sliding Sleeve, 2-7/8" XN nipple, a new set of Otis Seals and a guide shoe. Run in the hole to 7044'(+/-) and land completion in the permanent packer seal assembly as per vendor specification. Pressure test the 2-7/8" tubing x 8-5/8" production casing annulus to 1000 psig surface pressure.
18. Nipple down the 11" Class III 5M BOPE and install the production tree and test to 5000 psig.
19. Release the Ensign Rig #321, rig down and move out the production rig and the associated equipment.

**FF 32D  
ALISO CANYON**

*m.v. @ 14'*

Surface Casing  
13-3/8", 48#, K55  
0' - 818'

Stage collar at 1968'

Production Casing  
8-5/8", 36#  
0' - 5564', K55  
5564' - 7358', N80

Packer at 7043'  
8-5/8" Otis WB

Tubing  
0' - 7047'  
2-7/8", 6.5#, J55  
2.441" ID

6934' MMA Mandrel (1-1/2")

6975' Otis XD Sliding Sleeve (2.313" ID)

7010' Otis XN Nipple (2.205" ID)

7044' Otis Seal Units (2)

7047' Guide Shoe

Elevation (ground): 1995' ASL  
Elevation (KB): 2010' ASL  
Elevation (KB): 15' ASL

Status: Casing Flow

4/5/73: Well spudded  
5/14/73: Well completed  
6/7/75 - 7/21/75: Ran 2-7/8" liner and gravel packed  
6/16/76 - 7/1/76: Pressure tested casing, ran tubing with SSSV.  
8/1/77 - 8/12/77: Pulled and reran tubing with reconditioned SSSV.  
8/20/93 - 10/5/93: Pulled 2-7/8" liner, section milled csg, underreamed, ran 4-1/2" liner and gravel packed.

Liner  
7120' - 7241'  
4-1/2", 11.6#, N80  
(4.000" ID)  
.012" WWS from  
7169' - 7239'  
Gravel packed with  
70cf of 20-40 sand  
Section milled csg,  
underreamed to 14"  
7186' - 7241'

Bridge Plug at 7265'

Plugback at 7320'

Original TD at 7358'

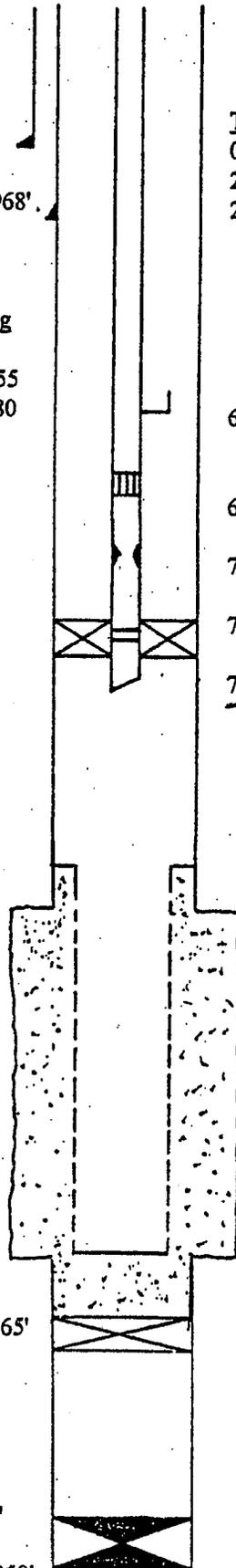
Well Volume

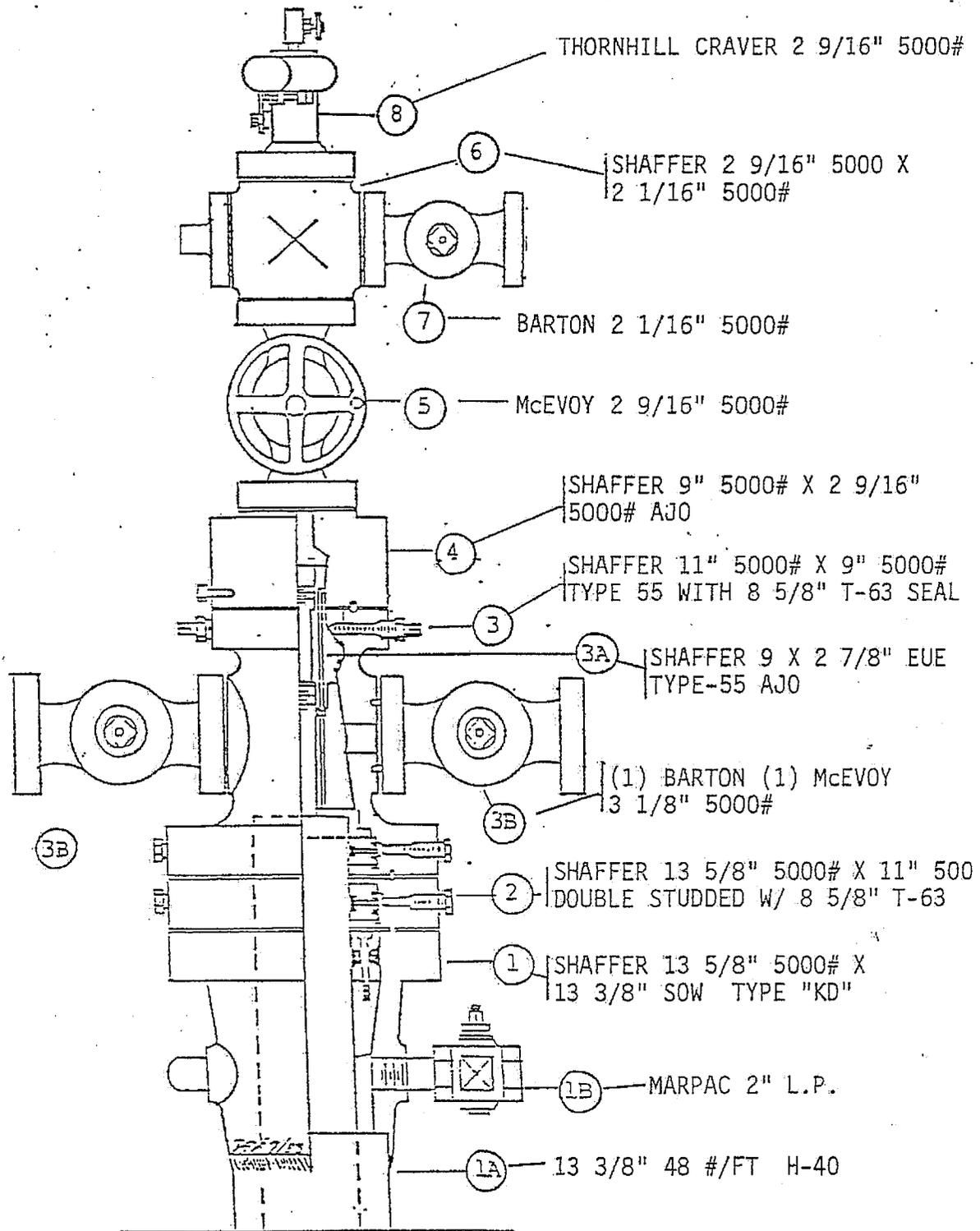
	<u>Cu. Ft.</u>	<u>Bbl.</u>
Tubing	228	41
Csg/Lnr	39	7
Annulus	2031	362
	<u>2298</u>	<u>410</u>

Zone Tops

MP	6846' (6825')
S1	7115' (7093')
S4	7191' (7169')
S8	7268' (7246')

Reviewed By: [Signature] Date: 2/16/94  
Petr. Eng.: [Signature]  
Drig. Eng.: [Signature] 1/27/94  
Region: [Signature] 1/2/94





Well Name: FF-32-D (FORMELY IW-75)

Mfg: SHAFFER OIL TOOL

Date Prepared: 9/22/93

Well No: FF 32-D (FORMERLY W-75)

Rec'd 12-13-13 DOGGR D2 Ventura

Field: ALISO CANYON

Date Prepared: 9/22/93

Wellhead Mfr: SHAFFER OIL TOOL

1. Casing Head SHAFFER Size 13 5/8" 5000# X 13 3/8" SOW TYPE "KD"  
Slips & Pack-off 13 5/8" X 8 5/8" "KD"  
A. Surface Csg Size 13 3/8" Wt 48 #/FT Grade H-40  
B. Casing Head Valve MARPAC Size 2" L.P. 3000# Fig CSB-790-JN
2. Seal Flange SHAFFER Size 13 5/8" 5000# X 11" 5000#  
Type Seal 8 5/8" T-63 Ring BOTTOM- BX 160 & TOP RX-54
3. Tubing Head SHAFFER Type Seal 8 5/8" T-63  
Size 11" 5000# X 9" 5000# T-55 Outlets 3 1/8" 5000#  
Sec. Seal 8 5/8" Valve Thrd 2 1/2" L.P. Ring Type Btm RX-54 Top RX-50  
A. Tubing Hanger SHAFFER Size 9 X 2 7/8" EUE T-55 AJO Bore 2.375  
Type T-55 Thread 2 7/8" EUE 8 RD  
B.P.B. Size & Thrd SHAFFER 2 7/8"  
B. Tubing Head Valves BARTON Size 3 1/8" 5000#  
McEVOY  
C. Automatic Csg Valve N/A Size \_\_\_\_\_
4. Adapter Seal Flange SHAFFER Size 9" 5000# X 2 9/16" 5000# T-AJO  
A. Ring Size BOTTOM RX-50 & TOP RX-27 Bore 2 9/16"
5. Master Valve McEVOY Size 2 9/16" 5000#
6. Xmas Tree Cross SHAFFER Size 2 9/16" 5000# X 2 1/16" 5000#
7. Tbg Wing Valves BARTON Size 2 1/16" 5000#  
Auto Tbg. Prod Valve N/A Size \_\_\_\_\_  
THORNHILL
8. Unibolt CRAVER Size 2 9/16" 5000# Inside Thrds 2 7/8" EUE 8 RD
9. Csg Size 8 5/8" Wt 36 #/FT Grade K-55
10. Tubing Head to Ground Level 82" BELLOW
11. Wt. Landed on Doughnut \_\_\_\_\_ Tubing Size 2 7/8" EUE Type J-55



SOUTHERN CALIF GAS  
 OPERATOR Bohite  
 LSE & NO 1W 75  
 MAP NO. 250

INTENTION	1	ALTER GSG	REWORK GAS STORAGE	REWORK	5
NOTICE DATED	2-13-73	6-4-75	-	7-25-77	
P-REPORT NUMBER	273-110	275-202	276-172	277-278	
CHECKED BY/DATE					
MAP LETTER DATED	9-29-73	N/C	N/C	N/C	
SYMBOL	129				

NOTICE	2-27-73	6-9-75	5-24-76	8-2-77				
	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED
HISTORY	9-11-73		7-16-75		8-2-76		8-31-77	
SUMMARY	9-11-73							
IES/ELECTRIC LOG	10-27-73							
DIRECTIONAL SURV.	8-25-75							
CORE/SWS DESCRIP.								
DIPMETER RESULTS								
OTHER	CEM BOND							
	SIDEWALL NEW							
	COMPACOUS VET							
	COMP DEN							
RECORDS COMPLETE								

ENGINEERING CHECK		CLERICAL CHECK	
T-REPORTS		POSTED TO 121	170 MAILED
OPERATOR'S NAME			FINAL LETTER
WELL DESIGNATION			MAILED
LOC. & ELEV.			
SIGNATURE			RELEASE
SURFACE INSPECTION			BOND
FINAL LETTER OK			

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SUBMIT IN DUPLICATE  
RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF CONSERVATION  
**DIVISION OF OIL AND GAS**

**History of Oil or Gas Well**

Operator ..Southern California Gas Company..... Field ..Aliso Canyon... County Los Angeles.....  
Well ..Fernando Fee #32D....., Sec. 27..., T3N..., R 16W, S.B.B. & M.  
A.P.I. No. ....037-21356..... Name ..M. A. Woiemberghe..... Title ..Agent.....  
Date ..December.....28 19 93  
(Person submitting report) (President, Secretary or Agent)

Signature..... *D. G. Neville*.....

D. G. Neville for M. A. Woiemberghe

..... P. O. Box 3249 Los Angeles, CA 90051-1249 (213) 244-2658.....  
(Address) (Telephone Number)

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.

Date

1993

- 08/20 Rig move.
- 08/21 Mixed kill fluid. Pressure tested surface lines to 2600 psi. Mixed 700 Bbls of 71.5# XC polymer fluid.
- 08/23 Killed well with 450 Bbls of 71.5 pcf XC polymer. Installed back pressure valve in tubing hanger. Removed xmas tree. Installed 8" 5000 psi Class III BOPE. Tested blind rams to 5000 psi for 20 minutes.
- 08/24 Tested 2-7/8" pipe rams to 5000 psi. Tested choke manifold to 5000 psi. Tested Hydril bag to 3750 psi. BOPE test waived by Steve Mulqueen with Division of Oil and Gas. Circulated well. Unable to release tubing from Baker model "D" packer @7062'. Ran free point. Found pipe and production tools free to bottom blast joint @7061'. Attempted to make back-off @ 7050'. Back-off failed.
- 08/25 Ran Dialog back off shot to 7051'. Made two shots at 7051' in No-Go nipple. Pulled out of well laying down tubing. Recovered 224 joints of 2-7/8" J-55 tubing, CAMCO gas lift mandrel and CAMCO annular flow system. Fish left in well: 19.85' blast joint, CAMCO "D" nipple, 89' 9.76' blast joint and Baker latch. Made up 7-3/8" OD screw in sub with 2-7/8" pin inside bumper sub, jars and 122' of 5-7/8" OD drill collars, crossover to 3-1/2" drill pipe. Measured and picked up 3-1/2" drill pipe to 2466'.
- 08/26 Ran in well with screw in sub. Screwed into top of blast joint at 7030'. Worked pipe and jarred for 3-1/2 hours. Released from Baker Model D packer at 7062'. Pulled out of well.

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

- 08/27** Pulled out of well. Recovered 19.85' blast joint, 89' CAMCO D nipple, 9.76' blast joint and Baker locator sub. Left seals and latch inside packer. Made up 4-7/8" ID by 7-5/8" mill shoe and two junk subs, bumper sub and jars, 122' of drill collars with crossover to 3-1/2" drill pipe. Ran in well to 6824'.
- 08/28** Milled at 7061'. Ran mill for 4-1/2 hours. Unable to make any footage. Pulled out of well. Found outside of mill lost 1/32" of gauge. Bottom of mill was like new. Ran in well to 3000' with kill string. Sent mill shoe into TriState to reduce down OD from 7-5/8" to 7-3/8".
- 08/30** Pulled kill string. Ran in well with 7-3/8" OD Packer milling shoe to 7062'. Milled Baker model "D" packer. Pulled to kill string.
- 08/31** Pulled out of well with packer mill. Made up 7-1/16" OD x 5-11/16" x 3-1/4" ID box tap and ran in well to 7062'. Rotated and screwed box tap on packer mandrel. Pulled out of well. Recovered piece of metal 1/4" x 3/4" x 17". Made up and ran TriState over shot. Dressed with 4-7/8" grapple. Ran in well to 7065'.
- 09/01** Pulled out of well with overshot. No recovery. No marks inside grapple. Made up 7-3/8" OD shoe with 1-1/2' x 3' OD taper tap inside of guide shoe. Ran in well to 7065'. Screwed in to Baker seal assembly. Pulled out of well. Packer hanging up in casing collars. Pulled up to 5960'. Packer hanging up in casing collars at this point.
- 09/02** Pulled out of well. Recovered 151.12' of fish. Left 18.79' of wire wrapped liner and 1 joint wire wrapped screen, 1 crossover (0.56) and 2-3/8" bull plug(0.63). Total fish left in well: 51.39'. The wire wrapped liner was parted in center of joint. Ran kill string.
- 09/03** Pulled kill string. Made up 7-3/8" shoe with 4-7/8" ID and 62' of 6" OD wash pipe with 5-3/8" ID, bumper sub, jars, 122' of 5-7/8" OD drill collars. Ran in well to 7213'. Washed over fish from 7213' to 7222'. Ran mill shoe for 5-3/4" hours. Made 9'. Pulled out of change mill shoe.
- 09/04** Pulled out of well. Recovered 9' of wire wrapped screen wedged inside shoe and washover pipe. Ran in well with 6" OD sawtooth shoe on 62' of 6" OD wash pipe to 7227'. Washed over liner from 7227' to 7255'. Unable to clean out past this point. Circulated hole clean. Pulled out of well.
- 09/07** Pulled out of well. Recovered 100% of 2-7/8" OD liner. Installed shooting flange. Using Schlumberger ran GR/Neutron correlation log from 7240' to 6500'. Ran in well with 7-5/8" bit on 8-5/8" casing scraper.
- 09/08** Ran in well with 7-5/8" bit and 8-5/8" scraper. Tagged fill at 7233'. Cleaned out to 7255'. Circulated well clean. Fine sand and metal returns. Found bridge plug at 7256'. Ran in well with 8-5/8" full bore packer on 3-1/2" drill pipe to 3726'.
- 09/09** Ran in well and set full bore packer at 7200'. Pressure tested 8-5/8" 35# casing to 1500 psi for 20 minutes (held o.k.). Pulled out of well. Ran in well with section mill.
- 09/10** Section mill 8-5/8" casing from 7180' to 7204'. Circulated well clean. Pulled up to 7042'. Shut well in.
- 09/11** Section mill from 7204' to 7235' Circulated well clean. Pulled up to 7042'. Shut well in.

- 09/13** Ran to bottom. Circulated bottoms up. Pulled out of well. Found one cutter head lost from section mill. Made up TriState 7-1/4" x 14" hole opener. Ran in well to 7180'. Tool plugged. Worked pipe and unplugged tool.
- 09/14** Swivel leaking. Repaired swivel. Rig down from 6:00 a.m. to 10:00 a.m. Opened hole to 14" from 7180' to 7235'. Circulated well clean. Pulled out of well.
- 09/15** Pulled out of well with under reamer. Made up 7-5/8" bit on 182' of 5-7/8" OD drill collars. Ran in well. Tagged fill at 7238'. Cleaned out to 7252'. Changed well over to 71 pcf HEC polymer. Pulled up to 7100'. Shut well in. Cleaned mud pits.
- 09/16** Ran in well. Bit stopped at 7235'. Unable to get into 8-5/8" stub at 7235'. Pulled out of well. Made up 118.60' of 4-1/2" liner. Ran in well. Liner set down at 7239' (13' off bottom). Tested packer to 500 psi. Started gravel packing. Unable to pack due to high pressure and no returns to surface.
- 09/17** Attempted to circulate down drill pipe through packer. Unable to circulate. Released packer. Pulled out of well. Checked gravel packing tools. Found tools to be o.k. Made up 4" OD grapple on bumper sub, jars and 182' of 5-7/8" OD drill collars. Ran in to 7120'. Spear liner. Pulled 20,000 lbs over string weight. Pulled free. Pulled out of well.
- 09/18** Pulled out of well. Recovered all of the 4-1/2" liner. Found liner was plugged with fine sand. Found 3' of sand in bottom of liner. Ran in well with 7-5/8" bit on 3-1/2" drill pipe and tagged fill at 7235'. Cleaned out to 7235'. Circulated well clean.
- 09/20** Ran into 7235'. No fill above 8-5/8" stub. Pulled out of well. Installed shooting flange. Using Schlumberger, ran 4-arm caliper/GR/CCL log from 7235' to 6800'. Made up 45° collar on 3-1/2" drill pipe. Ran in well to 7180'.
- 09/21** Ran in well to 7235'. Circulated well. Spotted 20 Bbls HEC polymer high vis pill from 7235' to 7004'. Pulled out of well. Made up and ran 118.50' of 4-1/2" 8rd EUE 11.6# LT&C liner as follows: Bull nose 1.50', 0.012" wire wrap screen 42.01', 0.012" screen, (28.00' with 22.95' of .012" mesh slots), 19.97' of 4-1/2" blank pipe, crossover from 4-1/2" 8rd EUE to 5-1/2" ACME stub, 5-1/2" OD landing nipple with 7-5/8" OD lugs. Made up Halliburton sand chief 8-5/8" packer. Ran in well to 7235' with liner top at 7116'. Set packer, mixed and pumped 67 sacks of 20-40 gravel. Final pressure: 500 psi at 3 Bbls/min. Backscuttled 2 drill pipe volumes. No gravel returns to surface. Mixed and pumped 5 sacks of 20-40 sand. Final pressure at 1000 psi. Backscuttled 2 drill pipe volumes. No gravel returns.
- 09/22.** Pressured pack to 1200 psi. Unable to establish pump rate. Pressure bled from 1200 psi to 800 psi in 45 min. Backscuttled one drill pipe volume. Released packer. Total gravel in place behind liner is 72 cu.ft. Pulled out of well. Ran in well with drive-over lead seal adapter. Lead seal stopped at 6341'. Pulled out of well to check lead seal.
- 09/23** Pulled out of well with lead seal drive-over adapter. Found metal cuttings build-up around lead seal and seal pushed out. Made up 8-5/8" scraper set to 7.700". Ran in well to 7116' (top of landing nipple). Circulated well clean. Reversed out 2 drill pipe volumes. Pulled out of well.
- 09/24** Pulled out of well with 8-5/8" scraper. Made up and ran Halliburton drive-over lead seal adapter (7.700" OD). Lead seal stopped at 6341'. Unable to pass this point. Pulled to kill string. Shut well in.

- 09/25** Pulled out of well. Found lead seal distorted. Made up drive-over lead seal turned down to 7.500" OD. Ran in well slow to 7114'. Installed lead seal adapter over landing nipple. Running tool stuck inside 4-1/2" liner. Pulled 100,000 lbs over string weight. Made manual back off in 3-1/2" drill pipe. Pulled out of well. Drill pipe backed off at 4237'. Ran in well with 3-1/2" drill pipe. Checked torque on each joint. Screwed into drill pipe at 4237'. Shut in well. OD of sub stuck in liner is 4.00". ID of 4-1/2" 11.6# liner is 4.00".
- 09/27** Rigged up Dia-log. Backed off 3-1/2" drill pipe at 7081'. Made up screw-in sub on bumper sub and jars, 182' of 5-7/8" OD drill collars. Ran in well to 7081'. Screwed in to 3-1/2" drill pipe. Jarred on tools stuck in liner. Liner moving. Pulled up to 6326'.
- 09/28** Pulled out of well. Recovered drive-over lead seal, landing nipple, and 121' of 4-1/2" OD liner. Made up 7-5/8" bit on 182' of 5-7/8" OD drill collars. Ran in well to 7161'. Changed well over to XC polymer.
- 09/29** Cleaned out sand from 7180' to 7235'. Pulled out of well. Made up TriState 7-1/4" x 14" under reamer. Ran in to 7180' and opened hole to 7235'. Circulated well clean. Changed well over to 71 pcf, 3% KCl/HEC polymer. Pulled up into 8-5/8" casing. Shut well in.
- 09/30** Ran in to 7235' with no fill. Pulled out of well. Made up 118.81' of 4-1/2" LTC, N-80 liner with landing nipple. Made up Halliburton gravel packing tools. Ran in well. Set liner bottom at 7235' and landing nipple at 7116'. Mixed 80 sacks of 20-40 Ottawa sand. Displaced with 264 cu.ft. Reversed out 17 cu.ft.; 63 cu.ft. in place behind liner. Gravel in place at 7:22 p.m. at 12:05 a.m., pump rate at 3.25 Bbls/min at 520 psi. Pumped 15 sacks of 20-40 Ottawa sand, with 7 cu.ft. in place behind liner. Pressured up to 1000 psi. Slow bleed off 26 psi/min. Reversed out two drill pipe volumes. Total sand in place behind liner at 70 cu.ft. (estimated volume at 62 cu.ft.). Shut well in at 4:00 a.m.
- 10/01** At 7:00 am pressured gravel pack to 1000 psi. Unable to establish pump rate (pressured too high with 70 cu.ft. of gravel in place behind liner). Released packer and pulled out of well. Made up Halliburton 7-1/2" OD drive over lead seal adapter. Ran in well. Set lead seal adapter at 7113'. Pulled out of well.
- 10/02** Pulled out of well. Made up 137' of 2-3/8" CS Hydril Tubing tail on 3-1/2" drill pipe. Ran in well to 7235'. Changed well over to 68 pcf 2% KCL water, with 2.5 gals COS per 100 Bbl, 5 gals HIB-19 per 100 Bbls and 5 gals Ucarcide per 100 Bbls. Laid down 3-1/2" drill pipe.
- 10/04** Laid down 3-1/2" drill pipe. Installed shooting flange. Wireline set 8-5/8" Otis "WB" Packer (OD 7.28", ID 4.00," length 3.28') at 7043'. Ran production tubing, applying Baker seal.
- 10/05** Ran in well picking up 2-7/8" tubing. Latched into packer at 7043'. Pulled 20,000 lbs over tubing weight to check latch. Spaced out and landed 10,000 lbs on packer and 35,000 lbs on tubing hanger. Pressure tested packer to 1500 psi for 20 min. Removed BOPE. Installed xmas tree. Tested tree to 5000 psi. Released rig.

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

No. P293-149  
Field Code \_\_\_\_\_  
Area Code \_\_\_\_\_  
New Pool Code \_\_\_\_\_  
Old Pool Code \_\_\_\_\_

PERMIT TO CONDUCT WELL OPERATIONS  
GAS STORAGE

R.D. Phillips, Agent  
Southern Calif. Gas Company  
810 S. Flower St.  
Los Angeles, CA. 90017

Ventura, California  
May 13, 1993

Your \_\_\_\_\_ proposal to rework well "Fernando Fee" 32D \_\_\_\_\_,  
A.P.I. No. 037-21356, Section 27, T. 3 N, R. 16W, S.B. B.&M.,  
Aliso Canyon field, --- area, Sesnon-Frew pool,  
Los Angeles County, dated 5-10-93, received 5-11-93, has been  
examined in conjunction with records filed in this office.

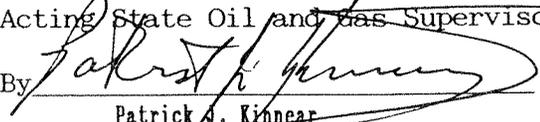
THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOG Class IIIB 3M requirements shall be installed and maintained in operating condition 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. This office shall be consulted before initiating any changes or additions to this proposed operation, or if operations are to be suspended.

*JIM DAYTON / S. MULQUETN RIGGED-UP ON WELL READY  
TO TEST BOPC EQUIP. 8-23-93 16:00*

Blanket Bond  
PK:SF:nr

Engineer Steve Fields  
Phone (805) 654-4761

WILLIAM F. GUERARD, Jr.  
Acting State Oil and Gas Supervisor  
By   
Patrick A. Kinnear  
Deputy Supervisor

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

Notice of Intention to Rework Well

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

FOR DIVISION USE ONLY		
BOND	FORMS	
	OGD 114	OGD 121
BO	5-11-93	✓

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework well Fernando Fee 32D, API No. 037-21356

(Well designation)

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

The present condition of the well is as follows:

DIVISION OF OIL AND GAS  
RECEIVED

MAY 11 1993

1. Total depth

7358'

2. Complete casing record, including plugs and perforations (present hole)

0' - 818'	13-3/8"	48#	
0' - 5564'	8-5/8"	36#	K-55 Stage collar at 1968'
5564' - 7330'	8-5/8"	36#	N-80 Packer at 7062', WSO 7179'
			Perforations: 7210' - 7240'
7078' - 7265'	2-7/8"		Wire wrapped 7200' - 7265'

VENTURA, CALIFORNIA

3. Present producing zone name Sesnon 4 & 6; Zone in which well is to be recompleted \_\_\_\_\_

4. Present zone pressure 2300 psig; New zone pressure \_\_\_\_\_

5. Last produced Gas Storage Project  
(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)

The proposed work is as follows:

1. Move in, rig up and install BOPE
2. Pull tubing, packer, and pressure test casing.
3. Pull existing liner.
4. Install new liner and gravel pack
5. Install packer and production tubing
6. Return well to service.

Note: If well is to be redrilled, show proposed new bottom-hole coordinates and true vertical depth.

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

Address P. O. Box 3249  
(Street)  
Los Angeles CA 90051  
(City) (State) (Zip)  
Telephone Number (213) 244-2665

Southern California Gas Company  
(Name of Operator)  
By E. S. Sinclair for R. D. Phillips (Agent)  
(Name - Printed)  
E. S. Sinclair 5-10-93  
(Name - Signature) (Date)  
Type of Organization Corporation  
(Corporation, Partnership, Individual, etc.)

STATE OF CALIFORNIA  
DEPARTMENT OF CONSERVATION  
DIVISION OF OIL AND GAS

REPORT ON PROPOSED CHANGE OF WELL DESIGNATION

R.D. Phillips, Agent  
Southern Calif. Gas Company  
810 S. Flower St.  
Los Angeles, CA. 90017

Ventura, California  
February 23, 1990

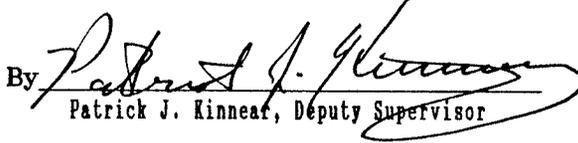
Your request, dated February 13, 1990, proposing to change the designation of wells in Sec. 27, T. 3N, R. 16W, SB B.&M., Aliso Canyon field Los Angeles County, District No. 2, has been received.

The proposed change in designation, in accordance with Section 3203, Public Resources Code, is authorized as follows:

From:	To:
IW 56 (037-21354)	"Porter" 32F (037-21354)
IW 57 (037-21355)	"Porter" 32D (037-21355)
IW 58 (037-21321)	"Fernando Fee" 32E (037-21321)
IW 60 (037-21276)	"Porter" 32B (037-21276)
IW 61 (037-21277)	"Porter" 32A (037-21277)
IW 62 (037-21313)	"Fernando Fee" 32F (037-21313)
IW 73 (037-21358)	"Fernando Fee" 32B (037-21358)
IW 75 (037-21356)	"Fernando Fee" 32D (037-21356)
IW 76 (037-21359)	"Fernando Fee" 32C (037-21359)
IW 77 (037-21323)	"Standard Sesnon" 25B (037-21323)
IW 78 (037-21360)	"Porter" 32C (037-21360)
IW 81 (037-21363)	"Porter" 32E (037-21363)

bb

M.G. MEFFERD, State Oil and Gas Supervisor

By   
Patrick J. Kinneat, Deputy Supervisor

SUBMIT IN DUPLICATE  
RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF CONSERVATION  
**DIVISION OF OIL AND GAS**

DIVISION OF OIL AND GAS  
RECEIVED  
AUG 31 1977

**History of Oil or Gas Well**

SANTA PAULA, CALIFORNIA

Operator Southern California Gas Comp. Field or County Aliso Canyon  
Well name and No. I. W. #75, Sec. , T. , R. , B. & M.  
A.P.I. well No. 037-21356 Name P.S. Magruder, Jr. Title Agent  
Date August 22, 1977 (Person submitting report) (President, Secretary or Agent)

Signature *P.S. Magruder, Jr.*

P.O. Box 3249 Terminal Annex, Los Angeles CA 90051 (213) 689-3561  
(Address) (Telephone Number)

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.

- | Date    |   |
|---------|---|
| 8-1-77  | Killed well using Halliburton pump truck and 460 barrels of 83# calcium chloride H.E.C. polymer drilling fluid.   |
| 8-9-77  | Moved in California Production Service Rig #D-4 and rigged up.  |
| 8-10-77 | Installed and tested B.O.P.E., pipe rams and blind rams with 4000 psi with water and nitrogen for 20 minutes each test. Hydril G.K. tested with 3000 psi with water and nitrogen for 20 minutes each test. B.O.E. tests witnessed and approved by Mr. Pete Wygle, D.O.G. Unlanded tubing and unlatched from packer. Circulated gas from well and began pulling tubing from well.  |
| 8-11-77 | Continued pulling tubing from well. Replaced all Camco equipment and seals on Baker equipment. Running tubing, replacing couplings and hydrotesting to 5000 psi.  |
| 8-12-77 | Hydrotested tubing string to 5000 psi and landed tubing with 9000# on packer. Tested latch with 25,000# pull above weight of tubing string which was 34,000#. Removed B.O.E. and installed Christmas tree with new master valve. Tested tree and well head seals with 5,000 psi. Circulated brine polymer fluid from well with waste salt water. Set tubing plug in NO-GO nipple and tested packer and seals with 2000 psi. Removed tubing plug and checked all wellhead valves closed. Released rig at 10:00 P.M. 8-12-77. |



# REPORT ON PROPOSED OPERATIONS

..... Santa Paula....., California

Mr. P. S. Magruder, Jr., Agent.....  
Southern California Gas Co.....  
P.O. Box 54790 Terminal Annex.....  
Los Angeles, Calif. 90054.....

..... August 3, 1977.....

Your..... proposal to rework gas storage well IW 75  
(Name and number)

....., A.P.I. No. 037-21356, Section 27, T. 3N, R. 16W

..... S.B. B. & M., ..... Aliso Canyon ..... field, ..... Los Angeles ..... County,

dated 7-25-77, received 8-2-77, has been examined in conjunction  
with records filed in this office.

### THE PROPOSAL IS APPROVED PROVIDED THAT:

1. The drilling fluid used shall be of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts; and a reserve supply of this material shall be kept on hand to meet any emergency.
2. Blowout prevention equipment, at least of the Division of Oil and Gas Class III, 3M rating, shall be installed and maintained in operating condition at all times.
3. THIS DIVISION SHALL BE NOTIFIED TO WITNESS A PRESSURE TEST OF THE BLOWOUT PREVENTION EQUIPMENT BEFORE COMMENCING DOWNHOLE OPERATIONS.

NOTE: A COPY OF THIS APPROVAL SHALL BE POSTED AT THE WELL SITE PRIOR TO COMMENCING OPERATIONS.

Blanket Bond  
MD:b

M. G. MEFFERD (acting)  
State Oil and Gas Supervisor

*John L. Hardoin*  
Deputy Supervisor

John L. Hardoin

DIVISION OF OIL AND GAS  
RECEIVED

AUG 2 1977

### DIVISION OF OIL AND GAS Notice of Intention to Rework Well

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

SANTA FE VALLEY, CALIFORNIA

537-  
21356

FOR DIVISION USE ONLY		
BOND	FORMS	
	114	121
<i>SB</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework well No. I. W. #75, API No. \_\_\_\_\_, Sec. 27, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

- Total depth. 7330'
- Complete casing record, including plugs and perforations:
  - 13 3/8" cemented 818'
  - 8 5/8" cemented 7330', plug at 7320', WSO 7240' and 7179' perforated 7240'-7210'
  - 2 7/8" landed 7265', top 7062', wire-wrapped 7265'-7200' slotted 7172'-7101' - gravel flow packed 10-20 mesh gravel
- Present producing zone name SESNON Zone in which well is to be recompleted -
- Present zone pressure 3500 psi New zone pressure -
- Last produced Gas Storage Well (Date) \_\_\_\_\_ (Oil, B/D) \_\_\_\_\_ (Water, B/D) \_\_\_\_\_ (Gas, Mcf/D) \_\_\_\_\_  
or
- Last injected \_\_\_\_\_ (Date) \_\_\_\_\_ (Water, B/D) \_\_\_\_\_ (Gas, Mcf) \_\_\_\_\_ (Surface pressure, psig.) \_\_\_\_\_

The proposed work is as follows:

- Move in and rig up. Kill well. Install B.O.P.E. and pressure test.
- Pull tubing. Recover piano wire tools.
- Re-run tubing with reconditioned down-hole safety system.
- Return well to gas storage operation.

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

Address P.O. Box 3249, Terminal Annex  
(Street)  
Los Angeles California 91324  
(City) (State) (Zip)  
Telephone Number (213) 689-3561

SOUTHERN CALIFORNIA GAS COMPANY  
(Name of Operator)  
By P. S. Magruder, Jr.  
(Name) P. S. Magruder, Jr. (Date) 7-25-77  
Type of Organization Corporation  
(Corporation, Partnership, Individual, etc.)

4. Pull tubing, recover piano wire tools. Recondition or exchange safety system and seal nipples. Re-run tubing, changing collars, cleaning pins, applying Baker seal and hydrotesting to 5000 psi holding each test for one minute. Tubing to include:

Baker Production Tube  
Baker Seals (4)  
Baker Latch-in Locator  
Camco 10' Blast Joint  
Camco 1.81" NO-GO Nipple 2 7/8" threads  
Camco 20' Blast Joint  
Camco 2 7/8" Annular Flow Safety System  
One Joint of 2 7/8" Tubing  
Camco MMG Gas LiftMandrel (EMPTY)  
2 7/8" 8rd EUE Tubing to Surface

5. Land tubing on packer with up to a maximum of 10,000# on packer. Pull 25,000# over weight of tubing to check latch.
6. Set back-pressure valve in doughnut. Remove B.O.P.E. and install Christmas tree. Pressure test Christmas tree to 5000 psi.
7. Circulate brine-polymer drilling fluid out of well with waste lease salt water. Set tubing plug in NO-GO nipple. Pressure test seals and packer to 2000 psi. Remove tubing plug and release rig.

*GCA*  
G. C. ABRAHAMSON  
July 25, 1977

cc: Rig Supervisor  
Relief Rig Supervisor  
Contract Pusher (2)

Division of Oil and Gas ✓

B. Jones  
D. Smiley  
J. Melton  
D. Justice )  
M. Grijalva )

Well File  
Book Copy  
Spare Copy

I. W. #75 - Aliso Canyon

Program to Pull Well - Remove Stuck Piano Wire Tools and Recondition  
Safety System

Take all measurements from original derrick floor 15' above ground.

PRESENT CONDITIONS:

13 3/8" cemented 818'  
8 5/8" cemented 7330', plug 7320', WSO 7180' and 7310'  
Perforated four 1/2" holes per foot 7240'-7210'  
203' 2 7/8" 18-mesh wire-wrapped, landed 7265'  
wire-wrapped perforated 7265'-7200'  
slots 7172'-7101'  
ported extension and Retrieva-"D" packer  
Top 7062'

TUBING DETAIL:

Baker Seals (4)  
Baker Latch-in Locator  
Baker Retrieva-"D" Packer at 7062'  
10' Blast Joint  
Camco 1.81" NO-GO Nipple 2 7/8" threads  
20' Blast Joint  
Camco 2 7/8" Annular Flow Safety System  
Camco MMG Gas Lift Mandrel  
2 7/8" 8rd EUE Tubing to Surface

PROGRAM

1. Move in and rig up. Pressure test wellhead seals.
2. Kill well with 85#/cu.ft. brine-polymer drilling fluid. Volume of well = 460 barrels.
3. Install back-pressure valve in doughnut. Remove Christmas tree and install Class III 5000 psi B.O.P.E. Pressure test complete shut-off rams and pipe rams to 4000 psi with water and nitrogen. Pressure test Hydril bag to 3000 psi with water and nitrogen. Pressure test choke manifold with 2000 psi using water.

## DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS  
 RECEIVED  
 AUG 2 1976  
 SANTA PAULA, CALIFORNIA

### History of Oil or Gas Well

OPERATOR SOUTHERN CALIFORNIA GAS COMPANY FIELD Aliso Canyon

Well No. I.W. #75, Sec. 27, T. 3N, R. 16W, S.B. B. & M.

Date July 28, 1976, 19

Signed P. S. Magruder, Jr.

P. O. Box 3259, Terminal Annex  
Los Angeles, California 90051

Title Agent

(Address)

(Telephone Number)

(President, Secretary or Agent)

(213) 689-3561

It is of the greatest importance to have a complete history of the well. Use this form to report a full account of all important operations during the drilling and testing of the well or during re-drilling, altering of casing, plugging, or abandonment with the dates thereof. Be sure to include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, shooting and initial production data.

Date

- 6-16-76 Using Dowell pump truck, killed I.W. #75 with 78# brine-polymer drilling fluid.
- 6-17-76  
thru  
6-20-76 Idle.
- 6-21-76 Moved in Pool Rig #38 from Standard Sesnon #13 and rigged up. Circulated 78#/cu.ft. brine-polymer drilling fluid - lost a total of 40 barrels. Installed tubing hanger plug.
- 6-22-76 Installed 5000 psi, 10" Class IV B.O.P.E. Tried to test - no good.
- 6-23-76 Changed API ring between single and double gates.  
 Using H. & H. Triplex pump and water, tested B.O.P.E., as follows:  
     Lower 2 7/8" pipe rams 4000 psi for 20 minutes )  
     Blind rams 4000 psi " " " ) O.K.  
     Upper 2 7/8" pipe rams 4000 psi " " " )  
     Shaffer bag - 10" 4000 psi " " " )  
 Using Newsco and nitrogen gas, tested B.O.P.E., as follows:  
     Lower 2 7/8" pipe rams 3850 psi for 20 minutes )  
     Blind rams 4000 psi " " " ) O.K.  
     Upper 2 7/8" pipe rams 3900 psi " " " )  
     Shaffer bag - 10" 4000 psi " " " )
- Using Baker serviceman, tried to release tubing from Baker Model "D" at 7062' - could not release.
- 6-24-76 Continued trying to work tubing loose. Rigged up McCullough wireline service. Determined that tubing was free at 6800, 6980' and 7052'. It was not free at 7065'. Using chemical cutter, cut 2 7/8" tubing off at 7052'. Circulated hole.
- 6-25-76 Measured out of hole - cut was at 7052'. Ran in with 11' of 6" washover pipe on tubing and circulated hole at 7062'. Pulled out of hole. Ran in hole with 2 7/8" overshot, on bumper sub, on jars, on 120' d 1/4" drill collars and on accelerator to 1800'.

- 6-26-76 Fished for 2 7/8" stub looking up at 7052'. Latched on to and de-latched from fish. Pulled out of hole. Baash-Ross overshot jammed in open position. Replaced parts in overshot. Re-ran fishing tools as follows:  
2 7/8" Baash-Ross overshot, bumper sub, jars, 120' 4 1/4" drill collars, accelerator.  
Latched on to fish. Set off jars to set dies. Worked fish. Rotated fish to right and recovered fish (10' 2 7/8" pup joint, Baker upper seal assembly and latch, 6' spacer and lower seals.
- 6-27-76 Rig and crew idle.
- 6-28-76 Picked up Baker 8 5/8" fullbore cementing tool and ran in hole. Rigged up Dowell pump truck. Tested 8 5/8" casing as follows:  
7050' to surface 2050 psi for 20 minutes )  
3500' " " 2300 psi " " " )  
2500' " " 3000 psi " " " ) O.K.  
1500' " " 3500 psi " " " )  
750' " " 4000 psi " " " )
- 6-29-76 Rigged up Bucks testing service and H. & H. power tongs. Plug tested Baker seal assembly, Camco blast joints and "D" nipple to 5000 psi for 2 minutes. Ran tubing, exchanging couplings, cleaning pins, applying thin coating of Baker seal to pins only and hydrostatically testing tubing to 5000 psi for one minute.
- 6-30-76 Completed hydrotesting tubing in hole, applying Baker seal and testing to 5000 psi - each test for one minute. Latched into Baker Model 8 5/8" DGP packer at 7062'. Unlatched from packer, spaced out tubing and hydrostatically tested tubing hanger and pup joints. Landed tubing with 10,000# compression after testing latch with 15,000# tension load (dressed tubing hanger). Installed tubing hanger plug. Removed B.O.P.E.
- 7- 1-76 Installed Christmas tree. Using Associated Services, tested Shaffer lower extended neck seal, API ring, and tubing hanger at 5000 psi for 20 minutes - O.K. Then tested upper extended neck seal and Christmas tree to 5000 psi for 20 minutes - O.K. Changed well fluid to waste lease salt water. Rigged up Otis wireline and set Camco.\* Using H. & H. Triplex pump, tested packer and seal assembly to 2000 psi for 20 minutes - O.K. Released rig at 6:00 P.M. Rigged down to move to I.W. #76.  
\* 2 3/8" C-A2 plug in Camco "D" nipple at 7052'.

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

REPORT ON PROPOSED OPERATIONS No. P 276-172

Mr. P. S. Magruder, Jr., Agent  
Southern California Gas Co.  
P.O. Box 54790 Terminal Annex  
Los Angeles, Calif. 90054

Santa Paula, Calif.  
May 28, 1976

DEAR SIR:

(037-21356)

Your proposal to rework gas storage Well No. IW 75  
Section 27, T. 3N, R. 16W, S.B.B. & M., Aliso Canyon Field, Los Angeles County,  
dated ---, received 5/24/76, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. The drilling fluid used shall be of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts; and a reserve supply of this material shall be kept on hand to meet any emergency.
2. Blowout prevention equipment, at least of the Division of Oil and Gas Class III rating, shall be installed and maintained in operating condition at all times.
3. THIS DIVISION SHALL BE NOTIFIED TO WITNESS A PRESSURE TEST OF THE BLOWOUT PREVENTION EQUIPMENT BEFORE COMMENCING DOWNHOLE OPERATIONS.

NOTE: A COPY OF THIS APPROVAL SHALL BE POSTED AT THE WELL SITE PRIOR TO COMMENCING OPERATIONS.

Blanket Bond  
MD:b

HAROLD W. BERTHOLF  
JOHN EX MATTHEWS, Jr., State Oil and Gas Supervisor

By *[Signature]* Chief, Deputy

DIVISION OF OIL AND GAS  
RECEIVED

MAY 24 1976

**DIVISION OF OIL AND GAS**  
**Notice of Intention to Rework Well**

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

SANTA PAULA, CALIFORNIA

FOR DIVISION USE ONLY		
BOND	FORMS	
	114	121
<i>for</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3. Public Resources Code, notice is hereby given that it is our intention to rework well No. I.W. #75, API No. \_\_\_\_\_, Sec. 27, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

1. Total depth. 7330'

2. Complete casing record, including plugs and perforations:

13 3/8" cemented 818'

8 5/8" cemented 7330', plug 7320',  
four 1/2" holes 7210'-7240'

203' 2 7/8" w.w. landed 7265', gravel packed  
top of packer at 7062'

3. Present producing zone name SESNON Zone in which well is to be recompleted -

4. Present zone pressure 2600 psi New zone pressure -

5. Last produced Gas Storage Well  
(Date) (Oil, B/D) (Water, B/D) (Gas, Mcf/D)  
or

6. Last injected \_\_\_\_\_  
(Date) (Water, B/D) (Gas, Mcf) (Surface pressure, psig.)

The proposed work is as follows:

1. Move in rig, kill well, install B.O.P.E. and pressure test.
2. Pull tubing. Pressure test casing. Perform any indicated remedial work.
3. Run tubing with new safety valve mandrel.
4. Re-complete as gas storage well.

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

Address P.O. Box 3249, Terminal Annex SOUTHERN CALIFORNIA GAS COMPANY  
(Street) (Name of Operator)  
Los Angeles California 90051 By Eugene C. Dunham for P.S. Magruder, Jr.  
(City) (State) (Zip) (Name) (Date)  
Telephone Number (213) 689-3561 Type of Organization Corporation  
(Corporation, Partnership, Individual, etc.)

- 6-14-75 Pulled out of hole. Ran in hole with Hampton 8 5/8" circulating washer. Unable to close sleeve on washer and pulled out of hole. Ran in hole with open end tubing.
- 6-15-75 Idle.
- 6-16-75 Circulated bottoms up. Pulled out of hole. Ran in with Hampton 8 5/8" circulating washer. Rigged up Byron Jackson pumper. Blanked washer at 7100' with 1500 psi. Ran in to 7254' and blanked washer with 1800 psi. Pulled up and washed perforations 7241'-7210' with breakdown pressure ranging from 1700 psi to 200 psi. Pulled up to 7200' and circulated bottoms up. Pulled out of hole. Ran in hole with 7 5/8" bit and 8 5/8" casing scraper.
- 6-17-75 Top of fill at 7268'. Cleaned out to 7271'. Circulated bottoms up. Pulled out of hole. Rigged up McCullough and set Baker Model "N" wireline bridge plug at 7265'. Rigged down McCullough and ran in hole with open end tubing.
- 6-18-75 Touched top of bridge plug at 7265'. Pulled out of hole. Ran in hole with 2 7/8" liner equipped with Baker gravel pack tools and hung liner at 7265', top at 7062'. Liner detail attached (2 joints Gru-V-Kut, 3 joints blank and 1 joint telltale). Rigged up Byron-Jackson. Established circulation with 3 barrels per minute at 900 psi. Moved Baker gravel pack tools to pressure pack position. Closed bag B.O.P. on tubing and pressure annulus to 1200 psi for 2 minutes. Packer and tools did not leak. Mixed 69 sacks of 10-20 mesh "Heart of Texas" gravel to a total slurry volume of 203 cu.ft. with Terra Pak II KCL fluid. With Baker tools in pressure pack position, pumped in tubing 93 cu.ft. of Terra Pak II KCL fluid pad, followed by the 203 cu.ft. of slurry, followed by 13 cu.ft. of Terra Pak II KCL fluid pad, followed by brine-polymer fluid. Calculated annulus pack is 51 sacks. Did not get a pressure pack. Repeated the above procedure, using 93 cu.ft. pack ahead, 29 cu.ft. of slurry (10 sacks of gravel) and 13 cu.ft. of following pad and did not get a pressure pack.
- 6-19-75 Established circulation at 3 barrels per minute at 900 psi. Moved Baker gravel pack tools to pressure pack position, closed bag B.O.P. on tubing and pressured annulus to 1200 psi for 2 minutes. Packer and tools did not leak. Mixed 70 sacks of 10-20 mesh "Heart of Texas" gravel to a total slurry volume of 203 cu.ft. with Terra Pak II KCL fluid. With Baker tools in pressure pack position, pumped in tubing 93 cu.ft. of Terra Pak II KCL fluid pad, followed by the 203 cu.ft. of slurry (70 sacks 10-20 mesh "Heart of Texas" gravel), followed by 13 cu.ft. of Terra Pak II KCL fluid pad, followed by brine-polymer fluid at a rate of 3.3 barrels per minute, with a pressure ranging from 1500 to 1900 psi. During the last 11 cu.ft. of displacement, The pressured increased to 3000 psi. Gravel in place at 9:42 A.M. Pulled

History of Well I.W. #75  
July 2, 1975

PAGE 3.

up and backscuttled 25 cu.ft. then pulled up and sheared collette and backscuttled 250 cu.ft. total. Gravel back to surface after backscuttling 188 cu.ft. Estimated gravel back to surface is 15 sacks. Total gravel packed 134 cu.ft. Calculated space 51 cu.ft. for a 263% pack. Rigged up and tested Flo-Safe Company's safety valve. This valve is actuated by the gravity load of a drill collar stabbed on to the joint of tubing directly above it and balanced by tubing pressure. Using Hydro-Test Inc., achieved the following results:

10'6" drill collar (6" x 3")  
average pressures (12 operations)  
OPEN: 2300 psi  
CLOSED: 1600 psi  
17'8" drill collar (6" x 3")  
average pressures (4 operations)  
OPEN: 3900 psi  
CLOSED: 2900 psi

Ran partway in hole with Baker double seals with latch assembly, locator sub, Flo-Safe safety valve (10'6" drill collar 6" x 3"), Otis sliding sleeve (open), 2 7/8", 6.5#, N-80, 8rd, EUE tubing while hydrotesting tubing to 5000 psi - see tubing detail.

6-20-75

Completed testing tubing while running in hole. Latched tubing into packer at 7062' and landed tubing on doughnut with latch-on in neutral. Plugged doughnut. Tore out B.O.P.E. Installed Christmas tree. Associated Services hydraulically tested Christmas tree with 5000 psi - O.K. Removed doughnut plug.

6-21-75

Changed brine-polymer fluid in well to lease production water, using rig pump. Recovered 395 barrels of brine-polymer fluid. Rigged up Archer-Reed wireline service and closed sliding sleeve at 7020'. Ran 2 1/2" Otis back check plug and set at 7020' in sliding sleeve to secure well while working on Fernando Fee #32. Rigged down California Production Service Rig D-3 and moved off. Will unload and test production of well in near future. Cumulative fluid lost to formation - 557 barrels.

June 20, 1975

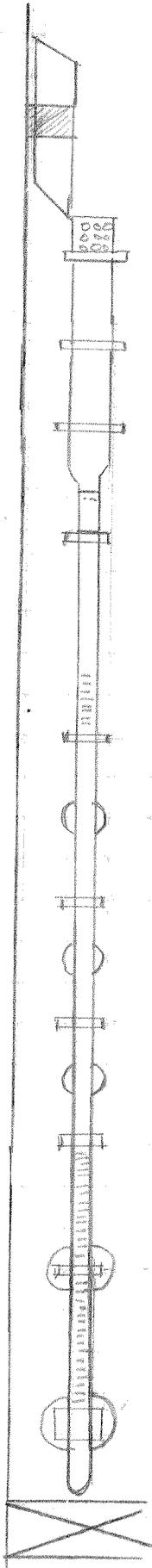
TUBING DETAIL FOR I.W. #75

<u>ITEM</u>	<u>LENGTH</u>	<u>DEPTH</u>
K. B. to Doughnut	16.50'	16.50'
Doughnut	1.00'	17.50'
1 Pup Joint 2 7/8", 6.5#, N-80, 8rd, EUE	6.08'	23.58'
1 Pup Joint 2 7/8", 6.5#, N-80, 8rd, EUE	10.09'	33.67'
1 Pup Joint 2 7/8", 6.5#, N-80, 8rd, EUE	10.10'	43.77'
224 Joints 2 7/8", 6.5#, N-80, 8rd, R-2, EUE Tubing	6972.94'	7016.71'
Otis Sliding Sleeve Model in Open Position	3.15'	7019.86'
1 Joint 2 7/8", 6.5#, N-80, EUE Tubing with 10'6" Drill Collar Stabbed over to actuate Safety Valve. O.D. 6" - I.D. 3" - Length 10'6" Includes spacer 13" X 4 1/2" O.D. X 0.375" thickness and Shock Ring 0.5" length X 4 1/2" O.D. X 3.120" I.D.	28.90'	7048.78'
1 Flo-Safe Safety Valve 4 1/2" O.D., 2.125 - I.D. 2.0625 NO-GO ring, without inner Mandrel and in Closed Position.	2.30'	7051.06'
1 Pup Joint 2 7/8", 6.5#, N-80, 8rd, EUE	10.14'	7061.20'
1 Baker Lock-sub - Tubing landed in Neutral	.88'	7062.08'
1 Baker Latch Assembly	.22'	7062.30'
1 Baker Upper Seals	2.07'	7064.15'
1 Pup Joint 2 7/8"	6.13'	7070.28'
1 Baker Lower Seals	2.03'	7072.31'

8 5/8", 36#, N-80 Casing

Top of Packer 7062'

7065.73'	Baker Model "D" Packer	3.73'
7070.63'	Gravel Packing Extension	4.90'
7071.19'	5 1/2" Collar	.56'
7072.90'	Lower Seal Bore	1.71'
7073.46'	5 1/2" Collar	.56'
7077.51'	Lower Extension	4.05'
7078.07'	5 1/2" Collar	.56'
7078.95'	5 1/2" x 2 7/8" X-Over	.88'
7081.45'	Baker Shear Joint 50,000#	2.50'
7112.61'	1 Joint 2 7/8", 6.5# Tubing Top 20' Blank, Bottom 11.16' 18-Mesh Wire Wrap Gru-V-Kut Used as Telltale	31.16'
7141.85'	1 Joint - Blank Pipe 2 7/8" Weld on Plate Centralizer	29.24'
7172.17'	1 Joint Blank Pipe 2 7/8" Weld on Plate Centralizer	30.32'
7200.32'	1 Joint Blank Pipe 2 7/8" Weld on Plate Centralizer	28.15'
7231.91'	1 Joint 18-Mesh Wire Wrap Gru-V-Kut Liner 2 7/8" Latch-on Centralizer	31.59'
7263.39'	1 Joint 18-Mesh Wire Wrap Gru-V-Kut Liner 2 7/8" Latch-on Centralizer	31.48'
7263.89'	2 7/8" x 2 3/8" X-Over Coupling	.50'
7264.51'	2 3/8" Bull Plug	.62'
		<hr/> 202.51'



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

Report on Operations

No. T. 275-209

Mr. P. S. Magruder, Jr., Agent  
Pacific Lighting Service Co.  
P.O. Box 54790, Terminal Annex  
Los Angeles, California 90054

Santa Paula, Calif.  
June 19, 1975

DEAR SIR:

Operations at well No. IV 75, API No. 037-21356, Sec. 27, T. 3N, R16W, S.B., B & M. Aliso Canyon Field, in Los Angeles County, were witnessed on June 12, 1975. Mr. A. Lershbough, representative of the supervisor was present from 1100 to 1500. There were also present C. Downey, foreman

Present condition of well: No changes since history dated Sept. 6, 1973.

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

DECISION:

THE BLOWOUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED.

b  
cc: Operator

Thomas E. Gay, Jr., Acting Chief  
~~JOHN F. MATTHEWS, JR.~~  
State Oil and Gas Supervisor

By [Signature] Deputy

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

REPORT ON PROPOSED OPERATIONS No. P 275-202

Mr. P. S. Magruder, Jr., Agent  
Pacific Lighting Service Co.  
P.O. Box 54790, Terminal Annex  
Los Angeles, California 90054

Santa Paula, Calif.  
June 12, 1975

DEAR SIR:

(037-21356)

Your proposal to alter casing Well No. IV 75  
Section 27, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County,  
dated 6/4/75, received 6/9/75, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT BLOWOUT PREVENTION EQUIPMENT, AT LEAST OF  
THE DIVISION OF OIL AND GAS CLASS III RATING, SHALL BE INSTALLED AND MAINTAINED IN  
OPERATING CONDITION AT ALL TIMES.

Blanket Bond  
ALL:b  
cc: Operator

Thomas E. Gay, Jr., Acting Chief  
JOHN F. MATTHEWS, JR., State Oil and Gas Supervisor

By *LOP Pitman*, Deputy



STATE OF CALIFORNIA  
DEPARTMENT OF CONSERVATION  
DIVISION OF OIL AND GAS

REPORT ON PROPOSED CHANGE OF WELL DESIGNATION

Santa Paula California

April 4, 1975

Mr. P. S. Magruder, Jr., Agent  
Pacific Lighting Service Company  
P O Box 54790, Terminal Annex  
Los Angeles, California 90054

DEAR SIR:

Your request dated March 29, 1975, relative to change in designation of well(s) in Sec. 27, T. 3N, R. 16W, S.B. B. & M., Alliso Canyon field, Los Angeles County, District No. 2, has been received; and in accordance with Section 3203, Public Resources Code, reading in part as follows:

“\* \* \* The number or designation by which any well heretofore drilled has been known, and the number or designation specified for any well in a notice filed as required by Section 3203, shall not be changed without first obtaining a written consent of the Supervisor.”

the proposed change in designation is hereby authorized as follows:

FROM:	TO:
IV 75 (037-21356)	<u>IV 75 (037-21356)</u>
IV 75 (037-21358)	IV 75 (037-21358)

cc: Cons. Comm.

JOHN F. MATTHEWS, JR.  
State Oil and Gas Supervisor

By [Signature]  
Deputy Supervisor

DIVISION OF OIL AND GAS

WELL SUMMARY REPORT

OCT 1 1973

SUBMIT IN DUPLICATE

Operator Pacific Lighting Service Company Well No. IW 76 SANTA PAULA, CALIFORNIA

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

Location From Station 84 1505.81' South and 1906.59 East  
(Give location from property or section corner, or street center lines)

Elevation of ground above sea level 1995 feet USGS

All depth measurements taken from top of kelly bushing which is 15 feet above ground.  
(Derrick Floor, Rotary Table or Kelly Bushing)

In compliance with Sec. 3215, 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.

Date September 28, 1973

Signed P. S. Magruder  
P. S. Magruder  
Agent

E. A. Olson  
(Engineer or Geologist)

B. F. Jones  
(Superintendent)

Title \_\_\_\_\_  
(President, Secretary or Agent)

Commenced drilling <u>May 16, 1973</u>	GEOLOGICAL MARKERS	DEPTH
Completed drilling <u>June 17, 1973</u>	<u>Top Sesnon S-4</u>	<u>7338</u>
Total depth <u>7676'</u> Plugged depth <u>Not</u>		
Junk <u>5.5' 18" hole opener 808-813</u>		

Geologic age at total depth: MIOCENE

Commenced producing \_\_\_\_\_ Flowing/gas lift/pumping \_\_\_\_\_ Name of producing zone \_\_\_\_\_  
(Date) (Cross out unnecessary words)

	Clean Oil bbl. per day	Gravity Clean Oil	Per Cent Water including emulsion	Gas Mcf. per day	Tubing Pressure	Casing Pressure
Initial production	<b>GAS STORAGE WELL</b>					
Production after 30 days						

CASING RECORD (Present Hole)

Size of Casing (A. P. I.)	Depth of Shoe	Top of Casing	Weight of Casing	New or Second Hand	Seamless or Lapweld	Grade of Casing	Size of Hole Drilled	Number of Sacks of Cement	Depth of Cementing if through perforations
13-3/8	798	sfc	48#	N	S	H-40	17-1/2"	342	
	695	Milled	13-3/8	695-716					
8-5/8	7339	sfc	36#	N	S	K&N	11"	585 810	shoe 3738
6-5/8	7676	7204	27.65#	N	S	K	14"	slotted liner	

PERFORATED CASING

(Size, top, bottom, perforated intervals, size and spacing of perforation and method.)

8-5/8" - Four 1/2" jet holes 7325', squeezed with cement; 4 - 1/2" holes @ 7324-WSO  
6-5/8" - Perforated 12 rows & 28 rows, 2" x 30M, 6" centers, SMC 7676-7210  
Gravel packed.

Was the well directionally drilled? yes Electrical Log Depths 7676' (Attach Copy of Log)

**DIVISION OF OIL AND GAS**

**WELL SUMMARY REPORT**

SUBMIT IN DUPLICATE

Operator Pacific Lighting Service Company Well No. IW 75

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

Location From Station 84, 1510.23' South & 1892.25' East

(Give location from property or section corner, or street center lines)

Elevation of ground above sea level 1995 feet USGS

All depth measurements taken from top of Kelly Bushing which is 15 feet above ground.  
(Derrick Floor, Rotary Table or Kelly Bushing)

In compliance with Sec. 3215, 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.

Date September 6, .973

Signed B. F. Jones

E. A. Olson

B. F. Jones

Title Agent

(Engineer or Geologist)

(Superintendent)

(President, Secretary or Agent)

Commenced drilling	Completed drilling	Total depth	Plugged depth	Junk	GEOLOGICAL MARKERS	DEPTH
<u>April 5, 1973</u>	<u>April 30, 1973</u>	<u>7358'</u>	<u>7320'</u>	<u>None</u>	<u>Pliocene-Miocene</u>	<u>6846'</u>
					<u>Top Sesnon S-4</u>	<u>7191'</u>
					<u>S-8</u>	<u>7268'</u>

Geologic age at total depth: Miocene

Commenced producing \_\_\_\_\_ (Date) Flowing/gas lift/pumping (Cross out unnecessary words) Name of producing zone Sesnon

	Clean Oil bbl. per day	Gravity Clean Oil	Per Cent Water including emulsion	Gas Mcf. per day	Tubing Pressure	Casing Pressure
Initial production	<b>GAS STORAGE WELL</b>					
Production after 30 days						

CASING RECORD (Present Hole)

Size of Casing (A. P. I.)	Depth of Shoe	Top of Casing	Weight of Casing	New or Second Hand	Seamless or Lapweld	Grade of Casing	Size of Hole Drilled	Number of Sacks of Cement	Depth of Cementing if through perforation
<u>13-3/8"</u>	<u>818</u>	<u>sfc</u>	<u>48</u>	<u>N</u>	<u>S</u>	<u>K-55</u>	<u>17-1/2"</u>	<u>353</u>	
<u>8-5/8"</u>	<u>7330</u>	<u>sfc</u>	<u>36</u>	<u>N</u>	<u>S</u>	<u>K-55&amp;N-80</u>	<u>11"</u>	<u>875</u> <u>732</u>	<u>shoe</u> <u>1968</u>

PERFORATED CASING

(Size, top, bottom, perforated intervals, size and spacing of perforation and method.)

WSO four jet holes at 7179' & 7180', squeezed with cement; four jet holes 7304'-7306', squeezed with cement.

PRODUCTION INTERVAL: Four jet holes per foot from 7210'-7241'.

Was the well directionally drilled? Yes Electrical Log Depths 7358' (Attach Copy of Log)

## DIVISION OF OIL AND GAS

## History of Oil or Gas Well

OPERATOR Pacific Lighting Service Company FIELD Aliso CanyonWell No. IW 75, Sec. 27, T. 3N, R. 16W, S.B. B. & M.Date September 6, 19 73 Signed R.S. Magruder Jr.P. O. Box 54790, Terminal Annex  
Los Angeles, California 90054 (213) 689-3561 Title Agent

(Address)

(Telephone Number)

(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form to report a full account of all important operations during the drilling and testing of the well or during re-drilling, altering of casing, plugging, or abandonment with the dates thereof. Be sure to include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, shooting and initial production data.

Date

1973

4-5 Well drilled by Camay Drilling Company, Contractor, rig #8. All measurements taken from top kelly bushing which was 15' above mat.

Spudded well at 8:00 AM and drilled 17-1/2" hole to 201.  
Mud: 70#, 50 sec.

4-6 Drilled and surveyed 17-1/2" hole to 489'.  
Mud: 72#, 60 sec.

4-7 Drilled and surveyed 17-1/2" hole to 690'.  
Mud: 72#, 55 sec.

4-8 Drilled and surveyed 17-1/2" hole to 820'.

TO CEMENT 13-3/8" SURFACE CASING: Ran 21 joints or 823.79' of 13-3/8", 48#, K-55, 8rd. ST&C, R-3 new J & L seamless blank casing and cemented same at 818' with 546 cu. ft. of 94#/cu. ft. slurry consisting of 2% Lodense class "G" cement, followed by 88 sacks of Class "G" cement treated with 2% calcium chloride. Moved casing 5' and circulated 20 minutes prior to cementing. Preceded cement with 100 cu. ft. of water and displaced with 728 cu. ft. of mud. Did not bump plug as cement returns to surface. Cement in place at 5:00 PM. Good circulation throughout job. Used Byron-Jackson power and bulk cement.

## CASING DETAIL:

All 21 joints or 818' 13-3/8" casing fitted on bottom with Baker stab-in float shoe and with one centralizer at 776'.

4-9 Cut and recovered 13-3/8" casing and welded on Shaffer 13", 5000# casinghead and tested same OK with 1500 psi for 15 minutes.  
Installed hydraulic GK Hydril and double Shaffer B.O.P. Tested same OK with 1500 psi. Witnessed and approved by ENGINEER FOR DIVISION OF OIL & GAS.  
Drilled out cement from 811' to shoe at 818'. Converted to Q-Trol drilling fluid.  
Mud: 64#, 33 sec., 8.0 cc.

1973

- 4-10 Drilled and surveyed 11" hole to 1190'.  
Mud: 64#, 32-1/2 sec., 6.8 cc., 1-1/2% solids.
- 4-11 Drilled and surveyed 11" hole to 1919'.  
Mud: 64#, 32-1/2 sec., 6.8 cc., 1-1/2% solids.
- 4-12 Pipe stopped at 1580'. Reamed 1573'-1919' and drilled and surveyed 11" hole to 2165'.  
Dyna Drill #1, 11" hole 2165'-2246'.  
Reamed hard from 2165'-2246' and drilled and surveyed 11" hole to 2322'.  
Mud: 70#, 34 sec., 7.4 cc., 4% solids.
- 4-13 Run Dyna-Drill #2 which stopped at 2234'. Pull to 2165' and rotate and ream to 2246'. Surveys indicate Dyna-Drill run #1 was sidetracked.  
Measure in drilling assembly, depth OK and clean out 10' of fill to 2322'.  
Run Dyna-Drill #2A and drilled 11" hole to 2435'.  
Mud: 67-1/2#, 34 sec., 6.8 cc., 3% solids.
- 4-14 Ream 2322'-2435' and directionally drill 11" hole to 3082'.  
Mud: 68#, 32-1/2 sec., 7.2 cc., 3% solids.
- 4-15 Directionally drilled 11" hole to 3693'.  
Mud: 69#, 35 sec., 7.2 cc., 3% solids.
- 4-16 Directionally drilled 11" hole to 4311'.  
Mud: 69#, 33 sec., 7.4 cc., 4% solids.
- 4-17 Directionally drilled 11" hole to 4689'.  
Mud: 69#, 33 sec., 7.2 cc., 3% solids.
- 4-18 Directionally drilled 11" hole to 5113'.  
Mud: 69#, 34 sec., 7.0 cc., 3% solids.
- 4-19 Directionally drilled 11" hole to 5690'.  
Mud: 69#, 34 sec., 8.0 cc., 4% solids.
- 4-20 Directionally drilled 11" hole to 6231'.  
Mud: 68-1/2#, 34 sec., 7.4 cc., 4% solids.
- 4-21 Directionally drilled 11" hole to 6459'. Ream 6424' to 6459' with Dyna-Drill.  
Dyna-Drill #3, 11" hole to 6542'.  
Mud: 69#, 33 sec., 7.6 cc., 4% solids.
- 4-22 Dyna-Drill #3 to 6608'. Survey instrument stuck in mule shoe. Unable to direct well as desired. Pulled to run Eye tool.  
Reamed 6523' to 6608' and Dyna-Drill #3-A to 6630'.  
Mud: 69#, 33 sec., 8.0 cc., 4% solids.
- 4-23 Dyna-Drill #3-A, 11" hole with Eye tool to 6668'.  
Ream 3656'-3686' and in stages from 4672'-5650'.  
Mud: 68#, 34 sec., 8.2 cc., 4% solids.

- 4-24 Ream 6459' to 6668' and directionally drilled 11" hole to 6875'.  
Mud: 68-1/2#, 37 sec., 7.6 cc., 4% solids.
- 4-25 Directionally drilled 11" hole to 7230' where circulation was lost. Treated mud with Kwik seal, cotton hulls and nut shells. Pumped in stages 250 barrels. No returns. Pipe free.  
Mud: 68#, 36 sec., 7.0 cc., 3% solids.
- 4-26 Pulled to 6448'. Pumped in 5 stages, 100 barrel pills of gel, Kwik seal and nut shells. Run in to fill at 7200' and spot pill. Pull to 6448' and continue pumping in LCM pills. Pull to 5337' and pump in LCM pill.  
Mud: 68#, 37 sec., 7.2 cc., 3% solids.
- 4-27 Pumped in 190 barrels of LCM treated mud and obtained circulation at 3:30 AM. Staged to bottom at 7230' with full circulation.  
Directionally drilled 11" hole to 7327'.  
Mud: 65#, 39 sec., 9.0 cc., 2% solids.
- 4-28 Directionally drilled 11" hole to 7358' TOTAL DEPTH. Last 31' drilled at rate of 3.5' per hour.  
Mud: 66#, 35 sec., 8.0 cc., 2% solids.
- Ran Welex Induction Electric log and recorded from 7354'-818'. Ran Gamma Compensated Density log with caliper from 7358'-7100'. Hole tool 20 barrels of mud during logging.
- 4-29 Ran Welex Sidewall Neutron & Acoustic Velocity logs, recording from 7358'-7100'. Hole took 35 barrels of mud while logging.  
Ream tight hole in stages from 2120 to 4835'. Pull out to change stabilizers.  
Mud: 66#, 39 sec., 8.2 cc., 2% solids.
- 4-30 Run in to 7330', ream to 7358 TOTAL DEPTH and condition hole for casing.  
&  
5-1 Mud: 64#, 41 sec., 8.4 cc., 2% solids.

TO CEMENT 8-5/8" CASING: Ran 175 joints or 7332.13 feet of 8-5/8", 36#, K-55 & N-80, Buttress thread, R-3, new seamless blank casing and cemented same at 7330 feet with 1600 cu. ft. of 93.5#/cu.ft. slurry consisting of 775 sacks Class "G" cement and 1488# of lodense, followed by 100 sacks Class "G" with 2% calcium chloride mixed to 118#/cu.ft. slurry. Casing froze. Circulated 15 minutes prior to cementing and lost circulation. Preceded cement with 50 cu. ft. water and displaced with 2500 cu. ft. of mud to bump plug to place at 12:08 AM, 5-1-73, under 3500 psig final pressure. Held 3500 psig for 15 minutes. Bled back 32 cu. ft. for total displacement of 2468 cu. ft. Partial circulation at end of job. 1 hour 38 minutes mixing and displacing cement. Dropped plug and opened stage collar at 1968 feet under 1500 psig. Preceded cement with 50 cu. ft. water. Pumped in 1500 cu. ft. of 93.5#/cu.ft. slurry consisting of 732 sacks Class "G" cement and 1400# lodense and displaced with 685 cu. ft. water to bump plug and close collar under 2000 psig at 1:57 AM. 45 minutes mixing and displacing cement. Good circulation throughout job. No cement returns to surface. Used Byron-Jackson bulk cement and power.

4-30 CASING DETAIL

&

5-1 Bottom 42 joints or 1766.35 (7330.13-5563.78) N-80 fitted on bottom with Davis-Lynch fill-up float shoe and at 7285' with Davis-Lynch fill-up float collar. TIW centralizers at 7285', 7157' & 6988'. TIW metal petal cement basket at 7030'.

Next 133 joints or 5563.78 (5563.78-K.B.) K-55 fitted with metal petal basket at 2011 feet and 750 feet with centralizers one joint below top basket. Baker stage collar at 1968' with one centralizer between basket and collar.

Total 175 joints or 7330.13 feet.

5-1 Removed BOP. Cut and recovered 8-5/8" casing and installed pack-off. Installed 10" x 8" Shaffer 5000# tubing head, serial #18923-T. Tested upper and lower seals with 3400 psig OK for 15 minutes. Reinstalled BOP.

5-2 Test BOP OK under 1500 psig. Ran 7-5/8" bit with casing scraper above and drilled out stage collar at 1969'. Pressure test casing under 1500 psig OK. Located cement at 7267' and drill out to 7320'. Test casing OK with 1500 psig for 15 minutes. Ran Go-International Cement Bond log from 7325' to surface. Ran Neutron Correlation log with collar locator. Ran Go-International 4" O.D. carrier and shot four jet holes at 7179'.

TO TEST WATER SHUT-OFF ON HOLES IN 8-5/8" CASING AT 7179': Ran Lynes tester on 5" drill pipe and set packer at 7130' with tail to 7148'. Opened tool at 8:25 PM for 5 minute test. Immediate hard blow increasing at end of test. Closed tool and bled off gas. Recovered 210' of gas cut drilling fluid. Charts showed tool functioned properly. Water shut-off not approved by Company test. See Lynes report #1, dated 5-2-73.

5-3 TO SQUEEZE HOLES IN 8-5/8" CASING AT 7179' WITH CEMENT: Ran Baker fullbore retrievable cement tool on 7068' of 5", 19.5# drill pipe and set same at 7070'. Holes took fluid at 12 cu. ft. per minute rate under 1400 psi. Preceded cement with 20 cu. ft. of water. Pumped in 100 sacks Class "G" cement treated with 2% calcium chloride mixed to an average of 118#/cu. ft. slurry. Displaced with 5 cu. ft. water and 550 cu. ft. of mud, then closed tool and displaced an additional 155 cu. ft. of mud in stages to clear tool of cement. Squeezed in stages, an additional 11 cu. ft. to force estimated 76 sacks away under 3250 psi final pressure. Bled back 4 cu. ft. for total displacement of 716 cu. ft. One hour 20 minutes mixing and displacing cement to place at 6:30 AM. Used Dowell bulk cement and power.

5-4 Ran 7-5/8" bit and scraper. Located cement at 6950'. Drilled out to 6990' and cleaned out to 7023'. Closed rams and holes at 7179' took fluid under 1000 psi.

5-4 TO RESQUEEZE HOLES IN 8-5/8" AT 7179' WITH CEMENT: Ran Baker fullbore retrievable cement tool on 5", 19.5# drill pipe and set same at 7016'. Holes took fluid at 12 cu. ft. per minute rate under 2300 psi. Preceded cement with 20 cu. ft. of water. Pumped in 50 sacks Class "G" cement treated with 2% calcium chloride mixed to an average 116-118#/cu. ft. slurry. Displaced with 8 cu. ft. water and 530 cu. ft. of mud, then closed tool and displaced an additional 194 cu. ft. of mud in stages under 2500 psi final pressure. Squeezed estimated 28 sacks through holes. Bled back 5 cu. ft. for total displacement of 727 cu. ft. Hold 1000 psi on annulus. 5 minutes mixing and 25 minutes displacing cement to place at 9:45 PM. Used Dowell bulk cement and power.

5-5 Ran 7-5/8" bit and scraper and located medium hard cement at 7126' after standing 19 hours.

5-6 Ran Go-International 4" O.D. carrier with collar locator and shot 4 holes at 7180' with DML-18 charge.

TO TEST WATER SHUT-OFF ON HOLES IN 8-5/8" CASING AT 7180 & 7179': Ran Lynes tester on 5", 19.5# drill pipe. Set packer at 7140' with tail to 7158'. Opened tool at 5:40 AM for one hour test. Puff blow and dead. No gas to surface. Recovered 15' rise of drilling fluid. Charts showed tool functioned properly. Water shut-off witnessed and approved by engineer for DIVISION OF OIL & GAS. See Lynes report #2, dated 5-6-73.

Ran Go-International 4" O.D. carrier and collar locator with DML-18 charge and shot four holes per foot from 7304'-7306', IEL depth.

PRODUCTION TEST ON PERFORATIONS IN THE INTERVAL 7304'-7306': Ran Lynes tester with MFE tool on 5" drill pipe and set packer at 7245' with tail to 7263'. Opened tester at 4:20 PM on 3/4" tool bean and 1/4" surface bean. 10 minute initial flow, 20 minute initial shut-in. Light blow decreasing to faint after 15 minutes of second flow and dead in 30 minutes. No gas to surface. No final shut-in. Closed tool at 5:30 PM. Charts showed tool functioned properly throughout test. Fluid rise 3600'. Dropped bar to shear disc and open back-scuttle valve. Backscuttled muddy salt water. Sample chamber contained salt water. Water sample to laboratory for complete chemical analysis.

PRESSURE RECORDER DATA PSIG

	<u>INSIDE (7258)</u>	<u>OUTSIDE (6263)</u>
INITIAL HYDRO	3400	3382
INITIAL FLOW	800	820
INITIAL SHUT-IN	Clock Stopped	1456
SECOND FLOW	"	1211
FINAL FLOW	"	1454
FINAL SHUT-IN	"	None Taken
FINAL HYDRO	"	3368

See Lynes report #3, dated 5-6-73.

5-7 TO SQUEEZE HOLES IN 8-5/8" CASING AT 7304'-7306' WITH CEMENT: Ran Baker full-bore retrievable cement tool on 5", 19.5# drill pipe and set same at 7165'. Holes took fluid at 20 cu. ft. per minute rate under 1600 psi pressure. Preceded cement with 20 cu. ft. of water. Pumped in 100 sacks Class "G" cement treated with 2% calcium chloride mixed to an average 118#/cu. ft. slurry. Displaced with 5 cu. ft. water and 531 cu. ft. of mud, then closed tool and displaced an additional 163 cu. ft. of mud in stages to clear holes of cement under 2000 psi final pressure. Hold 1000 psi pressure on annulus. Attempted to lower tools past holes at 7179'-7180' but same would not go, indicating holes at 7179'-7180' are taking fluid. Used Dowell bulk cement and power.

TO RESQUEEZE HOLES IN 8-5/8" CASING AT 7179'-7180' WITH CEMENT: Ran Baker fullbore retrievable cement tool on 5", 19.5# drill pipe and set same at 7072'. Holes took fluid at 20 cu. ft. per minute rate under 1600 psi pressure. Preceded cement with 20 cu. ft. of water. Pumped in 100 sacks Class "G" cement treated with 2% calcium chloride mixed to an average 118#/cu. ft. slurry. Displaced with 5 cu. ft. water and 545 cu. ft. of mud, then closed tool and displaced an additional 154 cu. ft. of mud in stages. Squeezed estimated 69 sacks away under 3500 psi final pressure. Hold 1000 psi pressure on annulus. 8 minutes mixing and 40 minutes displacing cement to place at 10:15 AM. Used Dowell bulk cement and power.

5-8 Ran 7-5/8" bit with scraper above and drilled out cement 7075'-7180' and run in to 7320' and circulate hole clean. With drill pipe hanging at 7300', closed rams and applied 2200 psi to 8-5/8" casing. Held OK for 10 minutes. Holes 7179-80' & 7304-06' not taking fluid.

TO TEST WATER SHUT-OFF ON HOLES IN 8-5/8" CASING AT 7304'-7306': Ran Johnston tester on 5", 19.5# drill pipe and set packer at 7270' with tail to 7287'. Opened tool at 1:35 PM for one hour test. Dead 25 minutes then medium light blow 35 minutes. No gas to surface. Recovered 3269' of salt water and 20' of sand in tool. Charts showed tool functioned properly. Water shut-off witnessed and not approved by Company Test. See Johnson report #02580C.

TO SQUEEZE HOLES IN 8-5/8" CASING AT 7304'-7306' WITH CEMENT: Ran Johnston retrievable cement tool on 5", 19.5# drill pipe and set same at 7193'. Holes took fluid at 12 cu. ft. per minute rate under 1500 psi pressure. Preceded cement with 20 cu. ft. of water. Pumped in 100 sacks Class "G" cement treated with 2% calcium chloride mixed to an average 118#/cu. ft. slurry. Displaced with 5 cu. ft. water and 525 cu. ft. of mud, then closed tool and displaced an additional 111 cu. ft. of mud in stages. Squeezed estimated 10 sacks away under 4000 psi final pressure. Bled back 8 cu. ft. for total displacement of 633 cu. ft. Unable to backscuttle or pump out tubing. Hold 1750 psi pressure on annulus. 5 minutes mixing and 25 minutes displacing cement to place at 9:45 PM. Used Dowell bulk cement and power.

5-9 Layed down 30 singles of cement plugged 5" drill pipe. Circulate hole clean at 7186'.

TO RETEST WATER SHUT-OFF ON HOLES IN 8-5/8" CASING AT 7179'-7180': Ran Johnston tester on 5", 19.5# drill pipe and set packer at 7145' with tail to 7162'. Opened tool at 2:20 PM for one hour 10 minute test. Puff blow, then dead balance of test. No gas to surface. Recovered 10' rise of drilling fluid. Charts showed tool functioned properly. Water shut-off witnessed and approved by engineer for DIVISION OF OIL & GAS. See Johnston report #02607C. Ran 7-5/8" bit with scraper above and drilled out cement at 7186' and clean out to 7320'.

5-10 Closed rams and tested holes 7179'-7180' and 7304'-7306' with 2000 psi Ok for 15 minutes.

TO RETEST WATER SHUT-OFF ON HOLES IN 8-5/8" CASING AT 7304'-7306': Ran Johnston tester on 5", 19.5# drill pipe and set packer at 7240' with tail to 7257'. Opened tool at 6:26 AM for one hour test. Puff blow 3 minutes dead balance of test. No gas to surface. Recovered 10' rise of drilling fluid. Charts showed tool functioned properly. Water shut-off witnessed and approved by Company test. See Johnston report #02608C.  
Ran Go-International 4" O.D. carrier and shot 4 DML 18 jet holes at 7241'.

TO TEST GAS-WATER-SEGREGATION ON HOLES IN 8-5/8" CASING AT 7241': Ran Johnston tester on 5", 19.5# drill pipe and set packer at 7215' with tail to 7232'. Opened tool at 2:50 PM for 15 minute initial flow. No blow. Shut-in 3:05 and reopened at 3:32 PM with hard blow estimated at 2000 MCF/D rate. Flowed 2000 MCF/D, 1400 psi flow pressure on 48/64 and 68/64 surface bean. Gas to surface in 38 minutes. Recovered 240' rise of condensate grading to muddy condensate. Charts showed tool functioned properly. Water segregation witnessed and approved by Company test. See Johnston report #02609C.

5-11 Ran 7-5/8" bit and scraper to 7320' and displaced fluid in hole with lease salt water treated with 1# per barrel potash and 3# per barrel DMS. Layed down drill pipe.

5-12 Layed down drill pipe and picked up 2-7/8" tubing and run in to 7320' EFFECTIVE DEPTH.

5-13 Ran Wellex 4" O.D. carrier with 19 gram deep penetration charges and shot four holes per foot from 7210'-7240'.

SAND STABILIZATION TREATMENT WITH "CLAY-LOK": Ran Halliburton RTTS tool on 2-7/8" tubing to 7240' and spotted 50 barrels of 2% KCl water. Set tool at 7180' and obtained breakdown at 25 CFM under 1700 psi. Pumped in 300 gallons of 6% HCl acid followed by 200 cu. ft. of 2% KCl water followed by 180 barrels of "Clay-Lok", followed by 180 barrels of 2% KCl water and 240 cu. ft. of hole fluid. Final displacement rate of 22 CFM and 1000 psi.

Ran 2-7/8", 6.5#, N-80, 8rd., EUE, new, seamless tubing and landed same on doughnut at 7206'.

<u>TUBING DETAIL</u>	<u>LENGTH</u>	<u>DEPTH</u>
K.B. to tubing flange	16.50	16.50
Doughnut	1.00	17.50
228 jts. of 2-7/8" tubing	7117.76	7135.26
Udell ported nipple	3.80	7139.06
1 jt. of 2-7/8" tubing	31.50	7170.56
Landing nipple for Udell safety valve	2.30	7172.86
1 jt. of 2-7/8" tubing	31.55	7204.41
Crossover	1.03	7205.44
Brown Oil Tool Husky M-1 packer	5.30	7210.74
Packer set with 10,000# weight		

Removed BOP, installed Shaffer tree and tested seals Ok with 4500 psi.

5-14 Rig released at 1:00 AM, 5-14-73.

JUL 16 1975

## DIVISION OF OIL AND GAS

### History of Oil or Gas Well

SANTA PAULA, CALIFORNIA

OPERATOR SOUTHERN CALIFORNIA GAS COMPANY FIELD Aliso Canyon

Well No. I.W.-#75, Sec. 27, T. 3N, R. 16W, S.E. B. & M.

Date July 2, 1975, 19

Signed P. S. Magruder, Jr.

P. O. Box 3249, Terminal Annex

P. S. MAGRUDER, Jr.

Los Angeles, California 90051

Title Agent

(Address)

(Telephone Number)

(President, Secretary or Agent)

(213) 689-3561

It is of the greatest importance to have a complete history of the well. Use this form to report a full account of all important operations during the drilling and testing of the well or during re-drilling, altering of casing, plugging, or abandonment with the dates thereof. Be sure to include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, shooting and initial production data.

Date

- |         |  |
|---------|--|
| 6- 7-75 | Using HOWCO and Drilling Fluid Specialists, Inc., killed well with 75# brine-polymer fluid.  |
| 6- 8-75 | Idle.  |
| 6- 9-75 | Moved in California Production Service Rig D-3. Set up hoist, sub base, shaker pit and one circulating pump. Bled, then unflanged all lateral lines on both ends. Cut off lateral lines at cellar floor and welded in end plugs.   |
| 6-10-75 | Continued rigging up. Using rig pump, tested choke, kill and mud lines to 1500 psi - O.K. Circulated brine-polymer fluid. Lost fluid at the rate of 70 barrels per hour. Spotted LCM pill on bottom (76#, 64 viscosity) and squeezed away 33 barrels.  |
| 6-11-75 | Circulated brine-polymer fluid. Installed tubing doughnut circulating plug and pulled Christmas tree. Installed Class III B.O.P.E.   |
| 6-12-75 | Using H. & H. tested B.O.P.E. Did not test. Changed mud cross and API ring. Re-tested without success. Pulled doughnut circulating plug and cleaned and redoped and reinstalled. Tested complete shut-off rams, pipe rams and bag with water at 2500 psi for 20 minutes - O.K. Test witnessed by Division of Oil and Gas. Tested choke and kill lines at 3000 psi with water - O.K. Rigged up NOWSCO and tested complete shut-off rams, pipe rams and bag with nitrogen at 2500 psi for 20 minutes - O.K. Tested choke manifold at 3000 psi with water - piping O.K. but some valves had slow leaks. |
| 6-13-75 | Released Brown Husky M-1 packer. Circulated bottoms up. Pulled packer. Ran in hole with 7 5/8" bit on 8 5/8" casing scraper to top of fill at 7260'. Circulated bottoms up.  |

DIVISION OF OIL AND GAS  
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AUG 25 1978

# SURVEY RECORD

SANTA PAULA, CALIFORNIA

GROUND 1995  
K.B. 15  
ELE. 2010

JOB NO IW-75 ONE DATE 4-25-1973

	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH		COURSE DEVIATION		DRIFT DIRECTION	RECTANGULAR COORDINATES				REMARKS		
								NORTH	SOUTH	EAST	WEST			
1	251	3.30	250	52	15	31	N 71 W	4	22			14	72	
2	343	5.00	342	17	8	02	S 84 W	3	38			22	70	
3	433	5.45	431	72	9	02	S 69 W		14			31	42	
4	525	6.00	523	22	9	62	S 59 W			4	82	39	36	
5	577	5.45	574	96	5	21	S 59 W			7	51	43	83	
6	678	5.45	675	45	10	12	S 67 W			11	47	53	15	
7	743	5.15	740	18	5	95	S 72 W			13	31	58	81	
8	891	5.00	887	62	12	90	N 77 W			10	41	71	38	
9	1050	5.30	1045	89	15	23	N 76 W			6	72	86	15	
10	1204	5.30	1199	18	14	76	N 84 W			5	18	100	83	
11	1380	5.45	1374	30	17	63	S 86 W			6	41	118	42	
12	1535	6.00	1528	45	16	20	S 71 W			11	69	133	74	
13	1700	6.15	1692	47	17	97	S 71 W			17	54	150	73	
14	1850	8.15	1840	92	21	52	S 60 W			28	30	169	37	
15	2010	8.15	1999	27	22	96	S 66 W			37	64	190	35	
16	2165	8.30	2152	57	22	91	S 72 W			44	72	212	14	
17	2250	8.30	2236	64	12	56	S 66 W			49	83	223	61	
18	2322	8.30	2307	85	10	64	S 68 W			53	82	233	47	
19	2373	7.15	2358	44	6	44	S 50 W			57	96	238	41	
20	2405	6.00	2390	26	3	34	S 38 W			60	59	240	47	
21	2477	3.30	2462	13	4	40	S 57 W			62	89	244	16	
22	2508	3.30	2493	07	1	89	S 61 W			63	89	245	81	
23	2601	3.00	2585	94	4	87	S 62 W			66	18	250	11	
24	2695	3.30	2679	76	5	74	S 64 W			68	69	255	27	
25	2789	4.00	2773	53	6	56	S 60 W			71	97	260	96	
26	2916	4.15	2900	19	9	41	S 62 W			76	39	269	27	
27	3003	4.45	2986	89	7	20	S 56 W			80	11	275	24	
28	3165	5.00	3148	27	14	12	S 56 W			88	31	286	95	
29	3321	5.00	3303	68	13	60	S 49 W			97	23	297	21	
30	3410	4.00	3392	46	6	21	S 50 W			101	23	301	97	
31	3562	3.30	3544	17	9	27	S 46 W			107	67	308	63	
32	3750	2.00	3732	06	6	56	S 63 W			110	64	314	48	

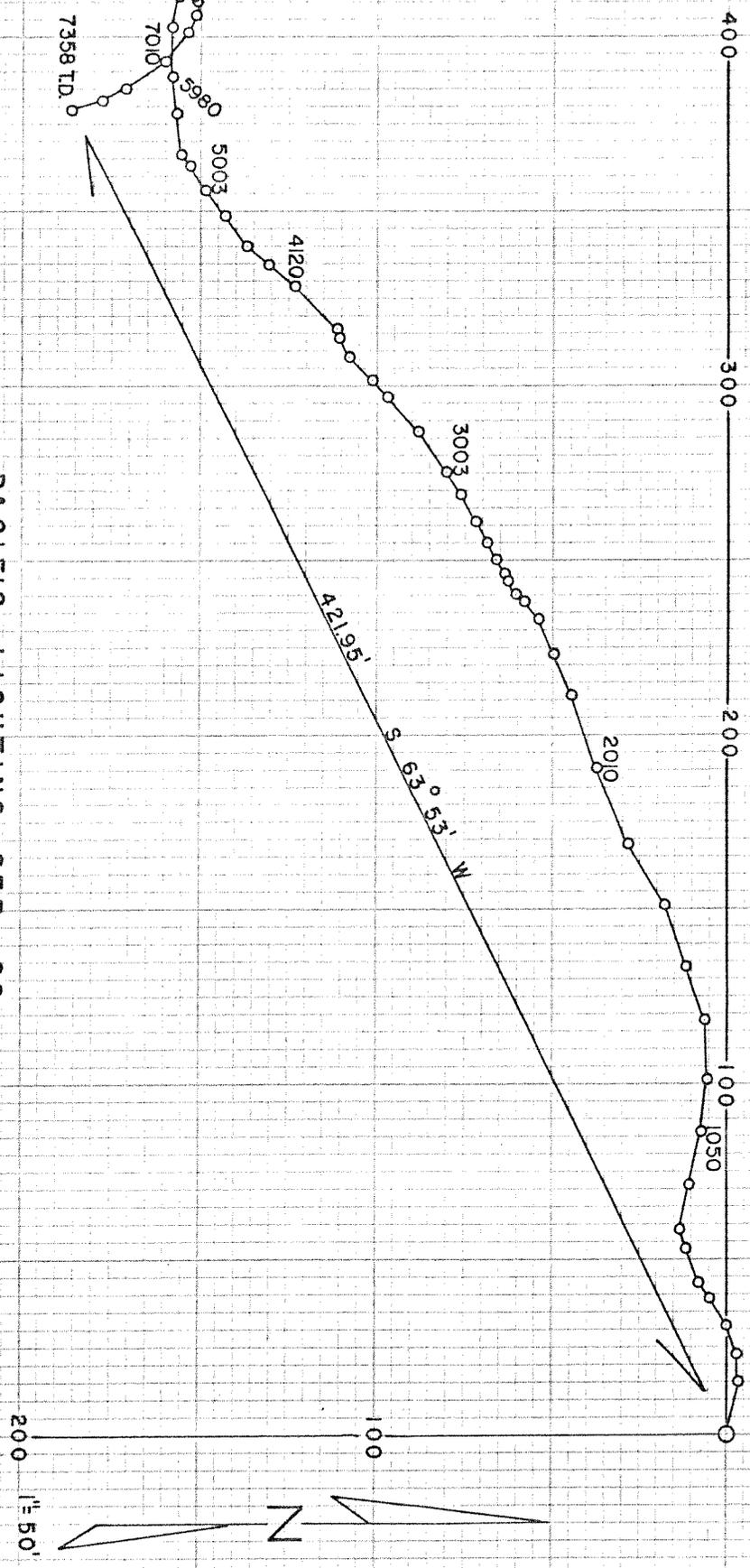
AUG 25 1978

SANTA PAULA, CALIFORNIA

# SURVEY RECORD

JOB NO     IW-75     TWO DATE     4-25-1973    

	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH		COURSE DEVIATION		DRIFT DIRECTION	RECTANGULAR COORDINATES				REMARKS		
								NORTH	SOUTH	EAST	WEST			
33	3808	1.45	3790	03	1	77	S 71 W							
34	4120	3.15	4101	53	17	69	S 47 W						316	16
													329	09
35	4311	2.45	4292	31	8	17	S 39 W						334	86
36	4495	2.30	4476	13	8	02	S 38 W						339	80
37	4750	2.30	4730	88	11	12	S 55 W						348	91
38	5003	2.00	4983	73	8	83	S 51 W						355	78
39	5275	1.45	5255	60	8	30	S 60 W						362	97
40	5420	1.45	5400	53	4	42	S 51 W						366	41
41	5731	2.15	5711	28	12	22	S 82 W						378	51
42	5980	2.30	5960	03	10	86	S 85 W						389	33
43	6271	2.45	6250	69	13	97	WEST						403	30
44	6454	2.45	6433	47	8	78	N 76 W						411	82
45	6485	2.00	6464	45	1	08	S 80 W						412	89
46	6516	1.00	6495	45		54	S 88 W						413	43
47	6547	1.30	6526	14		81	N 02 W						413	46
48	6578	2.30	6557	41	1	35	N 16 E						413	08
49	6610	4.00	6589	33	2	23	N 21 E						412	28
50	6648	3.45	6627	25	2	49	N 52 E						410	31
51	6747	2.30	6726	16	4	32	S 83 E						406	02
52	6855	3.00	6834	01	5	65	S 65 E						400	90
53	7010	3.45	6988	68	10	14	S 50 E						393	13
54	7191	4.30	7169	12	14	21	S 35 E						384	98
55	7268	5.00	7245	83	6	71	S 28 E						381	83
T.D. 56	7358	5.30	7335	42	8	63	S 20 E						378	87
HORIZONTAL DEPARTURE								421.95'	S	63.53'	W			
16° DECLINATION														



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SANTA PAULA, CALIFORNIA

PACIFIC LIGHTING SER. CO.  
WELL NO. IW-75  
ALISO CANYON

RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF CONSERVATION

## DIVISION OF OIL AND GAS

## Report on Operations

No. T 273-237Mr. P. S. Magruder, Jr., Agent  
Pacific Lighting Service Company  
P. O. Box 54790, Terminal Annex  
Los Angeles, California 90054Santa Paula Calif.  
May 9, 1973

DEAR SIR:

Operations at well No. IW 75, API No. 037-21356, Sec. 27, T. 3N, R. 16W,  
S.B. B & M. Aliso Canyon Field, in Los Angeles County, were witnessed  
on May 6, 1973. Mr. L. Bright, engineer, representative of the supervisor was  
present from 0830 to 1000. There were also present Mr. Clyde Coats, foremanPresent condition of well: 13 3/8" cem. 818'; 8 5/8" cem. 7330', c.p. at 1968' and 7179',  
perf. 7180' WSO. T.D. 7358', plugged with cement 7330-7320'.The operations were performed for the purpose of testing the 8 5/8" shut-off by means of  
a formation tester.

DECISION:

THE 8 5/8" SHUT-OFF AT 7180' IS APPROVED.

r  
cc: OperatorJOHN F. MATTHEWS, JR.  
State Oil and Gas SupervisorBy DD Pitman Deputy

RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Report on Operations

No. T 273-208

Mr. P. S. Magruder, Jr., Agent  
Pacific Lighting Service Company  
P O Box 54790, Terminal Annex  
Los Angeles, California 90054

Santa Paula Calif.  
April 16, 1973

DEAR SIR:

Operations at well No. IW 75, API No. (037-21356), Sec. 27, T. 3N, R. 16W,  
S.B., B & M. Aliso Canyon Field, in Los Angeles County, were witnessed  
on April 9, 1973. Mr. Larry Bright, engineer, representative of the supervisor was  
present from 1430 to 2100. There were also present Clyde Coats, drilling foreman

Present condition of well: 13 3/8" cem. 818'. T.D. 820'.

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

DECISION:

**THE BLOWOUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED.**

a  
cc: operator

JOHN F. MATTHEWS, JR.  
State Oil and Gas Supervisor

By [Signature] Deputy

## DIVISION OF OIL AND GAS

## REPORT ON PROPOSED OPERATIONS No. P. 273-110

Mr. P. S. Magruder, Jr., Agent  
Pacific Lighting Service Co.  
P. O. Box 54790, Terminal Annex  
Los Angeles, California 90054

Santa Paula Calif.  
March 5, 1973

DEAR SIR:

(037-21356)

Your proposal to drill Well No. IW 73-75  
Section 27, T. 3N, R. 16W S.B.B. & M., Aliso Canyon Field, Los Angeles County,  
dated 2/13/73, received 2/27/73, has been examined in conjunction with records filed in this office.

## THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Sufficient cement shall be pumped back of the 13 3/8" casing to fill from the shoe to the surface.
2. Drilling fluid of proper weight and consistency shall be used to keep the well under control at all times; and a reserve supply of this material shall be kept on hand to meet any emergency. NO CONTAMINATES OR TOXIC MATERIAL SHALL BE USED IN ANY DRILLING FLUID THAT IS TO BE PLACED IN AN UNLINED SUMP.
3. Blowout prevention equipment, at least of the Division of Oil and Gas Class III rating, shall be installed and maintained in operating condition at all times.
4. Fresh waters and oil or gas zones back of the 8 5/8" casing shall be protected with cement.
5. A directional survey shall be filed with this Division, if one is made.
6. THIS DIVISION SHALL BE NOTIFIED TO WITNESS:
  - a. A pressure test of the blowout prevention equipment before drilling out of the shoe of the 13 3/8" casing.
  - b. A test of the 8 5/8" water shut-off above the Sennon zone.

Blanket Bond

ALL:r

cc: Operator

JOHN F. MATTHEWS, JR., State Oil and Gas Supervisor

By LOCA Petyrus, Deputy

(037-21356)

RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF CONSERVATION

STATE OF CALIFORNIA  
DIVISION OF OIL AND GAS

9

**DIVISION OF OIL AND GAS**  
**Notice of Intention to Drill New Well**

This notice and surety bond must be filed before drilling begins

Fernando Fee No. 32  
site

FEB 13 1973

SANTA MONICA, CALIFORNIA

037-21356

Los Angeles Calif. February 13, 19 73

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division III, Article 4, Public Resources Code, notice is hereby given that it is our intention to commence drilling well No. IW73 (changed to IW75), Sec. 27, T. 3N,

R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County.

Legal description of mineral-right lease, consisting of 234.2 acres, is as follows:

(Attach map or plat to scale)

(as per plat previously filed)

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

Location of Well: 1510.23 feet South ~~along section line and~~ 1892.25 feet East  
(Direction) ~~along section line and~~ (Direction)

at right angles to said line from ~~the~~ Station No. 84 ~~corner of section~~

(reference: Metrex Aerial Surveys Company drawing No. 11679 -

Sheet 3 of 5)

Elevation of ground above sea level 1995 feet U.S.G.S. datum.

All depth measurements taken from top of kelly bushing which is 12 feet above ground.  
(Derrick Floor, Rotary Table or Kelly Bushing)

**PROPOSED CASING PROGRAM**

SIZE OF CASING INCHES A.P.I.	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS
13-3/8	48#	H-40 sm ls.	0'	800'	800'
8-5/8	36#	K-55 & N-80 sm ls.	0'	7300'	7300' & 3000'
6-5/8	27.65#	K-55 sm ls.	7200'	7750'	7750'

Intended zone(s) of completion: Seson 7400', 7750' Estimated total depth 7750'  
(Name) (Depth, top and bottom)

GAS STORAGE WELL

DATE	OPERATOR	STATUS	REMARKS	FORN	FORN
150	3-3-73	✓	BBB	✓	✓

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

Address P.O. Box 54790 T.A.  
Los Angeles, California 90054  
(213) 689-3621 or  
Telephone Number (213) 689-3561

Pacific Lighting Service Company  
(Name of Operator)  
By [Signature]  
Type of Organization Corporation  
(Corporation, Partnership, Individual, etc.)