



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

Rec'd 06-07-13 DOGGR D2 Ventura

# HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company

Field: Aliso Canyon

County: Los Angeles

Well: Fernando Fee 32 E

Surface Location: Sec 27 3N 16W S.B.B.M.

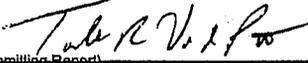
A.P.I. No. 03721321

Todd Van de Putte

Title: Senior Storage Field...

(President, Secretary, or Agent)

Date: 6/7/2013

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
3/19/2013	Rigged up the Western wireline unit and ran in the well. Pulled the PXN plug and shifted the sliding sleeve open. Rigged down and moved out the wireline unit.
3/22/2013	Moved in and rigged up the Ensign #321 rig and tied down the hoist. Rigged up to kill the well. Rigged up the associated rig equipment and secured the well.
3/25/2013	Opened the well with 1400 psig surface pressure on the tubing and the casing. Rigged up and pumped 40 bbl of hi-vis HEC polymer and displaced with 110 bbl of 8.5 ppg KCl brine. Killed the well per schedule with 277 bbl of 8.5 ppg KCl brine. Installed the back pressure plug and nipped down the production tree. Nipped up the Class III 5M BOPE and secured the well.
3/26/2013	Rigged up the WEA test truck and the associated test equipment. Pressure tested the blind rams to 300 psig (low) and 5000 psig (high) for twenty minutes. Pressure tested the pipe rams to 300 psig (low) and 5000 psig (high) for twenty minutes. Pressure tested the Hydril annular preventer to 300 psig (low) and 3500 psig (high) for twenty minutes. Pressure tested all the control valves and the choke manifold to 300 psig (low) and 5000 psig (high) for twenty minutes. (All pressure tests held). Changed the pipe rams from 3-1/2" to 4-1/2". Opened the well with 0 psig surface pressure on the tubing and 200 psig surface pressure on the casing. Bled down the casing and filled the well with 80 bbl of 8.5 ppg KCl brine. Backed out the hold down studs. Attempted to release the seals from the packer at 7143', worked the pipe and released the seals from the packer. Rigged up the WEA casing tongs. Pulled out of the well and laid down the 4-1/2" completion casing to 6700'. Circulated gas from the KCl brine and secured the well.
3/27/2013	Opened the well with 0 psig surface pressure on the tubing and 200 psig on the casing. Filled the well with 70 bbl of 8.5 ppg KCl brine and circulated gas cut brine. Pulled out of the well and laid down the 4-1/2" LT&C completion casing. Pulled to 4700' and the packer hung up, worked the pipe and the packer came free. Pulled out of the well to a kill string at 2800' and secured the well.
3/28/2013	Filled the well with 8 bbl of 8.5 ppg KCl brine. Pulled out of the well and laid down the 4-1/2" completion casing. Laid down (3) joints of 3-1/2" tubing, packer and the production equipment, and (3) joints of 2-7/8" tubing. Rigged down the casing tongs, changed the pipe rams from 4-1/2" to 3-1/2". Measured and picked up an 8-5/8" casing scraper and a bumper sub on 3-1/2" tubing. Measured and picked up 3-1/2" tubing to 3800' and secured the well.
3/29/2013	Filled the well with 10 bbl of 8.5 ppg KCl brine. Measured and picked up 3-1/2" tubing to 7145' and secured the well. Shut down the rig for other field operations. Opened the well, pulled out of the well to 5200' and secured the well.
4/1/2013	Opened the well and filled with 15 bbl of 8.5 ppg KCl brine. Pulled out of the well and laid down the casing scraper and installed the shooting flange. Rigged up the Schlumberger wire line unit and associated equipment. Made up the USIT tool on wireline. Ran the USIT log from 7145' to surface. Rigged down and moved out the Schlumberger wireline equipment and nipped down the shooting flange. Ran in the well to a kill string at 2400' and secured the well.
4/2/2013	Pulled out of the well with the kill string. Measured and picked (10) joints of 1" CS Hydril tubing and crossovers. Ran in the well with 3-1/2" tubing and tagged at 7285'. Attempted to work the tubing down. Nipped up the PGSR, reverse circulated, washed down to 7286' and circulated the well clean. Pulled out of the well to 7140' and secured the well.
4/3/2013	Filled the well with 14 bbl of 8.5 ppg KCl brine. Ran in the well to 7286', cleaned out the 2-3/8" liner. Continued to clean out the 2-3/8" liner to 7409'. Reverse circulated the hole clean, pulled to 7250' and secured the well.
4/4/2013	Opened the well with 0 psig surface pressure on the tubing and the casing. Filled the well with 65 bbl of 8.5 ppg KCl brine. Ran in the well and tagged bottom at 7409'. Attempted to clean out the well and circulated the well clean. (DOGGR - D. Ortiz waived the clean out depth and witness of the tag). Pulled out of the well to 7240' and secured the well.
4/5/2013	Filled the well with 72 bbl of 8.5 ppg KCl brine. Ran in the well to 7409' and rigged up the HES cementing equipment. Held a safety meeting with crews. Pressure tested the lines to 2000 psig. Pumped 10 bbl of fresh water ahead mixed and pumped 16 bbl (50 sx) of 14.8 ppg Class "G" cement with additives and displaced with 58 bbl of 8.5 ppg KCl brine. Estimated top of cement at 6960'. Pulled out of the well to 6700', rigged up and reverse circulated 90 bbl with a trace of cement to surface. Squeezed from surface with 200 psig surface pressure. Secured the well and cleaned the mud pit.

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Operator: Southern California Gas Company

Field: Aliso Canyon

County: Los Angeles

Well: Fernando Fee 32 E

Surface Location: Sec 27 3N 16W S.B.B.M.

A.P.I. No. 03721321

Todd Van de Putte

Title: Senior Storage Field...

(President, Secretary, or Agent)

Date: 6/7/2013

Signature: 

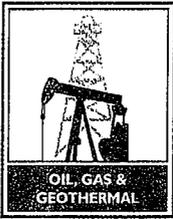
(Person Submitting Report)

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
4/8/2013	Opened the well with 0 psig surface pressure on the tubing. Filled the well with 10 bbl of 8.5 ppg KCl brine. Tagged the top of cement at 6997' (E Blivens - DOGGR waived the witness of tag). Pulled out of the well and laid down (10) joints of 1" CS Hydril tubing with crossovers. Made up the WEA 8-5/8" test packer on 3-1/2" tubing and ran in the well to 6900'. Filled the well, set the test packer and pressure tested below the packer to 500 psig surface pressure for twenty minutes (The cement plug and casing below the test packer held pressure). Pressure tested the tubing/casing annulus to 500 psig (Pressure bled down 100 psig in 10 minutes). Released the test packer and secured the well.
4/9/2013	Filled the well with 2 bbl of 8.5 ppg of KCl brine. Pulled out of the well to 5000', filled the well and set the test packer. Pressure tested below the test packer to 1240 psig surface pressure (pressure leaked off 1000 psig in 10 minutes). Pressure tested the tubing/casing annulus to 1240 psig (pressure leaked off 400 psig in 10 minutes). Released the test packer, ran in the well to 6000' and filled the well. Set the test packer and pressure tested below the test packer to 800 psig surface pressure (held pressure). Released the test packer, pulled out of the well to 5811' and pressure tested below the test packer to 879 psig surface pressure (held pressure). Released the test packer, pulled out of the well to 5711', and set the test packer. Pressure tested below the test packer to 925 psig surface pressure (pressure leaked off 700 psig in 10 minutes). Released the test packer, ran in the well to 5741' and set the test packer. Pressure tested below the test packer to 912 psig surface pressure (pressure leaked off 700 psig in 10 minutes). Released the test packer, ran in the well to 5780' and set the test packer. Pressure tested below the test packer to 800 psig surface pressure (leak estimated between 5741' and 5780'). Pulled out of the well to 3500', set the test packer and pressure tested the tubing/casing annulus to 1900 psig surface pressure (pressure leaked off 600 psig in 10 minutes). Released the test packer, pulled out of the well to 2800' and set the test packer. Pressure tested the tubing/casing annulus to 2200 psig surface pressure for 10 minutes (held pressure) (Squeeze holes at 2990' leaking). Released the test packer and secured the well.
4/10/2013	Filled the well with 3 bbl of 8.5 ppg KCl brine. Pulled out of the well and laid down the test packer. Ran in the well with 3-1/2" tubing to 6100'. Pulled out of the well, laid down the 3-1/2" tubing to 3000' and secured the well.
4/11/2013	Pulled out of the well and laid down the 3-1/2" tubing. Changed pipe rams from 3-1/2" to 2-7/8". Changed the pipe trailers, measured and picked up 2-7/8" tubing to 4800'. Held BOP drill and secured the well.
4/12/2013	Measured and picked up 2-7/8" tubing to 6012' and landed in the tubing in the hanger. Loaded the pump and the hoses, secured the well and cleaned the location.
4/15/2013	Nipped down the Class III 5M BOPE and nipped up the production tree. Loaded rig and associated equipment. Rigged down the hoist and spotted tanks at FF 32 D. Rigged down the rig equipment and cleaned the location.



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 213-0074**

**PERMIT TO CONDUCT WELL OPERATIONS**

Gas Storage

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

Ventura, California  
March 8, 2013

James D. Mansdorfer, Agent  
Southern California Gas Company (S4700)  
9400 Oakdale Avenue  
Chatsworth, CA 91313

Your proposal to **Rework** well "**Fernando Fee**" 32E, A.P.I. No. **037-21321**, Section **27**, T. **03N**, R. **16W**, **SB B. & M.**, **Aliso Canyon** field, **Sesnon-Frew** pool, **Los Angeles** County, dated **3/7/2013**, received **3/7/2013** has been examined in conjunction with records filed in this office.

**THE PROPOSAL IS APPROVED PROVIDED:**

1. Blowout prevention equipment, as defined by this Division's publication No. MO7, shall be 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.



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FOR DIVISION USE ONLY		
Bond	Forms	
	<del>000111</del> / 000121	
	CAL WIMS	1151

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

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

P213-0074

010 / 00 / 30 LS

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" 32 E, API No. 037-21321

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# H-40 at 717' (cemented to surface)
- 8-5/8", 36#, K-55 and N-80 at 7189' (cemented), WSO @ 7104', 7122'
- 6-5/8", 28#, K-55 from 7145'-7506' (cemented) perfed w/ 8-0.41" jspf from 7245'-7385', 7400'-7474', WSO @ 7328'.
- 2-3/8", 4.7#, J-55 from 7276'-7455' w/ 0.006" WWS gravel packed with 78 cuft of 40-60 sand.

The total depth is: 7669 feet. The effective depth is: 7474 feet.  
Present completion zone(s): Sesnon (Storage). Anticipated completion zone(s): Sesnon (Storage).  
Present zone pressure: Varies psi. Anticipated/existing new zone pressure: Varies 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.

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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 completion string/scrape the 8-5/8" production casing
- Run USIT log, perforate and squeeze 8-5/8" production casing if necessary.
- Plug back the perforations in the 2-3/8" liner from 7200'-7455' with 14.8 ppg, Class "G" cement.
- Clean out the cement to 7200' (+/-) and pressure test the 8-5/8" casing to 1000 psig
- 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 <i>Todd Van de Putte</i>	Date 3-7-2013
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, redrilling, or deepening any well.
2. Milling out or removing a casing or liner.
3. Running and cementing casing or tubing.
4. Running and cementing liners and inner liners.
5. Perforating casing in a previously unperforated interval for production, injection, testing, observation, or cementing purposes.
6. Drilling out any type of permanent plug.
7. Reentering an abandoned well having no bond.

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

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Geothermal Resources**

## Workover Program

**DATE:** March 7, 2013  
**OPERATOR:** Southern California Gas Company  
**FIELD:** Aliso Canyon  
**WELL:** Fernando Fee 32E  
**CONTRACTOR:** Ensign #321  
**OBJECTIVE:** Remove the 3-1/2" x 4-1/2" tubing string, plug back the 2-3/8" liner with cement to 7200' (+/-) and squeeze cement behind the 8-5/8" production casing if required. Run a 2-7/8" tubing string.  
**API Number:** 037-21321  
**ELEVATION:** Take all measurements from the original KB = 15' above GL (GL@ 1995').  
**SURFACE LOCATION:** Sec 27, T3N, R16W, S.B. B&M

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

0' - 717'	13-3/8"	48#	H-40	Cemented (surface)
0' - 7189'	8-5/8"	36#	K-55 and N-80	Cemented - WSO @ 7328'.
7145' - 7506'	6-5/8"	28#	K-55	Cemented - Perforated (w/ 8 - 0.41" jspf) at 7345'-7385', 7400'-7474' / WSO @ 7328' PBTD = 7474'
7276' - 7474'	2-3/8"	4.7#	J-55	0.006" WWS liner gravel packed with 78 cuft of 40-60 sand. PBTD = 7474'

**Estimated Wellbore Top of Geologic Markers:**

S-4: 7344' MD / 7106' TVD  
 S-8: 7418' MD / 7180' TVD

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Estimated Surface Pressure: 1800 psig (variable)  
Estimated Bottomhole Static Temperature: 190 deg F  
Estimated Formation Fracture Gradient: 0.80 psi/ft

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**Pre Rig Notes:**

Locate the rig anchors and reinstall if necessary.

The wellbore is slightly deviated.

**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. Kill the well with an HEC polymer pill and with approximately 8.5 ppg NaCl brine. Tubing volume is approximately 111 bbl and the tubing casing annulus is approximately 287 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 3-1/2" 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.
  - c. All tests are to be charted and witnessed by a DOGGR representative.
4. Pick up a 3-1/2" N-80 joint of tubing with safety valve, unland the 3-1/2" tubing string and pull out of the hole with the combination 3-1/2" x 4-1/2" completion tubing, and the GLM. Change the pipe rams from 3-1/2" to 4-1/2" after the upper portion of the 3-1/2" tubing is removed. Change the pipe rams back to 3-1/2" after the 4-1/2" portion of the completion string is removed.
5. Release from the HES WB Permatrieve permanent packer at 7240', pull out of the well and lay down the remaining 3-1/2", 9.3# and 4-1/2", 11.6# combination tubing string and the associated production equipment. (See the attached completion schematic for packer and completion string details)
6. Pick up 2-7/8" tubing for a workstring. Pick up a 8-5/8" casing scraper and run to the top of the 8-5/8" HES permanent packer profile at 7240'. Pull out of the hole and lay down the 8-5/8" casing scraper.
7. Rig up the wireline unit and run a USIT/Neutron log in the 8-5/8" production casing from the top of the upper permanent packer at 7240' to the surface. Rig down the wireline unit and the associated equipment.

8. Make up a cleanout BHA with a 1" tubing tail and run in the hole, tag fill and make an attempt to clean out the 2-3/8", 4.7# liner to 7474'(+/-) if necessary.
9. Rig up the cementing equipment and place approximately 9 bbl (50 cu ft), of 14.8 ppg, Class "G" cement plug (w/gas migration additives) across the perforations in the liner from 7200' to 7474'(+/-). Pull up at least 10 stands and reverse circulate any excess cement out of the well. Apply 100-300 psig surface pressure and perform a squeeze.
10. Wait on the cement plug at least 8-12 hrs and run in the hole and tag the cement plug. Top off the cement plug if required.
11. Pressure test the cement plug and 8-5/8" production casing to 1000 psig surface pressure.
12. If the USIT log shows poor cement/quality near the 8-5/8" production casing shoe, then pick up 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. If there are no anomalies on the USIT log then skip to Step 15.
13. Pick up and run a 8-5/8" test packer on 2-7/8" tubing with an aluminum tail and squeeze (50 sx/minimum delivery) 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.
14. Lay down the 8-5/8" test packer and pick up and run a 7-7/8" bit and clean out the cement squeeze in the 8-5/8" liner to the top of the cement plug. Pressure test the 8-5/8" production casing to 1000 psig surface pressure to verify the cemented perforation integrity.
15. Pick up a 2-7/8", 6.5#, L-80 tubing string open ended and run to 6000' (+/-). Pressure test the tubing/casing annulus to 1000 psig surface pressure. Circulate the well with biocide and corrosion inhibitor.
16. Nipple down the 11" Class III 5M BOPE and install the production tree and test to 5000 psig.
17. Release the Ensign Rig #321, rig down and move out the production rig and the associated equipment.

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Surface Casing:  
13-3/8" 48#  
H40 cemented  
at 717'

Csg patch 2967'  
Cp'd 2990'  
6.969" ID 3009'

Longstring:  
8-5/8" 36#  
0'-5669' K55  
-7189' N80

Sqzd WSO 7104'  
WSO 7122'

Liner top  
milled to 7145'

Cemented 7189'

Otis WB Pkr 7240'

Liner: 7145'-7506'  
6-5/8" 28# K-55

7272'

Prod. Liner: 7272'-7474'  
2-3/8" 10rd NUE 0.006"  
WMS gravel packed w/  
78 cu.ft. 40-60 gravel

WSO 7328'

8 - 0.41" JHPF/345'

7385'

7400'

8 - 0.41" JHPF

7474'

7506'

Tubing: 0'-7096'  
4-1/2" 11.6# N80  
8rd LT&C  
7096'-7240': 3-1/2"  
9.3# N80 8rd EUE

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Div. of Oil, Gas &  
Geothermal Resources

7096' (6874') X-over  
4-1/2" x 3-1/2"

7127' (6903') BST 3-1/2" HMG GLM  
1-1/2" packet w/RK latch

7173' (6946') Otis 3-1/2" XD  
SSD, 2.750" ID

7208' (6979') Otis 3-1/2" XN  
No-Go nipple, 2.635" ID

7240' (7009') Otis 2-7/8" J-latch  
and two seal units, 2.38" ID

7245' (7013') Bottom of guide shoe

7344' (7106') S-4

7410' (7172') MPP

7418' (7180') S-8

7474' (7231') PBDT

7669' (7410') TD

WELL NAME: IW #58

FF 3-2-L

STORAGE FIELD: Aliso Canyon

Elevation: Ground 1995' ASL  
KB 15' AGL

Status: Injection/Withdrawal  
Tubing Flow

Surf. Location: 1540.52' S and  
1840.18' E of Station #84

Bottom-hole Loc.: At 7515' MD,  
wellbore is 815' N and 1144'  
W of the surface location.

11/11/72-12/14/72: Well spudded  
and completed.

1/9/73-2/19/73: Pressure tested  
csg. Plugged back to 7474'. Flow  
tested perfs. Ran tbg w/ SSSV.  
8/28/75-9/23/75: Squeezed at  
2990', cleaned out to 7474'.  
Washed perfs. Ran & gravel  
packed 2-3/8" innerliner. Ran  
6-5/8" csg as patch 2926'-3060'.  
Ran tubing with SSSV.

11/2/76-7/29/77: Pulled 6-5/8"  
csg patch, squeezed at 2990'  
Triangle noise log indicated  
shoe leak. Milled 6-5/8"  
liner from 7009'-7145', sqzd  
WSO hole at 7122', pressure  
tested csg. Ran 8-5/8" csg  
patch 2967'-3009'. Cleaned out  
to 7193'. Ran tbg w/SSSV.

3/14/86-4/17/86: Recovered  
Retrieva-D packer and 2-3/8"  
liner. Ran caliper log which  
indicated possible bad pipe  
7000'-7030'. Pressure tested  
surf. to 7155' at 1950 psi. OK.  
Shot eight 1/2" HPF 7345'-7385'  
and 7400'-7474'. Gravel packed  
2-3/8" W.W. liner w/.006"  
openings with 40-60 gravel.  
5/16/89-5/22/89: Tested 8-5/8"  
csg to 1500 psi. Pulled tubing.  
Ran 3-1/2" production accessories  
below 4-1/2" large diameter  
tubing.

VOLUMES	CUFT	BBLS
Tubing	625	111
Annular	1610	287
Csg/Liner	10	2
Total	2245	400

Reviewed:

Department By Date

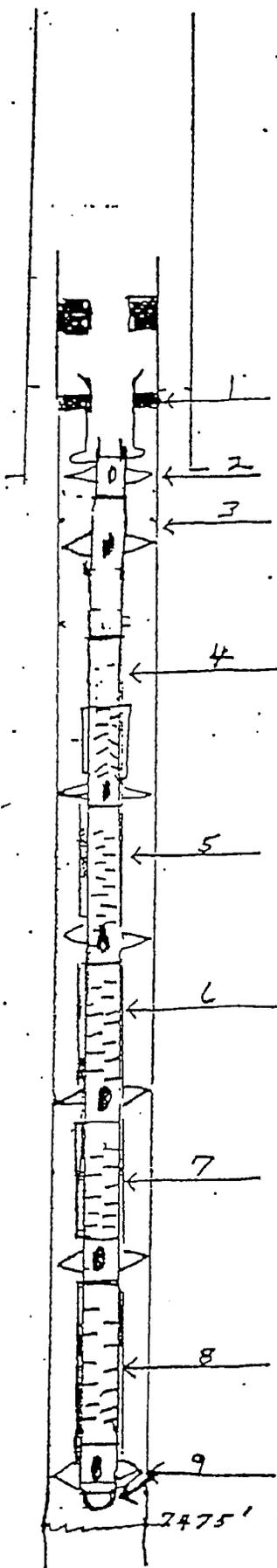
Drlg. Dept. *RE Wallace* 8-18-89

Pet. Eng. *ME Metton* 8-22-89

Division *JPR* 8-24-89

RLP: mc  
8/8/89

WELL PROFILE



OPERATOR So. Calif. Gas Co.  
 WELL # IW #58  
 FIELD Aliso Canyon  
 COUNTY Los Angeles  
 STATE California  
 DATE Revised 8-22-86  
4-18-86  
 NEW COMPLETION  WORKOVER

CASING	LINER	TUBING		
		1	2	3
SIZE <u>6-5/8"</u>	<u>2-3/8"</u>			
WEIGHT <u>28#</u>	<u>4.7#</u>			
GRADE	<u>J-55</u>			
THREAD	<u>10rd</u>			
DEPTH <u>7475'</u>	<u>7474'</u>			

ITEM NO.	LINER DETAILS	LENGTH	DEPTH
	Top Baker 6-5/8" lead seal driveover adapter		7271.00
1.	Baker 6-5/8" 28# stub to 2-3/8" lead seal drive on	5.66	7276.66
2.	Landing nipple 2-3/8" 8rd fins 5-5/8" OD	1.85	7278.51
3.	One joint 2-3/8" 8rd blank fin 5' down 5-5/8"	31.71	7310.22
4.	One joint 2-3/8" 8rd x 10rd collar with top 23.32' blank and 9.15' screen	32.47	7342.69
5.	One joint 2-3/8" 10rd screen tubing	32.86	7375.55
6.	One joint 2-3/8" 10rd screen	32.31	7407.86
7.	One joint 2-3/8" 10rd screen	32.61	7440.47
8.	One joint 2-3/8" 10rd screen	33.53	7474.00
9.	Bull plug	1.00	7475.00
Tubing Joint Total			
1.	31.71' Blank		
2.	31.97' 24.80' blank, 9.15' screen		
3.	32.86' 30.52' screen		
4.	32.31' 30.52' screen		
5.	32.61' 30.22' screen		
6.	33.53' 29.50' screen		
Each joint has fins on pin end on 5-1/2"			
Baker 6-5/8" 28# WB packer at 7240'			
Top 6-5/8" liner at 7145'			

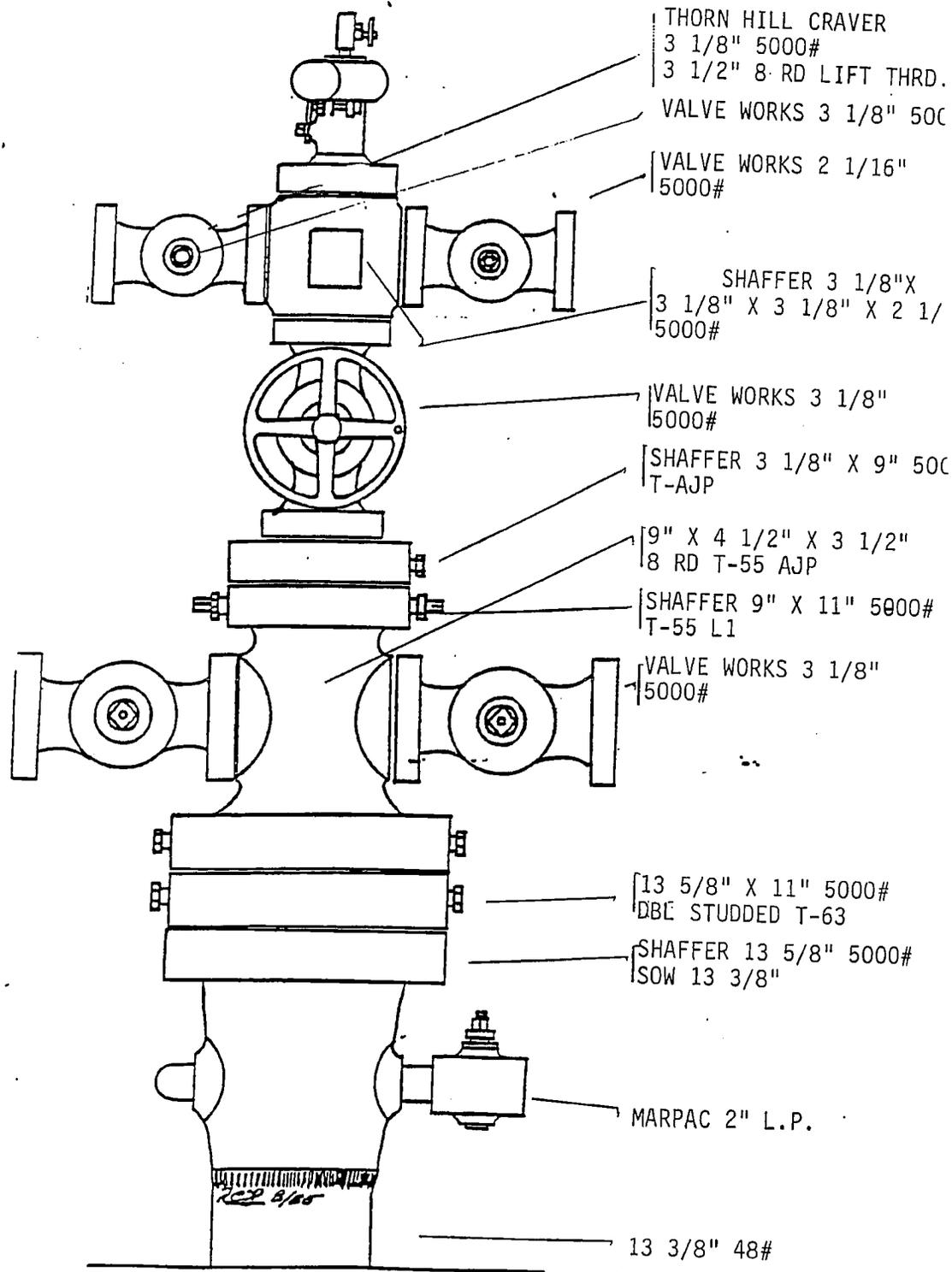
RECEIVED

MAR - 7 2013

Div. of Oil, Gas & Geothermal Resources

8-25-86 To DOG & internal distribution

COMMENTS:



WELL NAME FF-32-E

MFGR: SHAFFER OIL TOOL

DATE PREPARED: 5/31/07

**RECEIVED**

MAR - 7 2013

**DIV. OF OIL, GAS &  
 Geothermal Resources**

WELLHEAD DESCRIPTION  
(TYPE IV & VI)

Well No. FF-32-E Date Prepared 5/31/07  
Field ALISO CANYON Prepared By \_\_\_\_\_  
Wellhead Mfr. SHAFFER OIL TOOL

1. Casing Head SHAFFER Size 13 5/8" 5000# SOW 13 Type "KD"  
Slips & Pack-off 13 5/8" X 8 5/8"
  - A. Surface Csg. Size 13 3/8" Wt 48# Grade H-40
  - B. Casing Head Valve MARPAC Size 2" L.P. Fig No. CSB-790-JN
2. Seal Flange SHAFFER Size 13 5/8" X 11" 5000# DBL STUDD
  - A. Type Seal 8 5/8" T-63 Ring BOTTOM BX-160 & TOP RX-54
3. Tubing Head SHAFFER Size 11" X 9" 5000# Type T-55 L1  
Ring BOTTOM RX-54 & TOP RX-50  
Outlets 3 1/8" 5000# Sec. Seal 8 5/8" T-63  
Valve Removal Thrd 2 1/2" L.P.
  - A. Tubing Hanger SHAFFER Size X 4 1/2" 8 RD DN Type T-55 AJP  
B.P.V. Size 3 1/2" SHAFFER Thrd \_\_\_\_\_
    - B. Tubing Head Valves VALVE WORKS Size 3 1/8" 5M Fig.No. \_\_\_\_\_
    - C. Automatic Csg. Valve \_\_\_\_\_ Size \_\_\_\_\_ Fig.No. \_\_\_\_\_
4. Adapter Seal Flange SHAFFER Size 9" X 3 1/8" 5M Type AJP
  - A. Ring Size BOTTOM RX-50 & TOP RX-35
5. Master Valve VALVE WORKS Size 3 1/8" 5000# Fig.No. \_\_\_\_\_
6. Xmas Tree Cross SHAFFER Size 3 1/8" X 3 1/8" X 3 1/8" X 2 1/16" 5000#  
Bore: Thru 3 1/8" Across 3 1/8" & 2 1/16"
7. Tubing Wing Valves VALVE WORKS Size 3 1/8" & 2 1/16" Fig.No. \_\_\_\_\_
  - A. Automatic Tbg. Valve \_\_\_\_\_ Size \_\_\_\_\_ Fig.No. \_\_\_\_\_
8. Unibolt Size 3 1/8" 5000# Inside Thrds 3 1/2" 8 RD
9. Size Landed in Csg. Head 8 5/8" Wt 36# Grade K-55
10. Size Landed on Doughnut 3 1/2" Wt 9.3# Grade N-80
11. Tubing Head to Ground Level 1.9 ABOVE GROUND LEVEL

RECEIVED

MAR - 7 2008

DIV. OF Oil, Gas &  
Geothermal Resources

INTENTION	( ) alter casing ing gas storage	( ) plug & re-drill gas stor.	( ) perforate	( ) rework	( ) No None	( )
NOTICE DATED	4-13-57	4-21-78	3/11/80	4-4-89		
P-REPORT NUMBER	277-136	278-117	286-88	289-107		
CHECKED BY/DATE					Refused	
MAP LETTER DATED	no change					
SYMBOL			N/C	N/C		

	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED
NOTICE	4-21-77	X	4-26-78		3/17/80		4-10-89			
HISTORY	8-24-77	X			7/18/80		8-23-89			
SUMMARY										
IES/ELECTRIC LOG										
DIRECTIONAL SURV										
CORE/SWS DESCRIP										
OTHER ULTRA SONIC IMAGER GR-NEUTRON	BOPE 16ft 6-20-77	X							7-23-07	
RECORDS COMPLETE	10-24-77	X					9-25-89	SM	7-23-07	NO

**ENGINEERING CHECK**

T-REPORTS \_\_\_\_\_

OPERATOR'S NAME \_\_\_\_\_

WELL DESIGNATION \_\_\_\_\_

LOC & ELEV \_\_\_\_\_

SIGNATURE \_\_\_\_\_

SURFACE INSPECTION \_\_\_\_\_

FINAL LETTER OK \_\_\_\_\_

**CLERICAL CHECK**

POSTED TO 121 \_\_\_\_\_ 170 MAILED \_\_\_\_\_

FINAL LETTER MAILED \_\_\_\_\_

RELEASED BOND \_\_\_\_\_

REMARKS: not injected Jan-June 1977

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

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
Well: Fernando Fee 32 E  
A.P.I. No. 037-21321

Field: Aliso Canyon  
County: Los Angeles  
Surface Location: Sec 27 3N 16W S.B.B.M.

Richard Jackson  
Title: *ENGINEER*  
(President, Secretary, or Agent)

Date: 6/25/2007

Signature: *Richard Jackson*  
(Person Submitting Report)

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

Telephone Number: 818-701-3251

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
5/18/2007	Move in rig up
5/21/2007	Rigged up PPS slick line, ran in well, pulled equalizing prong. Ran GS pulling tool, unable to pass thru sliding sleeve. Made up 2.70" broach, ran thru SS. Ran GS pulling tool, pulled plug body. Made up "B" shifting tool open sliding sleeve. Rigged up to kill well. Open well with 2193 psi. tubing and casing. Pumped 50 bbls. hi-vis HEC polymer pill displaced with 110 bbls. KCL water. Killed well per schedule with 284 bbls. of 3% KCL water with return to surface.
5/22/2007	Installed back pressure plug. Nipped down production tree. Nipped up class III BOP. Tested blind rams to 5000 psi. for twenty minutes. Removed BPV installed pup jt. Tested pipe rams to 5000 psi. for twenty minutes. Tested Hydril to 3500 psi. for twenty minutes. Tested all control valves and choke manifold to 5000 psi. for twenty minutes. F. Pineda DOGGR waived witness of installation and test of BOPE.
5/23/2007	Backed out hold down studs changed pipe rams to 4-1/2". Unlanded tubing at 55,000 lbs., attempted to release from packer at 7240'. Worked for 4 hours released from packer. Pulled out of well laying down 4-1/2" LT&C casing.
5/24/2007	Pulled out of well laid down GLM, sliding sleeve, no/go and seal assembly. Loaded out casing tongs, changed pipe rams to 2-7/8". Measured and picked up 2-7/8" PH-6 tubing to 3000'. Pulled out of well, made up redressed seal assembly and J latch, 8" L-80 pup joint, on/off tool with PXN plug in place. Ran in well measured and picked up tubing. Stabbed into packer pulled 15,000 over to check latch. Released from on/off tool filled and tested to 400 psi. for 10 minutes. Pulled out of well. Made up spear, measured and picked up (4) 4-3/4" drill collars. .
5/25/2007	Made up spear, bumper sub, Jars (4) 4-3/4" drill collars and intensifier. Ran in well to top of patch, engaged top cone. Jarred loose at 25,000 over string weight. Pulled out of well laid down spear. Made up spear extension, bumper sub, jars (4) 4-3/4" drill collars and intensifier. Ran in well engaged patch. Jarred loose at 25,000 over string weight. Pulled out of well laid down patch. 1' of patch and bottom cone in well. Ran in well with kill string.
5/29/2007	Pulled out of well with kill string. Made up spear, bumper sub, jars, (4) 4-3/4" drill collars and intensifier. Ran in well to 3000' engaged fish, jarred loose at 60,000. Moved up hole 12' could not jar up or down. Released spear pulled out of well.
5/30/2007	Made up spear 5' stroke bumper sub, jars, (6) 4-3/4" drill collars, intensifier. Ran in well to 3000' engaged fish. Attempted to drive down well. Jarred up at 60,000 string weight jarred free. Pulled out of well, dragging and hanging up. Laid down fish, recovered both pieces of patch. Made up 6-5/8" and 8-5/8" casing scraper ran in well to 3500'.
5/31/2007	Ran in well to liner top at 7145', 6-5/8" casing scraper 6' inside liner. Pulled out of well, made up 5-1/2" washover shoe, 6-5/8" casing scraper, bumper sub, (6) 4-3/4" drill collars ran in well to 7230' (top of o/o tool). Ran in to packer at 7240'. No fill. Reversed circulated. Pulled out of well to 1200'.
6/1/2007	Pulled out of well laid down shoe and casing scraper. Rigged down tubing equipment and working floor. Nipped down class III BOP. Nipped down tubing head, nipple up double gate.
6/2/2007	Rigged Schlumberger wireline, made up USIT tools. Ran in well logged 6-5/8" from 7230' to 7145' Logged 8-5/8" from 7145' to surface. Rigged down wireline.
6/3/2007	Nipped down double gate. Installed new primary seal, nipped up tubing head. Tested all seals to 5000 psi. for twenty minutes. Nipped up class III BOP. Rigged up tubing equipment. Ran in well with drill collars. Laid down (6) 4-3/4" drill collars.
6/4/2007	Made up WEA 8-5/8" test packer ran in well to 7136'. Packer would not set. Pulled to 7088" Set packer tested lap and WSO hole to 500 psi. for twenty minutes. Pulled out of well laying down 2-7/8" tubing to 5006'. Set packer, tested from 5006' to surface to 950 psi., bled down from 950 to 790 psi. in twenty minutes. Pulled out of well laying down tubing to 3020'. Set packer, tested to 1810 psi. bled down from 1810 to 1200 psi. in twenty minutes. Pulled to 2950', set packer tested to 1850 psi. for twenty minutes, tested good. Ran in well to 3020'. Set packer and retested with same results. Released packer.
6/5/2007	Pulled out of well laying down 2-7/8" PH-6 tubing laid down test packer. Change pipe rams to 4-1/2". Moved in 4-1/2" tubing trailer rigged up casing tongs. Made up top half on/off tool 6', 2-7/8 pup jt., 2-7" x 3-1/2" crossover, 3 joints 3-1/2" tubing, HES "XD" sliding sleeve, 1 joint of 3-1/2" tubing, gas lift mandrel, 1 joint of 3-1/2" tubing, 3-1/2" x 4-1/2" crossover. Measured and picked up 4-1/2" tubing to 4000'.

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

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
Well: Fernando Fee 32 E  
A.P.I. No. 037-21321

Field: Aliso Canyon  
Surface Location: Sec 27 3N 16W S.B.B.M.  
Richard Jackson

Title:  
(President, Secretary, or Agent)

Date: 6/25/2007

Signature:   
(Person Submitting Report)

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

Telephone Number: 818-701-3251

**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
6/6/2007	Measured and picked up 4-1/2" tubing to 7230'. Bottom half of on/off tool. Latched on/off tool pulled 20,000 over to check latch. Released from on/off tool, changed over to double inhibited packer fluid. Respaced well with 3-1/2" pup joints. Landed with 10,000 compression, pulled 20,000 to check latch, tested annulus to 500 psi. for twenty minutes. Installed BPV and nipped down class III BOP. Nipped up production tree.
6/7/2007	Loaded out equipment. Casing head installed in wrong position casing laterals would not fit. Change position of tubing head. Rigged down hoist. Rigged down
6/8/2007	Loaded out equipment. Installed laterals and cleaned location.

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

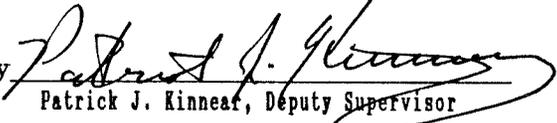
Your request, dated February 13, 1990, proposing to change the designation of wells in Sec. 27, T. 3N, R. 16W, SB B.&M., Aliso Canyon field Los Angeles County, District No. 2, has been received.

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. Kinneaf, Deputy Supervisor

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

JUN OF OIL AND  
RECEIVED

AUG 27 1989

TULIKA, CALIFORNIA

**History of Oil or Gas Well**

Operator Southern Calif. Gas Co. Field Aliso Canyon County Los Angeles  
Well IW #58 Sec. 27, T 3N, R 16W S.B. & M.  
A.P.I. No. #037-21321 Name R. W. Weibel Title Agent  
Date June 8, 1989 (Person submitting report) (President, Secretary or Agent)

Signature

*N. W. Buss* 8/18/89  
N. W. Buss for R. W. Weibel

P.O. Box 3249 Terminal Annex, L.A., California 90051 (213) 689-3925

(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	GWO No. 91851: was issued to install big tubing
<u>1989</u>	
5-16 to 5-17	Rigged up. Pressure tested tubing to 1000 psi. Installed back pressure valve in donut. Removed xmas tree and installed 9" x 3000 psi BOPE. Removed back pressure valve and installed 2-7/8" pup with safety valve in donut.
5-18	Tested pipe rams, blind rams and choke manifold at 3000 psi for 20 minutes; Hydril bag at 2300 psi for 20 minutes. BOPE inspected by Pam Ceccarelli of DOG. Released Otis latch from packer at 7240' and pulled out of well. Removed 2 joints tubing, Pengo tubing patch and production equipment. Ran Otis test seals to 7240' and pressure tested 8-5/8" casing at 1500 psi for 20 minutes.
5-19	Laid down 2-7/8" tubing.
5-20	Ran 3.25" latch type seal assembly, joint of 3-1/2" tubing, 2.635" NX nipple, joint of 3-1/2" tubing, 3-1/2" XO sliding sleeve, joint of 3-1/2" tubing, 3-1/2" gas lift mandrel with 2000 psi pump out, 3-1/2" tubing crossed over to 4-1/2" N-80 8rd thread casing. Ran in well hydrotesting to 4000 psi to packer at 7240'. Spaced out and installed donut.
5-22	Displaced polymer completion fluid from well with 320 bbls. of 3% KCl water. Attached to packer at 7240'. Pulled 15,000# over weight to check. Landed donut with 12,000# on latch when donut was in place. Installed back pressure valve in donut. Removed BOPE and installed xmas tree. Pressure tested xmas tree and seals to 5000 psi. Removed back pressure valve and blind flanged outlets. Released rig at 10:00 P.M.

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

No.T 289-150

REPORT ON OPERATIONS

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

Ventura, California  
May 23, 1989

Your operations at well IW 58, API No. 037-21321,  
Sec. 27, T. 3N, R. 16W, S.B.B.&M. Aliso Canyon Field, in Los Angeles  
County, were witnessed on 5/18/89. Pam Ceccarelli, representative of  
the supervisor, was present from 1300 to 1400. There were also  
present Ed Bradbury, Co. Rep.

Present condition of well: 20" cem 30'; 13 3/8" cem 717'; 8 5/8" cem 7189',  
cp 2988', perf 7122' WSO, 6 5/8" cem 7145'-7506', perf 7345'-7473'; 2 3/8"  
ld 7176'-7474'. TD 7515'. Bp 7474'.

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

DECISION:

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

ljg

M.G. MEFFERD, State Oil and Gas Supervisor

By Patrick J. Kinnear  
Patrick J. Kinnear  
Deputy Supervisor

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

No. P 289-107  
Field Code 694  
Area Code 12  
New Pool Code 20/25  
Old Pool Code 20/25

PERMIT TO CONDUCT WELL OPERATIONS

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

Ventura, California  
April 17, 1989

Your \_\_\_\_\_ proposal to rework well IW 58,  
A.P.I. No. 037-21321, Section 27, T. 3 N, R. 16W, S.B. B.&M.,  
Aliso Canyon field, any \_\_\_\_\_ area, Sesnon pool,  
Los Angeles County, dated 4/4/89, received 4/10/89, has been  
examined in conjunction with records filed in this office.

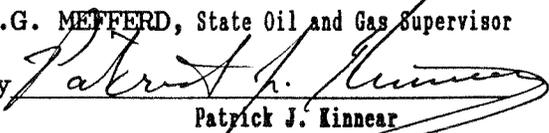
THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOG Class III 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. Blowout prevention practice drills are conducted at least weekly and recorded on the tour sheet.
4. This office shall be consulted before initiating any changes or additions to this proposed operation, or if operations are to be suspended.
5. THIS DIVISION SHALL BE NOTIFIED:
  - a. To witness a pressure test of the blowout prevention equipment before commencing downhole operations.

Blanket Bond  
SF:ljj

Engineer Steve Fields  
Phone (805) 654-4761

M.G. MEFFERD, State Oil and Gas Supervisor

By   
Patrick J. Kinnear  
Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

OG111

APR 10 1989

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
<i>AB</i>	✓	✓

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 IW #58, API No. 037-21321

(Well designation)

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

The present condition of the well is as follows:

- Total depth 7506'
- Complete casing record, including plugs and perforations (present hole)
  - 13-3/8" cemented 717'
  - 8-5/8" cemented 7189', WSO 7122'
  - 361' 6-5/8" cemented 7506', plugged to 7474', top 7145', WSO 7328', perf'd at intervals 7345'-7385' and 7400'-7474'
  - 202' 2-3/8" landed 7474', top 7272', 6-mesh WW gravel flow packed
- Present producing zone name Sesnon; Zone in which well is to be recompleted \_\_\_\_\_
- Present zone pressure 2000; 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/D) (Surface pressure, psig)
- Is this a critical well according to the definition on the reverse side of this form?  (Yes)  (No)

The proposed work is as follows:

- Move in and rig up. Kill well. Install and test BOPE.
- Pull and lay down 2-7/8" tubing. Clean out well to T.D.
- Run 3-1/2" x 4-1/2" large diameter tubing string.
- Return well to gas storage 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 Box 3249, Terminal Annex, 401J Southern California Gas Company  
(Street) (Name of Operator)

Los Angeles, CA 90051  
(City) (State) (Zip)

By N.W. Buss for R.W. Weibel, Agent  
(Name - Printed)

Telephone Number (213) 689-3925

[Signature] 4/4/89  
(Name - Signature) (Date)

Type of Organization Corporation  
(Corporation, Partnership, Individual, etc.)



1986

- 3-21 Laid down production equipment. Rigged up wireline. Ran CCL. Stopped at 7185'. Pulled out and changed tool. Ran in but were unable to get below 7185'. Ran in well with one joint of 2-3/8" tubing with 45° cutoff. Backscuttled clean. Pulling out of well.
- 3-22 Rigged up wireline and ran in to 7192'. Pulled out of well. Made chemical cut in extension at 7189'. Ran in well with packer recovery tool to 7176'. Attempted to release packer; did not release. Pulled to kill string. Secured well.
- 3-24 Filled well with 4 bbls. Pulled out of well with tool. Checked tool and ran in well. Latched into packer and jarred on packer with 50,000# over string weight. Released from packer. Laid down tools. Rigged up wireline and ran in well to packer at 7176'. Fired string shot. Ran in well with 2-3/8" perforated pup joint on 2-7/8" drill pipe. Worked perforated pup joint inside packer while circulating at 3.7 bbls. per minute at 2200 psi.
- 3-25 Filled well with 2 bbls. Pulled out of well. Made up retrieving tool with bumper sub, jars, three drill collars and ran in well. Latched packer at 7176'. Jarred on packer. Would not release. Released from packer.
- 3-26 Laid down packer retrieving tool. Made up inside mechanical cutter and ran in well on 2-7/8" drill pipe. Made cut 53" below top of packer. Laid down tool. Picked up packer retrieving tool. Ran in well with bumper sub, jars and drill collars on 2-7/8" drill pipe. Latched into packer. Jarred on packer at 50,000# over string weight. No movement. Released from packer. Secured well.
- 3-27 Filled well with 2 bbls. Pulled kill string. Laid down packer retrieving tool. Made up 5-1/2" O.D. mill shoe, two junk subs, jars, drill collars. Ran in well on 2-7/8" drill pipe. Ran in to top of packer at 7176'. Milled over packer to 7178' and pulled up to top of packer. Circulated and cleaned well. Pulled out of well to kill string and secured well.

1986

- 3-28 Finished pulling out of well. Laid down mill shoe. Picked up packer retrieving tool. Ran in with bumper sub, jars, drill collars on 2-7/8" drill pipe. Latched into packer. Pulled 30,000# weight to release packer. Appeared latch released. Latched into top of packer. Began jarring at 50,000# over string weight. Had 8" up movement in 4 hours. Continued jarring with no movement. Released from packer and secured well.
- 3-29 Removed packer retrieving tool. Picked up 5-1/2" O.D. x 4-7/8" I.D. washover shoe, two junk subs, jars and drill collars and ran in on 2-7/8" drill pipe. Located top of packer at 7175', one foot high. Washed over to 7177' and milled on packer and rubbers to 7178'. Circulated bottoms up.
- 3-31 Changed out washover shoe. Ran in to 7175'; washed over packer to 7178'. Milled 6" on packer. Circulated well clean.
- 4-1 Pulled out of well with top sleeve from packer on outside of wash pipe. Laid down wash pipe. Made up latching tool and ran in and latched packer at 7175'. Pulled out of well. Laid down fish, including packer, 4-1/2" ported extension, lower seal bore, 4" lower extension, 2-7/8" 8rd x 4" 8rd crossover, 2-7/8" 8rd x 2-3/8" 8rd crossover and top half of shearout safety.
- 4-2 Ran in well with 300' of wash pipe with mill shoe on bottom. Ran in and located top of sand at 7222'. Cleaned out sand over liner to 7380' and circulated bottoms up. Recovered no sand. Would not backscuttle. Washed to 7411', but would not backscuttle. Washed up, laying down single to top of liner at 7176'. Pulled two stands and secured well.
- 4-3 Worked into top of liner at 7176'. Washed and backscuttled over liner to 7416'. Unable to backscuttle. Circulated and worked pipe out of liner to 7176'. Backscuttled bottoms up. Pulling out of well.
- 4-4 Made up outside cutter tool on 120' of wash pipe. Ran in and worked over fish at 7176'. Tool stopped at 7209'. Unable to work down. Cut 2-3/8" tubing at 7205' and pulled out. Recovered 10' including shearout sub and 2-3/8" tubing. Made up overshot. Ran in and latched onto fish. Jarred on liner for 2-1/2 hours.

1986

- 4-5 Rigged up wireline and ran free point, which stopped at 7213'. Released overshot and pulled out of well. Made up wash pipe. Ran in, worked and washed over fish from 7205'-7474'. Circulated bottoms up. Pumped 60 bbls. high viscosity pill and circulated well clean. Circulated and worked out of liner. Backscuttled clean at 7146'. Pulled out of well.
- 4-6 Stood back wash pipe and made up overshot. Ran in and latched onto fish at 7205'. Worked loose and pulled out of well. Laid down 266' of 2-3/8" liner. Laid down wash pipe and made up sawtooth. Ran in well to 7474'. Backscuttled well. Pulled out of well.
- 4-7 Made up bit and casing scraper. Ran in well to 7474'. Backscuttled clean. Circulated polymer completion fluid out of well with new clean fluid. Pulled out of well. Ran neutron log from 7466' to 5465'. Ran casing caliper log.
- 4-8 Made up bridge plug. Ran in and set bridge plug in 6-5/8" at 7155'. Tested casing with 1950 psi for one hour (no pressure drop). Released bridge plug and pulled out of well. Ran tubing-conveyed perforating guns to 7474'. Set RTTS retainer at 7313'. Rigged up surface flow lines.
- 4-9 Rigged up lines and tested to 3000 psi. Pressured drill pipe to 1150 psi with gas. Pressured annulus to 1500 psi to fire gun. Flowed well to Baker tank for 45 minutes. Filled pipe with 30 bbls. Released retainer and circulated gas out of well. Pulled out of well. Laid down guns. Perforated intervals 7474'-7400' and 7385'-7345'. Ran open ended with sawtooth collar. Backscuttled at 7474'. Pulled out of well. Picked up 7 joints 2-3/8" 8rd liner.
- 4-10 Found bad weld on wire-wrapped liner. Laid down wire-wrapped liner. Ran in well to top of liner. Pulled out and laid down 2-7/8" drill pipe (244 joints). Ran in well, picking up 2-7/8" tubing. Changed out collars.
- 4-11 Changed 4300' of 2-7/8" collars. Picked up 2-7/8" tubing to 7205'.
- 4-12 Ran in to 7473'. Circulated and filtered fluid in well. Pulled out of well to kill string. Inspected wire-wrapped liner. Rig on standby waiting on welder to weld centralizers on liner.

1986

- 4-13 Welded centralizers on 2-3/8" liner. Pulled kill string. Picked up 5 joints (196') 2-3/8" 10rd, 0.006 wire-wrapped liner, including one blank joint. Picked up 193' of 1" pipe. Made up gravel pack tools. Ran in well. Could not work gravel pack cup tool down liner. Pulled out of well. Laid down wire-wrapped liner. Ran in well with 6-1/4" tapered mill and dressed liner top. Circulated bottoms up.
- 4-14 Ran 197.34' of 2-3/8" liner on over-the-top gravel pack tool. Liner includes 140.46' of 6-gauge wire-wrapped screen with 1' bull plugged blank on bottom and 56.5' of blank, crossover and landing nipple on top. Installed 193' of 1" pipe in liner and landed assembly at 7474'. Pressure tested lines to 3000 psi. Recorded circulating pressures. Closed back side and recorded 900 psi injection pressure, pumping at 1 bbl./minute. Pumped 5 bbls. prepad, 15 bbls. of 15#/gallon slurry, 5 bbls. backpad at 1 bbl./minute - no sand out. Mixed 25 sacks more gravel and pumped at 1 bbl./minute. Sanded out and repressured 4 times to 2750-2300 psi. Reversed out two tubing volumes. Estimated 78 sacks of gravel in place. Waited two hours. Retested pack to 2300 psi. Pulled out of well with gravel pack tools. Made up Baker lead seal for 6-5/8" casing.
- 4-15 Ran in well and set Baker lead seal adapter on 2-3/8" liner. Top at 7272'. Released tool and pulled out. Rigged up wireline and ran junk ring to 7272'. Made up Otis 6-5/8" 28# "WB" packer. Packer hung up when running in well from 5433'-7145'. Set packer at 7240'. Pulled out of well, sticking coming out of well from 7145'-4500'. Ran in well and tested packer and seals. Tested to 1500 psi for 30 minutes. Seals hanging up while pulling out at 5433'. Ran kill string.
- 4-16 Laid down kelly. Rigged up Hydro-Test and made up production equipment, hydrotesting tubing in well at 5000 psi. Spaced out and landed 12,000# on packer. Pulled 20,000# over tubing weight to check latch. Tested xmas tree to 5000 psi for 20 minutes.
- 4-17 Circulated 63#/cu.ft. polymer completion fluid out of well with inhibited salt water. Released rig at 6:01 a.m., 4-17-86.

DIVISION OF OIL AND GAS

Report on Operations

Mr. J. W. Gourley, Agent  
So. Calif. Gas Co.  
Box 3249 Terminal Annex  
Mail Location 511C  
Los Angeles, CA 90051

Ventura, Calif.  
Apr. 17, 1986

Your operations at well IW 58, API No. 037-21321,  
Sec. 27, T. 3N, R. 16W SB B. & M. Aliso Canyon Field, in Los Angeles County,  
were witnessed on 3/15/86 by S. Mulqueen, representative of  
the supervisor, was present from 1300 to 1400. There were also present Jerry Woods,  
Drilling Foreman

Present condition of well: 20" cem 30'; 13 3/8" cem 717'; 8 5/8" cem 7189', cp 2988', perf  
7122' WSO, 6 5/8" cem 7145-7506', perf 7345-7473'; 2 3/8" ld. 7176-7474'. TD 7515'. BP 7474'.

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

DECISION:

THE BLOWOUT PREVENTION EQUIPMENT AND ITS INSTALLATION ON THE 8 5/8" CASING ARE APPROVED.

M. G. MEFFERD

*Murray W. Dosch*

Murray W. Dosch



DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS  
RECEIVED

MAR 17 1986

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 **VOID** in VENTURA, CALIFORNIA

FOR DIVISION USE ONLY		
BOND	FORMS	
	OGD 114	OGD 121
<i>BB</i>	✓	✓

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 IW #58, API No. 037-21321  
*(Well designation)*

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

The present condition of the well is as follows:

- Total depth 7515'
- Complete casing record, including plugs and perforations (present hole)
  - 13-3/8" cemented 717'
  - 8-5/8" cemented 7189', WSO 7122'
  - 361' 6-5/8" cemented 7506', plug 7474', top 7145', WSO 7328', perf'd at intervals 7473'-7345'
  - 298' 2-3/8" landed 7474', top 7176', 18-mesh W.W. gravel flow packed
- Present producing zone name Sesnon; Zone in which well is to be recompleted \_\_\_\_\_
- Present zone pressure 2200 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/D)* *(Surface pressure, psig)*
- Is this a critical well according to the definition on the reverse side of this form?  (Yes)  (No)

The proposed work is as follows:

- Move in and rig up. Kill well. Install BOPE and pressure test.
- Pull and lay down 2-7/8" tubing. Make up 2-7/8" drill pipe.
- Recover packer. Recover inner 2-3/8" liner. Shoot four 1/2" holes 7474'-7400' and 7385'-7345'. Run 2-3/8" W.W. inner liner and gravel flow pack.
- Set packer and run tubing. Return to gas storage 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 Box 3249, Terminal Annex  
*(Street)*  
Los Angeles, CA 90051  
*(City) (State) (Zip)*  
Telephone Number (213) 689-3925

Southern California Gas Company  
*(Name of Operator)*  
By *N.W. Buss* 3-11-86  
*(Name)* N.W. Buss for *(Date)* J.W. Gourley  
Type of Organization Corporation  
*(Corporation, Partnership, Individual, etc.)*

DIVISION OF OIL AND GAS

WELL STATUS INQUIRY

Santa Paula , Calif.

October 24, 1979

DIVISION OF OIL AND GAS  
RECEIVED

NOV 1 1979

SANTA PAULA, CALIFORNIA

Mr. J. W. Tenfelder, Agent  
Southern California Gas Co.  
12801 Tampa Avenue  
Northridge, CA 91324

In a notice dated April 21 19 78, you propose to plug and redrill  
well name and No., IW 58 (037021321)  
Sec. 27, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon  
(Field or County)

Please indicate below conditions or intentions regarding this proposed work and return the completed form to this office within 10 days.

       THIS WORK HAS BEEN DONE. If you check this space, please file the required well records on this work in duplicate within 60 days after work was completed.

       THIS WORK IS IN PROGRESS AND SHOULD BE COMPLETED ABOUT        19       .

       THIS WORK HAS NOT BEEN DONE, BUT WE STILL INTEND TO DO THE WORK.  
Please give details.       

X WE DO NOT INTEND TO DO THIS WORK. Please cancel our notice to plug & redrill  
      , dated 4/21 19 78.

Signature P.S. Magruder Jr, GCA

(Bonds on file covering canceled notices will be returned.)

       OTHER:       

**NOTE:** Division 3 of the Public Resources Code states in part:  
Section 3203, ...If operations have not commenced within one year of receipt of the notice, the notice will be considered canceled. --- Section 3215. ...Well records shall be filed 60 days after completion or suspension of proposed work. ---

M. G. MEFFERD  
~~HAROLD W. BERTHOFF~~  
State Oil and Gas Supervisor

By Jane E. Robble  
for John L. Hardoin, Deputy Supervisor

DIVISION OF OIL AND GAS

SEP 7 1979

WELL STATUS INQUIRY

SANTA PAULA, CALIFORNIA

Santa Paula, Calif.

October 24, 1979

Mr. J. W. Tenfelder, Agent  
Southern California Gas Co.  
12801 Tampa Avenue  
Northridge, CA 91324

In a notice dated April 21 19 78, you propose to plug and redrill  
well name and No., IW 58 (037021321)  
Sec. 27, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon  
(Field or County)

Please indicate below conditions or intentions regarding this proposed work and return the completed form to this office within 10 days.

       THIS WORK HAS BEEN DONE. If you check this space, please file the required well records on this work in duplicate within 60 days after work was completed.

       THIS WORK IS IN PROGRESS AND SHOULD BE COMPLETED ABOUT        19       .

       THIS WORK HAS NOT BEEN DONE, BUT WE STILL INTEND TO DO THE WORK.  
Please give details.       

X WE DO NOT INTEND TO DO THIS WORK. Please cancel our notice to PLUG AND  
REDRILL, dated 4-21 19 78.

Signature *O. S. Hill*

(Bonds on file covering canceled notices will be returned.)

       OTHER:       

**NOTE:** Division 3 of the Public Resources Code states in part:  
Section 3203, ...If operations have not commenced within one year of receipt of the notice, the notice will be considered canceled. --- Section 3215, ...Well records shall be filed 60 days after completion or suspension of proposed work. ---

M. G. MEFFERD  
~~HAROLD W. BERTHOFF~~  
State Oil and Gas Supervisor

By *Jane E. Robble*  
for John L. Hardoin, Deputy Supervisor

# REPORT ON PROPOSED OPERATIONS

Santa Paula, California

P. S. Magruder, Jr., Agent  
Southern Calif. Gas Co.  
P.O. Box 54790 Terminal Annex  
Los Angeles, CA. 90024

April 28, 1978

Your proposal to plug and redrill gas storage well IW 58 (Name and number)

A.P.I. No. 037-21321, Section 27, T. 3N, R. 16W

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

dated 4-21-78, received 4-26-78, has been examined in conjunction

with records filed in this office.

### THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Hole fluid of sufficient quality and quantity shall be maintained in the hole to control any subsurface condition, and a reserve supply shall be on hand for emergencies.
2. Blowout prevention equipment of at least DOG Class III, 3M, shall be installed and maintained in operating condition at all times.
3. The hole shall be plugged with cement from 7484' to 7022'.
4. THIS DIVISION SHALL BE NOTIFIED TO WITNESS:
  - a. A pressure test of the blowout prevention equipment before commencing downhole operations.
  - b. The location and hardness of the cement plug at 7022', or above.
  - c. A test of the 5 1/2" shut-off at 7300'.

A COPY OF THIS APPROVAL SHALL BE AVAILABLE AT THE WELL SITE DURING THE PROPOSED OPERATIONS.

Blanket Bond  
MD:b

*See on JH 5/10/78. If then I advised of change in name of company. Machine will require as proposed change in the shut-off.*

*[Faint signature and stamp area]*

M. G. MEFFERD

State Oil and Gas Supervisor

By

*[Signature of John L. Hardoin]*  
Deputy Supervisor

John L. Hardoin

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RECEIVED

DIVISION OF OIL AND GAS  
Notice of Intention to Rework Well

APR 26 1978

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 PAULA, CALIFORNIA

FOR DIVISION USE ONLY		
BOND	OGD114	OGD121
	bb	✓

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. #58, 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. 7515'
- Complete casing record, including plugs and perforations:
  - 13 3/8" cemented 717'
  - 8 5/8" cemented 7189', WSO 7122'
  - 361' 6 5/8" cemented 7506', plug 7484', top 7145' perforated at intervals 7345'-7484'
  - 298' 2 3/8" landed 7474', top 7176' - 20-mesh wire-wrapped liner with Retrieva-"D" packer on top and gravel-packed with 10-20 mesh gravel.
- Present producing zone name Sesnon Zone in which well is to be recompleted -
- Present zone pressure 2700 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:

- Kill well. Move in and rig up. Install B.O.P.E. and pressure test.
- Pull tubing. Run drill pipe. Squeeze off Zone with cement. Cut section from 7120'-7140', open hole and cement. Plug from 3000'-2850' with cement.
- Cut and recover 8 5/8" casing from 800'. Plug with cement to 700'.
- Directionally redrill from 717'-7300'. Run Induction and Caliper logs.
- Cement 8 5/8" casing at 7300' and test WSO. Drill 7 5/8" hole to 7500' and log.
- Open hole. Run 200' of 5 1/2" wire-wrapped liner and gravel-flow pack.
- Set packer. Run tubing with safety system. Return well to gas storage service.

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 90051  
(City) (213) 689-3561 (Date) (Zip)  
Telephone Number \_\_\_\_\_

SOUTHERN CALIFORNIA GAS COMPANY  
(Name of Operator)  
By P. S. Magruder, Jr.  
(Name) (Date) 4-21-78  
Type of Organization Corporation  
(Corporation, Partnership, Individual, etc.)

PROGRAM FOR REDRILL OF I.W. #58

Aliso Canyon

PRESENT CONDITIONS:

13 3/8" cemented 717'  
8 5/8" cemented 7189'  
361' 6 5/8" cemented 7506', top 7145'  
WSO 7328' - perf'd at intervals 7345'-7484'  
298' 2 3/8" landed 7474' - top 7176' Retrieva-"D" packer  
wire-wrapped 20-mesh - gravel packed 10-20  
gravel  
"GO" casing patch 2967' to 3009'

TUBING DETAILS: 2 7/8" tubing landed in Retrieva-"D" packer at 7176'  
Blast joints and safety system

NOTE: 2 3/8" wire-wrapped liner is full of junk (iron  
cuttings and rubber). Well will not produce.

Take all measurements from original Kelly Bushing 15'  
above ground.

PROGRAM

1. Kill well with 72#/cu.ft. brine-polymer drilling fluid. Check bottom hole pressure - provided minimum 700 psi over balance. Volume of well is 470 barrels.
2. Move in drilling rig. Install Class III 5000 psi 12" B.O.P.E. Pressure test blind rams and pipe rams to 4000 psi with water and nitrogen. Also test Hydril bag to 3000 psi with water and nitrogen. Test choke and kill manifold to 3000 psi with water and nitrogen.
3. Pull and lay down tubing. Make up drill pipe.
4. Run retrievable retainer and set 6 5/8" casing near 7160'. Squeeze off Zone and perforations with Class "G" cement - DO NOT EXCEED 3000 psi.
5. Cut section in 8 5/8" casing from 7120' to 7140' and open hole to 13". Equalize 50 sacks of Class "G" cement opposite section and squeeze under maximum pressure of 4000 psi - D.O.G. to witness.
6. Set cement plug across casing patch from 3000' to 2850'.

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7. Remove B.O.P.E. and tubing head. Using spear and free-point, cut and recover 8 5/8" casing from at least 800' - mill casing if necessary.
8. Open 11" hole to 13" from 717' to 800' or top of 8 5/8". Plug with Class "G" cement mixed with 20% sand and 3% Ca.Cl.<sub>2</sub> from 850' to 700'.
9. Mix and change over to clay-water drilling fluid with the following specifications:

730' to 4000'	72#-75#	40-50 secs.	15 c.c.
4000' " 7300'	72#-75#	40-50 secs.	6 c.c.
10. Drill 12 1/4" hole from 725' to 4000'. Using Dynadrill, directionally drill to bottom hole location at depth now estimated at 7300'. Exact depth to be determined after details of directional work has been calculated by directional company.
11. Run Induction and Caliper Logs with suitable scales 100 millivolts and 50 ohms.
12. Run 8 5/8" casing with float shoe and float collar, centralizers and scratchers. Precede cement with 100 cu.ft. of fresh water and cement with 1000 sacks of Class "G" cement. Land casing and install tubing head. Reinstall B.O.P.E. and pressure test same as before.
13. Drill out cement to 7290' and run Cement Bond Log to top of cement. Shoot four 1/2" holes in shale and test WSO for D.O.G. Pressure test casing and WSO holes to 3000 psi.
14. Change over to suitable weight brine-polymer drilling fluid - now estimated at 72#/cu.ft. Drill 7 5/8" hole to 7500' ± depending on correlations.
15. Run Induction, Gamma Ray, Density and Neutron Logs.
16. Open 7 5/8" hole to 15" from 7300' to 7500'.
17. Run computer Caliper Log and reopen hole as required.
18. Run 200' of 5 1/2" 10-mesh wire-wrapped liner, two blank joints of 5 1/2" and one joint of 5 1/2" wire-wrapped, port collar and lead seal liner hanger. Gravel flow pack with 20-40 gravel, using clean filtered brine-polymer drilling fluid. Close port collar and wash perforations. Re-gravel pack and repeat until satisfactory gravel fill is obtained. Run Photon Log.
19. Lay down drill pipe. Set permanent retrievable packer near 7175'. Run 3 1/2" tubing, changing collars, applying Baker seal, cleaning pins and Hydrotesting for one minute at 5000 psi.

Tubing to include:

Production Tube  
Seals (4)  
Latch-in Locator  
10' Blast Joint  
2.25" NO-GO Nipple  
20' Blast Joint  
Annular Flow Safety System  
One Joint 3 1/2" Tubing  
Gas Lift Mandrel with pump-out plug

20. Land tubing with up to a maximum of 10,000# on packer - pull 25,000# over weight of tubing to check latch.
21. Install back-pressure valve. Remove B.O.P.E. and install Christmas tree. Pressure test tree to 5000 psi.
22. Circulate drilling fluid out of well with waste lease salt water. Set tubing plug in NO-GO nipple. Pressure test packer and seals to 2500 psi. Pull tubing plug.  
RELEASE RIG.

*GCA*  
G. C. ABRAHAMSON  
March 20, 1978

GCA/jp

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MAY 15 1978

SANTA PAULA, CALIFORNIA

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

Report on Operations

No. T 277-127

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

Santa Paula, Calif.  
June 28, 1977

DEAR SIR:

Operations at well No. IV 58, API No. 037-21321, Sec. 27, T. 3N, R. 16W,  
S.B., B & M. Aliso Canyon Field, in Los Angeles County, were witnessed  
on 5/20/77. Mr. P.R. Wylie, representative of the supervisor was  
present from 1700 to 1900. There were also present A. Smith, foreman

Present condition of well: No additions to the casing record since proposal dated 4/13/77.

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

DECISION:

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

M. G. MEFFERD  
~~XXXXXXXXXXXXXXXXXXXX~~  
JOHN F. MATTHEWS, JR.  
Acting, State Oil and Gas Supervisor

By John L. Hardin Deputy

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

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AUG 24 1977  
SANTA PAULA, CALIFORNIA

**History of Oil or Gas Well**

Operator SOUTHERN CALIFORNIA GAS COMPANY Field or County Aliso Canyon  
Well name and No. I.W. #58, Sec. 27, T. 3N, R. 16W, S. B. & M.  
A.P.I. well No. 037-21321 Name P. S. Magruder, Jr. Title Agent  
Date August 9, 1977 (Person submitting report) (President, Secretary or Agent)

Signature P. S. Magruder, Jr.

P. O. Box 3249, Terminal Annex, Los Angeles, California 90051 (Address) (213) 689-3561 (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        |   |
|-------------|---|
| <u>1976</u> |   |
| 11-2        | Killed well with 450 barrels of 81#/cu.ft. polymer fluid.   |
| 11-3        | Circulated 880 barrels of polymer fluid.  |
| 11-14       | Inadvertently injected gas into casing at 3000 psi.   |
| 11-19       | Shot fluid levels in tubing and casing and determined 128 barrels of kill fluid still in well.  |
| 11-22       | Re-killed well with 325 barrels of 82#/cu.ft. polymer fluid.  |
| <u>1977</u> |   |
| 5-4         | Re-circulated well with 75# polymer fluid. Used 250 barrels to regain circulation.  |
| 5-7         | Re-killed well with 250 barrels of 73#/cu.ft. polymer fluid.  |
| 5-19        | Moved In California Production Service Rig #D-4 and rigged up.  |
| 5-20        | Circulated 73#/cu.ft. polymer drilling fluid and conditioned drilling fluid. Set plug in tubing hanger. Removed Christmas tree and installed B.O.P.E. Tested blind rams and pipe rams to 4000 psi with water and nitrogen for 20 minutes. Tested Hydril bag to 3000 psi with water and nitrogen for 20 minutes. Tests O.K. and witnessed by D.O.G. Removed tubing plug. |
| 5-21        | Worked tubing for 1-1/2 hours and could not release latch-in on packer. Ran McCullough free point - tubing free to 6975'. Cut tubing with chemical cutter at 6945'. Well started to flow. Circulated out gas cut mud. Removed tubing hanger and closed well in.   |

- 5-22-77 Rig and crew idle.
- 5-23-77 Circulated well for 2-1/2 hours. Started out of hole. Well started flowing with 3500' of tubing in hole. Circulated out gas. Ran back to 6900'. Increased mud weight to 77#/cu.ft. from 73#/cu.ft. Pulled to 5000'. Circulated for 2 hours. Circulated at 3000' for 1 hour and finished pulling out of hole. Made up 6 5/8" casing cutter. Ran to 2800'.
- 5-24-77 Finished going in hole. Cut 6 5/8" casing at 2939'. Pulled out of hole. Ran Bowen 6 5/8" 24# spear. Slips would not go in liner. Ran 6 5/8" 28# slips - could not get inside 6 5/8" casing patch.
- 5-25-77 Pulled out of well and recovered 16.72' of Burns lead seal hanger and 6 5/8" casing. Ran in well and jarred balance of 6 5/8" casing free. Pulled out and recovered all of 6 5/8" casing. Ran in well with 5" wash pipe shoe - 5 7/8" O.D. x 4 3/8" I D. Washed over tubing fish from 7140' to 7148'.
- 5-26-77 Washed over 2 7/8" tubing from 7148' to 7182'. Circulated hole clean. Pulled out of hole. Ran Baash-Ross overshot and latched on to fish, but jars would not work. Were unable to set slips in overshot in order to release packer.
- 5-27-77 Pulled out of well and changed jars and slips in overshot. Ran in hole and released latch-in. Pulled out and recovered all tubing. Ran in hole with 7 5/8" bit and scraper to 6998'. Circulated for two hours.
- 5-28-77 Pulled 7 5/8" bit and casing scraper. Ran and set DR plug in packer. Tested plug with 1500 psi - pressure fell to 800 psi in one minute. Circulated drilling fluid out of well with water. Started out of hole. Pulled one stand and well started to flow. Circulated water out of well with 75#/cu.ft. drilling fluid.
- 5-29-77 Rig and crew idle.
- 5-30-77 Circulated polymer fluid in hole. Pulled out 2 7/8" tubing. Set Johnston bridge plug at 3100'. Spotted 10 sacks of sand on top of bridge plug. Located sand at 3081' - well started to flow. Circulated to remove gas cut drilling fluid. Pulled out 2 7/8" tubing. Ran in Johnston cementing tool on 2 7/8" tubing. Located sand at 3081'. Pulled to 3058' and tested bridge plug to 1500 psi for 5 minutes. Tested casing above 2968' to 1500 psi for 5 minutes. Tested casing below 3009' to 1500 psi for 5 minutes. Pressure would not hold between 2968' and 3009'. Pulled to 2818'.

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- 5-31-77 Circulated polymer fluid. Set Johnston retainer at 2818'. Obtained breakdown under 1000 psi at 9 cu.ft./minute rate. Squeezed 125 sacks of Class "G" cement preceded by 30 cu.ft. of water ahead and followed by 10 cu.ft. of water. Displaced 105 sacks of cement through leak at 2990' under 1200 psi final pressure. Pulled out. Ran in with bit and casing scraper. Drilled out cement from 2964' to 3024'. Pressure tested leak with rig pump at 1000 psi for 15 minutes - O.K. Circulated sand out of hole. Pulled out. Ran in hole with bridge plug retrieving tools.
- 6-1-77 Circulated polymer fluid. Pulled out with Johnston bridge plug. Ran 2 7/8" tubing to 7141'. Spotted 5 sacks of sand in 6 5/8" casing on top of bridge plug at 7169'. Located top of sand at 7153'. Circulated to recondition polymer fluid.
- 6-2-77 Pulled out tubing. Ran Noise Log by Triangle - confirmed shoe leak. Ran in with pilot mill on 2 7/8" tubing and milled out 6 5/8" liner from 7009' to 7015'. Circulated hole clean.
- 6-3-77 Milled 6 5/8" liner from 7015' to 7017'. Pulled out. Ran in hole with 7 5/8" x 4 3/4" mill.
- 6-4-77 Milled 6 5/8" liner from 7017' to 7026'. Circulated hole clean. Pulled out.
- 6-5-77 Rig and crew idle.
- 6-6-77 Pulled out of hole. Ran in hole with 7 5/8" x 4" pilot mill, two junk subs and eight drill collars. Milled from 7026' to 7030'.
- 6-7-77 Continued milling. Milled from 7030' to 7037'. Pulled out of hole. Ran in hole with 7 5/8" x 5 5/8" pilot mill, float sub, junk sub and two 7 5/8" stabilizers. Unable to mill. Started pulling out of hole.
- 6-8-77 Pulled out of hole. Ran in hole with 7 5/8" x 3 5/8" Servco pilot mill, two junk subs, eight drill collars and float sub. Milled from 7026' to 7030' (corrected pipe measurement). Pulled out of hole with 30 stands still in hole.
- 6-9-77 Pulled out of hole. Ran in with 6 3/4" x 5 5/8" pilot mill, four drill collars and float sub. Milled from 7030' to 7044'. Circulated hole clean.
- 6-10-77 Continued milling. Milled from 7044' to 7050'. Pulled out of hole. Ran in with new 6 3/4" x 5 5/8" A-1 pilot mill, four drill collars and a float sub. Milled from 7050' to 7053'.

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- 6-11-77 Started milling 6 5/8" liner at 7053 - tubing parted at 6901'. Pulled out of hole. Ran in hole with Midway 5 3/4" overshot, 6 3/4" guide, 3 1/8" grapple and bumper sub. Latched on to fish. Pulled out of hole and recovered all fish. Laying down tubing to pick up drill pipe.
- 6-12-77 Rig and crew idle.
- 6-13-77 Finished laying down tubing. Measured and picked up 2 7/8" drill pipe. Ran in hole to 6968' with a new 6 3/4" x 5 5/8" A-1 pilot mill, four drill collars and a float sub.
- 6-14-77 Finished running 2 7/8" drill pipe. Tagged top of milling surface at 7044'. Milled from 7044' to 7063'.
- 6-15-77 Pulled out of hole with 29' of partially milled 6 5/8" liner and a centralizer. Ran in hole with 6 3/4" x 5 5/8" A-1 pilot mill, four drill collars and a float sub.
- 6-16-77 Continued milling on 6 5/8" liner. Milled from 7071' to 7094'. Pulled out of hole.
- 6-17-77 Finished pulling out of hole. Ran in with 6 3/4" x 5 5/8" A-1 pilot mill. Located top of milling surface at 7072'. Reamed to 7079' but were unable to mill further. Pulled out of hole. Recovered pieces of partially milled 6 5/8" liner. Ran in hole with 7 5/8" junk mill, bumper sub, jars and four drill collars. Located top of milling surface at 7077'. (Top of liner at 7094').
- 6-18-77 Using 7 5/8" junk mill, milled up cement and junk from 6 5/8" casing from 7077' to 7095'. Circulated well clean. Pulled out of well and ran 5 1/2" junk mill to clean out inside of 6 5/8" liner.
- 6-19-77 Rig and crew idle.
- 6-20-77 Ran in hole with 5 1/2" junk mill and cleaned out from 7082' to 7140'. Circulated hole for three hours. Started out of hole and stuck pipe. Worked pipe free. Repaired swivel.
- 6-21-77 Finished pulling out of hole. Ran in hole with 6 3/4" pilot mill. Milled from 7093' to 7116' (23'). Circulated for two hours. Pulled one stand.
- 6-22-77 Milled from 6 5/8" liner from 7116' to 7124'. Pulled out of hole and recovered 4' piece of liner on mill. Ran 7 5/8" junk mill and milled from 7103' to 7115'. Pulled up one stand.

- 6-23-77 Pulled out of hole - both subs full of metal. Ran 7 5/8" junk mill. Milled from 7115' to 7124'. Pulled out of hole. Started in hole with 4 5/8" O.D. 2" I.D. mill shoe.
- 6-24-77 Ran in hole with mill shoe. Cleaned out from 7122' to 7151'. Could not reverse circulation because of junk. Pulled out of hole. Ran in hole with 5 5/8" x 6 3/4" pilot mill.
- 6-25-77 Milled with 6 3/4" mill from 7124' to 7140'. Circulated hole clean. Started out of hole.
- 6-26-77 Rig and crew idle.
- 6-27-77 Pulled out of hole with 6 3/4" x 5 5/8" pilot mill. Ran in hole with Servco 7 5/8" junk mill. Cleaned out from 7112' to 7140'. Milled cement and 6 5/8" liner from 7140' to 7145'.
- 6-28-77 Pulled out of well with 7 5/8" junk mill. Ran in with Halliburton cement retainer. Achieved breakdown through WSO holes at 7122' under 3200 psi and with 14 cu.ft./minute rate. Retainer set at 7077'. Pumped in 100 sacks of Class "G" cement with retainer set at 6921'. Squeezed 90 sacks of cement through WSO holes at 7122' under final pressure of 2400 psi. Pulled out of well. Ran 42 stands in well with four drill collars, bit and scraper.
- 6-29-77 Ran in hole with 7 5/8" bit and scraper. Drilled out cement from 7063' to 7140'. Circulated polymer fluid to clean well. Pulled out of hole. Ran in with Halliburton cement retainer and set same at 7077'. Achieved breakdown through WSO holes at 7122' under 2900 psi and with 5 cu.ft. per minute rate. Attempted to set retainer at 7138' - unable to get past 7117'. Set retainer at 6983'. Pumped in 50 sacks of Class "G" cement and squeezed 38 sacks of cement through WSO holes at 7122' under final pressure of 4000 psi. Let cement stand under pressure for one hour. Bled off pressure. Pulled five stands.
- 6-30-77 Pulled out of well with Halliburton cement retainer. Ran in well with 7 5/8" bit and scraper. Drilled out cement from 7042' to 7145'. Circulated polymer fluid to clean well. Pulled out of well with 35 stands still in well.
- 7-1-77 Finished pulling out of well with 7 5/8" bit and scraper. Shot four 1/2" holes at 7104' with GO-International wireline unit. Ran in well with Lynes WSO tester and set it at 7050'. Opened tester for two hours. Last hour a

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faint blow (flowing surface pressure less than two inches of water). Pulled out of well. Stylus mechanism on charts failed. Recovered 180' of polymer fluid in 2 7/8" drill pipe.

7-2-77 Ran in with Lynes WSO tester. Set tester at 7065'. Opened tester to WSO holes at 7104'. Light blow for first ten minutes. Very light blow for balance of the two hour test. Pulled out of well. Recovered 100' rise in 2 7/8" drill pipe - WSO by Company. Ran in well with Halliburton squeeze tool to 7000'.

7-3-77 Rig and crew idle.

7-4-77 Rig and crew idle.

7-5-77 Replaced polymer fluid in well with fresh water. Set Halliburton squeeze tool at 7079'. Applied 2000 psi pressure at wellhead - pressure dropped 200 psi in five minutes. Re-set Halliburton squeeze tool at 7108'. Applied 2000 psi pressure at wellhead - pressure dropped to 1800 psi in five minutes. Set squeeze tool at 7046', achieved breakdown at 2600 psi and rate of 8 cu.ft. per minute. Squeezed with 135 sacks of Class "G" cement under a final pressure of 3500 psi.

7-6-77 Pressure tested 8 5/8" casing using Halliburton RTTS tool, as follows:

3500' to 7025' (top of cement)	at 2000 psi for 60 minutes
2500' to Surface	" 3200 psi " 60 "
2000' " "	" 3700 psi " 60 "
1000' " "	" 4000 psi " 60 "

All above tests O.K.

Pulled out of well. Ran in well with 7 5/8" bit and casing scraper. Drilled out cement from 7025' to 7106' and cleaned well up to 7145' (top of 6 5/8" liner). Started pulling out of well and drill pipe stuck. Worked from 9:00 P.M. to 2:00 A.M. circulating and pulling 2 7/8" drill pipe in singles. Pulled 11 singles - drill pipe came loose. Pulled out of well. Ran in well with Halliburton RTTS tool to 3500'.

7-7-77 Set Halliburton RTTS tool at 3500'. Pressure tested 8 5/8" casing from 3500' to 7176' at 2000 psi for 60 minutes test - O.K. Pulled out of hole. Ran in well with 5 1/2" reverse circulating junk basket and jars on 2 7/8" drill pipe to 7111'. Displaced fresh water with polymer drilling fluid. Cleaned hole to 7142'. Pulled out of well. Ran in well with 5 1/2" junk mill and four 3 3/4" drill collars.

7-8-77 Finished running in well with 5 1/2" junk mill. Milled to top of Baker DR plug at 7177'. Circulated polymer fluid in well to clean well. Started pulling out of well.

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- 7-9-77 Finished pulling out of well with 5 1/2" junk mill. Ran in well with Baker DR plug retrieving tool. Recovered Baker DR plug from 7176'. Circulated polymer drilling fluid in well. Ran in well with GO-International casing patch for 8 5/8" casing and a Johnston mechanical collar locator. Using GO-International wireline unit, set patch - top of patch at 2967' - bottom of patch at 3009'.
- 7-10-77 Rig and crew idle.
- 7-11-77 Finished pulling out of well. Laid down "patch" setting tools. Ran Baker seals on drill pipe and stabbed into packer at 7176'. Pressured tested packer at 1800 psi - O.K. Circulated for two hours. Pulled out and laid down 2 7/8" drill pipe.
- 7-12-77 Finished laying down drill pipe. Made up production tube, seal assembly and safety system. Hydrotesting tubing in well.
- 7-13-77 Finished hydrotesting tubing in hole. Could not latch into packer. Circulated bottoms up. Pulled out of hole. Started in hole with 5.66" mill.
- 7-14-77 Finished going in hole with 5.66" tapered mill. Reamed from 7145' to 7179'. Circulated hole for 1-1/2 hours. Pulled out of hole. GO-International ran gauge ring to 7144'. Ran packer to 7144' - would not enter liner. Started in hole with packer on tubing.
- 7-15-77 Packer would not enter 6 5/8" liner. While pulling out of hole, tubing string parted dropping 1921' of tubing and packer in hole. Ran in hole with overshot. Recovered fish. Laid down 44 joints of bad tubing.
- 7-16-77 Ran packer with mule shoe. Could not enter 6 5/8" liner. Pulled out of hole. Started in hole with one joint of 2 3/8" tubing to clean out to top of 2 7/8" liner.
- 7-17-77 Rig and crew idle.
- 7-18-77 Finished running in well to depth of 7183'. Circulated polymer fluid to clean well. Pulled out of well. Started running in well 2 7/8" tubing with Baker seals and Otis safety system while hydrotesting each stand for one minute to a pressure of 5000 psi. Ran in 102 stands.
- 7-19-77 Finished running production string in well while hydrotesting. Attempted to latch seal assembly into packer, but were unable to latch into packer. Pulled out of hole.

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- 7-20-77 Ran in well with 10 joints of 1" Hydril tubing on 2 7/8" tubing. Washed and drilled out cuttings from 7160' to 7193' (top of 2 3/8" wire-wrapped liner). Took two hours to wash out last 1' of cuttings. Pulled out to 7145' and circulated polymer fluid at rate of 14 cu.ft./minute for two hours.
- 7-21-77 Pulled out of well. Ran in well with Midway Surge tool. Opened tool on top of 6 5/8" liner. Pulled out of hole and recovered no junk. Started running in hole with Midway Surge tool to recover junk inside 6 5/8" liner.
- 7-22-77 Finished running in well with Midway Surge tool. Opened tool on top of packer at 7176'. Pulled out of hole and recovered no junk. Evidence of fine cuttings in well. Ran in well with sawtooth shoe. Reverse circulated polymer fluid and pumped down two sacks of sawdust in annulus and reverse circulated again while cleaning out to top of packer at 7176'. Recovered 5 to 7 cu.ft. of fine iron cuttings.
- 7-23-77 Reverse circulated for one hour. Pulled out of well. Ran in with 300' of 1" tubing and 1" tungsten carbide shoe. Tried to clean out 2 3/8" liner but repeatedly plugged 1" tubing while circulating in either direction. Pulled out of 6 5/8" liner at 7145'. Reverse circulated for two hours.
- 7-24-77 Rig and crew idle.
- 7-25-77 Pulled out of well. Ran in well with 60' of 1" tubing and two junk subs. Drilled and cleaned from 7172' to 7196'. Unable to drill further. Pulled out of well - junk subs empty but evidence of very fine metal cuttings at bottom. Ran in 2000' of tubing.
- 7-26-77 Finished running 2 7/8" tubing in well to 7192' - top of 2 3/8" tubing. Using Camco wireline equipment, ran following tools with results as indicated:
1. MAGNET: recovered about 5 milligrams of iron cuttings (7214').
  2. BAILER: no recovery, except for some polymer drilling fluid (7214').
  3. IMPRESSION BLOCK: indication of fine cuttings (7214').
  4. HYDROSTATIC BAILER: made 5 trips and recovered rubber (probably B.O.P.E. rubber) on first 4 trips - no recovery on 5th trip (from 7214' to 7215').
  5. IMPRESSION BLOCK: indication of fine cuttings. There were also some markings on side indicating that 1 3/4" block may be entering a tight pipe.
- 7-27-77 Ran 1" Impression Block and Sinker Bar on wireline and stopped at 7220'. Ran hydrostatic bailer - no recovery. Pulled out of well. Started running production string while hydrotesting each stand for one minute.

7-28-77

Finished running production tube in well. Latched onto Baker Model "D" packer. Pulled 25,000# over weight of tubing to check latch. Removed B.O.P.E. and installed Christmas tree. Tested tree seals to 5000 psi - O.K. Replaced polymer drilling fluid in well with lease salt water. Pulled sleeve from Otis safety system using wireline.

7-29-77

Archer-Reed pulled out NO-GO plug. Rig released at 9:00 A.M. (7-29-77).

RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS No. P 277-136

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

Santa Paula, Calif.  
Apr. 22, 1977

DEAR SIR: alter casing in (037-21321)  
Your proposal to gas storage Well No. IW 58  
Section 27, T. 3N, R. 16W, S.B.B. & M., Aliso Canyon Field, Los Angeles County,  
dated 4/13/77, received 4/21/77, 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 the 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.

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)  
xJOHN P. MATTHEWS, JR., State Oil and Gas Supervisor

By  Deputy

DIVISION OF OIL AND GAS  
Notice of Intention to Rework Well

APR 21 1977

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	OGD114	OGD121
BB	✓	✓

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. #58, 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. 7515'
- Complete casing record, including plugs and perforations:
  - 13 3/8" cemented 717'
  - 8 5/8" cemented 7189'
  - 508' 6 5/8" cemented 6998'-7506'
  - 134' 6 5/8" landed 3060'
  - 298' 2 3/8" 7178'-7474' Gru-V-Kut gravel pack - landed 7474'
  - 6 5/8" casing patch 3060'-2926'

- Present producing zone name SESNON Zone in which well is to be recompleted -
- Present zone pressure 2500 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, rig up. Kill well. Install B.O.P.E. Pull tubing.
- Recover 6 5/8" casing 3060'-2926'.
- Pressure test 8 5/8" casing. Perform indicated remedial work.
- Set casing patch.
- Run tubing with down hole safety system.
- Return well to gas storage.

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 90051  
(City) (State) (Zip)  
Telephone Number (213) 689-3561

SOUTHERN CALIFORNIA GAS COMPANY  
(Name of Operator)  
By P.S. Magruder, Jr. 4-13-77  
(Name) (Date)  
Type of Organization Corporation  
(Corporation, Partnership, Individual, etc.)

OCT 27 1975

## DIVISION OF OIL AND GAS

## History of Oil or Gas Well

SANTA PAULA, CALIFORNIA

OPERATOR SOUTHERN CALIFORNIA GAS COMPANY FIELD Aliso CanyonWell No. I.W. - #58, Sec. 27, T. 3N, R. 16W, S.B. B. & N.Date September 24, 1975Signed P. S. Magruder, Jr.  
P. S. Magruder, Jr.P.O. Box 3249, Terminal Annex  
Los Angeles, California 90051Title 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 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	Description
8-28-75	Rigged up pump truck and killed well with 81#/cu.ft. brine-polymer circulating fluid. Surface pressure at start of job 2750 psi. Total fluid pumped was 964 barrels. Calculated hole net volume was 410 barrels. Bled gas to withdrawal line down to 600 psi.
8-29-75	Started rigging up California Production Service rig D-3. Tubing pressure zero psi.
8-30-75	Idle. Tubing pressure zero psi.
8-31-75	Idle.
9- 1-75	Idle.
9- 2-75	Continued rigging up. No pressure on casing or tubing. Circulated hole, then installed plug in doughnut. Disconnected lateral lines. Removed Christmas tree. Installed Class III B.O.P.E. and pit level indicator. Screwed pup joint into doughnut and removed doughnut plug.
9- 3-75	Using 10,000 psi test pump, tested Hydril bag, Shafer pipe rams and blind rams with water: bag at 1900 psi for 20 minutes - O.K.; pipe rams at 2200 psi for 20 minutes - O.K.; blind rams at 2300 psi for 20 minutes - O.K. Test witnessed by Division of Oil and Gas. Tested B.O.P.E. with gaseous nitrogen, as follows: Hydril bag at 2500 psi for 20 minutes - O.K.; Shafer pipe rams at 2400 psi for 20 minutes - O.K.; Shafer blind rams at 2350 psi for 20 minutes - O.K. Completed work platform. Circulated hole. Pulled 8 5/8" Brown boll weevil packer loose from 6980'. Laid down doughnut and single. Circulated hole.
9- 4-75	Pulled 4 joints of 3 1/2" buttress tubing out of hole with 30/60,000# of drag while swabbing hole with packer. Waiting on Udell 3 1/2" pulling tool.

- 9- 5-75 Worked boll weevil packer at 6830' with 60,000# drag. Pulled packer up to 6730'. Laid down 3 singles. Rigged up wireline and pulled Udell WRR packer from 6690' (left bottom section in hole - 17 1/2" - fell below 3 1/2" tubing). Made sinker bar run out of and below 3 1/2" tubing. Circulated gas cut mud out of hole. Mixed LCM pill and spotted at 6730'.
- 9- 6-75 Pulled out of hole, laying down 3 1/2" buttress tubing and cutting off 1/4" high-pressure safety valve control line. Laid down Udell ported nipple, Udell landing nipple, 4" Otis safety valve (1/4" line not connected) and Brown boll weevil packer. Ran in hole with 7 5/8" bit on 8 5/8" casing scraper on 2 7/8" EUE tubing (picked up).
- 9- 7-75 Idle.
- 9- 8-75 Touched top of liner at 6998'. Circulated hole. Measured out of hole. Ran in with 8 5/8" Baker Model "B" Lok-Set retrievable bridge plug on setting tool.
- 9- 9-75 Set 8 5/8" Baker Model "B" Lok-Set retrievable bridge plug at 6980'. Pulled up to 6950'. Displaced 10 sacks sand at 6950'. Ran Baker 8 5/8" Model "C" Full-Bore to 6950' and touched top of sand plug. Pulled up to 6945' and set Full-Bore. Tested tubing and plug at 1500 psi for 15 minutes - O.K. Reset Full-Bore at 3100'. Tested casing at 3100' to surface at 2600 psi with a loss of 125 psi in 30 minutes annulus leaked. Tested casing from 3100' to 6950' at 2500 psi for 30 minutes - O.K.
- 9-10-75 Pulled up to 1008' and set Full-Bore. Tested casing from surface to 1008' at 3400 psi for 30 minutes - O.K. Made up 8 5/8" Baker Model "C" retrievable bridge plug on Baker Full-Bore and set Model "C" at 3050'. Pulled up to 3010' and set Full-Bore. Tested casing from 3010' to 3050' at 2700 psi for 30 minutes - O.K. Pulled Full-Bore up to 2982' and set. Tested casing at 2982' to 3050' at 2700 psi for 30 minutes - O.K. Pulled up to 2952' and reset Full-Bore. Tested casing at 2952' to 3050' at 3000 psi for 2 hours - O.K. Released Full-Bore and hung at 3020' and spotted 10 sacks of 20-mesh sand. Pulled up to 2780' and waited 3 hours, then ran in and tagged sand at 3030'.
- 9-11-75 Installed lubricator. Using 4" carrier, shot four 1/2" jet holes at 2990'. Ran in with Full-Bore to 2896' and set established injection rate of 5 cu.ft. at 750 psi. Opened unloading sub and pumped in 100 cu.ft. of fresh water. Closed sub. Mixed 53 sacks of Class "G" neat cement - Dowell mixing pot malfunctioned and tried to repair for 7 minutes. Displaced cement with 20 cu.ft. of water, followed by 94 cu.ft. of brine-polymer fluid. Cement in place at 2:16 P.M. Final pressure 600 psi (44 sacks into formation). Bled to zero in

- 9-11-75 (cont'd) 25 minutes. Pulled out of hole. Ran in hole with 7 5/8" bit on 8 5/8" casing scraper on 60' of 4 1/8" drill collars.
- 9-12-75 Stood cemented until 1:30 P.M. Found top of cement at 2946'. Cleaned out cement at 2946'-2993'. Circulated hole. Ran in hole with Baker Full-Bore.
- 9-13-75 Rigged up Dowell. Tested casing and perforations at 1250' to 3050' at 2750 psi for 20 minutes - O.K. Ran in with Baker retrieving tool and found top of fill at 3026'. Circulated sand and fill out of hole. Latched onto bridge plug at 3050' and pulled out of hole. Made up Baker Model "C" retrieving tool.
- 9-14-75 Idle.
- 9-15-75 Tagged top of sand plug at 6946'. Cleaned out sand at 6946'-6980'. Circulated hole. Latched on to equalizer and released 8 5/8" Baker Model "B" Lok-Set retrievable bridge plug. Hole took fluid at one barrel per 8-minute rate. Spotted LCM pill at 6980' (60 barrels 83#). Waited 1-1/2 hours. Pulled Model "B" out of hole. Ran in with 5 3/8" bit on 6 5/8" casing scraper and found top of fill at 7404'. Cleaned out fill 7404'-7424'.
- 9-16-75 Ran back in to top of fill. Rigged up power swivel. Cleaned out from 7405'-7474'. Circulated high-viscosity pill (45 barrels, 81#, 78 viscosity). Laid down power swivel. Started out of hole - pipe stuck at 7414'. Circulated hole and pipe freed. Ran back in to 7472' and circulated hole.
- 9-17-75 Made up and ran in with 6 5/8" Burns (30") circulating washer to top of liner. Circulated hole. Installed Guiberson. Rigged up swivel and Byron-Jackson pump truck. Blanked tool at 7015'. Found top of fill at 7463' (11'). Washed perforations from 7463' - maximum pressure 2200 psi breakdown; wash pressure 1000 to 450 psi. All perforations washed (detail attached). Pulled up to 6990'. Circulated hole.
- 9-18-75 Ran in with 7 5/8" bit on 8 5/8" casing scraper on 60' x 4 3/4" drill collars to 3250'. Circulated hole. Cleaned shaker pit. Ran in hole with 5 5/8" bit and found top of fill at 7466'. Cleaned out fill 7466'-7474'. Circulated hole.
- 9-19-75 Made up 2 3/8" Gru-V-Kut liner, Baker gravel pressure packing tools, 1" Hydril "CS" tail pipe and ran in hole to 7474'. Tagged bottom and pulled out slack. Rigged up Byron-Jackson. Broke circulation. Dropped ball, pressured up to 2000 psi and set Retrieva "D" Packer at 7176' (see Liner Detail attached). Tested 8 5/8" casing and Retrieva "D" Packer (2 7/8" x 8 5/8" annulus) to 1000 psi for one minute - O.K. Moved tools to pressure pack position and

- 9-19-75 (cont'd) broke down formation at 1500 psi at 3.4 barrels per minute. Displaced into tubing at 3.2 barrels per minute 133 cu.ft. of Terra-Pak II calcium chloride fluid pad (pressure 750 to 1700 psi), followed by 155 cu.ft. (80 sacks of 10-20 mesh "Heart of Texas" gravel) slurry at 94#/cu.ft., followed by 27 cu.ft. Terra-Pak II pad, followed by brine-polymer circulating fluid. Total brine-polymer fluid displaced was 81 cu.ft. Calculated volume for 100% pack of 2 3/8" x 8 5/8" is 43 cu.ft. Volume of tubing 234 cu.ft. Final pressure of sand in place is 4000 psi. Displaced 42 cu.ft. down liner. Pulled up and sheared collette. Backscuttled at 1000 psi at 3.0 barrels per minute. Total volume backscuttled, when sand came to the surface, was 194 cu.ft., therefore by displacement pack, volume was 48 cu.ft. Best surface estimate was (by sand on ground) a pack of 68 cu.ft. Pulled up to 6850'.
- 9-20-75 Ran in hole with Burns 8 5/8" x 6 5/8" lead seal hookwall packer on six joints of 6 5/8", 24#, 8rd, L.T. & C. casing on Burns 8 5/8" x 6 5/8" lead seal adapter (casing detail attached). Set hookwall packer at 3060' and tested same with 1000 psi for 20 minutes - O.K. Set top of lead seal adapter at 2926' and tested same at 1000 psi for 20 minutes - O.K.
- 9-21-75 Rig idle.
- 9-22-75 Made up Baker latch and seal assembly for gravel packing tools and Otis safety valve system on 2 7/8", 8rd, EUE tubing and Hydrotested to 4500 psi in hole. Spaced out and landed tubing on doughnut at 7176' with 10,000# compression. Installed doughnut plug and removed B.O.P.E. Installed Christmas tree.
- 9-23-75 Installed blank plug in doughnut and tested doughnut and seals to 5000 psi for 30 minutes - O.K. Tested Christmas tree to 5000 psi for 30 minutes - O.K. Removed blank plug. Changed circulating fluid to lease salt water, using rig pump. Recovered approximately 400 barrels of brine-polymer fluid. Rig released at 8:00 P.M., September 23.

Cumulative Fluid Loss = 531 barrels Brine-Polymer Fluid.

September 19, 1975

WELL IW-#58

LINER DETAIL (2 3/8" 18-Mesh)

<u>ITEM</u>	<u>JOINTS</u>	<u>LENGTH</u>	<u>DEPTH</u>
TOP OF PACKER			7176.24
Baker Retrieval "D" Hydril Packer		7.12	7183.36
4 1/2 Ported Extension		3.12	7186.48
Lower Seal Bore		1.45	7187.93
4" Lower Extension (Pup)		3.70	7191.63
2 7/8" EUE, 8rd x 4" 8rd X-Over		.46	7192.09
2 7/8" EUE, 8rd x 2 3/8" EUE, 8rd X-Over		.50	7192.59
Shear-Out Safety		2.80	7195.39
Blank		23.80	7219.19
Wire Wrapped		5.08	7224.27
Blank	30.72	1.97	7226.24
Blank	30.86	30.86	7257.10
Blank	29.32	29.32	7286.42
Blank	30.47	30.47	7316.89
Blank		2.01	7318.90
Wire Wrapped		26.79	7345.69
Blank	30.80	2.00	7347.69
Blank		2.04	7349.73
Wire Wrapped		26.84	7376.57
Blank	30.85	1.97	7378.54
Blank		2.03	7380.57

WELL IW-#58  
Liner Detail (continued)

September 19, 1975

<u>ITEM</u>	<u>JOINTS</u>	<u>LENGTH</u>	<u>DEPTH</u>
Wire Wrapped		27.08	7407.65
Blank	31.11	2.00	7409.65
Blank		2.05	7411.70
Wire Wrapped		26.82	7438.52
Blank	30.87	2.00	7440.52
Blank		2.02	7442.54
Wire Wrapped		28.80	7471.34
Blank - including Bull Nose	31.55	2.73	7474.07

September 20, 1975

WELL IW-#58

CASING PATCH DETAIL

<u>ITEM</u>	<u>LENGTH</u>	<u>DEPTH</u>
Top of Burns Lead Seal Adapter 6 5/8" x 8 5/8"		2926.00
Adapter Length	3.03	2929.03
<u>6 JOINTS</u>	16.16	2945.19
6 5/8", 24#, K-55, R-1, L.T. & C. Casing	23.18	2968.37
	21.48	2989.85
	21.03	3010.88
	20.81	3031.69
	22.97	3054.66
Burns 6 5/8" x 8 5/8" Lead Seal Hookwall Packer	5.80	3060.46
TOP OF PATCH . . .		2926'
BOTTOM OF PATCH . . .		3060'

September 22, 1975

WELL IW-#58

TUBING DETAIL

<u>ITEM</u>	<u>LENGTH</u>	<u>DEPTH</u>
Below K.B.	13.00	13.00
1 Doughnut	.65	13.65
1 Fatigue Nipple	.65	14.30
1 Pup Joint 2 7/8", 6.5#, 8rd, EUE, N-80	10.20	24.50
235 Joints 2 7/8", 6.5#, 8rd, EUE	7036.20	7060.20
1 2 7/8" Otis Sliding Sleeve (Closed)	3.15	7063.85
1 Joint 2 7/8", 6.5#, 8rd, EUE	32.18	7096.03
1 2 7/8" Landing Nipple, Otis "X"	1.00	7097.03
1 Joint 2 7/8", 6.5#, 8rd, EUE	31.20	7128.23
1 Otis Safety Valve System	12.55	7140.78
1 Joint 2 7/8", 6.5#, 8rd, EUE	29.58	7170.36
1 2 7/8" NO-GO Nipple, Otis "X-N"	1.15	7171.51
1 Locator Sub with Latch Assembly - Baker	.80	7172.31
2 Seal Units - Baker Retrieva "D" Packer	2.35	7174.60
1 2 7/8" Pup Joint, Spacer	4.00	7178.66
1 2 7/8" Pup Joint, Spacer	2.43	7181.09
2 Seal Units - lower bore packing tools	2.50	7183.59

Tubing Latched in and Landed with 10,000# Compression

Tubing Landed at Top of Retrieva "D" Packer at 7176'.

Retrieval "D" Packer I.D. is 3.250"

Seal Bore I.D. is 2.375"

RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Report on Operations

No. T. 275-325

Mr. P. S. Magruder, Jr., Agent  
So. Calif. Gas Company  
P.O. Box 54790, Terminal Annex  
Los Angeles, Calif. 90054

Santa Paula, Calif.  
Oct. 8, 1975

DEAR SIR:

Operations at well No. IW 58, API No. 057-21321, Sec. 27, T. 3N, R. 16W,  
S.B. & M. Aliso Canyon Field, in Los Angeles County, were witnessed  
on Sept. 3, 1975. Mr. L. Bright, representative of the supervisor was  
present from 0730 to 1400. There were also present C. Downey, foreman

Present condition of well: No changes since proposal No. P275-262.

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

HAROLD W. BERTHOLF

~~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 275-262

Mr. P. S. Magruder, Jr.  
Southern California Gas Co. Santa Paula, Calif.  
P.O. Box 54790, Terminal Annex July 21, 1975  
Los Angeles, California 90054

DEAR SIR:

(037-21321)

Your proposal to alter casing Well No. IW 58,  
Section 27, T. 3N, R. 16W, S.B.B. & M., Aliso Canyon Field, Los Angeles County,  
dated 7/20/75, received 7/14/75, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. 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.
2. The drilling fluid used shall be of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts. NO CONTAMINANTS OR TOXIC MATERIAL SHALL BE USED IN ANY DRILLING FLUID THAT IS TO BE PLACED IN AN UNLINED SUMP.
3. Constant surveillance of drilling fluid characteristics and volume shall be maintained by drilling personnel and by the use of mud pit level, volume, and return monitoring equipment.
4. Blowout-prevention practice drills shall be conducted at least weekly for each crew, and recorded in the log book.
5. THIS DIVISION SHALL BE NOTIFIED TO WITNESS A PRESSURE TEST OF THE BLOWOUT PREVENTION EQUIPMENT BEFORE COMMENCING REWORK OPERATIONS.

Blanket Bond  
DER:B  
cc: Operator

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

By ROD Pitman, Deputy

DIVISION OF OIL AND GAS

Notice of Intention to ~~Deepen, Redrill, Plug or~~ Alter Casing in Well

This notice must be given before work begins; one copy only

Los Angeles Calif. July 10 19 75

DIVISION OF OIL AND GAS

In compliance with Section 3203, Chapter 93, Statutes of 1939, notice is hereby given that it is our intention to commence the work of ~~deepening, redrilling, plugging or~~ altering casing at Well No. I.W. #58  
(Cross out unnecessary words)

, 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:

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1. Total depth. 7515'

2. Complete casing record, including plugs:

13 3/8" cemented 717'

8 5/8" cemented 7189', cp'd 2988'

508' 6 5/8" cemented 7506' - top 6998'  
cement plug 7474'

shot four 1/2" jet holes per foot 7484'-7476',  
7473'-7467', 7464'-7433', 7430'-7428', 7422'-7415',  
7406'-7400', 7376'-7372' and 7350'-7345'.

\* plugged off with cement

3. Last produced. GAS STORAGE WELL  
(Date) (Oil, B/D) (Water, B/D) (Gas Mcf/D)

The proposed work is as follows:

1. Move in rig and kill well. Install B.O.P.E. and test.
2. Pull tubing. Pressure test casing and cement off suspected leak at 2988'.
3. Wash perforations.
4. Run packer with 275' 2 3/8" wire wrapped liner and land 7470'. Gravel pressure pack with 10-20 gravel.
5. Run tubing and return to gas storage service.

MAP	MAP BOOK	CARDS	BOND	FORM 114
			BB	✓

P. O. Box 3249, Terminal Annex  
Los Angeles, California 90051  
(Address)  
(213) 689-3561  
(Telephone No.)

SOUTHERN CALIFORNIA GAS COMPANY  
(Name of Operator)  
By P. S. Magruder, Jr.

OPERATOR Ph. L. L. L.  
 LSE & NO. TW 58  
 MAP NO. 150

INTENTION	<u>Drill</u>	<u>ACTRCSM</u>			
NOTICE DATED	<u>10-28-72</u>	<u>7-10-75</u>			
P-REPORT DATED	<u>172-1219</u>	<u>215-262</u>			
CHECKED BY/DATE					
MAP LETTER DATED	<u>4-7-73</u>	<u>N/C</u>			
SYMBOL	<u>⊗</u>	<u>⊗</u>			

REC'D NEED REC'D NEED REC'D NEED REC'D NEED REC'D NEED

NOTICE	<u>10-30-72</u>	<u>7-16-75</u>			
HISTORY	<u>3-29-73</u>	<u>10-27-75</u>			
SUMMARY	<u>3-29-73</u>				
IES/ELECTRIC LOG	<u>10-23-73</u>				
DIRECTIONAL SURV.					
CORE/SWS DESCRIP.					
DIPMETER RESULTS					
OTHER					
RECORDS COMPLETE					

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

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

WELL SUMMARY REPORT

SUBMIT IN DUPLICATE

LONG BEACH, CALIFORNIA

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MAR 2 1973

MAR 29 1973

Operator Pacific Lighting Service Company Well No. SANTA MARIA 58 Santa Maria, California

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

Location From Station 84 1540.52' south and 1840.18' 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 March 14, 1973

Signed [Signature]

E. A. Olson

B. F. Jones

Title Agent

(Engineer or Geologist)

(Superintendent)

(President, Secretary or Agent)

Commenced drilling November 11, 1972

GEOLOGICAL MARKERS

DEPTH

Completed drilling December 6, 1972 Top Sesnon Zone S4 7344

Total depth 7515' Plugged depth 7500'

Junk None

Geologic age at total depth: Miocene

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

Initial production

Production after 30 days

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

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
3-3/8"	717'	sfc	48#	N	S	H-40	17-1/2"	596 cu. ft	
3-5/8"	7189'	sfc	36#	N	S	N-80 & K-55	11"	1003 cu. ft	shoe
5-8"	7506'	6998'	28#	N	S	K-55	7-5/8"	911 cu. ft	2900'
								125	

PERFORATED CASING

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

- 5/8" - 7122' four 1/2" jet holes for WSO
- 5/8" - 7328' four 1/2" jet holes for WSO
- 5/8" - Production perforations four 1/2" jet holes per foot: 7345' to 7484'  
at intervals per history

Was the well directionally drilled? Yes Electrical Log Depths 7190' and 7515' (Attach Copy of Log)

DIVISION OF OIL AND GAS

MAR 27 1973

History of Oil or Gas Well

LONG BEACH, CALIFORNIA

OPERATOR Pacific Lighting Service Co. FIELD Aliso Canyon

Well No. IW 58, Sec. 27, T. 3 N, R. 16 W, SB B. & M.

Date March 14, 19 73 Signed *P. B. Maguire Jr.*

P.O. Box 54790, Terminal Annex  
 Los Angeles, CA 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  
 1972

- 11-10 Well drilled by Atlantic Oil Company, Contractor, rig #11. All measurements taken from top of kelly bushing which was 15' above mat. Spudded well at 7:00 am and drilled 11" hole to 161'.
- 11-11 Drilled 11" hole to 731'. Opened 11" hole to 17-1/2" from 15' to 139'.
- 11-12 Opened 11" hole to 17-1/2" to 620'.
- 11-13 Opened 11" hole to 17-1/2" to 720'. TO CEMENT 13-3/8" SURFACE CASING: Ran 18 joints or 719.20' of 13-3/8" 48#, H-40, R-3, 8 rd, ST&C, new seamless blank casing and cemented same at 717' with 596 cu ft of 87#/cu ft slurry consisting of 335 sacks Class "G" 1:1 Perf-A-Lite cement with 4% gel and 2% calcium chloride. Preceded cement with 100 cu ft of water and displaced with 50 cu ft of water and 480 cu ft of mud. Did not bump plug as had cement returns to surface. 55 minutes mixing and pumping cement to place at 12:01 pm. Moved casing 10' while mixing cement. Good circulation throughout job. Casing fitted on bottom with Baker guide shoe and 10' above shoe with one centralizer. Used HOWCO bulk cement and power. Cut and recovered 13-3/8" casing, welded on casing head and tested same under 4000# for 15 minutes, OK.
- 11-14 Installed GK Hydrill and double Shaffer, hydraulic BOP. Test BOP under 1500# OK by Engineer for Division of Oil & Gas. Ran 11" bit and drilled out cement from 627' to 715' and shoe at 717'. Directionally drilled 11" hole to 946'. Mud: 68#, 35 sec., 8.4 cc., 4% solids.

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LONG BEACH, CALIFORNIA

- 1972
- 11-15 Directionally drilled 11" hole to 1723'.  
Mud: 69#, 36 sec., 8.2 cc., 5% solids.
- 11-16 Directionally drilled 11" hole to 2437'.  
Mud: 71#, 36 sec., 8.5 cc., 6% solids.
- 11-17 Directionally drilled 11" hole to 3004'. Pull out because of  
washout in sub.  
Mud: 71#, 36 sec., 7.8 cc., 6% solids.
- 11-18 Pow-R-Drill 11" hole 3004' to 3097', run #1. Ream 3004-3097'.  
and directionally drill 11" hole to 3304'.  
Mud: 70#, 35 sec., 7.2 cc., 5% solids.
- 11-19 Directionally drilled 11" hole to 3890'.  
Mud: 71#, 35 sec., 8 cc., 6% solids.
- 11-20 Directionally drilled 11" hole to 4505'.  
Mud: 71#, 37 sec., 7.8 cc., 6% solids.
- 11-21 Directionally drilled 11" hole to 4566'. Pow-R-Drill 11" hole to  
4654', runs #2 & #3.  
Mud: 71#, 39 sec., 7.2 cc., 6% solids.
- 11-22 Pow-R-Drill 11" hole to 4660' end run #3. Ream 4566'-4660' and  
directionally drill 11" hole to 4962'.  
Mud: 71#, 37 sec., 7.2 cc.
- 11-23 Directionally drilled 11" hole to 5615'.  
Mud: 73#, 43 sec., 7.2 cc., 7% solids.
- 11-24 Directionally drilled 11" hole to 5705'. Tight spot at 4589' on  
bit change.  
Directionally drilled 11" hole to 6021'.  
Mud: 72#, 39 sec., 7.8 cc., 6% solids.
- 11-25 Directionally drilled 11" hole to 6025'. Dyna drilled and reamed  
6000-6015', and drilled to 6070', run #1 with Dyna drill. 4th  
directional tool run. Reamed 6000-6070' with Dyna drill. Rig  
up Eye tool and Dyna drilled 11" hole to 6157'.  
Mud: 71#, 36 sec., 8.2 cc., 6% solids.
- 11-26 Dyna drilled 11" hole with Eye tool to 6176', end run #2. 5th  
directional tool run. Reamed 5960-6176' and directionally  
drilled 11" hole to 6426'.  
Mud: 72#, 39 sec., 7.8 cc., 6% solids.

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MAR 27 1973

LONG BEACH, CALIFORNIA

- 1972
- 11-27 Directionally drilled 11" hole to 6831'. Pulled tight off bottom on bit change at 6737'.  
Mud: 72#, 43 sec., 7.8 cc., 6% solids.
- 11-28 Directionally drilled 11" hole to 6935'. Pulled tight on 7th and 25th stand on bit change. Measure in hole and ream 6910-6935' and directionally drill 11" hole to 7078'. Pulled into tight spot at 6212' and pipe stuck. Working stuck pipe.  
Mud: 72#, 43 sec., 7.8 cc., 6% solids.
- 11-29 Spotted 50 barrels oil around pipe, moving oil 3 barrels per hour. Working stuck pipe. Ran Dia-Log survey and located free point at 6068'. Ran Dia-Log string shot and backed off pipe at 6068'.  
Mud: 72#, 40 sec., 7.8 cc.,
- Ran jars and bumper sub on 3-7" drill collars and 4-1/2" drill pipe and screwed into top of fish. Jarred fish loose and drilled up through tight spot. Recovered all of fish.
- 11-30 Reamed 6193-7078' and directionally drilled 11" hole to 7190'.  
Mud: 70#, 41 sec., 8.0 cc., 5% solids.
- 12-1 Ran Welex Induction Electric Log and recorded 7189-717'.  
Conditioned hole to run casing.  
TO CEMENT 8-5/8" CASING: Ran 176 joints or 7191.69 feet of 8-5/8", 36#, K-55 and N-80, Buttress thread, R-3, new seamless blank casing and cemented same at 7189 feet with 889 cu. ft. of 94#/cu. ft. slurry consisting of 432 sacks Class "G" cement, 812# of A-2, followed by 100 sacks Class "G" with 2% calcium chloride mixed to 116#/cu. ft. slurry. Moved casing 10 feet and circulated 30 minutes prior to cementing and for 30 minutes while mixing and displacing cement. Preceded cement with 100 cu. ft. water and displaced with 2430 cu. ft. of mud to bump plug to place at 11:04 PM under 2000# final pressure. Held 2000# pressure for 10 minutes. Bled back 7 cu. ft. for total displacement of 2423 cu. ft. Full circulation throughout job. 1 hr. 19 minutes mixing and displacing cement. Dropped plug and opened stage collar at 2988 feet under 1000# pressure. Preceded cement with 100 cu. ft. water. Pumped in 911 cu. ft. of 94#/cu. ft. slurry consisting of 442 sacks Class "G" cement, 831# A-2, and displaced with 10 cu. ft. water and 988 cu. ft. of mud to bump plug and close collar under 2000# pressure at 1:03 AM 12-2-72. Bled back 4 cu. ft. for total displacement of 994 cu. ft. 43 minutes mixing and displacing cement. Full circulation throughout job. No returns to surface. Used Byron Jackson bulk cement and power.

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LONG BEACH, CALIFORNIA

1972

12-1 CASING DETAIL

Bottom 36 joints or 1519.81' (7189-5669') N-80 fitted on bottom with Davis fill-up float shoe and at 7144' with Davis fill-up float collar. TIW turbo centralizers at 7174', 7143', 7100', 7060' and 7020'.

Next 140 joints or 5669.88' (5669' - K.B.) K-55 fitted with metal petal basket at 5300' and 1500' with centralizers one joint above and below each basket. Stage collar at 2988' with one centralizer on joint above.

Total 176 joints or 7189.69'

12-2 Cut and recovered 8-5/8" casing, installed bit guide and reinstalled BOP. Test BOP with 1500# psi, OK. Ran 7-5/8" bit and circulated hole clean at 7130'.

12-3 TO TEST WATER SHUT-OFF ON HOLES IN 8-5/8" CASING AT 7122': Ran Johnston combination gun and tester and shot four 1/2" jet holes at 7122'. Set packer at 7069' with tail to 7096'. Opened tester at 5:20 AM. Light blow increasing to medium blow at end of one hour test. Recovered 48' of drilling fluid in 5" drill pipe. No evidence of gas. Charts OK. Water shut-off approved by engineer for Division of Oil and Gas.

TO PRESSURE TEST 8-5/8" CASING: Closed rams on 5" drill pipe and applied 2000# pressure which bled off to 1850# in 10 minutes. Ran Johnston retrievable cement tool on 5" drill pipe and set tool at 7105'. Applied 2000# pressure with Halliburton pump truck. Pressure bled off to 1800# in 20 minutes and held 1800# for 50 minutes. Holes not taking fluid.

12-4 Drilled out cement and drilled out to shoe and converted to special light weight drilling fluid. Drilled 7-5/8" hole to 7307'.  
Mud: 64#, 35 sec., 7.2 cc., 0 solids.

12-5 Drilled 7-5/8" hole to 7500' and conditioned hole for log. Ran Schlumberger log which stopped at 7363'.

12-6 Reamed from 7372-7402' and cleaned out fill 7480-7500' and drilled to 7515' TOTAL DEPTH. Ran Schlumberger Induction Electric and Density-Neutron Logs. Conditioned hole for liner.

12-7 TO CEMENT 6-5/8" LINER: Ran 12 joints or 508.41 of 6-5/8", 27.65#, K-55, Security flush joint, R-3, new seamless blank casing as liner on 4-1/2" drill pipe and landed same at 7506'. Cement

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- 1972
- 12-7 125 sacks of Class "G" cement. Liner had to be circulated to reach 7506'. No circulation. Preceded cement with 500 gallons of "Mud Flush" and displaced with 50 cu. ft. of water and 634 cu. ft. of mud. Partial to full circulation while displacing cement to place at 8:10 AM. 35 minutes mixing and displacing cement to place. Details of equipment on liner in well file. Used Byron Jackson bulk cement and power.  
Ran 7-5/8" bit with casing scraper above and ran in to top of liner at 6998'. Applied 1800# pressure and pumped away at 1700# which bled back to 1300# in 10 minutes. Determined lap taking fluid.
- 12-8 TO SQUEEZE 6-5/8" x 8-5/8" LAP WITH CEMENT: Ran Johnston retrievable cementer on 4-1/2" drill pipe and set same at 6880'. Squeezed 25 sacks Class "G" cement away in stages with 3000# final pressure. Cement in place at 6:15 PM. Held 1000# on annulus. Used Byron Jackson cement and power. (See well file for details.)
- 12-9 Ran 7-5/8" bit with casing scraper above and ran in to liner top at 6998'. No cement. Applied 2000# pressure with rig pump and lap held OK. Ran 5-3/8" bit to 7500' and circulated hole clean.  
TO TEST WATER SHUT-OFF ON 6-5/8" x 8-5/8" LAP AT 6998': Ran Johnston tester on 4-1/2" drill pipe and set packer at 6952' with tail to 6970'. Opened tool at 8:07 PM for one hour test. Puff blow, dead balance of test. Recovered 30' rise of drilling fluid in 4-1/2" drill pipe. Water shut-off by company test. Charts OK.
- 12-10 Ran Welex Cement Bond and Neutron Logs. Welex shot four 1/2" jet holes at depth equivalent to 7328' on Schlumberger Neutron-Density Log run 12-6-72.  
TO TEST WATER SHUT-OFF ON HOLES IN 6-5/8" LINER AT 7328': Ran Johnston tester on 4-1/2" drill pipe and set packer at 7290' with tail to 7307'. Opened tool at 11:55 AM for one hour test. Medium blow 5 minutes, light blow next 35 minutes and dead after 40 minutes. Recovered 50' rise of mud in 3-1/2" drill pipe. Charts OK. Water shut-off approved by company test.
- 12-11 Installed Shaffer tubing head and flanged up BOP. Tested upper and lower sealing flange with 3500# psi for 15 minutes OK. Ran drill pipe to 7500' and displaced mud in hole with salt water treated with 3# barrels. Aktaflos (DMS equivalent). Layed down drill pipe.

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12-12 Finish laying down drill pipe and ran Schlumberger Thermal Neutron Decay Time Log.  
Ran Dresser Atlas 4" OD jet gun and shot four 1/2" "Golden Jets" per foot at TDT log depth of: 7345-7350', 7372-7376', 7400-7406', 7415-7422', 7428-7430', 7433-7464', 7467-7473', and 7476-7484'.  
Dresser Atlas set Otis type WC 8-5/8" packer at 6975'.

12-13 Ran 2-7/8", 6.5#, N-80, 8rd., upset tubing with 1/2" Bundy tubing strapped alongside and tested to 5000# with nitrogen. Attempted to latch onto packer, but could not latch. Set down on packer and pumped out Otis plug.

12-14 TUBING DETAIL  
224 joints of tubing, including pups and control valve -- 6951.22'  
Kelly bushing to tubing head 12.00'  
Bottom of Otis tool 6963.22'

Removed BOP, installed Christmas tree and tested to 5000# OK.  
RIG RELEASED AT 3:30 PM 12-14-72.

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MAR 27 1973

LONG BEACH, CALIFORNIA

RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Report on Operations

No. T 172-1390

Mr. P. S. Magruder, Jr., Agent  
PACIFIC LIGHTING SERVICE CO.  
P.O. Box 54790, Terminal Annex  
Los Angeles, CA 90054

Long Beach, Calif.  
Dec. 8, 1972

DEAR SIR:

Operations at well No. IV 58 (037-21321), Sec. 27, T. 3N, R. 16W, S.B. B & M.  
Aliso Canyon Field, in Los Angeles County, were witnessed  
on Dec. 3, 1972. Mr. W. Guerard, Engineer, representative of the supervisor was  
present from 0830 to 0930. There were also present H. Price, Foreman, and  
D. Richards, Tester Operator.

Present condition of well: 20" cem. 30'; 13-3/8" cem. 717'; 8-5/8" cem. 7189', cp 2988',  
perf. 7122' WSD. Present depth 7189'.

The operations were performed for the purpose of testing the water shut-off with a formation  
tester.

Mr. \*\*\*\* reported:

**THE 8-5/8" SHUT-OFF AT 7122' IS APPROVED.**

WG:dr

cc Company

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

By WS [Signature] Deputy

RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF CONSERVATION

**DIVISION OF OIL AND GAS**

**Report on Operations**

No. T 172-1325

Mr. P. S. Magruder, Jr., Agent  
PACIFIC LIGHTING SERVICE CO.  
P.O. Box 54790, Terminal Annex  
Los Angeles, CA 90054

Long Beach, Calif.  
Nov. 17, 1972

DEAR SIR:

Operations at well No. IW 58 (037-21321), Sec. 27, T. 3N, R. 16W, S.B. B & M.  
Aliso Canyon Field, in Los Angeles County, were witnessed  
on Nov. 14, 1972. Mr. H. Lang, Engineer, representative of the supervisor was  
present from 0640 to 0830. There were also present H. Price, Drilling Foreman,  
and G. Gardner, Driller.

Present condition of well: 13-3/8" cem. 717'. Present depth: 731'. (Standing cemented.)

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

Mr. ---- reported:

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

HL:dr

cc Company

*HL*

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

By W. E. Dugan Deputy

## DIVISION OF OIL AND GAS

## REPORT ON PROPOSED OPERATIONS No. P 172-1219

Mr. P. S. McGruder, Jr., Agent  
PACIFIC LIGHTING SERVICE CO.  
P.O. Box 54790, Terminal Annex  
Los Angeles, CA 90054

Inglewood, Calif.  
November 2, 1972

DEAR SIR:

Your proposal to drill Well No. IW 58 (037-21321),  
Section 27, T. 3N, R. 16W, S.B.B. & M., Aliso Canyon Field, Los Angeles County,  
dated 10/28/72, received 10/30/72, has been examined in conjunction with records filed in this office.

## THE PROPOSAL IS APPROVED PROVIDED:

1. A COPY OF THIS REPORT SHALL BE POSTED AT THE WELL SITE PRIOR TO COMMENCING OPERATIONS.
2. Sufficient cement shall be pumped back of the 13-3/8" casing to reach to the surface.
3. Drilling fluid of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts shall be used.
4. The surface casing shall be cemented in competent beds and blowout prevention equipment conforming to this Division's Class III requirements, shall be installed and maintained in operating condition at all times.
5. Sufficient cement shall be used to fill all the space back of the 8-5/8" casing to above the top of any oil, gas or salt water-bearing formations, or the casing shall be cemented also through ports at a point below the base of the fresh water-bearing formations with sufficient cement to fill above such base.
6. THIS DIVISION SHALL BE NOTIFIED TO WITNESS:
  - a. A test of the effectiveness of the blowout prevention equipment prior to drilling out cement in the shoe of the 13-3/8" casing.
  - b. A test of the effectiveness of the 8-5/8" shut-off above the Senon and Frew zones.

ADS:dr

cc Company

Blanket Bond

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

By W. E. Ingram, Deputy

9 RECEIVED  
OCT 30 1972 Gas Storage  
INGLEWOOD, CALIFORNIA

037-21321

**DIVISION OF OIL AND GAS**  
**Notice of Intention to Drill New Well**  
This notice and surety bond must be filed before drilling begins

Los Angeles Calif. Oct. 28 1972

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. TW 58 (037-21321), Sec. 27, T. 3N, R. 16W, S. B. B. & M., Aliso Canyon Field, Los Angeles County.

Legal description of mineral-right lease, consisting of \_\_\_\_\_ acres, is as follows: \_\_\_\_\_  
(Attach map or plat to scale)  
(plat has been filed)

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

Location of Well: 1541 feet South (Direction) along ~~section~~ <sup>property</sup> line and 1840 feet East (Direction) at right angles to said line from ~~the~~ Station BA ~~corner of section~~ <sup>property</sup>

Elevation of ground above sea level 1993.07 feet S.L. datum.

All depth measurements taken from top of K.B. 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
<u>13 3/8</u>	<u>48#</u>	<u>5m/s H-40</u>	<u>0</u>	<u>700</u>	<u>700</u>
<u>8 5/8</u>	<u>36#</u>	<u>5m/s K-55 N-60</u>	<u>0</u>	<u>±7000</u>	<u>7000 ± CP if necessary</u>
<u>6 5/8</u>	<u>27.65#</u>	<u>5m/s K-55</u>	<u>±6950</u>	<u>±7200</u>	<u>7200</u>

Intended zone(s) of completion: Sesnon & FIPA 7000'-7200' (Name) Estimated total depth 7200' (Depth, top and bottom)

MAP	MAP BOOK	CARDS	BOND	FORMS
				114 124
<u>7m G</u>	<u>7m G</u>	<u>ARG</u> <u>ARG</u>	<u>B</u>	<u>ARG</u> <u>ARG</u>

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

Address P.O. Box 3249 T.A.  
Los Angeles, Cal. 90051  
Telephone Number 360-2389

Pacific Lighting Service Co. (Name of Operator)  
By P.S. Magruder, Jr / 179  
Type of Organization Corporation (Corporation, Partnership, Individual, etc.)