

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

No. T200-125

Report on Operations

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

Ventura, California
August 15, 2000

Your operations at well "**Fernando Fee**" 33, API No. 037-00687, Sec. 34, T. 3N, R.16W, S.B.B.&M. **Aliso Canyon** Field, in **Los Angeles** County, were witnessed on 07-17-2000. **Steve Mulqueen**, representative of the supervisor, was present from 1400 to 1600. There were also present **Art Thomas**.

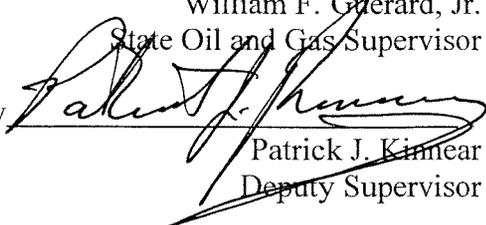
Present condition of well: 13 3/8" cem 996'; 7" cem 7630', cp 6302'; 5 1/2" casing patch 6285'-6327'; 5" ld 7598'-7630'; 4 1/2" ld 7510'-7739', perf 7532'-7738'. TD 7740'. Plugged w/ cem 7678'-7633'. Packer 7481'.

The MIT was performed for the purpose of witnessing an initial temperature survey prior to start-up of a water-disposal project.

DECISION:

The MIT is approved.

CBT

William F. Gerard, Jr.
State Oil and Gas Supervisor
By 
Patrick J. Kimnear
Deputy Supervisor

8/17/01

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

No. T 200-125

STATIC TEMPERATURE SURVEY
MECHANICAL INTEGRITY TEST (MIT)

Operator: <u>SOUTHERN CALIFORNIA GAS CO.</u>					Well: <u>"FERNANDO FEE" 33</u>				
Sec.	T.	R.	B.&M.	API No.:	Field:				
<u>34</u>	<u>3N</u>	<u>16W</u>	<u>SB</u>	<u>037-00687</u>	<u>ALISO CANYON</u>				
County: <u>LOS ANGELES</u>					Witnessed/Reviewed on: <u>7-17-2000</u>				
<u>STEVE MULQUEEN</u> , representative of the supervisor, was present from <u>1400</u> to <u>1600</u> .									
Also present were: <u>ART THOMAS</u>									
Casing record of the well: <u>13 3/8" cem 996'; 7" cem 7630', cp 6302'. 5 1/2" CASING PATCH 6285' - 6327'; 5" ID 7598' - 7630'; 4 1/2" ID 7510' - 7739', poof 7532' - 7738'. TD 7740'. Plugged w/ cem 7678' - 7633'. Packer 7481'.</u>									
The MIT was performed for the purpose of <u>WITNESSING AN INITIAL TEMPERATURE SURVEY PRIOR TO START-UP OF A WATER-DISPOSAL PROJECT</u>									
<input checked="" type="checkbox"/> The MIT is approved since it indicates that all of the injection fluid is confined to the formations below _____ feet at this time.									
<input type="checkbox"/> The MIT is not approved due to the following reasons: (specify)									

STATIC
TEMPERATURE LOG

Well: FERNANDO FEE '33		Date: RUN ON 7-10-2000		Time: 10:00	
Observed rate: B/D		Meter rate: B/D		Fluid level: 4410' feet	
Injection pressure: psi		MASP:		Pick-up depth: 7716' feet	
Initial annulus pressure: 2380 psi			Pressure after bleed-off: 2050 psi		
Casing vented during test (Y/N)		Survey company: FIRST ENERGY SERVICES SAM PELLEGRINE			
SPINNER COUNTS					
DEPTH	COUNTS	RATE	DEPTH	COUNTS	RATE
COMMENTS: BOTTOM HOLE 174.6 °F 7' KB TBG 2380 PSI CSG 2380 PSI					
TRACER CASING AND TUBING RATE CHECKS					
Interval	Time (sec.)	Rate (B/D)	Background log: _____ to _____		
COMMENTS: bled casing to 2050 prior to running test. SLIGHT TEMP CHANGE @ 7410'					
TOP PERFORATION CHECK					
Top perforation depth:		Wait at: _____ for _____		seconds	Beads: (Y/N)
Casing shoe at:	WSO holes at:		Arrival time: <i>Calculated</i>	<i>Actual</i>	
LOG FROM	TO	SLUG @	LOG FROM	TO	SLUG @
COMMENTS:					
PACKER CHECK					
Packer at:		Wait at: _____ for _____		seconds	Beads: (Y/N)
Tubing tail at: 7491		Tubing size: 2 7/8"	2nd Packer at:		Mandrel: * 6709
LOG FROM	TO	SLUG @	LOG FROM	TO	SLUG @
COMMENTS:					
COMMENTS: plug back to 7740 13 3/8" con 996', 7" C 7630, 4 1/2" Ld 7510-7739, PERFS 7532-7552 * MANDRELS 2313, 3649, 4846, 5855, 6709, 7410', P7570' WSO 7610-7738					



August 26, 1998

Mr. Steve Fields
Division of Oil and Gas
1000 South Hill Road, Suite 116
Ventura, CA 93003-4458

Fernando Fee 30 Radioactive Tracer Survey

Southern California
Gas Company

12801 Tampa Ave
Northridge, CA
91324

818 368-4958

Dear Mr. Fields:

Enclosed you will find copies of the Fernando Fee (FF) 30 water injection profile and the offset well temperature surveys (wells FF 33, FF 35D and Porter 37A). The water injection survey indicates injection is confined below the top perforation and packer. With respect to the offset temperature surveys, there is a temperature anomaly at ~3,380' near a casing patch in well FF 35D. We will re-survey this well to determine if the anomaly has changed character since the FF 30 solids injection well has been idle since the August 4th water injection survey. Should the anomaly still be present, will run another survey with lower casing pressure to further monitor the anomaly. Copies of the 1997 temperature surveys of the offset wells are also enclosed.

Please revise the project letter you previously sent to Jim Mansdorfer to reflect that this is a solids disposal project; the previous letter refers to FF 30 as a water disposal project.

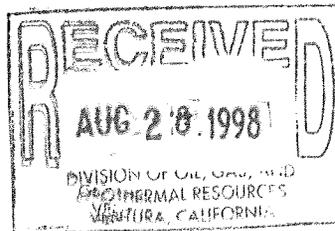
Thank you for your assistance. If you need more information, please contact me at (805) 253-7077.

Sincerely,



Steve Cardiff
Petroleum Engineer

cc: J. Mansdorfer
T. Schroeder



Enclosures

DEPARTMENT OF CONSERVATION

1000 S. Hill Road, Suite 116
Ventura, CA 93003-4458

(805) 654-4761
FAX (805) 654-4765



July 22, 1998

James D. Mansdorfer
Southern California Gas Co.
22245 Placerita Canyon Road ML9181
Newhall, CA 91322-1124

Dear Mr. Mansdorfer:

**Water-Disposal Project
Aliso Canyon Field
"Fernando Fee" 30**

In the process of conducting an evaluation into your "Notice to Rework" and "Supplementary Notice" for "Fernando Fee" 30, this Division determine that several wells in the vicinity of the well did not have the required cement behind the production string to protect the fresh waters from injection zone. However, this Division was able to approve the injection into this wells provided that a monitoring program was devised. As a result, the Division will require that static temperature surveys be conducted on the following wells within 60 days after injection has commenced and once a year thereafter.

Wells

"Fernando" Fee 35D
"Fernando Fee" 33
"Porter" 37-A

This Division shall be notified every year to witness the surveys and copies submitted within 60 days after the surveys are conducted.

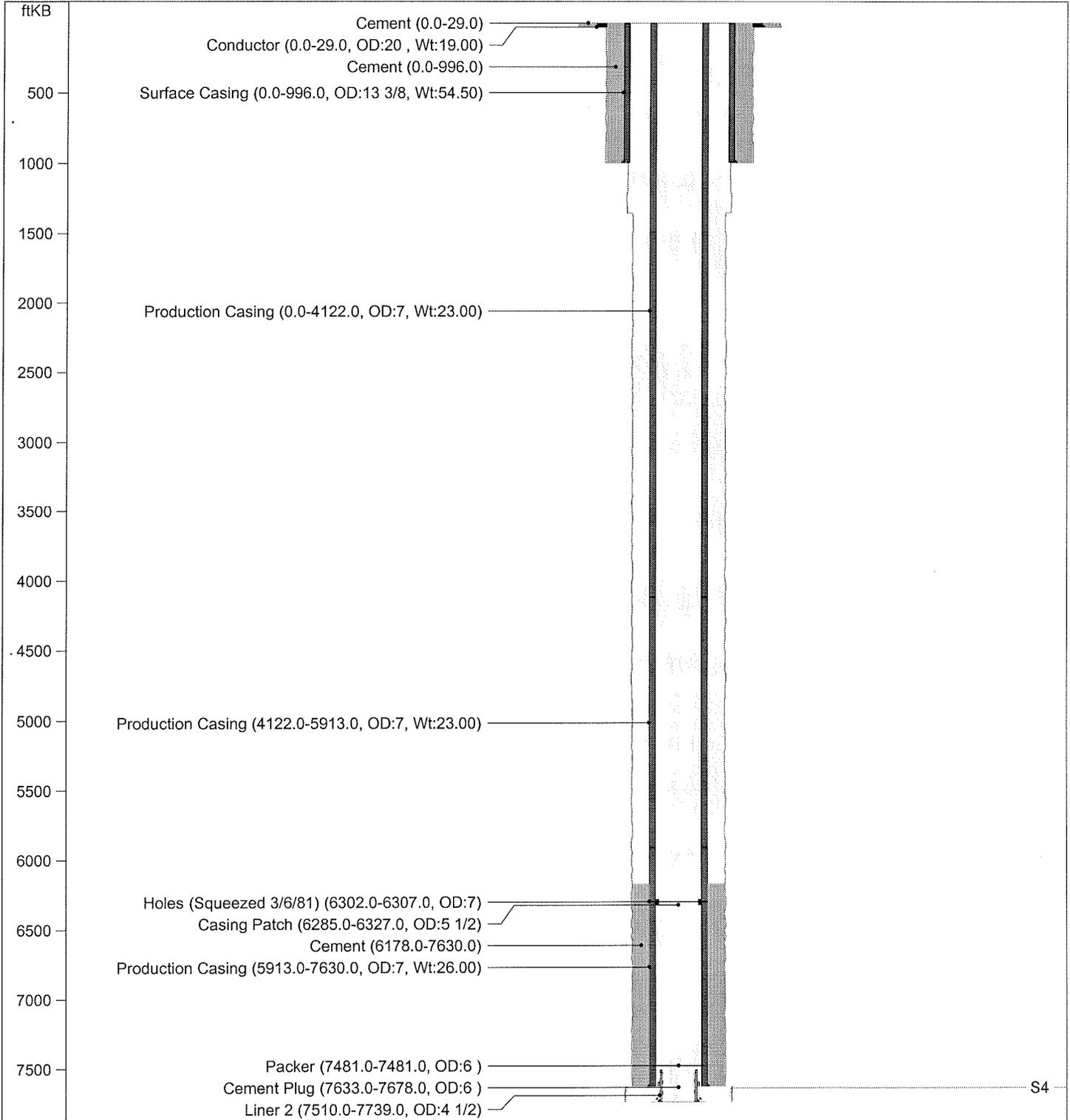
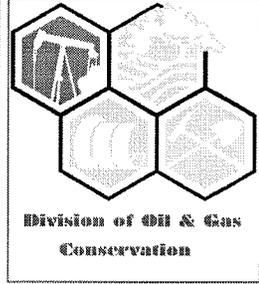
If you have any questions on this matter, please contact us (805) 654-4761.

A handwritten signature in black ink, appearing to read "S. A. Fields".

Steven A. Fields
Operations Engineer
Division of Oil, Gas, and
Geothermal Resources

04037006870100

Well Name	FERNANDO FEE 33
Operator	SOUTHERN CA GAS CO
Field Name	ALISO CANYON
TD	7740.0 ftKB
PBTD	7633.0 ftKB
Approval Date	23-Oct-80
Spud Date	29-Jan-81
TD Date	01-Feb-81
Production Date	
Injection Date	
P/A Date	



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

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APR 05 1993

History of Oil or Gas Well

VENTURA, CALIFORNIA

Operator Southern California Gas Company Field Aliso Canyon County Los Angeles.
Well Fernando Fee 33.....34 Sec.....3N.....16 WRS. B. & M. B. & M.
A.P.I. No. 037-00687..... Name R. D. Phillips..... Title Agent.....
Date March.....31, 19...93 (Person submitting report) (President, Secretary or Agent)

Signature *J. Hemmerly*
J. A. Hemmerly for R. D. Phillips

P. O. Box 3249 Los Angeles, CA 90051-1249.....(213) 244-2687.....
(Address) (Telephone Number)

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

Date

1993

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VENTURA, CALIFORNIA

- 03/22 Move in - rig up. Installed back pressure valve. Removed x-mas tree. Nippled up BOPE. Removed back pressure valve. Secured well.
- 03/23 Nippled up BOPE. Tested pipe rams and choke manifold to 4000 psi, annular preventor to 2000 psi. Determined tubing hanger leaking. Steve Fields with D.O.G. waived blind ram test. Released tubing from Baker Retrieval packer. Pulled tubing to 3500'.
- 03/24 Pulled out of well with 2-7/8" tubing and Baker seal assembly. Ran in well with new seal assembly, Baker locator latch, 1 jt. 2-7/8" tbg, Otis 2.205" XN nipple, 1 jt. 2-7/8" tbg, 2-7/8" MMA GLM, 22 jts. 2-7/8" tbg, 2-7/8" MMA GLM, 27 jts. 2-7/8" tbg, 2-7/8" MMA GLM, 32 jts. 2-7/8" tbg, 2-7/8" MMA GLM, 38 jts. 2-7/8" tbg, 2-7/8" MMA GLM, 43 jts. 2-7/8" tbg, 2-7/8" MMA GLM, 32 jts. 2-7/8" tbg., 2-7/8" pup jts., 1 jt. 2-7/8" tbg. Plug tested Baker seal assembly. Internally tested tubing to 4000 psi. Spaced out well. Stabbed into Baker packer. Pulled 20,000 lbs over string weight to test latch. Landed tubing with 12,000 lbs of compression on packer.
- 03/25 Installed back pressure valve. Nippled down BOPE. Installed xmas tree. Tested xmas tree to 5000 psi. Tested casing valves to 5000 psi. Released rig at 6:00 p.m.

DOG 4/2/93

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

No. P293-058
Field Code 010
Area Code 00
New Pool Code 30
Old Pool Code 30

PERMIT TO CONDUCT WELL OPERATIONS
GAS STORAGE

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

Ventura, California
February 22, 1993

Your proposal to rework well "Fernando Fee" 33,
A.P.I. No. 037-00687, Section 34, T. 3 N, R. 16W, S.B. B.&M.,
Aliso Canyon field, --- area, Sesnon-Frew pool,
Los Angeles County, dated 2-18-93, received 2-19-93, has been
examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOG Class 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. This office shall be consulted before initiating any changes or additions to this proposed operation, or if operations are to be suspended.
4. THIS DIVISION SHALL BE NOTIFIED:
 - a. To inspect the installed blowout prevention equipment before commencing downhole operations.

WALMEC SF
3/23/93

Blanket Bond
PK:SF:nr

Engineer Steve Fields
Phone (805) 654-4761

WILLIAM F. GUERARD, Jr.
Acting State Oil and Gas Supervisor
By *Patrick V. Kinnear*
Patrick V. 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

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

Notice of Intention to Rework Well

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

FOR DIVISION USE ONLY		
BOND	FORMS	
	OGD 114	OGD 121
BB	2-1993	✓

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework well Fernando Fee #33, API No. 037-00687
(Well designation)
Sec. 34, T. 3N, R. 16W, SB B. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

- Total depth 7740'
- Complete casing record, including plugs and perforations (present hole)
See Attachment

DIVISION OF OIL AND GAS
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FEB 19 1993

VENTURA, CALIFORNIA

- Present producing zone name Sesnon; Zone in which well is to be recompleted _____
- Present zone pressure 1900 psig; New zone pressure _____
- Last produced Gas Storage Project
(Date) *(Oil, B/D)* *(Water, B/D)* *(Gas, Mcf/D)*
(or)
Last injected _____
(Date) *(Water, B/D)* *(Gas, Mcf/D)* *(Surface pressure, psig)*
- Is this a critical well according to the definition on the reverse side of this form? (Yes) (No)

The proposed work is as follows:

See Attachment

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

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

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

Southern California Gas Co.
(Name of Operator)
By E. S. Sinclair for R. D. Phillips (Agent)
(Name-Printed)
E. S. Sinclair 2/18/93
(Name-Signature) (Date)

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

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

NOTICE OF INTENTION TO REWORK WELL
Fernando Fee #33

ATTACHMENT

2. Complete casing record, including plugs and perforations
(Present Hole)

0' - 996'	13-3/8"	55#	J-55
0' - 7630'	7"	23 & 26#	J-55 & N-80, Patch 6285'-6327'.
7510' - 7740'	5"	18#	Wire wrapped liner 7738'-7610' and 7572'- 7532'.

The proposed work is as follows:

1. Move in, rig up, install and test BOPE.
2. Pull tubing and clean out well.
3. Install tubing with new gas lift design.
4. Recomplete well and return to service.

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FEB 19 1993

VENTURA, CALIFORNIA

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT ON PROPOSED CHANGE OF WELL DESIGNATION

Ventura, California

November 12, 1991

R. D. Phillips, Agent
SOUTHERN CALIFORNIA GAS COMPANY
P.O. Drawer 3249 Mail Location 22G0
Los Angeles, CA 90051

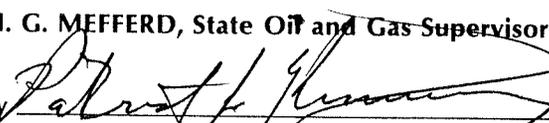
Your request, dated July 24, 1991, proposing to change the designation of well(s) in Sec. 34, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon field, Los Angeles County, District No. 2, has been received.

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

<u>FROM</u>	<u>TO</u>
"SFZU" FF-31 (037-00685)	"Fernando Fee" 31 (037-00685)
"SFZU" FF-33 (037-00687)	"Fernando Fee" 33 (037-00687)
"SFZU" FF-34 (037-00688)	"Fernando Fee" 34 (037-00688)
"SFZU" FF-35 (037-00689)	"Fernando Fee" 35 (037-00689)
"SFZU" MX-1A (037-21891)	"Mission Adrian" 1A (037-21891)
"SFZU" MA-1B (037-21892)	"Mission Adrian" 1B (037-21892)
"SFZU" MA 5 (037-00695)	"Mission Adrian" 5 (037-00695)
"SFZU" MA 5-A (037-22309)	"Mission Adrian" 5A (037-22309)
"SFZU" PF-3 (037-00646)	"Porter Fee" 3 (037-00646)
"SFZU" FF-34-A (037-22044)	"Fernando Fee" 34-A (037-22044)
"SFZU" FF-34-B (037-22302)	"Fernando Fee" 34-B (037-22302)
"SFZU" MA-3 (037-00693)	"Mission Adrian" 3 (037-00693)
"SFZU" MS-4 (037-00694)	"Mission Adrian" 4 (037-00694)
"SFZU" PF-1 (037-00644)	"Porter Fee" 1 (037-00644)
"SFZU" PF-2 (037-00645)	"Porter Fee" 2 (037-00645)

M. G. MEFFERD, State Oil and Gas Supervisor

By


Deputy Supervisor
PATRICK J. KINNEAR

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

APR 6 1981

API No. 037-00687

WELL SUMMARY REPORT

SANTA PAULA, CALIFORNIA

Operator Southern California Gas Company		Well Fernando Fee #33			
Field Aliso Canyon		County Los Angeles		Sec. 34	T. 3N
Location (Give surface location from property or section corner, street center line and/or California coordinates)		R. 16W	B.&M. S.B.		
3934.03' south & 1642.05' east of station #84		Elevation of ground above sea level 2060.23'			
Commenced drilling (date) 1-8-81 (Redrill)	Total depth			Depth measurements taken from top of:	
Completed drilling (date) 3-11-81	(1st hole) 7730'	(2nd) 7740'	(3rd)	<input checked="" type="checkbox"/> Derrick Floor <input type="checkbox"/> Rotary Table <input type="checkbox"/> Kelly Bushing Which is 6.92 feet above ground	
Commenced producing (date)	Present effective depth 7740'			GEOLOGICAL MARKERS	
<input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas lift	Junk None			DEPTH 7642'	
Name of producing zone(s) Seson	Formation and age at total depth Seson zone, Miocene				

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

Size of Casing (API)	Top of Casing	Depth of Shoe	Weight of Casing	Grade and Type of Casing	New or Second Hand	Size of Hole Drilled	Number of Sacks of Cement	Depth of Cementing (if through perforations)
13-3/8"	Surface	996'	54.5#	J-55	New	17-1/2"	780	
7"	Surface	7630'	23 & 26	J-55 & N-80	New	11"	500	

PERFORATED CASING (Size, top, bottom, perforated intervals, size and spacing of perforation and method.)
229' 4-1/2" landed 7739', top 7510', 10 mesh wire wrapped 7738'-7610' & 7572'-7532'. Gravel flow packed with 91 sacks 20-40 gravel

Was the well directionally drilled? If yes, show coordinates at total depth
 Yes No No survey run

Electrical log depths
7740'

Other surveys
compensated neutron & density, caliper & photon

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

Name P. S. Magruder Jr.	Title Agent
Address P.O. Box 3249 Terminal Annex	City Los Angeles
Telephone Number (213) 689-3561	Zip Code 90051
Signature <i>P. S. Magruder Jr.</i>	Date 4/2/81

DIVISION OF OIL AND GAS

MAR 21 1961

History of Oil or Gas Well

SANTA PAULA, CALIFORNIA

Operator Southern California Gas Co. Field or County Los Angeles
Well Fernando Fee #33, Sec. 34, T 3N, R 16W S.B.B. & M.
A.P.I. No. 037-00687-01 Name P.S. Magruder Jr. Title Agent
Date _____, 19____ (Person submitting report) (President, Secretary or Agent)

Signature *P.S. Magruder Jr.* 3/20/61

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

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

Date

GWO #98751 was issued to redrill and gravel flowpack
Fernando Fee #33.

1981

- 1-08 0 Day. Archer Reed ran tubing perforator to 6250'. Tubing plugged. Shot hole 3/8" at 6238'. Ran 2nd gun and tubing was open. Ran to mandrel at 7410'. Shot 2nd hole at 7341'.
- 1-09 0 Day. Using Haliburton truck killed well. Used 303 bbls 81#/ cu. ft. polymer completion fluid.
- 1-12 0 Day. Moved CPS rig D-4 on location. Started rigging up.
- 1-13 1st Day. Rigged up. Installed 5000# Class III BOPE. Tested manifold, blind and pipe rams, at 4000 psi with water for 20 minutes. Tested Hydril 3000 psi with water for 20 minutes.
- 1-14 2nd Day. Filled hole with 100 bbls 81#/cu. ft. polymer completion fluid. Circulated well, drilling fluid came back at 70#/cu. ft. Circulated through Baker tank to dispel gas. Worked tubing but could not unlatch from packer. Ran free point. Tubing open to 7457'. Heavy wall below mandrel at 7419' and 7451'. Tubing free at 7445'.
- 1-15 3rd Day. McCullough made chemical cut in 2-7/8" tubing at 7440'. Circulated and increased mud weight from 77#/cu. ft. to 81#/cu. ft. Layed down 2-7/8" tubing. Picked up 2 joints 5-1/2" wash pipe and 4 - 4-3/4" drill collars. Going in hole picking up 2-7/8" drill pipe.
- 1-16 4th Day. Finished picking up 2-7/8" drill pipe. Washed over fish from 7445' to 7489'. Circulated 1 hour at 7489'. Pulled off fish and circulated hole clean. Started out of well.
- 1-17 5th Day. Finished pulling out of well. Ran in hole with over shot. Latched on to fish. Pulled out of well, recovered all tubing and production equipment. Going in well with packer recovery tool.

- 1-19 6th Day. Finished going in well with Baker packer recovery tool. Latched into packer, sheared pins and tried to pull packer with 40,000#. Worked packer and tripped jarstwo times when the top collar on recovery tool parted on mandrel. Left the packer recovery tool in the well. Going in well with spear (2-3/8" OD) to fish for packer recovery tool.
- 1-20 7th Day. Repaired pump. Increased mud weight from 79#/cu. ft. to 80#/cu. ft. Pulled recovery tool out of packer. Ran new Baker packer recovery tool, freed packer and started out of hole.
- 1-21 8th Day. Finished pulling out of well. Recovered packer. Ran in well with 4-1/8" bit and 2-3/8" tubing tail. Bit stopped at 7712' (TD 7726). Circulated 2-1/2 hours. Pulled out of well. Ran 5" inside cutter and cut 5" liner at 7625'. Pulled 2 stands.
- 1-22 9th Day. Finished pulling casing cutter. Ran in well with spear. Jarred fish free. Pulled out of well, recovered 26.80' of hanger and 5" liner. Ran in well with 6-1/8" x 4-1/8" pilot mill.
- 1-23 10th Day. Milled 5" liner 7625' to 7634'. 4 hours working on pump.
- 1-24 11th Day. Milled 5" liner from 7634' to 7658'. Circulated 2 hours. Pulled out of well and changed mills. Going in well with mill #2.
- 1-25 12th Day. Idle.
- 1-26 13th Day. Milled 5" liner from 7658' to 7680'. Circulated hole clean. Pulled out with mill #2 and ran hole opener.
- 1-27 14th Day. Ran in with 10" hole opener #1. Opened hole from 7630' to 7680'. Circulated hole clean. Pulled 6-1/8" x 10" hole opener.
- 1-28 15th Day. Ran in open ended - plugged with 60 cu. ft. Class "G" cement mixed with 20% sand from 7680' to 7461'. Drilled out cement to 7550'. Waiting on cement to set.
- 1-29 16th Day. Waited on cement from 12 a.m. to 8 a.m. Drilled out cement to 7630'. Made up mud motor with Bent Housing. Ran in with Bit #2 - directionally drilled 6-1/8" hole in northerly direction.
- 1-30 17th Day. Dyna drilled from 7646' to 7662'. Pulled Dyna Drill. Ran in with Bit #3. Directionally drilled 6-1/8" hole from 7662' to 7740'.
- 1-31 18th Day. Circulated hole clean. Pulled out. Ran Welex induction compensated density and neutron logs. Ran hole opener #1 7630' to 7663'. Pulled hole opener. Ran in with bit to clean out 6-1/8" hole.

- 01 19th Day. Ran in to 7663'. Drilled to 7664' - unable to get into 6-1/8" hole. Pulled out. Picked up Dyna Drill. Ran in to 7664'. Oriented Dyna Drill. Reamed hole attempting to locate 6-1/8" hole. Drilled on old liner at 7680'.
- 2-02 20th Day. Mixed 48 sacks Class "G" cement + 12 sacks sand. Equalized at 7678'. Pulled 10 stands and reversed out drill pipe. Pulled out of well. Ran in well with 6-1/8" bit. Found soft cement at 7546'. Drilled out cement to 7580'. Waited till 5 p.m. Drilled out to 7633'. Pulled out of well. Picked up Dyna Drill.
- 2-03 21st Day. Dyna drilled from 7633' to 7668'. Ran in well with 6-1/8" Bit #4. Drilled from 7668' to 7683'.
- 2-04 22nd Day. Drilled 6-1/8" hole from 7683' to 7699'. Pulled out of well. Ran in hole with Bit #5. Drilled from 7699' to 7740'. Circulated hole clean. Ran Welex induction log.
- 2-05 23rd Day. Ran Welex induction log from 7630' to 7735'. Opened 6-1/8" hole to 13" from 7630' to 7672'. Left nose of hole opener in well. Ran Grant 6" mill and pushed nose to 7740'.
- 2-06 24th Day. Finished pulling mill. Ran hole opener. Opened hole 7672' to 7675'. Pulled out of well. Ran in hole with new hole opener. Opened hole from 7640' to 7687'. Pulled out and ran new hole opener.
- 2-07 25th Day. Opened 6-1/8" hole to 13" from 7687' to 7691'. Pulled out and ran new hole opener. Opened hole from 7691' to 7693'. Pulled out and ran hole opener #7. Opened hole from 7693' to 7708'. Circulated hole clean.
- 2-08 26th Day. Pulled out of well. Ran opener #8 and opened 6-1/8" to 13" from 7708' to 7723'. Pulled out of well. Ran hole opener #9 and opened hole from 7723' to 7740'. Circulated bottoms up. Started out of well.
- 2-09 27th Day. Pulled out of well. Ran new hole opener and reamed hole 7630' to 7740'. Circulated 3 hours and pulled out of well. Ran Dresser Atlas caliper log from 7630' to 7740'. Hole not opened from 7630' to 7658'. Started in hole with hole opener.
- 2-10 28th Day. Ran in well and opened 6-1/8" hole to 13" from 7630' to 7660'. Ran to 7740' and circulated 3 hours. Pulled out and Dresser Atlas ran caliper log 7630' - 7740'. Hole was 11" from 7646' to 7660'. Ran hole opener and opened hole from 7640' to 7660'. Ran to 7740' circulated 3 hours and started out of well.
- 2-11 29th Day. Ran Dresser Atlas caliper log from 7630' to 7740' and found all hole 13" or more. Ran in well with bit. Changed over to clean filtered polymer completion fluid. Pulled out of well. Picked up 4-1/2" liner, port collar and hanger. Started in well.

- 2-12 30th Day. Ran in hole with 4-1/2" 10 mesh wire wrapped liner. Hung liner, shoe at 7739' top at 7510' port collar 7514'. Circulated 1 hour. Gravel packed, 91 sacks 20-40 gravel in place. Reversed out. Closed port collar. Started out of well. Rig had bearing go out on shaft. Rig down for repairs.
- 2-13 31st Day. Rig down for repair.
- 2-14 32nd Day. Rig down for repair.
- 2-15 33rd Day. Rig and crew idle.
- 2-16 34th Day. Rig down for repair.
- 2-17 35th Day. Rig down for repair.
- 2-18 36th Day. Rig down for repair.
- 2-19 37th Day. Rig down for repair.
- 2-20 38th Day. Rig down for repair.
- 2-21 39th Day. Rig down for repair.
- 2-22 40th Day. Rig and crew idle.
- 2-26 41st Day. Pulled out of well with gravel pack tools. Ran 248' of 2-3/8" 8Rd open end tubing on 2-7/8" drill pipe and cleaned out to 7739'. Started out of well.
- 2-27 42nd Day. Finished pulling out with open end tubing. Ran 4-1/2" washing tools to 7739' and stuck tools. Worked tools loose. Tested tools in blank casing but would not hold pressure. Pulled out of well. Installed new wash tools and washed liner from 7538' to 7730' with polymer gravel pack fluid. Started out with wash tools.
- 2-28 43rd Day. Finished pulling out with wash tools. Ran 4-1/2" gravel pack tools to port collars, opened port collar and pumped into liner at 500 psi. Mixed 3 cu. ft. of gravel pack sand in polymer and displaced 30 cu. ft. down drill pipe (capacity = 190 cu. ft.) when pressure reached 1000 psi. Back scuttled sand out of well; closed port collar and pressure tested to 750 psi. Pulled out of well with gravel pack tools.
- 3-02 44th Day. Dresser Atlas ran photon log from 7396' to 7736' and set Baker Retrieva-D packer with top at 7481'. Laid down drill collars and 2-3/8" tubing. Ran drill pipe in hole circulated 1-1/2 hours. Started laying down drill pipe (166 joints down).
- 3-03 45th Day. Finished laying down drill pipe. Loaded out drill pipe. Picked up 2-7/8" tubing. Ran in hole to test packer. Circulated bottoms up at 7443'.

- 04 46th Day. Latched into packer at 7481'. Tested packer with tubing open, casing had a leak. Pulled out of well. Ran Baker full bore found leak between 6302' and 6307'. Pumped into formation 16 cu. ft. per minute at 1700 psi. Started out of well.
- 3-05 47th Day. Pulled out of well. Ran Baker Model "B" bridge plug and set at 6415'. Spotted 10 sacks sand. Pulled 500' of tubing. Installed new studs in tubing head. Sand located at 6405'. Pulled out of well. Going in well with 405' of 2-7/8" tubing below full-bore.
- 3-06 48th Day. Ran in hole and found top of sand at 6368'. Hung tail at 6304'. Equalized 100 cu. ft. water and squeezed 75 cu. ft. through hole with 2000 psi at 6 cu. ft. minute. Hung tail at 6304' and equalized 50 sacks Class "G" cement with 0.5% CFR-2 and 0.6% Halad 9. Pulled 450' and reversed out tubing. Squeezed 2 cu. ft. of cement out holes. Held 2000 psi for 20 minutes. Started at 8 a.m., finished at 9:07 a.m. Pulled out of well. Ran in with 2 drill collars bit and scraper. Drilled out cement from 6045' to 6250'.
- 3-07 49th Day. Drilled out cement from 6243' to 6305'. No cement to sand at 6368'. Tested casing with 1500 psi for 20 minutes. Cleaned out sand to bridge plug at 6415'. Pulled out of well. Ran in and recovered bridge plug. Circulated bottoms up and pulled out. Going in hole with latch and seal unit.
- 3-09 50th Day. Latched into packer at 7481', pulled 10,000# and tested seals and packer with 1500 psi for 20 minutes. Pulled out of well. Picked up Pengo casing patch. Ran and set Pengo patch from 6285' to 6327' (5-1/2" ID). Started out of well.
- 3-10 51st Day. Finished pulling out of well. Ran tubing in well Hydro-testing to 5000 psi for 1 minute. Camco NO-GO (2.25) at 7449'. Otis sliding sleeve at 7418'. Camco KBMG mandrel at 7380'. Pulled 20,000# to check latch and landed with 10,000# on packer. Removed BOPE. Installed xmas tree.
- 3-11 52nd Day. Tested xmas tree with 5000 psi for 20 minutes. Circulated polymer completion fluid out of well with waste salt water. Rig released 11:00 a.m. 3-11-81

REPORT ON PROPOSED OPERATIONS

010
(field code)
03
(area code)
30
(pool code)

Mr. J. W. Tenfelder, Agent
Southern Calif. Gas Co.
12801 Tampa Avenue
Los Angeles, CA 91324

Santa Paula, California
Oct. 23, 1980

Your plug back and redrill proposal to gas storage well "SFZU" FF-33,
A.P.I. No. 037-00687-01, Section 34, T. 3N, R. 16W, S.B. B. & M.,
Aliso Canyon field, Main area, Sesnon-Frew pool,
Los Angeles County, dated 10/13/80, received 10/20/80 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
2. Unlined sumps, if they contain harmful waters, shall not be located over fresh water bearing aquifers.
3. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
4. Blowout prevention equipment of at least DOG Class III 3M B shall be installed and maintained in operating condition at all times.
5. THIS DIVISION SHALL BE NOTIFIED TO WITNESS A PRESSURE TEST OF THE BLOWOUT PREVENTION EQUIPMENT BEFORE COMMENCING DOWNHOLE OPERATIONS.

Blanket Bond
MD:b

M. G. MEFFERD, State Oil and Gas Supervisor

By John L. Hardoin
John L. Hardoin, Deputy Supervisor

OCT 2 1980

DIVISION OF OIL AND GAS
Notice of Intention to Rework Well

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

FOR DIVISION USE ONLY		
BOND	OGD114	OGD121
66	✓	✓

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. Fernando Fee #33, API No. 037-00687-01, Sec. 34, T. 3N, R. 16W S.B. B. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

1. Total depth.
7,730'

2. Complete casing record, including plugs and perforations:

128' 13 3/8" cemented 996'
7" cemented 7,630', WSO 7,570'
5" landed 7,726', slots 7,776' - 7,626'
Top of liner 7,598'

3. Present producing zone name Sesnon Zone in which well is to be recompleted -
4. Present zone pressure 3,600 psi New zone pressure -
5. Last produced Gas Storage Well
(Date) (Oil, B/D) (Water, B/D) (Gas, Mcf/D)
or
6. Last injected _____
(Date) (Water, B/D) (Gas, Mcf) (Surface pressure, psig.)

The proposed work is as follows:

1. Move in and rig up. Kill well. Install BOPE and pressure test.
2. Pull tubing. Make up drill pipe and recover packer. Recover 5" liner to 7,625', mill liner 7,625' - 7,680'. Open hole and plug with cement.
3. Redrill 7,630' - 7,740'. Run logs. Open hole. Run 195' 4 1/2" 10 mesh liner and gravel flow pack. Set production packer.
4. Lay down drill pipe. Run tubing with down hole safety system.
5. 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) (State) (Zip)
Telephone Number (213) 689-3561

Southern California Gas Company
(Name of Operator)
By P.S. Magruder Jr. 10/3/80
(Name) (Date)
Type of Organization Corporation
(Corporation, Partnership, Individual, etc.)

DEC 14 1977

DIVISION OF OIL AND GAS

History of Oil or Gas Well

SANTA PAULA, CALIFORNIA

OPERATOR SOUTHERN CALIFORNIA GAS COMPANY FIELD Aliso Canyon
 Well No. FERNANDO FEE #33, Sec. 34, T. 3N, R. 16W, S.B. B. & M.
A.P.I. #037-00687
 Date December 8, 19 77 Signed P. S. Magruder, Jr.
P.O. Box 3249, Terminal Annex P. S. Magruder, Jr.
Los Angeles, California 90051 Title Agent
 (Address) (Telephone Number) (President, Secretary or Agent)

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

1977

- 11-1 Killed well with 310 barrels 85#/cu.ft. polymer drilling fluid. Casing had 3100 psi on tubing. Started pumping at 8:30 A.M. finished at 11:00 A.M. Had good circulation.
- 11-2 Rigged down. Preparing to move from I.W. #63 to Fernando Fee #33.
- 11-3 Rigged up California Production Service Rig #D-6.
- 11-4)
 11-5) Rig and crew idle due to rig repairs.
 11-6)
- 11-7 Circulated and conditioned drilling fluid. Installed back-pressure valve in doughnut. Removed Christmas tree and installed Class III B.O.P.E. Tested pipe rams and blind rams to 4000 psi with water. Tested Hydril bag to 3000 psi with water.
- 11-8 Tested B.O.P.E. with nitrogen, as follows: Blind rams and pipe rams to 4000 psi for 20 minutes - O.K.; Hydril bag to 3000 psi for 20 minutes - O.K. Attempted to release packer. Ran free-point which showed tubing free at 7540'. (Packer at 7582'). Located fill inside tubing at 7540'. Made second attempt **and packer came free**. Circulated hole volume. Pulled tubing and packer out of well. Ran 30 stands of tubing in well.
- 11-9 Ran 6 1/8" bit and 7" casing scraper to 7598'. Pulled out of well. Ran 4 1/8" bit and 5" casing scraper to 7726'.
- 11-10 Ran Baker 7" retrievable bridge plug and set at 7650'. Pressure tested plug to 2000 psi for 15 minutes. Circulated brine-polymer drilling fluid out of well with fresh water treated with surfactant. Ran Baker 7" fullbore retainer to 3500'.

1977

- 11-11 Bled 1100 psi gas off well. Filled well and pressured Baker Lok-Set bridge plug to 2500 psi for 15 minutes. Circulated well and gas increased. Displaced water out of well with 86#/cu.ft. polymer mud. Pulled fullbore retainer out of well. Ran second Baker Lok-Set bridge plug to 7605'. Displaced polymer drilling fluid with fresh water.
- 11-12 After being shut in overnight, well had 600 psi on tubing and casing. Bled off pressure and well continued to flow. Displaced fresh water with 86#/cu.ft. brine-polymer drilling fluid. Released bridge plug set at 7506' and pulled out of well, but did not recover bridge plug. Ran retrieving tools back in well and latched on to retrievable bridge plug.
- 11-13 Rig and crew idle.
- 11-14 Pulled bridge plug. Ran in well and unseated plug at 7650'. Circulated out gas-cut drilling fluid and pulled out of well. Ran in and set Baker Type "C" bridge plug at 7580'. Tested bridge plug with 1800 psi for 15 minutes. Circulated drilling fluid out of well with fresh water treated with surface tension agent.
- 11-15 Ran in with Baker fullbore squeeze tool and set in 7" casing at 3500'. Tested 7" casing with Halliburton pump truck with fresh water, as follows:
- | | | | | | | | | |
|--|---------|----|-------|------|----------|-----|----|---------|
| | 3500' | to | 7580' | with | 2500 psi | for | 60 | minutes |
| | Surface | " | 3500' | " | 2800 psi | " | 60 | " |
| | " | " | 3200' | " | 3000 psi | " | 60 | " |
| | " | " | 2800' | " | 3200 psi | " | 60 | " |
| | " | " | 2000' | " | 3500 psi | " | 60 | " |
| | " | " | 800' | " | 4000 psi | " | 60 | " |
- Pulled out fullbore. Ran in with Baker Model "C" retrieving tool to 7571'.
- 11-16 Displaced fresh water in well with 83#/cu.ft. polymer drilling fluid - total used 280 barrels. Latched on and released Baker 47-B Model "C" bridge plug at 7580'. Circulated bottoms up. Pulled up to 6500', circulated bottoms up - no gas. Pulled out of well. Laid down Baker bridge plug. Removed pitcher nipple and installed lubricator. Ran Triangle Noise Log and logged from 7726' to 500'. Reinstalled pitcher nipple. Ran in open-end tubing with float sub to 7595'.
- 11-17 Circulated bottoms up. Pulled out of well. Rigged up lubricator. Using GO-Wireline Services, ran junk basket and feeler gauge to top of 5" liner at 7598'. Ran and set Baker 7" Retrieva-"D" packer at 7489', using reference collars. Made up Camco safety system and tested same at 5000 psi. Running 2 7/8" tubing, changing couplings and using Baker seal and Hydrotesting to 5000 psi.

1977

- 11-18 Continued running 2 7/8" tubing string, Hydrotesting at 5000 psi, changing couplings and applying Baker seal. Spaced out tubing string and latched into Baker Retrieval-"D" packer at 7489'. Pulled up 25,000# over tubing string weight to check latch-in. Landed tubing string with 9,000# on packer. Tubing string weight 46,000# on hook. Removed 8" bag and rotary table.
- 11-19 Removed B.O.P.E. and installed Christmas tree. Tested between upper and lower tubing hanger seals at 5000 psi for 60 minutes. Tested above upper tubing hanger seals and Christmas tree at 5000 psi for 60 minutes. Circulated 83#/cu.ft. brine-polymer drilling fluid out of well with lease salt water. Ran Camco plug and set in Camco NO-GO nipple. Unable to obtain pressure test. Pulled plug and found plug did not seat in NO-GO nipple. Ran Archer-Reed plug and set in NO-GO nipple. Pressure tested seals and packer at 1900 psi for 60 minutes.
RELEASED RIG at 10:00 P.M. (11-19-77)

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

Report on Operations

No. T 272-379

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

Santa Paula, Calif.
Dec. 27, 1977

DEAR SIR:

Operations at well No. "SPZU" FF-33, API No. 037-00687, Sec. 34, T. 3N, R. 16W,
S.B., B & M. Aliso Canyon Field, in Los Angeles County, were witnessed
on 11/8/77. Mr. P.R. Wygle, representative of the supervisor was
present from 1200 to 1600. There were also present R. Stringer, contract foreman

Present condition of well: No additions to the casing record since proposal dated 10/6/77.

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

DECISION:

THE BLOWOUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED.

b

M. G. MEFFERD

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

By John L. Herdson Deputy

REPORT ON PROPOSED OPERATIONS

Santa Paula, California

Oct. 13, 1977

E. S. Maeruder, Jr., Agent
Southern Calif. Gas Co.
P.O. Box 54790 Terminal Annex
Los Angeles, Calif. 90054

Your proposal to rework gas storage well "SP2U" FF-33
(Name and number)
, A.P.I. No. 037-00687, Section 34, T. 3N, R. 16W
S.E. B. & M., Aliso Canyon field, Los Angeles County,
dated 10-6-77, received 10-12-77, 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, 5M, shall be installed and maintained in operating condition at all times.
3. THIS DIVISION SHALL BE NOTIFIED TO WITNESS A PRESSURE TEST OF THE BLOWOUT PREVENTION EQUIPMENT BEFORE COMMENCING DOWNHOLE OPERATIONS.

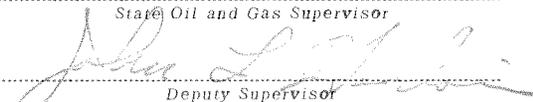
NOTE: A COPY OF THIS APPROVAL SHALL BE AVAILABLE AT THE WELL SITE DURING THE PROPOSED OPERATIONS.

Blanket Bond
MD:b

M. G. METTERD

State Oil and Gas Supervisor

By



Deputy Supervisor

John L. Hardoin

OCT 13 1977

DIVISION OF OIL AND GAS
Notice of Intention to Rework Well

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

SANTA ANA, CALIFORNIA

FOR DIVISION USE ONLY		
BOND	OGD11A	OGD12I
	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. FERNANDO FEE #33, API No. 037-00687, Sec. 34 ~~28~~, 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. 7730'
- Complete casing record, including plugs and perforations:
 - 13 3/8" cemented 996'
 - 7" cemented 7630', WSO 7470', squeezed four 50-sack jobs
 - 128' 5" landed 7726', top 7598', slotted 7628'-7726'

- Present producing zone name SESNON Zone in which well is to be recompleted _____
- Present zone pressure 3650 psi New zone pressure -
- Last produced Gas Storage Well
 (Date) (Oil, B/D) (Water, B/D) (Gas, Mcf/D)
 or
- Last injected _____
 (Date) (Water, B/D) (Gas, Mcf) (Surface pressure, psig.)

The proposed work is as follows:

- Move in and rig up. Kill well. Install B.O.P.E. and pressure test.
- Pull packer and tubing. Clean out to 7726'.
- Pressure test 7" casing. Perform any remedial work indicated by pressure testing.
- Run packer and 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.
 (Name) (Date) 10-6-77
 Type of Organization Corporation
 (Corporation, Partnership, Individual, etc.)

FERNANDO FEE #33 - ALISO CANYON

PROGRAM to - pressure test casing, run new packer and down hole safety valve.

WITHDRAWAL THROUGH TUBING ONLY

Take all measurements from original derrick floor 6.92' above ground.

PRESENT CONDITIONS:

13 3/8" cemented 996' 54.5# J-55
 7" cemented 7630
 squeeze WSO holes at 7470'
 with 4-50 sack jobs - after final job holes
 held 2000 psi - did not test

128' 5" landed 7726', top 7598', slotted
 7628' - 7726' 18# J-55 security
 flush joint - Burns liner hanger on top.
 (6" hole)

7" CASING DETAILS:

			<u>100% Safety Factor</u>	
			<u>Burst</u>	<u>Collapse</u>
0-4122'	23#	J-55	4360	3290
4122'-5913'	23#	N-80	6340	4300
5913'-7630'	26#	N-80	7240	5320

TUBING DETAIL:

2 7/8" 8rd EUE J-55 landed 7583'
 Otis XN nipple 7583'
 Brown Husky M-1 packer 7582'
 Otis X nipple 7546'
 Otis X nipple 7513'
 Otis sliding sleeve 7482' (open)

PROGRAM

1. Move in and rig up. Pressure test wellhead seals to 3300 psi.
2. Kill well with 85#/cu.ft. brine-polymer drilling fluid. Check bottom hole pressure before moving in rig. - Volume of well = 310 barrels.
3. Set back-pressure valve in doughnut. Remove Christmas tree. Install Class III 5000 psi B.O.P.E. Pressure test complete shut-off rams and pipe rams to 4000 psi, with water and nitrogen. Also pressure test Hydril bag to 3000 psi with water and nitrogen. Use float valve.
4. Unseat packer and pull tubing. Run 6 1/8" bit & casing scraper. Clean out to 7598'.
5. Run 4 1/8" bit and casing scraper and clean out to 7726'.
6. Set bridge plug at 7560'. Test plug with rig pump. Circulate polymer fluid out of well with fresh water, treated with surface tension agent.

Pressure test casing, using retainer and cement pump truck equipped with calibrated pressure chart and pressure gauge, as follows:

3500'	to	6960'	with	2500 psi	for	60 minutes
Surface	"	3500'	"	2800 psi	"	60 "
"	"	3200'	"	3000 psi	"	60 "
"	"	2800'	"	3200 psi	"	60 "
"	"	2000'	"	3500 psi	"	60 "
"	"	800'	"	4000 psi	"	60 "

7. Change to polymer fluid. Perform any remedial work indicated by pressure testing. Recover bridge plug at 7560'.
8. Run Baker Retrieva-D packer on wireline. Using reference collars, set packer near 7500', but do NOT set packer in a collar.
9. Run tubing, charge collars, clean pins, apply Baker seal and hydro test to 5000 psi holding each test for one minute.
Tubing to include:
 - Baker Production tube
 - " four seals
 - " Latch-in-locator
 - Camco 10' heavy wall tube
 - " 1.79 "XN" "NO GO" nipple
 - " 20' heavy wall tube
 - " Tubing flow safety system
10. Land tubing on packer with up to maximum of 10,000 pounds - pull 25,000 pounds over weight of tubing to check latch.
11. Set back pressure valve in doughnut. Remove B.O.P.E. and install Christmas tree. Pressure test to 5000 psi.
12. Circulate drilling fluid out of well with waste lease salt water. Set tubing plug in "NO GO" nipple. Pressure test seals and packer to 1800 psi. Recover tubing plug and release rig.

G. C. ABRAHAMSON
October 6, 1977

Division of Oil and Gas
B. Jones
J. Melton
D. Justice)
M. Grijalva)
Relief Rig Supervisor
cc: Rig Supervisor
Contract pusher (2)
File

DEPARTMENT OF CONSERVATION
 DIVISION OF OIL AND GAS

REPORT OF CORRECTION OR CANCELLATION

Santa Paula, California

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

Aug. 13, 1976

In accordance with section 3203, Division 3, Chapter I of the California Public Resources Code

the following change pertaining to your well No. "SFZU" FF-33 (037-00687),
 Sec. 34, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon field,
Los Angeles County, District No. 2, is being made in our records:

The corrected location is _____

The corrected elevation is _____

Report No. _____, dated _____, has been corrected as follows: _____

Your notice to redrill dated 1-24-75,
 (Drill, abandon, etc.)
 and our report No. P 275-44, issued in answer thereto, are hereby cancelled inasmuch as the work will not be done. If you have a drilling bond on file covering this notice it will be returned. No request for such return is necessary.

Other: Note: Notices of intention and approvals shall be considered cancelled if the proposed operations are not commenced within one year of receipt of the notice.

MAP	FILE BOOK	CARDS	BOUND	114	121
					<input checked="" type="checkbox"/>

HAROLD W. BERTHOLF
~~JOHN F. MATTHEWS, JR.~~
 State Oil and Gas Supervisor

By John L. Gordon
 Deputy Supervisor

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS No. P 275-44

Mr. P. S. Magruder, Agent
Pacific Lightning Service Co.
P. O. Box 54290, Terminal Annex
Los Angeles, California 90054

Santa Paula, Calif.
January 29, 1975

DEAR SIR:

(037-00687)

Your proposal to redrill Well No. "SEZU" #1-33,
Section 34, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County,
dated 1/24/75, received 1/28/75, 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. NO CONTAMINANTS OR TOXIC MATERIAL SHALL BE USED IN ANY DRILLING FLUID THAT IS TO BE PLACED IN AN UNLINED SUMP.
2. Any sump used during drilling operations shall be thoroughly cleaned of all drilling materials and the site restored to its prior condition as soon as drilling operations are completed.
3. Blowout prevention equipment, at least of the Division of Oil and Gas Class IV rating, shall be installed and maintained in operating condition at all times.
4. 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.
5. Blowout-prevention practice drills shall be conducted at least weekly for each crew, and recorded in the log book.
6. The cement plug proposed to be placed from 7700' to 7500' shall extend from 7700' to 7460' or above.
7. All portions of the hole not plugged with cement shall be filled with heavy rotary mud.
8. THIS DIVISION SHALL BE NOTIFIED TO WITNESS:
 - a. A pressure test of the blowout prevention equipment.
 - b. The placing of the cement plug from 7700' to 7460'.
 - c. The location and hardness of the cement plug at 7460'.
 - d. The 5" water shut-off above the Senon zone prior to placing the well into gas storage service.

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

Blanket Bond
ALL:b
cc: Operator

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

By DEP. P. J. ..., 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

Redrill

Los Angeles Calif. January 24 1975

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. SFZU 33

(Cross out unnecessary words)

Sec. 34, T. 3N, R. 16W, S.B.B. & M. Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

- 1. Total depth.
- 2. Complete casing record, including plugs:

13-3/8" 54.5# Cmtd. 996'
7" 23 & 26# cmtd. at 7630'. WSO on 4 holes at 7510'.
128' of 5" 18# perforated liner landed at 7726', perf'd 7628'-7726'. Top of liner at 7598'.

Oil

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

The proposed work is as follows: (Confirming telephone conversation Ritzius-Olson 1-24-75)

- 1. After killing well with 80#/cu. ft. fluid, move in drilling contractor, install & test G.K. Hydril, double Shaffer, single Shaffer and test with 3000 psi nitrogen.
- 2. Pull tubing, remove hardware, rerun to bottom and plug hole with cement to 7500' + -. D.O.G. to witness location of plug.
- 3. Mill window near 5500-5530' & redrill well to coordinates 202' South and 480' East of surface location at depth of 7900'.
- 4. Run Induction Electric log & cement ^{full string of} 5" 18# S.F.J. ~~lines~~ ^{casing} 2' off bottom.
- 5. Demonstrate WSO above 5" shoe and on 5" & 7" lap. D.O.G. to witness.
- 6. Utilize well to pump fluid and drown SFZU #34.

720 W. 8th St., L.A., Ca. 90017 Pacific Lighting Service Company (Address) (Name of Operator)

(213) 360-1064 By P. S. Magruder, Jr. Agent (Telephone No.)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED

FEB 24 1975

History of Oil or Gas Well

OPERATOR Pacific Lighting Service Co. FIELD Aliso Canyon SANTA PAULA, CALIFORNIA

Well No. FF-33, Sec. 34, T. 3N, R. 16W, S.B. B. & M.

Date _____, 19____ Signed P.S. Magruder, Jr.
P.O. Box 54790, Terminal Annex P.S. Magruder, Jr.
Los Angeles, Ca. 90054 Agent
 (Address) (Telephone Number) Title (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

1974

10-11

Moved in C.P.S. Service rig, pump and shaker. Using Otis wire line pulled type "H" safety valve from 506' and type "F" collar stop from 816'. Made wire line feeler run, finding second "H" valve at 7411' and "F" stop at 7441', which were also pulled.

10-12

Pulled gas lift valve from mandrel at 7485. Using Halliburton pump truck against 2350psi tubing and casing pressure, pumped 285 bbls 75#/ft³ brine - polymer work over fluid down tubing to a tubing pressure of 0 psi and casing pressure of 100 psi and getting gas cut work-over fluid returns since pumping first 100 bbls. Continued pumping 75#/ft³ 300 bbls fluid with rig pump getting gas cut fluid returns until mud remaining in tank became gas cut.

10-13

Hauled out gas cut work-over fluid and mixed 480 bbls of 78#/ft³ brine-polymer work-over fluid.

10-14

Circulated for 6 hours. Returns were highly cut gas over entire period. Set Otis tubing plug at 7490'. Circulated for 2 more hours. Set Otis tubing plug at 500'. Installed BOPE. Tested pipe rams; held 2800 psi for 20 minutes. Tested Hydril; held 1800 psi for 20 minutes. Removed Otis plug from 500' and 7490'.

10-15

Filled hole; took 2 barrels mud. Circulated 79# mud with no gas. Released packer and circulated. Pulled tubing and packer. Ran 7" scraper to top of liner at 7598'. Running in hole with bumper sub, wire brush, 5" scraper and 4-1/2" bit.

Duplicated History

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR Pacific Lighting Service Co. FIELD Aliso Canyon

Well No. Fernando Fee 33, Sec. 34, T. 3N, R. 16W, B. & M.

Date November 4, 1974

Signed

P. O. Box 54790, Terminal Annex
Los Angeles, California 90051

P. S. Magruder, Jr.
P. S. Magruder, Jr.

Title Agent

(Address)

(Telephone Number)

(President, Secretary or Agent)

Telephone: (213) 689-3561

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

Date

- | Date | Description |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10-12-74 | Using Halliburton pump truck, pumped brine polymer 75# pcf drilling fluid. Gassy drilling fluid returns after pumping 100 barrels. Pumped 300 barrels with gas cut drilling fluid returns. Continued circulating with rig pump but mud remained gas cut. Shut well in. |
| 10-13-74 | Mixed 480 barrels of 78# pcf brine polymer drilling fluid. A.M. will circulate to kill well. |
| 10-14-74 | Circulated for 6 hours. Returns were highly gas cut over entire period. Set Otis tubing plug at 7490'. Circulated for 2 more hours. Set Otis tubing plug at 500'. Installed BOPE. Tested pipe rams; held 2800 psi for 20 minutes. Tested Hydril; held 1800 psi for 20 minutes. Removed Otis plug from 500' and 7490'. |
| 10-15-74 | Filled hole; took 2 barrels mud. Circulated 79# mud with no gas. Released packer and circulated. Pulled tubing and packer. Ran 7" scraper to top of liner at 7598'. Running in hole with bumper sub, wire brush, 5" scraper and 4-1/2" bit. |
| 10-16-74 | Cleaned out to bottom of liner with bit, scraper, and wire brush. Found top of fill at 7718'. Cleaned out to 7726'. Made two passes with wire brush to clean slotted liner and circulated. Ran Schlumberger cement bond log with variable density log and neutron correlation log from 7598' to 6200'. Ran T.D.T. log from 7726' to 6200'. Conducted BOP drill. Started in hole with Baker bridge plug. |
| 10-17-74 | Set bridge plug at 7587' and full bore at 7580'. Pressure tested; held 1700 psi for 20 minutes. Set full bore at 7549'. Tested WSO holes at 7570'; broke down with 20 cu.ft./Min. at 1300 psi. Pressure tested casing from surface to 7549'; held 2200 psi for 20 minutes. Spotted 2 sacks sand on top of bridge plug. Set full bore at 7416'. Cemented with 50 sacks class G cement with 0.5% Halide 9. Pumped cement at 800 psi. Displaced cement with 20 cu.ft. behind pipe. |

- 10-18-74 Set full bore at 7416'. Pressured up WSO holes; broke down at 1000 psi. Mixed 50 sacks class G cement with .5% Halide 9. Squeezed 44 cu.ft. into formation in 10-minute stages leaving 13 cu.ft. in pipe. Final pressure was 2000 psi. Pressure tested casing. From surface to 5494' held 2400 psi for 20 minutes. From surface to 3509' held 2600 psi for 20 minutes. From surface to 1994' held 3200 psi for 20 minutes. Ran in hole with bit and scraper. Rigged up power swivel. Found top of cement at 7418'. Drilled out to 7449'.
- 10-19-74 Drilled out cement to 7583'. Pressure tested casing. Held 2100 psi for 3 minutes; then bled down to 300 psi. Pressured up to 1400 psi; took fluid at rate of 9 cu.ft. per minute. Pulled out of hole with bit and scraper. Started back in hole with full bore to resqueeze WSO holes.
- 10-21-74 Set full bore at 7578' and tested bridge plug to 2000 psi. Pulled full bore up to 7416'. Tested to surface with 1500 psi. Cemented with 50 sacks class G cement with 0.5% Halide 9 and 1% CaCl₂. Squeezed 49 cu.ft. cement behind pipe in 10-minute stages, leaving 8 cu.ft. in pipe. Final pressure was 2000 psi. Pulled out of hole. Ran in hole with bit and scraper; found top of cement at 7417'.
- 10-22-74 Drilled out cement. Pressure test on WSO holes broke down at 1400 psi; took 8 cu.ft./min. rate. Pulled out bit and scraper. Ran back in hole with full bore.
- 10-23-74 Set full bore at 7416'. Pressured up tubing. WSO holes broke down at 1900 psi; took mud at 6 cu.ft. per minute. Cemented with 50 sacks class G cement with .5% Halide 9 and 1% CaCl₂. Squeezed 44 cu.ft. cement behind pipe, leaving 13 cu.ft. in pipe. Final pressure was 2600 psi. Pulled out of hole. Ran back in with bit and scraper. Drilled out cement and circulated clean.
- 10-24-74 Pressure test on WSO holes held 2000 psi for 20 minutes. Pulled out tubing. Removed BOPE and tubing held. Unlanded casing and removed slips.
- 10-25-74 Removed old casing head. Lowered cellar floor 14 inches with jackhammers. Welded on new McEvoy casing head.
- 10-26-74 X-rayed weld on new casing head, approved by Valley X-ray Services. Installed and tested new tubing head. Pressure held 4000 psi for 20 minutes on each of the four test ports. Installed BOPE. Pressure tested with water between donut and pipe rams; held 2600 psi for 15 minutes. Pressured with water between donut and Hydrill to 1700 psi. Bled down to 1400 psi in 15 minutes but could not detect any water leaks. Tightened flange between tubing head and rams. Retested BOPE with nitrogen. Between donut and pipe rams held 2600 psi for 15 minutes. Between donut and Hydrill held 2000 psi for 15 minutes.

- 10-28-74 Ran Schlumberger cement bond log and variable density log from 7572'-7567'. Showed good bonding from 7572'-7355'. Retrieved Baker bridge plug. Started in hole with 4-1/8" bit and 5-1/2" scraper.
- 10-29-74 Ran bit and scraper to bottom. Found no fill or any indications of cement from previous squeeze jobs. Circulated 1-1/2 hours. In pulling tubing we noted a cement sheath inside bottom 42 stands of tubing. Preparing to broach same.
- 10-30-74 Could not broach the 42 stands of tubing with cement sheath. Ordered 100 joints of 2-1/2" J-55 used tubing. Ran Otis XN No Go nipple, Husky M-1 packer, 2 Otis X nipples, and Otis sliding sleeve. Running tubing.
- 10-31-74 Finished running tubing hydrotesting to 5000 psi. Set Brown Husky M-1 packer with 12000 pounds at 7582'. Installed McEvoy tree; tested against donut seals in lower flange of tree to 4000 psi for 20 minutes. Tested tree to 4500 psi for 20 minutes. Changed over to salt water and released rig.

SOUTHERN CALIFORNIA GAS COMPANY

HISTORY OF OIL OR GAS WELL

FERNANDO FEE 33

No. Jts.		Length (Feet)	Depth (Feet)
	Below K.B.	9.92	
49	2-7/8" EU 8 thd. N-80 tubing with donut on top	1,524.12	
192	2-7/8" EU 8 thd. J-55 tubing	5,944.39	
	2-1/2" EU 8 thd. Otis sliding sleeve	3.15	7,481.58
1	2-7/8" EU 8 thd. J-55 tubing	31.27	
	2-1/2" EU 8 thd. Otis X nipple with 2.313 I.D.	1.00	7,513.85
1	2-7/8" EU 8 thd. J-55 tubing	31.28	
	2-1/2" EU 8 thd. Otis X nipple with 2.313 I.D.	1.00	7,546.13
1	2-7/8" EU 8 thd. J-55 tubing	31.68	
	2-1/2" x 7" 26# Brown Husky packer, 12,000# weight on packer	4.45	7,582.26
	2-1/2" EU 8 thd. Otis X nipple No Go 2.205 I.D. with guide collar on bottom	1.15	7,583.41

Hauled from rack 49 jts. 2-7/8" N-80 tubing (all used in well).
40 jts. 2-7/8" J-55 tubing from advance yard were used in well.

60 jts. 2-7/8" J-55 tubing wouldn't drift due to scale. Laid down on ground at well.

82 jts. 2-7/8" J-55 tubing from original tubing string wouldn't drift due to a sheath of cement. Laid down on ground at well.

2 jts. 2-7/8" J-55 tubing out of well on ground. To be sent to salvage; wouldn't Hydrotest.

1974

- 10-16 Cleaned out to bottom with bit scraper and wire brush. Found top of fill at 7718'. Cleaned out to 7726'. Made 2 passes with wire brush to clean slotted liner and circulated. Ran variable density log and neutron correlation log from 7598' to 6200'. Ran TDT log from 7726' to 6200'. Started in hole with Baker bridge plug. Tested blind rams and pipe rams.
- 10-17 Set bridge plug at 7580'. Pressure tested; held 1700 psi for 20 minutes. Set fullbore at 7549'. Tested WSO holes at 7570'; broke down with 20 cf/m at 1300 psi. Pressure tested casing from surface to 7549'; held 2200 psi for 20 minutes. Spotted 2 sacks sand on top of bridge plug. Set fullbore at 7416'. Cemented with 50 sacks class "G" cement with 0.5% halide 9. Pumped cement at 800 psi. Cleared holes at 7570' with 20 ft³ mud.
- 10-18 Set fullbore at 7416'. Pressured up WSO holes; broke down at 1000 psi, mixed 50 sacks class "G" with 0.5% Halide 9. Squeezed 44 cf into formation in 10 minute stages, leaving 13 cf in pipe. Final pressure was 2000 psi. Pressure tested casing from surface to 5494'. Held 2400 psi for 20 minutes. From surface to 3509' held 2600 psi for 20 minutes. From surface to 1994' held 3200 psi for 20 minutes. Ran in well with bit and scraper. Rigged up power swivel. Found top of cement at 7418'. Drilled out to 7449'.
- 10-19 Drilled out cement to 7583'. Pressure tested casing. Held 2100 psi for 3 min; then bled down to 300 psi. Pressured up to 1400 psi; took fluid at rate of 9 cu. ft. per minute. Pulled out of hole with bit and scraper. Started back in hole with full bore to resqueeze WSO holes.
- 10-21 Set fullbore at 7578' and tested bridge plug to 2000 psi. Pulled fullbore up to 7416' tested to surface with 1500 psi. Cemented with 50 sacks Class "G" cement with 0.5% Halide 9 and 1% CaCl₂. Squeezed 49 cu. ft. cement behind pipe in 10 min. stages leaving 8 cu. ft. in pipe. Final pressure was 2000 psi. Pulled out of hole. Ran in hole with bit and scraper; found top of cement at 7417'.
- 10-22 Drilled out cement. Pressure test on WSO holes broke down at 1400 psi; took 8 cu. ft/min rate. Pulled out bit and scraper. Ran back in hole with fullbore.
- 10-23 Set full bore at 7416'. Pressured up tubing. WSO holes broke down at 1900 psi; took mud at 6 cu. ft. per minute. Cemented with 50 sacks class "G" cement with 0.5% Halide 9 and 1% CaCl₂.

1974

- 10-23 Cont'd. Squeezed 44 cu. ft. cement behind pipe, leaving 13 cu. ft. in pipe. Final pressure was 2600 psi. Pulled out of hole. Ran back in with bit and scraper. Drilled out cement and circulated clean.
- 10-24 Pressure test on WSO holes held 2000 psi for 20 minutes. Pulled out tubing. Removed BOPE and tubing head. Unlanded casing and removed slips.
- 10-25 Removed old casing head. Lowered cellar floor 14 inches with jackhamers. Welded on new McEvoy casing head.
- 10-26 X-rayed weld on new casing head, approved by Valley X-Ray Services. Installed and tested new tubing head. Pressure held 4000 psi on each of the four test ports. Installed BOPE. Pressure tested with water between donut and pipe rams; held 2600 psi for 15 minutes. Pressured with water between donut and hydrill to 1700 psi; bled down to 1400 psi in 15 minutes but could not detect any water leaks. Tightened flange between tubing head and rams. Retested BOPE with nitrogen. Between donut and pipe rams held 2600 psi for 15 minutes. Between donut and hydrill held 2000 psi for 15 minutes.
- 10-28 Ran Schlumberger cement bond log and variable density log from 7572'-67'. Showed good bonding from 7572'-7355'. Retrieved Baker bridge plug. Started in hole with 4 1/8 bit and 5 1/2" scraper.
- 10-29 Ran bit and scraper to bottom. Found no fill or any indications of cement from previous squeeze jobs. Circulated 1 1/2 hours. In pulling tubing we noted a cement sheath inside bottom 42 stands of tubing. Preparing to broach same.
- 10-30 Could not broach the 42 stands of tubing with cement sheath. Ordered 100 joints of 2 7/8" J-55 used tubing. Ran Otis XN No Go nipple, Husky M-1 packer, 2 Otis x nipples, and Otis sliding sleeve. Ran original string of tubing excluding the 42 stands with cement. Ran 40 joints of 2 1/2".
- 10-31 Finished running tubing hydrotesting to 5000 psi. Set brown Husky M-1 packer with 12,000 lb. at 7582'. Installed McEvoy tree; tested against donut seals in lower flange of tree to 4000 psi for 20 minutes. Tested tree to 4500 psi for 20 minutes. Changed over to salt water and released rig.

SOUTHERN CALIFORNIA GAS COMPANY

HISTORY OF OIL OR GAS WELL

FERNANDO FEE 33

10-31-74

No. Jts.		Length (Feet)	Depth (Feet)
	Below K.B.	9.92	
49	2-7/8" EU 8 thd. N-80 tubing with donut on top	1,524.12	
192	2-7/8" EU 8 thd. J-55 tubing	5,944.39	
	2-1/2" EU 8 thd. Otis sliding sleeve	3.15	7,481.58
1	2-7/8" EU 8 thd. J-55 tubing	31.27	
	2-1/2" EU 8 thd. Otis X nipple with 2.313 I.D.	1.00	7,513.85
1	2-7/8" EU 8 thd. J-55 tubing	31.28	
	2-1/2" EU 8 thd. Otis X nipple with 2.313 I.D.	1.00	7,546.13
1	2-7/8" EU 8 thd. J-55 tubing	31.68	
	2-1/2" x 7" 26# Brown Husky packer, 12,000# weight on packer	4.45	7,582.26
	2-1/2" EU 8 thd. Otis X nipple No Go 2.205 I.D. with guide collar on bottom	1.15	7,583.41

Hauled from rack 49 jts. 2-7/8" N-80 tubing (all used in well).
 40 jts. 2-7/8" J-55 tubing from advance yard were used in well.

60 jts. 2-7/8" J-55 tubing wouldn't drift due to scale. Laid down on ground at well.

32 jts. 2-7/8" J-55 tubing from original tubing string wouldn't drift due to a sheath of cement. Laid down on ground at well.

3 jts. 2-7/8" J-55 tubing out of well on ground. To be sent to salvage; wouldn't Hydrotest.

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS No. P-274-422

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

Santa Paula, Calif.
November 8, 1974

DEAR SIR:

Your proposal to convert to gas storage Well No. (037-00687) "SRZU" FF-33
Section 34, T. 3N, R. 16W, S.B.B. & M., Aliso Canyon Field, Los Angeles County,
dated 10/12/74, received 11/7/74, has been examined in conjunction with records filed in this office.

THE PROPOSED OPERATIONS ARE APPROVED.

Blanket Bond
ALL:b
Operator

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

By *DCR Riggs*, Deputy

DIVISION OF OIL AND GAS

Notice of Intention to Rework Well

DIVISION OF OIL AND GAS
RECEIVED

NOV 2 1974

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	
	114	121
fb	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3. Public Resources Code, notice is hereby given that it is our intention to rework well No. SFZU FF-33, API No. _____, Sec. 34, T. 3N, R. 16W, B. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

- Total depth.
7730'
- Complete casing record, including plugs and perforations:
13-3/8" cemented at 996'.
7" cemented at 7630'.
5-1/2" hung from 7598'-7726'.
Slotted from 7628'-7726', 80 Mesh, 12 rows, 2" slots, 6" centers, 6° undercut.

*3100 psi possible surface
Gradient .046 psi/ft*

- Present producing zone name Sesnon Zone in which well is to be recompleted Sesnon
- Present zone pressure 3400 psi New zone pressure 3400 psi
- Last produced _____ (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:

To convert to gas storage well; no additional perforating is necessary.

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

Address 720 W. 8th Street
(Street)
Los Angeles, Calif. 90017
(City) (State) (Zip)
Telephone Number (213) 360-2389

Pacific Lighting Service Company
(Name of Operator)
By [Signature] 10-12-74
(Name) (Date)
Type of Organization Corporation
(Corporation, Partnership, Individual, etc.)

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT ON PROPOSED CHANGE OF WELL DESIGNATION

830 North La Brea Avenue
Inglewood, California

September 26, 1968

Mr. Mr. C. G. Nelson, Agent
Getty Oil Co., Operator
P. O. Box 811
Agent for Ventura, California 93001

DEAR SIR:

Your request dated letter dated August 26, 1968, relative to change in designation of well(s) in Sec. 27, 28, 34, T. 3 N., R. 16 W., S. B. B. & M., Aliso Canyon field, Los Angeles County, District No. 1, has been received;

and in accordance with Section 3203, Public Resources Code, reading in part as follows:

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

the proposed change in designation is hereby authorized as follows: (formerly owned by Getty Oil Co.)

See attached list.

ag
cc: F. E. Kasline
Production Dept.
Conservation Committee

F. E. KASLINE

~~E. R. MURRAY-AARON~~
State Oil and Gas Supervisor

By Wm. C. Bailey
Deputy Supervisor

Proposed Changes of Well Designation

Old Designation:

New Designation:

Sec. 27:

"Fernando Fee" 32
"Porter" 12
" 30
" 31
" 32
" 36
" 37
" 45

"SFZU" FF-32 (037-00686)
" P-12 (037-00701)
" P-30 (037-00717)
" P-31 (037-00718)
" P-32 (037-00719)
" P-36 (037-00723)
" P-37 (037-00724)
" P-45 (037-00732)

Sec. 28:

"Porter" 4
" 25
" 26
" 34
" 35
" 38
" 39
" 40
" 41
" 42
" 43
" 44
" 46
" 47
"Porter-Sesnon" 42

"SFZU" P-4 (037-00699)
" P-25 (037-00712)
" P-26 (037-00713)
" P-34 (037-00721)
" P-35 (037-00722)
" P-38 (037-00725)
" P-39 (037-00726)
" P-40 (037-00727)
" P-41 (037-00728)
" P-42 (037-00729)
" P-43 (037-00730)
" P-44 (037-00731)
" P-46 (037-00733)
" P-47 (037-00734)
" PS-42 (037-00753)

Sec. 34:

"Fernando Fee" 31
" 33
" 34
" 35
"Mission-Adrian Fee" 3
" 4
" 5

"SFZU" FF-31 (037-00685)
" FF-33 (037-00687)
" FF-34 (037-00688)
" FF-35 (037-00689)
" MA-3 (037-00693)
" MA-4 (037-00694)
" MA-5 (037-00695)

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT ON PROPOSED CHANGE OF WELL DESIGNATION

830 North La Brea Avenue
Inglewood,

California 90302

October 8, 1964

Mr. E. E. Lee
P. O. Box 511
Ventura, California
Agent for TIDEWATER OIL CO.

DEAR SIR:

Mr. V. F. Murray's
Your request dated September 18, 1964, relative to change in designation of well(s) in Sec. 27 & 34, T. 3 N., R. 16 W., S.B. B. & M., Aliso Canyon field, Los Angeles County, District No. 1, has been received; and in accordance with Section 3203, Public Resources Code, reading in part as follows:

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

the proposed change in designation is hereby authorized as follows:

Old Designation		New Designation	
"Fernando" 1,	Sec. 27	"Fernando Fee" 1,	Sec. 27
"Fernando" 11,	" 27	"Fernando Fee" 11,	" 27
"Fernando" 12,	" 27	"Fernando Fee" 12,	" 27
"Fernando" 30,	" 34	"Fernando Fee" 30,	" 34
"Fernando" 31,	" 34	"Fernando Fee" 31,	" 34
"Fernando" 32,	" 27	"Fernando Fee" 32,	" 27
"Fernando" 33,	" 34	"Fernando Fee" 33,	" 34
"Fernando" 34,	" 34	"Fernando Fee" 34,	" 34
"Fernando" 35,	" 34	"Fernando Fee" 35,	" 34

cc- Mr. E. R. Murray-Aaron
Prod. Dept.
Conservation Committee

E. R. MURRAY-AARON
State Oil and Gas Supervisor

By 
Deputy Supervisor

STATE OF CALIFORNIA
SAN FRANCISCO 11

RECEIVED
MAY 10 1949
LOS ANGELES, CALIFORNIA

Inter-Departmental Communication

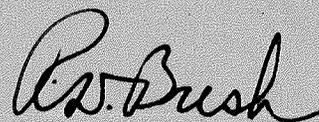
To: E. H. MUSSER
Los Angeles

Date: May 9, 1949

From: State Division of Oil and Gas

Please refer to my letter of April 12, 1949, regarding the location of Tide Water Associated Oil Company well No. "Fernando" 33, T. 3 N., R. 16 W., S. B. B. & M., Aliso Canyon field.

If this well is in Sec. 34, and not in Sec. 27 as shown on your report No. P 1-46344 dated February 16, 1949, a letter of correction should be sent to the operator, with a copy to this office.



State Oil and Gas Supervisor

STATE OF CALIFORNIA
SAN FRANCISCO 11

Inter-Departmental Communication

RECEIVED

APR 13 1949

LOS ANGELES, CALIFORNIA

To: E. H. Musser
Los Angeles

Date: April 12, 1949

From: State Division of Oil and Gas

According to Report No. PL-46344, the location of Tide Water Associated Oil Company well No. "Fernando" 33 falls in Section 34, instead of Section 27 as shown in the report.



State Oil and Gas Supervisor

JUL 15 1954

LOS ANGELES, CALIFORNIA

July 13, 1954

State Division of Oil and Gas
1015 W. Olympic Blvd.
Los Angeles 15, California
Atten.: Mr. R. W. Walling
Deputy Oil & Gas Supervisor

Overton, Lyman, Prince & Vermille
727 West 7th Street
Los Angeles 17, California
Atten.: Mr. Donald R. Ford

Mr. Edmund G. Brown, Attorney General
600 State Building
Los Angeles 12, California
Atten.: Mr. John S. Hassler
Deputy Attorney General

B. F. Porter Estate
2 Pine Street
San Francisco 11, California
Atten.: Mr. Porter Sesnon

Standard Oil Company of California
P. O. Box 397
La Habra, California
Atten.: Mr. Warren Johnson

Porter Sesnon et al
2 Pine Street
San Francisco 11, California
Atten.: Mr. Porter Sesnon

Carlton Beal & Associates
c/o H. L. Shepard & Sons, Operator
Route 3, Box 77
Saugus, California

Mr. Everett S. Layman
Attorney at Law
220 Bush Street
San Francisco 4, California

Gentlemen:

Transmitted herewith are the results of a fourteen day production test which was conducted in Tide Water Associated Oil Company's Fernando Well #33, Aliso Canyon Field, during the period from June 28 - July 11, 1954 inclusive.

The results of this test demonstrate that Fernando Well #33 presently is capable of efficient oil production. It is our intention to continue to produce the well as long as the gas-oil ratio remains below 4500 cu.ft/bbl.

Yours very truly,


G. O. Suman
General Superintendent

RWT/rds
bcc: Thos. L. Mark
Wm. F. Kiessig (2)
Joseph Jensen
R. S. Curl
A. C. Tutschulte
T. E. Weaver
File

Los Angeles

E H MUSSER

June 10 1954

I am enclosing a letter of June 8, 1954, from Tide Water Associated Oil Company advising of its intention to test the productivity of its wells No. "Fernando" 33, "Fernando" 34, and "Fernando" 35, in the Aliso Canyon field, in accordance with the provisions of the restraining order now in effect. You will note that the tests are to start at 8:00 a. m., Monday, June 14, 1954.

Engineer Kasline will be present as a representative of this Division and will arrange for our receiving a complete record of the tests. It is not believed that his constant attendance will be necessary throughout the tests.

/s/ R. W. Walling

RWW:my

enclosure

TIDE WATER ASSOCIATED OIL COMPANY
Western Division
Pacific Electric Bldg
610 South Main Street
Los Angeles 14 California

June 8, 1954

State Division of Oil and Gas
1015 W. Olympic Blvd.
Los Angeles 15, California
Atten.: Mr. R. W. Walling
Deputy Oil & Gas Supervisor

Mr. Edmund G. Brown, Attorney General
600 State Building
Los Angeles 12, California
Atten.: Mr. John S. Hassler
Deputy Attorney General

Standard Oil Company of Calif.
P. O. Box 397
La Habra, California
Atten.: Mr. Warren Johnson

Carlton Beal & Associates
c/o H. L. Shepard & Sons, Operator
Route 3, Box 77
Saugus, California

Gentlemen:

This is to advise you that it is the intention of Tide Water Associated Oil Company to test the productivity of its Fernando Wells Nos. 33, 34, and 35, in the Aliso Canyon Field, in accordance with the procedures outlined in Order, dated July 16, 1953, of the District Oil & Gas Commissioners, District Number 1, starting at 8:00 a. m., Monday, June 14, 1954. These wells are now shut in.

You are invited to witness these tests if you so desire.

Yours very truly

O/S G.O. Suman
G. O. Suman
General Superintendent

GOS:0

Overton, Lyman, Prince & Vermille
727 West 7th Street
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Attorney at Law
220 Bush Street
San Francisco 4, California

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

WELL SUMMARY REPORT

FF-33

RECEIVED
JUL 27 1949
LOS ANGELES, CALIFORNIA

Operator ELDE WATER ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERNANDO #13 Sec. 34, T. 1 N, R. 16 W S. B. B. & M.

Location 3934.03' S. & 1642.05' E. from Sta. #64 Elevation above sea level 2060.23 feet.
All depth measurements taken from top of derriek floor, which is 6.92 feet above ground.

In compliance with the provisions of Chapter 93, Statutes of 1939, 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 July 25, 1949

Signed [Signature]

W. E. Perkins
(Engineer or Geologist)

H. S. Cuff
(Superintendent)

Title Agent
(President, Secretary or Agent)

Commenced drilling March 4, 1949 Completed drilling May 6, 1949 Drilling tools Cable Rotary

Total depth 7730' Plugged depth _____ GEOLOGICAL MARKERS DEPTH

Junk _____

Commenced producing May 9, 1949 (date) Flowing/gas lift/pumping (cross out unnecessary words)

	Clean Oil bbl. per day	Gravity Clean Oil	Per Cent Water including emulsion	Gas Mcf. per day	Tubing Pressure	Casing Pressure
Initial production	1029	23.9	2.0%	465	750#	900#
Production after 30 days ^{6/6}	350	23.3	0.2%	190	950#	1800#

CASING RECORD (Present Hole)

Size of Casing (A. P. I.)	Depth of Shoe	Top of Casing	Weight of Casing	New or Second Hand	Seamless or Lapweld	Grade of Casing	Size of Hole Drilled	Number of Sacks of Cement	Depth of Cementing if through perforations
13-3/8"	996'	0'	54.5#	New	Seamless	J-55, 250	17-1/2"	760	
7"	7630'	0'	26 & 23#	New	Seamless	X-80, J-55	11"	500	
5"	7726'	7596'	18#	New	Seamless	J-55	6-1/2"	0	

PERFORATIONS

Size of Casing	From	To	Size of Perforations	Number of Rows	Distance Between Centers	Method of Perforations
5"	7626ft.	7726ft.	80 Mesh 2" slots	12	6"	by Pacific
	ft.	ft.				
	ft.	ft.				
	ft.	ft.				
	ft.	ft.				

Electrical Log Depths 996' - 7730' (Attach Copy of Log)

DIVISION OF OIL AND GAS

History of Oil or Gas Well

DIVISION OF OIL AND GAS
RECEIVED
JUL 27 1949
LOS ANGELES, CALIFORNIA

OPERATOR WIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. FERNANDO #13, Sec. 34, T. 3 N, R. 16 W, S. B.B. & M.

Signed J. C. Foster

Date _____ Title Agent
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

Date	HISTORY
1949	
12/28 - 29	Graded rig site.
12/30	Idle.
12/31	Graded road and rig site.
1/1 - 2	Idle.
1/3	Graded road and rig site.
1/4	Idle, on account of wind and cold.
1/5 - 1/8	Graded road and rig site.
1/9	Idle.
1/10 - 1/15	Graded road. Graded rig site. Graded road and rig site.
1/16	Idle.
1/17 - 1/22	Graded road and rig site.
1/23	Idle.
1/24 - 1/29	Graded road and rig site.
1/30	Idle.
1/31 - 2/5	Graded road and rig site.
2/6	Idle.
2/7 - 2/12	Graded road and rig site.
2/13	Idle.
2/14 - 15	Graded road and rig site.
2/16	Graded road. Contractor drilled 24" hole to 22' for conductor pipe.
2/17	Graded road. Contractor drilled 24" hole from 22' to 29'. Cemented 20" O.D., 19" I.D. casing at 29', (36' from rig floor) with concrete.
2/18 - 2/19	Graded road and installed culvert.
2/20	Idle.
2/21	Poured concrete mat.
2/22	Erected derrick.
2/23	Graded road and erected derrick.
2/24	Installed black top around rig.
2/25 - 2/26	Graded road and moved in rotary equipment.
2/27	Moved in rotary equipment.
2/28 - 3/1	Rigged up rotary equipment and graveled road.
3/2	Graveled road and rigged up rotary.
3/3	Finished rigging up rotary and drilled rat hole.

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR TIME WATER ASSOCIATED OIL COMPANY FIELD ALSEO CANYON

Well No. FERNANDO 483, Sec. 34, T. 3 N, R. 16 W, S.B.B. & M.

Signed J. C. Foster

Date _____ Title Agent
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

Date
1949

Cont'd)

- 3/4 Spudded 12-1/4" hole at 4:00 A.M. and drilled to 390'.
- 3/5 Drilled 12-1/4" hole from 390' to 705'.
- 3/6 Drilled 12-1/4" hole from 705' to 883'. Lost circulation while drilling at 880', but regained.
- 3/7 Drilled 12-1/4" hole from 883' to 1030'.
- 3/8 Drilled 12-1/4" hole from 1030' to 1120'.
- 3/9 Drilled 12-1/4" hole from 1120' to 1270'.
- 3/10 Drilled 12-1/4" hole from 1270' to 1334'. Opened 12-1/4" hole to 17-1/2" from surface to 560'.
- 3/11 Opened 12-1/4" hole to 17-1/2" from 560' to 996'. Ran 13-3/8", 54.5# Youngstown 280 Grade J-55 casing and landed at 996'. Bottom 4 joints spot welded. Cemented with 700 sacks of Colton Construction cement. Treated first and last 150 sacks. Had no cement returns to surface. Time 4:45 P.M. Cemented around outside of casing with 80 sacks of cement. International Bulk Method.
- 3/12 Cleaned out cement and plugs and circulated to 1334'.
- 3/13 Drilled 12-1/4" hole from 1334' to 1354' and 11" hole from 1354' to 1440'.
- 3/14 Drilled 11" hole from 1440' to 1635'.
- 3/15 Drilled 11" hole from 1635' to 1797'.
- 3/16 Drilled 11" hole from 1797' to 1887'.
- 3/17 Drilled 11" hole from 1887' to 1944'.
- 3/18 Drilled 11" hole from 1944' to 1997'.
- 3/19 Drilled 11" hole from 1997' to 2052'.
- 3/20 Drilled 11" hole from 2052' to 2109'.
- 3/21 Drilled 11" hole from 2109' to 2160'.
- 3/22 Drilled 11" hole from 2160' to 2226'.
- 3/23 Drilled 11" hole from 2226' to 2340'.
- 3/24 Drilled 11" hole from 2340' to 2492'.
- 3/25 Drilled 11" hole from 2492' to 2672'.
- 3/26 Drilled 11" hole from 2672' to 2830'.
- 3/27 Drilled 11" hole from 2830' to 2965'.
- 3/28 Drilled 11" hole from 2965' to 3085'.

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR TIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. FRENCHMAN #33, Sec. 34, T. J N, R. 16 W, S. E, B. & M.

Signed J. C. Foster
Agent

Date _____ Title _____
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

2986

(Cont'd)

- 3/29 Drilled 11" hole from 3085' to 3230'.
- 3/30 Drilled 11" hole from 3230' to 3398'.
- 3/31 Drilled 11" hole from 3398' to 3611'.
- 4/1 Drilled 11" hole from 3611' to 3877'.
- 4/2 Drilled 11" hole from 3877' to 4148'.
- 4/3 Drilled 11" hole from 4148' to 4423'.
- 4/4 Drilled 11" hole from 4423' to 4450'. Ran Schlumberger electric log to 4450'. Conditioned mud. Drilled 11" hole from 4450' to 4513'.
- 4/5 Drilled 11" hole from 4513' to 4558'. Side wall sampled.
- 4/6 Drilled 11" hole from 4558' to 4601'. Side wall sampled. Drilled 11" hole from 4601' to 4621'.
- 4/7 Drilled 11" hole from 4621' to 4757'.
- 4/8 Drilled 11" hole from 4757' to 4897'.
- 4/9 Drilled 11" hole from 4897' to 5129'.
- 4/10 Drilled 11" hole from 5129' to 5409'.
- 4/11 Drilled 11" hole from 5409' to 5727'.
- 4/12 Drilled 11" hole from 5727' to 5969'.
- 4/13 Drilled 11" hole from 5969' to 6204'.
- 4/14 Drilled 11" hole from 6204' to 6370'.
- 4/15 Drilled 11" hole from 6370' to 6561'.
- 4/16 Drilled 11" hole from 6561' to 6675'.
- 4/17 Drilled 11" hole from 6675' to 6774'.
- 4/18 Drilled 11" hole from 6774' to 6859'.
- 4/19 Drilled 11" hole from 6859' to 7024'.
- 4/20 Drilled 11" hole from 7024' to 7132'.
- 4/21 Drilled 11" hole from 7132' to 7246'.
- 4/22 Drilled 11" hole from 7246' to 7300'.
- 4/23 Drilled 11" hole from 7300' to 7376'.
- 4/24 Drilled 11" hole from 7376' to 7460'.
- 4/25 Drilled 11" hole from 7460' to 7615'. Ran Schlumberger electric log at 7564'.
- 4/26 Cored 7-5/8" hole from 7615' to 7665'.
- 4/27 Cored 7-5/8" hole from 7665' to 7695'. Ran Schlumberger electric at 7695'.

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR TIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. FERNANDO 933, Sec. 34, T. 3 N, R. 16 W, S.B. B. & M.

Signed J. C. Foster

Date _____ Title Agent
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

Date
1949

(Cont'd)

- 4/25 Opened 7-5/8" hole to 11" from 7615' to 7630'. Ran and cemented 7", 26# and 23# Youngstown speedtite casing at 7630' with 500 sacks of Colton Hi-temperature cement. Spot welded bottom 4 joints. Pressure increased from 600# to 725# when plugs bumped. Time 7:45 P.M. International Bulk Method. Casing: Bottom 1717.0' is 26# H-80
then 1791.3' is 23# H-80
Balance 4121.7' is 23# J-55.
- 4/29 - 4/30 Standing cemented.
- 5/1 Made up 2-7/8" drill pipe. Located top of cement at 7583' and cleaned out to 7600'.
- 5/2 Ran combination Johnston gun and tester on 2-7/8" drill pipe with 960' of water cushion. Shot four 1/2" holes at 7570'. Set packer of tester at 7525' with perforated tail pipe to 7545'. Opened 3/8" bean at 11:00 A.M. Had medium steady blow with gas to surface in 14 minutes. Blow decreased during last half hour of test to a light blow. Closed tester at 12:30 P.M., after being open 1-1/2 hours. Recovered 1350' of new fluid as follows:
Top 180' of gassy drilling mud
then 270' of gassy oil cut drilling mud
then 600' of gassy muddy oil
and Bottom 300' of clean looking oil.
No free water in evidence. Oil samples cut 13.0% and 20.0% mud with no water. Test of water shut off witnessed and approved by Division of Oil and Gas. Ran Eastman oriented drill pipe survey.
- 5/3 Ran Eastman oriented drill pipe survey. Cleaned out hard cement from 7600' to 7633' and circulated to 7695'.
- 5/4 Ran Johnston tester on 2-7/8" drill pipe with 960' of water cushion and set packer at 7525'. Hole open to 7695'. Opened tester at 10:00 A.M. and had a medium steady blow with gas to surface in 4 minutes and fluid in 15 minutes. After flowing water cushion and mud well flowed clean oil at rate of 128 barrels per hour, based on a 15-minute gauge. Daily rate 3030 barrels per day. Cut 0.3% mud and 0.1% water; 23.5° gravity. Closed tester at 11:30 A.M. and pulled. Cleaned out to 7695' and conditioned mud preparatory to coring ahead.

700
6178

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR Lido Water Assoc. Oil Co. FIELD Alvar Canyon

Well No. FERNANDO 433, Sec. 34, T. 34, R. 16W, S4E B. & M.

Signed T. C. Foster
Title Agent

Date _____ Title _____
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

Date
1949

(Cont'd)

Date	Gross Fluid	Approx. Net Oil	Cut	Gravity	Bean	Pressure	Pressure	Gas	Hours On
5/23	Shut In...					1100#	1850#		
5/24	Shut In...					1100#	1850#		
5/25	Shut In...					1100#	1850#		
5/26	Shut In...					1100#	1850#		
5/27	Shut In...					1100#	1850#		
5/28	Shut In...					1100#	1850#		
5/29	Shut In...					1100#	1850#		
5/30	Shut In...					1100#	1850#		
5/31	Shut In...					1100#	1850#		
6/1	79	78	0.2%	23.8°	16/64	1050#	1850#	36	6
6/2	Shut In...					1100#	1850#		
6/3	Shut In...					1100#	1850#		
6/4	Shut In...					1100#	1850#		
6/5	Shut In...					1100#	1850#		
6/6	351	350	0.2%	23.8°	14/64	950#	1800#	190	17
6/7	130	129	0.2%	23.8°	10/64	1050#	1800#	33	9
6/8	Shut In...					1050#	1825#		
6/9	Shut In...					850#	1850#		
6/10	Shut In...					850#	1850#		
6/11	Shut In...					850#	1850#		
6/12	Shut In...					850#	1850#		
6/13	Shut In...					850#	1850#		
6/14	Shut In...					850#	1850#		
6/15	Shut In...					850#	1850#		
6/16	Shut In...					---	---		
6/17	Shut In...					---	---		
6/18	Shut In...					---	---		
6/19	Shut In...					---	---		
6/20	Shut In...					750#	1800#		
6/21	Shut In...					---	---		
6/22	Shut In...					---	---		

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR L. de Water Casing Co. FIELD Almad Canyon
Well No. FERRANDO 433, Sec. 34, T. 3N, R. 16W, 4B B. & M.
Signed J. C. Foster
Date _____ Title Agent
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

Date 5/24/49

(Cont'd)

5/5 Cored 6" hole from 7695' to 7699'.
5/6 Cored 6" hole from 7699' to 7730'.
5/7 Ran Schlumberger electric log to 7730'. Ran 6-1/2" Baker well scraper and scraped from 7630' to 7730'.
5/8 Ran 125' of 5", 18# Security flush joint liner, including 98' of 80 Mesh perforated and landed at 7726'. Top of Burne liner hanger 7598'. Perforations are 80 Mesh, 2" slots, 12 rows, 6" centers, with 6" undercut, by Pacific. Started running 2-1/2" tubing.
5/9 Ran 2-7/8", 6.5# J-55 Upset tubing with 2-1/2" x 2" swedge nipple on bottom, and hung at 7543'. Circulated out mud with oil and well started flowing at 4:30 A.M., 5/10/49. In 1 hour and 45 minutes well flowed 99 barrels gross fluid; 97 barrels approximate net oil (1330 barrels net rate); 2.0% cut; 23.8° gravity; 32/64 bean; 800# tubing pressure; --# casing pressure.
5/10 In 24 hours well flowed 1403 barrels gross fluid, of which 374 barrels is circulating oil. Average cut 2.0%, last cut 0.2%; 28/64 bean; 23.9° gravity; 750# tubing pressure 900# casing pressure; 488 MCF gas.
5/11 In 24 hours well flowed 924 barrels gross fluid; 922 barrels approximate net oil; 0.2% cut; 20/64 bean; 23.9° gravity; 850# tubing pressure; 1100# casing pressure; 430 MCF gas.

	Gross Fluid	Approx. Net Oil	Cut	Gravity	Bean	Tubing Pressure	Casing Pressure	MCF Gas	Hours On
5/12	904	902	0.2%	--	20/64	900#	1100#	413	24
5/13	910	908	0.2%	24.0°	20/64	900#	1175#	482	24
5/14	932	930	0.2%	23.7°	20/64	850#	1350#	455	24
5/15	921	920	0.1%	24.0°	20/64	850#	1400#	439	24
5/16	712	711	0.1%	23.9°	16/64	900#	1550#	297	24
5/17	553	552	0.2%	23.9°	15/64	900#	1600#	251	24
5/18	537	536	0.2%	23.9°	15/64	900#	1600#	238	24
5/19	536	535	0.2%	23.8°	15/64	900#	1700#	239	24
5/20	210	209	0.2%	23.8°	15/64	--	--	59	8
5/21	Shut In...					1100#	1900#		
5/22	Shut In...					1100#	1850#		

SUBMIT IN DUPLICATE
STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR Lido Water Assoc Oil Co FIELD Aliso Canyon

Well No. FERNANDO #33, Sec. 34, T. 3N, R. 10W, S. 18 B. & M.

Signed J. C. Foster

Date _____ Title Agent
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

Date

1949
6/23
6/24
6/25
6/26
6/27
6/28
6/29

(Cont'd)

		<u>Tubing</u> <u>Pressure</u>	<u>Casing</u> <u>Pressure</u>
Shut In...		750#	1850#
Shut In...		750#	1850#
Shut In...		750#	1850#
Shut In...		750#	1850#
Shut In...		750#	1850#
Shut In...		750#	1850#
Shut In...		750#	1850#

CASING RECORD

20" 3 36'
13-3/8", 54.5# 0 996'
7", 26# & 23# 0 7630'
128' - 5", 18# inc. 98' of Perf. L 7726'. Top 7598'.

TUBING RECORD

2-7/8", 6.5# J-55 Upset tubing with 2 1/2" x 2" swedge nipple on bottom, H 7543'.

JUL 15 1954

LOS ANGELES, CALIFORNIA

SUMMARY OF PRODUCTION TEST
Fernando #33

<u>1954</u>	<u>Oil</u> <u>Prod.</u> <u>B/D</u>	<u>Gas</u> <u>Prod.</u> <u>MCF/D</u>	<u>GOR</u> <u>CF/B</u>	<u>Cut</u> <u>%</u>	<u>Tubing</u> <u>Pressure</u> <u>PSIG</u>	<u>Casing</u> <u>Pressure</u> <u>PSIG</u>	<u>Gravity</u> <u>API</u>	<u>Bean</u>
6/28	5	17	3400	0.1 (E)	1100	2200	-	3
6/29	10	8	800	0.1 (E)	250	2200	-	4.5
6/30	27	21	778	0.1	300	2200	28.0	5
7/1	33	19	576	0.1 (E)	300	2200	-	5
7/2	27	19	704	0.1	300	2200	25.5	5
7/3	30	18	600	0.1	300	2200	25.4	5
7/4	29	17	586	0.1	300	2200	25.4	5
7/5	28	18	613	0.1	275	2200	25.5	5
7/6	31	18	581	0.1	275	2200	25.4	5
7/7	28	18	643	0.1	300	2200	25.6	5
7/8	27	18	667	0.1	300	2200	25.5	5
7/9	27	18	667	0.1	300	2200	25.6	5
7/10	31	19	612	0.1	300	2200	25.6	5
7/11	26	19	731	0.1	300	2200	25.7	5
	<u>359</u>	<u>247</u>	<u>688</u>	<u>0.1</u>				

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

RECEIVED
JUL 27 1949
LOS ANGELES, CALIFORNIA

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator SEABOARD ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERNANDO 433 Sec. 34, T. 3 N, R. 16 W, S.B.B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION
Top of Formation	Bottom of Formation				
<u>HONCO 1 1/4" SIDE WALL CORES</u>					
4224'				0' 3"	Soft silty gray sand. No cut or odor. Looks wet.
4202'				0' 2"	Quartz arkose. No cut or odor.
4184'				0' 2"	Quartz arkose. No cut or odor.
4135'				0' 3"	Quartz arkose. No cut or odor.
4084'				0' 3"	Soft silty gray sand. No cut or odor.
2373'				0' 2"	Firm, poorly sorted, fine grained gray sand. No cut or odor.
<u>7-5/8" BORED WIRE LINE CORES</u>					
7615'	7625'			10' 0"	1' 0" Firm, silty oil sand. Slight cut and odor. 3' 0" Firm, gray, sandy siltstone. No cut and odor. 0' 6" Firm, silty oil sand. Slight cut and odor. 5' 6" Firm, gray, sandy siltstone. No cut and odor.
7625'	7635'			6' 0"	4' 0" Firm, gray, sandy siltstone. No cut and odor. 1' 0" Firm, silty, well sorted oil sand. Slight cut and odor. 2' 0" Firm, oil stained, gray, sandy siltstone. 1' 0" Firm, silty, well sorted oil sand. Fair cut and odor.

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator TIDE WATER ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERRANDY #13 Sec. 34, T. J H, R. 16 W, S.B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION
Top of Formation	Bottom of Formation				
<u>7-5/8" Reed Wire Line Cores</u>			<u>(Cont'd)</u>		
7635'	7645'			10' 0"	4' 0" Firm, gray, sandy siltstone. No cut or odor. 6' 0" Firm, silty oil sand. Fair cut and odor.
7645'	7655'			10' 0"	Firm, medium grained oil sand. Good cut and odor.
7655'	7665'			10' 0"	5' 6" Firm, fine grained oil sand. Good cut and odor. 2' 0" Firm, silty oil sand. 2' 6" Firm, fine grained oil sand. Good cut and odor, with streaks of silty oil sand. Slight cut, fair odor.
7665'	7673'			8' 0"	1' 0" Hard, oil stained, sandy siltstone. 4' 0" Firm, silty oil sand. Fair cut and odor. 2' 0" Firm, fine grained oil sand. Good cut and odor. 2' 0" Firm, medium grained oil sand. Good cut and odor.
7673'	7683'			10' 0"	Firm, medium grained oil sand. Good cut and odor.
7683'	7689'			6' 0"	1' 0" Firm, fine grained, well sorted oil sand. Fair cut and odor. 0' 2" Conglomerate. Slight cut, good odor. 1' 0" Loosely consolidated, fine to medium grained oil sand. Slight cut, fair odor. 1' 10" Streaks silty oil sand and shale. Slight cut and odor. Good 35° dip. 2' 0" Firm, silty oil sand. Fair cut and odor. Bottom 0' 2" grades to loosely consolidated medium grained oil sand. Good cut and odor.

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator TIDE WATER ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERNANDO/433 Sec. 34, T. 3 N, R. 16 W, S. 2, B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION
Top of Formation	Bottom of Formation				
<u>7-5/8" Reed Wire Line Cores</u>			<u>(Cont'd)</u>		
7689'	7695'			6' 0"	0' 1/4" Fragments shell. 5' 8" Firm, fine oil sand. Good cut and burned odor.
<u>6" REED CONVENTIONAL CORES</u>					
7695'	7715'			18' 0"	3' 0" Firm, fine grained, well sorted oil sand. Good cut and odor. 0' 2" Hard, fine grained oil sand. 0' 3" Shell. 2' 6" Firm, fine grained, well sorted oil sand. Good cut and odor. 0' 2" Hard oil sand, as above. 8' 0" Firm, fine grained, well sorted oil sand. Good cut and odor. 0' 3" Shell. 4' 6" Firm, fine grained oil sand. Good cut and odor.
7715'	7725'			10' 0"	2' 0" Loosely consolidated medium grained, poorly sorted, well saturated oil sand. Good cut and odor. 3' 9" Loosely consolidated fine grained, well sorted, well saturated oil sand. Good cut and odor.
7725'	7730'			0' 2"	0' 3" Firm, fine grained oil sand. Good cut and odor. 4' 0" Loosely consolidated medium grained poorly sorted, well saturated oil sand. Good cut and odor. 0' 2" Hard, oil stained sandstone shell.

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Report on Test of Water Shut-off
(FORMATION TESTER)

No. T 1-49744

Los Angeles 15, Calif. May 16, 1949

Mr. F. C. Foster
Los Nietos, Calif.

Agent for TIDE WATER ASSOCIATED OIL COMPANY

DEAR SIR:

Your well No. "Fernando" 33, Sec. 34, T. 3 N., R. 16 W., S.B. B & M.
Aliso Canyon Field, in Los Angeles County, was tested for water shut-off
on May 2, 1949. Mr. Paul Betts, Inspector, designated by the supervisor,
was present as prescribed in Secs. 3222 and 3223, Ch. 93, Stat. 1939; there were also present

Gordon Larter, Engineer; R. Roberts, Drilling Foreman.

Shut-off data: 7 in. 23 & 26 lb. casing was cemented ~~xxxx~~ at 7630 ft.
on April 28, 1949 in 11 in. hole with 500 sacks of cement
~~xxxx~~ of which 9 sacks was left in casing.

Casing record of well: 13-3/8" cem. 996'; 7" cem. 7630'; four 1/2" test holes at 7570', W.S.O.

Present depth 7695 ft. Bridged with cement from 7630 ft. to 7600 ft. Cleaned out to 7600 ft. for test.
A pressure of 1500 lb. was applied to the inside of casing for 15 min. without loss after cleaning out to 7600 ft.
A Johnston gun and tester was run into the hole on 2-7/8 in. drill pipe ~~using~~
with 960 ft. of water ~~work~~ cushion, and packer set at 7525 ft. with tailpiece to 7545 ft.
Tester valve, with 3/8 in. bean, was opened at 11:00 a.m. and remained
open for 1 hr. and 30 min. During this interval there was a medium, steady blow for the
duration of the test. Gas reached the surface in 14 min.

THE INSPECTOR ARRIVED AT THE WELL AT 2:30 P. M. AND MR. LARTER REPORTED:

1. A 17-1/2" rotary hole was drilled from the surface to 996'.
2. On March 11, 1949, 13-3/8", 54.5 lb. casing was cemented at 996' with 700 sacks of cement.
3. An 11" rotary hole was drilled from 996'-7630'; a 7-5/8" rotary hole, 7630'-7695'.
4. Electrical core readings showed the top of "Sesnon" zone at 7645'.
5. The 7" casing was run into the hole and cemented as noted above.
6. The 7" casing was shot-perforated with four 1/2" holes at 7570' for this test.
7. A Johnston gun and tester was run as noted above.

THE INSPECTOR NOTED:

1. When the drill pipe was removed, there was a net rise of 180' of gassy drilling fluid, 870' of gassy, oily, drilling fluid, and 300' of clean oil and gas found in the drill pipe above the tester, equivalent to 7.0 bbl.
2. Water filtered from fluid sample taken from 30' above the bottom of the drill pipe cut 17% mud, and no free water.
3. The recording pressure bomb chart showed that the tester valve was open 1 hr. and 30 min.

The test was completed at 3:45 p.m.

THE WATER SHUT-OFF ABOVE THE PERFORATIONS AT 7570' IS APPROVED.

PWB:OH

cc- T. L. Wark
Jos. Jensen
Wm. E. Perkes (2)

R. D. BUSH, State Oil and Gas Supervisor

By E. H. Messer, Deputy

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Report on Proposed Operations

No. P 1-46344

Los Angeles 15, Calif. February 16, 19 49

Mr. F. C. Foster

Los Nietos, Calif.

Agent for TIDE WATER ASSOCIATED OIL COMPANY

DEAR SIR:

Your ³⁴ proposal to drill Well No. "Fernando" 33
(Corr. letter 5-11-49) oh
Section 27, T. 3 N., R. 16 W., S.B. B. & M., Aliso Canyon Field, Los Angeles County,
dated Feb. 9, 19 49, received Feb. 10, 19 49, has been examined in conjunction with records filed in this office.

Present conditions as shown by the records and the proposal are as follows:

THE NOTICE STATES:

"The well is 3934.03 feet S. and 1642.05 feet E. from Station #84.
Elevation of ground above sea level approx. 2100 feet.
All depth measurements taken from top of derrick floor, which is 6.92 feet above ground.
We estimate that the first productive oil or gas sand should be encountered at a depth of about _____ feet."

PROPOSAL:

"We propose to use the following strings of casing, either cementing or landing them as herein indicated:

Size of Casing	Weight	Grade and Type	Depth	Landed or Cemented
13-3/8"	54.5#	T&C J-55	800'	Cemented
7"	23#, 26#, 29#	J-55 N-80 Speedtite	7700'	Cemented
5"	18#	J-55 P.E.	7800'	Landed

Well is to be drilled with rotary tools.

It is understood that if changes in this plan become necessary we are to notify you before cementing or landing casing."

DECISION:

THE PROPOSAL IS APPROVED PROVIDED THAT

1. Mud fluid consistent with good drilling practice shall be used and the column of mud fluid maintained at all times to the surface, particularly while pulling the drill pipe.
2. Blowout prevention equipment, sufficient to provide a complete close-in of the well under pressure at any time, shall be installed.
3. Any hole to be sidetracked in any oil or gas zone shall be filled with cement, if possible.
4. THIS DIVISION SHALL BE NOTIFIED AS FOLLOWS:
 - (a) To inspect the installed blowout prevention equipment before drilling below 1500'.
 - (b) To witness a test of the effectiveness of the 7" shut-off.

CLB:OH

cc- T. L. Wark
Jos. Jensen
Wm. E. Perkes (2)

OH
CLB

R. D. BUSH
State Oil and Gas Supervisor

By *[Signature]* Deputy

RECEIVED
FEB 10 1949
LOS ANGELES, CALIFORNIA

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

037-00687

DIVISION OF OIL AND GAS

Notice of Intention to Drill New Well

2

This notice must be given and surety bond filed before drilling begins

Los Nietos, Calif. February 9, 19 49

DIVISION OF OIL AND GAS

Los Angeles, Calif.

In compliance with Section 3203, Chapter 93, Statutes of 1939, notice is hereby given that it is our intention to commence the work of drilling well No. 34 (Corr. letter 5-11-49) on Fernando 33, Sec. 27, T. 3 N., R. 16 W., S.E. B. & M., Aliso Canyon Field, Los Angeles County.

Legal description of lease Fernando Fee

The well is 3934.03 feet ~~XXX~~ S., and 1642.05 feet E. ~~XXXX~~ from Station #84.
(Give location in distance from section corners or other corners of legal subdivision)

Elevation of ground above sea level approx. 2100 feet.

All depth measurements taken from top of derrick floor, which is 6.92 feet above ground.

We estimate that the first productive oil or gas sand should be encountered at a depth of about _____ feet.

We propose to use the following strings of casing, either cementing or landing them as herein indicated:

Size of Casing, Inches	Weight, Lb. Per Foot	Grade and Type	Depth	Landed or Cemented
13-3/8"	54.5#	T&C J-55	800'	Cemented
7"	23#, 26#, 29#	J-55 N-80 Speedtite	7700'	Cemented
5"	18#	J-55 P.I.	7800'	Landed

MAP	MAP BOOK	CARDS	BOND	FORMS	
				114	121
18 A	RWB				

Well is to be drilled with ~~rotary~~ rotary tools.

It is understood that if changes in this plan become necessary we are to notify you before cementing or landing casing.

Address P. O. Box "Y", Los Nietos, Calif.

TIDE WATER ASSOCIATED OIL COMPANY

(Name of Operator)

Telephone number Whittier 42-043

By J. C. Foster
Agent