

SCHNEPP CAUF GAS

OPERATOR                       
 LSE & NO 200 200  
 MAP NO. 2607

INTENTION	Drill 1	REWORK	REC'D 11	4	5
NOTICE DATED	2-13-73	---	7-18-01		
P-REPORT NUMBER	273-105	2-16-168	201-189		
CHECKED BY/DATE			aa / 8-20-02		
MAP LETTER DATED	11-18-73	N/C			
SYMBOL	⊕				

	2-27-73		5-24-76							
	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED
NOTICE										
HISTORY	11-4-73		7-6-76		8-6-01					
SUMMARY					3-29-02					
TES/ELECTRIC LOG	8-22-75				7-18-02					
DIRECTIONAL SURV.	10-1-73									
CORE/SWS DESCRIP.										
DIPMETER RESULTS										
1050	5-10-73				0517					
OTHER					7-14-02					
					GR/OCL					
RECORDS COMPLETE	Ⓟ		Ⓟ							

ENGINEERING CHECK		CLERICAL CHECK	
T-REPORTS		POSTED TO 121	170 MAILED
OPERATOR'S NAME	7777		FINAL LETTER
WELL DESIGNATION	7777		MAILED
LOC. & ELEV.	7777		
SIGNATURE	7777		RELEASE
SURFACE INSPECTION			BOND
FINAL LETTER OK			

REMARKS: Motor rec'd. 11/20/03 no action required

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

# HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
 Well: Porter 26A / IW 80  
 A.P.I. No. 037-21362

Field: Aliso Canyon

County: Los Angeles

Surface Location: Sec 28 3N 16W S.B.B.M.

Name: Matt Ortwein  
 (Person Submitting Report)

Title: Storage Field Engineer  
 (President, Secretary, or Agent)

Date: 7/15/2002

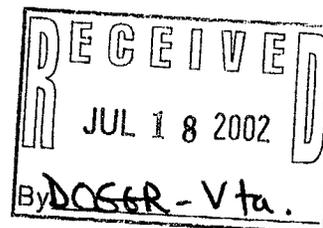
Signature: *Matt Ortwein*

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

Telephone Number: (818) 701-3251

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

Start Date	Ops This Rpt
11/1/2001	remove instr and laterals
11/5/2001	run temp and pres survey
11/6/2001	run temp and pres survey
11/7/2001	spot key rig equipment
11/8/2001	rig up sub-base / spot pump
11/9/2001	rig up key 447
11/10/2001	SDFW
11/11/2001	SDFW
11/12/2001	SDFH
11/13/2001	prep to kill well
11/14/2001	Installed supports under sub base. Receive fluids and condition mud to 8.7# KCl.
11/15/2001	Pumped 60 barrel high viscosity polymer pill in zone. Killed well per schedule with 420 barrels of 8.7#/gal KCl polymer.
11/16/2001	Filled well with 85 barrels of 8.7#/gallon KCl fluid. Install BPV and nipple down tree. Attempt to remove tree. Break out studs and remove tree. Nipple up class III BOPE.
11/19/2001	Changed pipe rams to 2-7/8". Pretest BOPE. Repaired leaks. Test and chart BOPE 20 minute tests. DOGGR witnessed partial test. Pump 40 barrels down tubing. Fill well with 91barrels total. Well flowing back.
11/20/2001	Fill well with 31 barrels of 8.7#/gallon KCl polymer. Install BPV and test blind rams to 5000psi for 20 minutes. DOGGR witnessed and approved installation.(S. Mulqueen) Removed BPV and installed 1 joint of 2-7/8" N-80 tubing in top of hanger. Attempted to release from packer at 7700'. Could not release from packer. Rigged up Tiger Wireline and chemically cut tubing at 7657'. (10' above collar) Removed hanger.
11/21/2001	Filled well with 30 bbl. Rigged up Tuboscope wellhead tubing inspection unit. Mixed and pumped 40 barrel polymer pill and pumped down tubing. Displaced with 50 barrels. Pulled out of well inspecting and laying down tubing. Ran in well with kill string to 2000'.
11/26/2001	Killed well with 105 barrels. Circulated. Pulled out of well laying down kill string. Made up kelly. Rig up Foster drill pipe tongs. Tongs wouldn't work. Rig down tongs. Picked up Oil Country tongs. Changed pipe rams to 3-1/2". Picked up 2 joints of 6-3/8" wash pipe with shoe, junk sub, bumper sub and 4) 4-3/4" drill collars. Ran in hole picking up 3-1/2" drill pipe to 1600'.
11/27/2001	Filled well with 10 barrels of 8.7#/gallon KCl polymer. Continued running in well with washpipe picking up 3-1/2" drill pipe. Tagged fish at 7652'. Lay down 1 joint.
11/28/2001	Filled well with 22 barrels of 8.7# KCl polymer. Work over fish at 7652' and ran in to fill at 7681'. Washed over to packer at 7711'. Pulled out of well to 1600'.
11/29/2001	Filled well with 10 barrels. Continued pulling out of well with wash pipe. Lay down wash pipe. Ran in well with 3-21/32" LH release grapple in 5-3/4" overshot with 10' extentions, BS, Jars, 4)4-3/4" drill collars and accelerator. Ran in well to 7652'. Worked over fish. Attempted to release from packer. Could not get off latch. Sheared pins on J latch. Pulled out of well to 6500'.
11/30/2001	Fill well with 18 barrels. Continued pulling out of well with fish. Layed down seals, latch, blast joints and safety system. Made up and ran 4" spear, BS, 4)4-3/4" drill collars and accelerator. Ran in well to 7711'. Engaged packer and worked free. Pull out of well 2 stands. (Packer hanging on casing collars).
12/3/2001	Filled well with 35 barrels. (Rig down for brake and clutch repair.)



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## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company

Field: Aliso Canyon

County: Los Angeles

Well: Porter 26A / IW 80

Surface Location: Sec 28 3N 16W S.B.B.M.

A.P.I. No. 037-21362

Name: Matt Ortwein

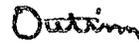
Title: Storage Field Engineer

(Person Submitting Report)

(President, Secretary, or Agent)

Date: 7/15/2002

Signature:



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

Telephone Number: (818) 701-3251

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Start Date	Ops This Rpt
12/4/2001	Continued pulling out of well with 8-5/8 packer. Packer hanging on casing collars. Worked through well head and layed down packer and fishing tools. Picked up 5-3/4" bit on 15 joints of 2-7/8" tubing. Ran in well to 7710'.
12/5/2001	Ran in well with bit to tag fill at 8037'. Cleaned out to 8148'. Could not clean out deeper. Reverse circulated clean and pulled out to 1500'.
12/6/2001	Filled well with 18 barrels. continued pulling out of well with bit. Layed down 2-7/8" tubing. Rigged up Baker wireline and ran in with 6-5/8" jet cutter with collar locator. Ran collar log. Could not get deeper than 8107'. Cut liner at 8106'. Pulled out and made up 6-5/8" chemical cutter. Ran in and cut 2' above connection. Cut at 7852'. Rigged down wireline. Made up 6-5/8" spear, BS, Jars, 4) 4-3/4" collars and accelerator. Ran in well 65 stands.
12/7/2001	Filled well with 24 barrels. Continued running in well with spear to fish at 7725'. Engaged fish and jarred free. Pulled out to 2000'.
12/10/2001	Filled well with 40 barrels. Pulled out of well. Layed down tools and fish. Recovered Hanger, port collar and 3 joits of 6-5/8" liner. 127.22' overall. Top of fish is now at 7852'. (2.82' above connection. Made up 6-5/8" spear with stop, BS, Jars, 4)4-3/4" collars and accelerator. Ran in well to tag at 7852' Could not get into fish. Pick up 30'.
12/11/2001	Filled well with 18 barrels. Hooked up to circulate. Rotated and circulated. Could not get into liner. Pulled out of well. Layed down spear. Made up 2-7/8" bent stinger on bottom of grapple. Ran in well to 7555'.
12/12/2001	Filled well with 10 barrels. Ran in to top of fish at 7852'. Worked into fish and set spear. Attempted to work free to 230,000#. Jarred on fish at 80,000# over string weight. Pulled free. Pulled out of well to 6000'. Shut down for rig repair. Drop box was making noise. Shut down for repairs.
12/13/2001	Rig repairs.
12/14/2001	Continued pulling out of well with spear. No recovery. Grapple was broken and part was missing. Made up spear for 6-5/8" 20# liner. Added 3' additional extension. Ran in well to 7400'.
12/17/2001	Filled well with 35 barrels. Continued running in with spear. Worked into liner stub at 7852'. Set spear and jarred on liner at 40,000# over. Spear pulled loose. Could not reset. Pulled out. Spear had pulled over mandrel. Layed down tools. Measured and picked up 15 joints and 45 cut off. Ran in well with drill pipe to top of liner stub at 7852'. Worked inside and tagged fill at 8038'. Pulled to 7830'.
12/18/2001	Filled well with 8 barrels. Ran in well to tag at 8036'. Cleaned out fill to 8133'. Could not get deeper. Rigged up BJ cementers and pumped 10 barrels of fresh water ahead of 92cf(80sx) "G" cement with xxxxx Displaced with 5 barrels of fresh water and 50 barrels of 8.7#/ gallon polymer. Pulled to 7500'. Reverse circulated. Recovered no cement. Theo top of cement at 7730'. Pulled to 7600'.
12/19/2001	Ran in well and tagged top of cement plug at 7828'. Pulled out of well. Layed down 2-7/8" tubing. Made up 7-5/8" bit, 4) 4-3/4" collars and ran in well to 7700'. Drilled out stringers and hard cement to 7844'. Conditioned mud and treated out cement contamination. Pulled out of well to 6000'.
12/20/2001	Continued pulling out of well with bit. Rigged up Baker Atlas and ran in well to tag at 7844'. Ran collar strip to confirm collars out of window. Found bottom joint was to short to accommodate window. Ran in well with 8-5/8" Baker bridge plug and set at 7818'. Top at 7816'. Bottom of BP is 2' above collar at 7820'. Rig down Baker wireline.
12/21/2001	Made up 8-5/8" Weatherford whipstock with orientation sub and ran in well on 4) 4-3/4" crill collars and 10 jts of 3-1/2" heavy weight drillpipe. With whipstock at 7805', ran in well with Scientiff Gyro and oriented whipstock to high side of hole. Set down at 7816' and set whipstock. Release from whipstock.
12/26/2001	Ran in well and tagged at 7796'. Milled starting window at whipstock. Conditioned mud. Pulled out of well. Set up mud cleaning equipment. Installed wellhead protector. Made up 7-5/8" window mill and 7-5/8" water mellon mill 8' above. Ran in well with 4) 4-3/4" drill collars and Heavy weight drill pipe to 3000'.

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## HISTORY OF OIL OR GAS WELL

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Well: Porter 26A / IW 80  
A.P.I. No. 037-21362

Field: Aliso Canyon

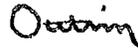
County: Los Angeles

Surface Location: Sec 28 3N 16W S.B.B.M.

Name: Matt Ortwein  
(Person Submitting Report)

Title: Storage Field Engineer  
(President, Secretary, or Agent)

Date: 7/15/2002

Signature: 

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

Telephone Number: (818) 701-3251

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Start Date	Ops This Rpt
12/27/2001	Continued running in well to 5155'. Hit obstruction. Milled 11' to clear. Ran in to Weatherford whipstock at 7796'. Milled winsow in 8-5/8" casing from 7796' to 7804'. Mill stopped. Circulated clean. Pulled out of well. Replaced lead mill. Ran in well with mill#2
12/28/2001	Continued running in well with Mill #2 to 7796'. (top of window) Reamed 7796' to 7808'. Drilled from 7808' to 7818'. Cleaned up window. No drag or torque in window. Pulled out of well. Made up 7-1/2" Mill tooth drill bit with 7-1/2" near bit stabilizer. Made up 4) 4-3/4" drill collars and 10 joints of 3-1/2" HW drill pipe and ran in well to 7818' Picked up to 7790 and rotated pipe. Rig rotary table would not control torque. Pulled to 7850'. Down for repairs.
12/31/2001	Rig Repairs
1/3/2002	Rig Repairs
1/3/2002	Rig Repairs
1/4/2002	Rig Repairs
1/7/2002	Rig repairs. Lay down 12 joints Ran in to tag at 7818'. Drill ahead to 7824'. Drill ahead from 7824' to 7888'. Circulate to survey. Riggged up Spicer wireline and ran in well with deviation survey. With tool at 7863', Deviation was 5degrees.
1/8/2002	Drill from 7888' to 7978'. Drill from 7978' to 8016'. Circulate to survey. Rig up wireline and recorded deviation survey at 7991' of 6-3/4degrees. Drilled from 8016' to 8072'. Top of hard zone. Circulate clean. Recorded deviation of 8-1/2degrees at 8052'. Pull out of well. Made up 12" Baker hole opener, shock sub, 4) 4-3/4" drill collars and ran in well.
1/9/2002	Continued running in well with 12" hole opener to 7850'. Opened hole from 7-1/2" to 12" from 7850' to 7900'. Opened hole from 7-1/2" to 12" from 7900' to 8000'. Opened hole from 7-1/2" to 12" from 8000' to 8052'.
1/10/2002	Opened hole from 7-1/2" to 12" from 8052' to 8072'. (top of hard zone) Placed 60 barrel high viscosity pill on bottom. Pulled to 7750'. Changed well over to 3% KCl water. Pulled out of well. Riggged up Schlumberger and ran 4 arm caliper log with directional from 8072' to 7590'. Rig down loggers. Picked up and ran 4-1/2" Baker liner. Ran 2-1/16" Hydril inside liner and spaced out. Ran in well with liner.
1/11/2002	Continued running in well and tagged bottom at 8072'. Set Baker SC-1 packer at 7687.45'. Tested tools. Blew ball seat. Circulate well and gravel packed liner with 180 sacks of 20/40 gravel. Reversed out 15 CuFt. 165 cuft total in place. Retest pack at 1500psi. Released from liner and pulled out laying down drill pipe to 1800'. Liner detail: (see schematic) T.D.
1/14/2002	Filled well with 16 barrels. Continued pulling out of well laying down drill pipe. Removed well head protector. Riggged up Schlumberger and ran USIT log from 9687' to surface. Rig down loggers. Layed down kelly. Ran in well to 2000'. (kill string)
1/15/2002	Filled well with 16 barrels. Pulled out of well with kill string. Ran in well as follows: (see schematic)
1/16/2002	Continued running in well with 2-7/8" tubing. Latched in SC-1 packer at 7687'. Released from packer and spaced out with pup jts.(4',4',6',6') Latch into SC-1 and pulled 20,000# over. Land hanger with 10,000# on packer. Ran in studs and pressure tested seals and hanger to 1000psi for 20 minutes. OK.

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 Well: Porter 26A / IW 80  
 A.P.I. No. 037-21362

Field: Aliso Canyon

County: Los Angeles

Surface Location: Sec 28 3N 16W S.B.B.M.

Name: Matt Ortwein  
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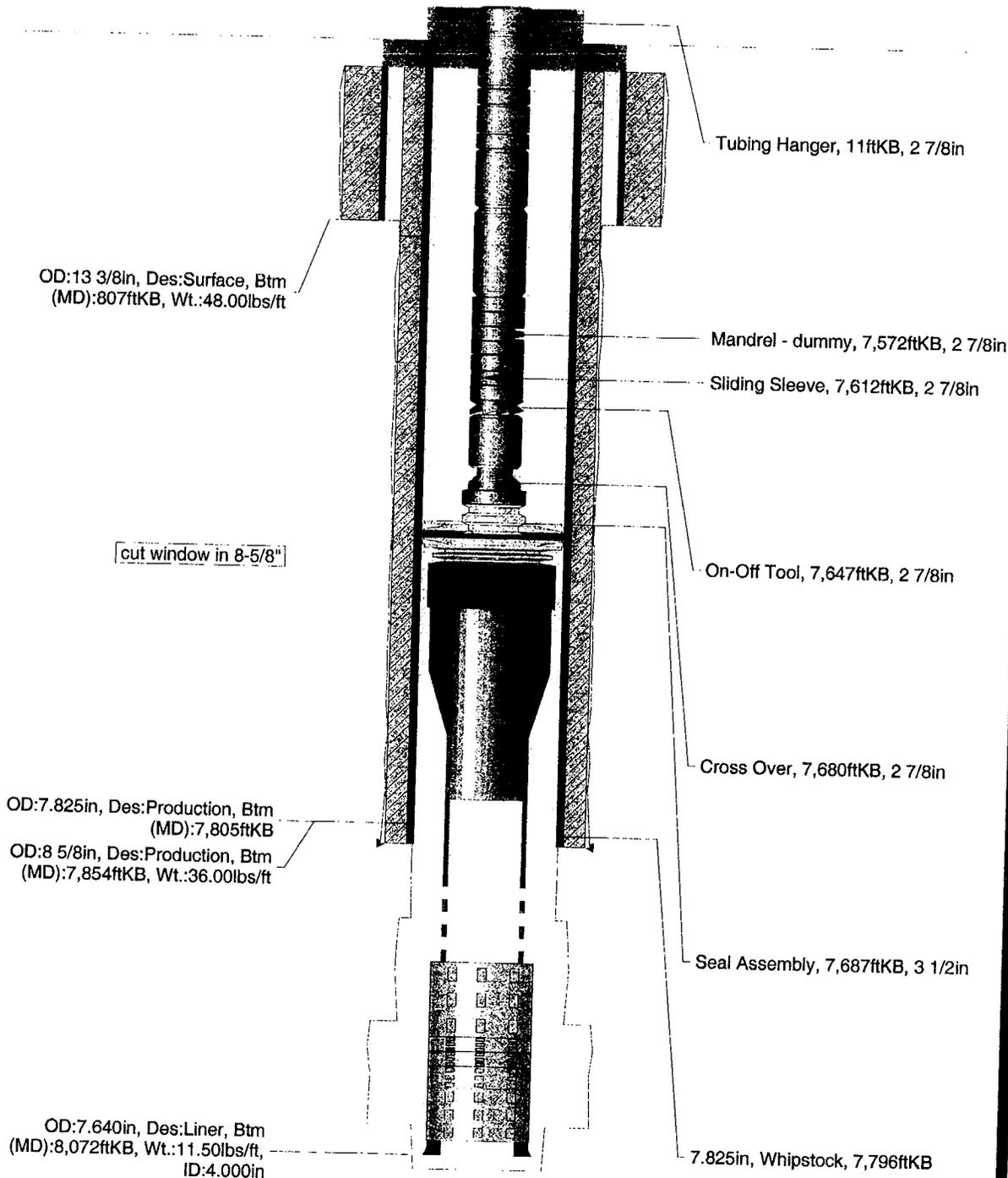
Start Date	Ops This Rpt
1/17/2002	Installed BPV. Removed table and nipped down BOPE. Installed production tree. Loaded out BOPE. Tested tree to 5000psi. OK. Rigged up Spicer Wireline and ran in well to 7611'. Opened XD sliding sleeve. Rigged out wireline.
1/18/2002	Rig up swabbing tools. Pressured annulus to 2200psi from adjacent well. Recovered 200barrels from tubing. Rig down.
1/22/2002	Bled 2200psi from tubing to system and to tank. Well would not flow. Rig down choke manifold, hoses and rig down.
1/23/2002	Rig down rig and equipment
1/24/2002	Load out and move to WEZU 23 at Honor Ranch
1/25/2002	Move out.
1/28/2002	Clean tanks and release same
1/30/2002	Install laterals / clean location
2/3/2002	Clean up all
2/13/2002	Clean tanks and release same
3/15/2002	Flow-back well for clean-up. Returned well to service.
3/26/2002	Submit History of Oil or Gas Well to CDOGGR

# Current Schematic

API/UWI 037-21362	Field Name Aliso Canyon	Area	Operator Southern California Gas Company	County Los Angeles	State/Province California
KB Elevation (ft) 12.00	Ground Elevation (ft)	Casing Flange Elevation (ft)	KB-Ground Distance (ft)	KB-Casing Flange Distance (ft)	Spud Date 7/17/1973

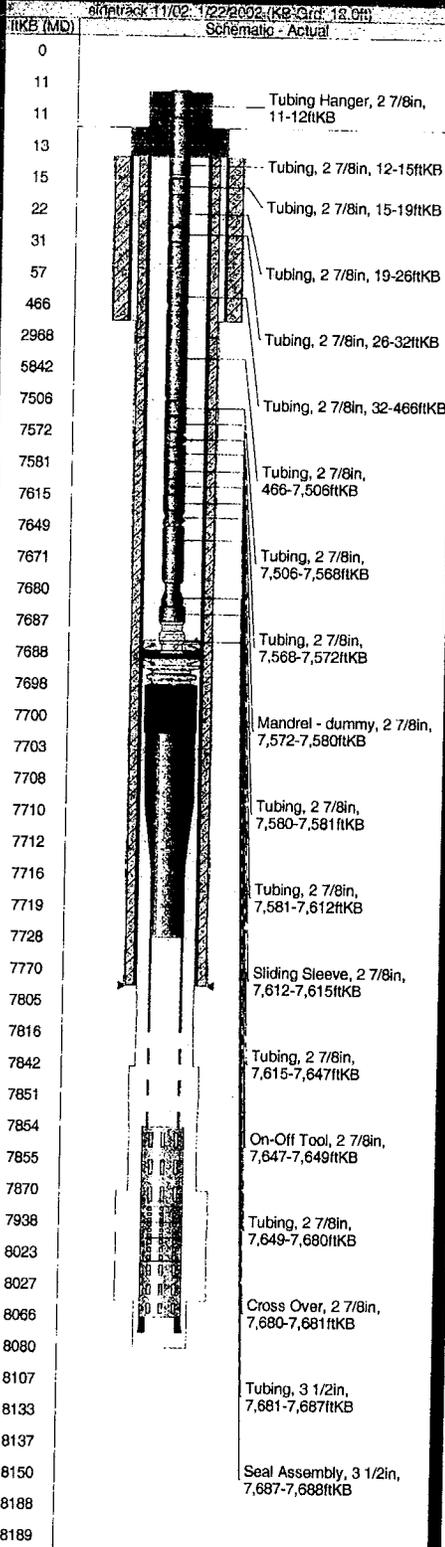
sidetrack 11/02: 1/22/2002  
Schematic - Actual

ftKB (MD)
0
11
11
13
15
22
31
57
466
2968
5842
7506
7572
7581
7615
7649
7671
7680
7687
7688
7698
7700
7703
7708
7710
7712
7716
7719
7728
7770
7805
7816
7842
7852
7854
7856
7896
7981
8024
8064
8072
8106
8125
8137
8150
8188
8189



# Tubing String Report

API/UWI 037-21362		Field Name Aliso Canyon		Area		County Los Angeles		State/Province California		Operator Southern California Gas Company		License No.	
KB Elevation (ft) 12.00		Gr Elev (ft)		KB-CF (ft)		KB-TH (ft)		PBDT (ftKB)		Spud Date 7/17/1973		Rig Release Date 8/23/1973	
Tubing Description Tubing				Run Date 1/22/2002 00:00		Pull Date		Btm (ftKB) 7,688.0		Hole sidetrack 11/02		Run Job	
Comment													



Jts	Item Des	OD (in)	ID (in)	Wt (lbs/ft)	Grade	Len (ft)	Cum Len (ft)	Top (ftKB)	Btm (ftKB)	Cum Vol Disp (bbl)
	Tubing Hanger	2 7/8	2.441			0.65	7677.04	11.0	11.6	17.2
	Tubing	2 7/8	2.441	6.50	N-80	3.67	7676.39	11.6	15.3	17.2
	Tubing	2 7/8	2.441	6.50	N-80	4.11	7672.72	15.3	19.4	17.2
	Tubing	2 7/8	2.441	6.50	N-80	6.11	7668.61	19.4	25.5	17.2
	Tubing	2 7/8	2.441	6.50	N-80	6.15	7662.50	25.5	31.7	17.2
14	Tubing	2 7/8	2.441	6.50	N-80	434.70	7656.35	31.7	466.4	17.1
227	Tubing	2 7/8	2.441	6.50	J-55	7039.15	7221.65	466.4	7,505.5	16.2
2	Tubing	2 7/8	2.441	6.50	N-80	62.11	182.50	7,505.5	7,567.6	0.4
	Tubing	2 7/8	2.441	6.50	N-80	4.00	120.39	7,567.6	7,571.6	0.2
	Mandrel - dummy	2 7/8				7.99	116.39	7,571.6	7,579.6	0.2
	Tubing	2 7/8	2.441	6.50	N-80	1.00	108.40	7,579.6	7,580.6	0.2
1	Tubing	2 7/8	2.441	6.50	N-80	31.53	107.40	7,580.6	7,612.1	0.2
	Sliding Sleeve	2 7/8				3.20	75.87	7,612.1	7,615.3	0.2
1	Tubing	2 7/8	2.441	6.50	N-80	31.50	72.67	7,615.3	7,646.8	0.2
	On-Off Tool	2 7/8				1.70	41.17	7,646.8	7,648.5	0.1
1	Tubing	2 7/8	2.441	6.50	N-80	31.44	39.47	7,648.5	7,680.0	0.1
	Cross Over	2 7/8				0.95	8.03	7,680.0	7,680.9	0.0
	Tubing	3 1/2	2.992	9.30	N-80	6.08	7.08	7,680.9	7,687.0	0.0
	Seal Assembly	3 1/2	2.441			1.00	1.00	7,687.0	7,688.0	0.0

# Casing String Summary

API/UWI 037-21362		Field Name Aliso Canyon		Area		County Los Angeles		State/Province California		Operator Southern California Gas Company		License No.	
KB Elevation (ft) 12.00		Ground Elevation (ft)		Casing Flange Elevation (ft)				Spud Date 7/17/1973		Rig Release Date 8/23/1973			

### Casing: Surface, 807.0ftKB

Bottom or Set Depth (ftKB) 807.0		Set Tension (lbf)		String Max Nominal OD (in) 13 3/8		String Drift Min (in)		Centralizers		Scratchers			
Jts	Item Des	OD (in)	ID (in)	Wt (lbs/ft)	Grade	Top Thread	Top (ftKB)	Btm (ftKB)	Len (ft)	Burst Pres. (psi)	Collapse Pres. (psi)		
	Csg head housing	13 3/8					12.0	13.0	1.00				
20	Casing Joints	13 3/8	12.715	48.00	H-40		13.0	807.0	794.00		740.0		

### Casing: Production, 7,854.0ftKB

Bottom or Set Depth (ftKB) 7,854.0		Set Tension (lbf)		String Max Nominal OD (in) 8 5/8		String Drift Min (in)		Centralizers		Scratchers			
Jts	Item Des	OD (in)	ID (in)	Wt (lbs/ft)	Grade	Top Thread	Top (ftKB)	Btm (ftKB)	Len (ft)	Burst Pres. (psi)	Collapse Pres. (psi)		
	Tbg head housing	8 5/8					11.0	12.0	1.00				
	Casing Hanger	8 5/8					12.0	12.6	0.65				
74	Casing Joints	8 5/8	7.825	36.00	K-55		12.6	2,968.0	2955.35		3,450.0		
	Stage Tool	8 5/8	7.825				2,968.0	2,973.0	5.00				
67	Casing Joints	8 5/8	7.825	36.00	K-55		2,973.0	5,842.0	2869.00		3,450.0		
48	Casing Joints	8 5/8	7.825	36.00	N-80		5,842.0	7,796.0	1954.00		4,100.0		
	Casing - Milled Section	8 5/8	8.625				7,796.0	7,805.0	9.00				
1	Casing Joints	8 5/8	7.825	36.00	N-80		7,805.0	7,854.0	49.00		4,100.0		
	Slotted Liner	8 5/8					7,854.0	7,854.0					

### Casing: Liner, 7,852.0ftKB

Bottom or Set Depth (ftKB) 7,852.0		Set Tension (lbf)		String Max Nominal OD (in) 6 5/8		String Drift Min (in)		Centralizers		Scratchers			
Jts	Item Des	OD (in)	ID (in)	Wt (lbs/ft)	Grade	Top Thread	Top (ftKB)	Btm (ftKB)	Len (ft)	Burst Pres. (psi)	Collapse Pres. (psi)		
	Liner Hanger	6 5/8					7,724.9	7,730.8	5.90				
	Slotted Liner	6 5/8					7,730.8	7,850.8	120.00				
	Chemical cut	6 5/8					7,850.8	7,852.0	1.20				

### Casing: Liner, 8,188.0ftKB

Bottom or Set Depth (ftKB) 8,188.0		Set Tension (lbf)		String Max Nominal OD (in) 6 5/8		String Drift Min (in)		Centralizers		Scratchers			
Jts	Item Des	OD (in)	ID (in)	Wt (lbs/ft)	Grade	Top Thread	Top (ftKB)	Btm (ftKB)	Len (ft)	Burst Pres. (psi)	Collapse Pres. (psi)		
	Slotted Liner	6 5/8					7,852.0	7,855.0	3.00				
4	Slotted Liner	6 5/8					7,855.0	8,023.8	168.77				
	Port Collar	6 5/8					8,023.8	8,027.1	3.35				
3	Slotted Liner	6 5/8					8,027.1	8,106.1	79.00				
	Jet cut	6 5/8					8,106.1	8,107.1	1.00				
	Slotted Liner	6 5/8					8,107.1	8,135.1	28.00				
	Cross Over 8 rd to SFJ	6 5/8					8,135.1	8,136.8	1.66				
	External Casing Packer	6 5/8					8,136.8	8,148.4	11.65				
	Cross Over SFJ to 8rd	6 5/8					8,148.4	8,149.8	1.40				
	Port Collar	6 5/8					8,149.8	8,153.0	3.18				
1	Casing Joints	6 5/8	5.791	28.00	K-55		8,153.0	8,187.5	34.50		9,220.0		
	Bull Plug	6 5/8					8,187.5	8,188.0	0.50				

### Casing: Production, 7,818.0ftKB

Bottom or Set Depth (ftKB) 7,818.0		Set Tension (lbf)		String Max Nominal OD (in) 7		String Drift Min (in)		Centralizers		Scratchers			
Jts	Item Des	OD (in)	ID (in)	Wt (lbs/ft)	Grade	Top Thread	Top (ftKB)	Btm (ftKB)	Len (ft)	Burst Pres. (psi)	Collapse Pres. (psi)		
	Bridge plug - permanent	7					7,816.0	7,818.0	2.00				

### Casing: Production, 7,805.0ftKB

Bottom or Set Depth (ftKB) 7,805.0		Set Tension (lbf)		String Max Nominal OD (in) 7.825		String Drift Min (in)		Centralizers		Scratchers			
Jts	Item Des	OD (in)	ID (in)	Wt (lbs/ft)	Grade	Top Thread	Top (ftKB)	Btm (ftKB)	Len (ft)	Burst Pres. (psi)	Collapse Pres. (psi)		
	Whip Stock	7.825					7,796.0	7,805.0	9.00				

### Casing: Liner, 8,072.0ftKB

Bottom or Set Depth (ftKB) 8,072.0		Set Tension (lbf)		String Max Nominal OD (in) 5.63		String Drift Min (in)		Centralizers 5		Scratchers			
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## Casing String Summary

API/UWI 037-21362	Field Name Aliso Canyon	Area	County Los Angeles	State/Province California	Operator Southern California Gas Company	License No.
KB Elevation (ft) 12.00	Ground Elevation (ft)	Casing Flange Elevation (ft)		Spud Date 7/17/1973	Rig Release Date 8/23/1973	

Jts	Item Des	OD (in)	ID (in)	Wt (lbs/ft)	Grade	Top Thread	Top (ftKB)	Btm (ftKB)	Len (ft)	Burst Pres. (psi)	Collapse Pres. (psi)
	Packer (SC-1)	7.64	4.750				7,687.4	7,692.2	4.70		
	Upper Extension	6.67	5.791				7,692.2	7,698.2	6.07		
	Gravel Pack Sleeve	7.02	4.000				7,698.2	7,700.8	2.60		
	Lower Extension	6.67	4.000				7,700.8	7,727.9	27.05		
	Blank Pipe	4 1/2	4.000	11.50		VFJ	7,727.9	7,769.8	41.94		
	Blank Pipe	4 1/2	4.000	11.50		VFJ	7,769.8	7,811.7	41.91		
	Slotted Liner (box x pin)	4 1/2	4.000	11.50		VFJ	7,811.7	7,853.6	41.88		
	4-1/2" Wirewrap Screen w/armor 0.12 GA	5.63	4.000			VFJ	7,853.6	7,895.7	42.05		
	4-1/2 " Wirewrap Screen w/armor 0.12 GA	5.63	4.000	11.50		STC	7,895.7	7,938.3	42.61		
	4-1/2 Wirewrap Screen w/armor 0.12 GA	5.63	4.000	11.50		STC	7,938.3	7,980.9	42.63		
	4-1/2" Wirewrap Screen w/armor 0.12 GA	5.63	4.000	11.50		STC	7,980.9	8,023.5	42.56		
	4-1/2" Wirewrap Screen w/armor 0.12 GA	5.63	4.000	11.50		STC	8,023.5	8,066.1	42.65		
	GPC Shoe	5.56	4.000			STC	8,066.1	8,072.0	5.90		



A  Sempra Energy company

**Southern California  
Gas Storage**

Southern California  
Gas Company  
12801 Tampa Avenue  
Northridge, CA 91324-1045

Tel: 818.368.4958

Steve Fields  
CDOGGR  
1000 South Hill Road  
Suite 116  
Ventura, CA 93003-4458

July 15, 2002

Dear Steve Fields,

Please find the enclosed History of Oil or Gas Well (in duplicate) for a recent re-drill on well Porter-26A (API # 037-21326) located at our Aliso Canyon Storage Field.

I have also enclosed a copy of an Ultra Sonic Imaging Tool / Gamma Ray / CCL log which was run in this well.

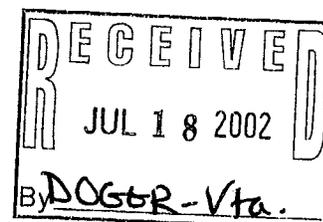
If you have any questions or require additional information, please feel free to contact me at (818) 700 38 02.

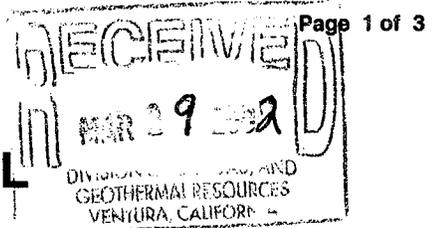
Salutations,

*Outtim*

Matt Ortwein  
Field Storage Engineer  
Aliso Canyon  
So Cal Gas

Encl. (History of Oil or Gas Well, well-bore diagram)





# HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
Well: Porter 26A / IW 80  
A.P.I. No. 037-21362

Field: Aliso Canyon  
Surface Location: Sec 28 3N 16W S.B.B.M.  
Name: Matt Ortwein  
(Person Submitting Report) Title: Field Storage Engineer  
(President, Secretary, or Agent)

Date: 03/26/2002

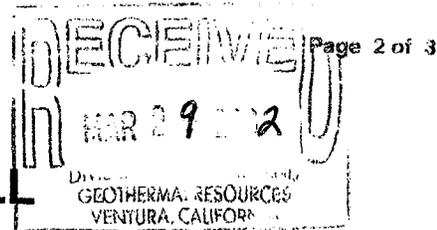
Signature: *M. Dubin 26-mar-02*

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

Telephone Number: (818) 701-3251

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

Start Date	Ops This Rpt
11/01/2001	remove instr and laterals
11/05/2001	run temp and pres survey
11/06/2001	run temp and pres survey
11/07/2001	spot key rig equipment
11/08/2001	rig up sub-base / spot pump
11/09/2001	rig up key 447
11/10/2001	SDFW
11/11/2001	SDFW
11/12/2001	SDFH
11/13/2001	prep to kill well
11/14/2001	Installed supports under sub base. Receive fluids and condition mud to 8.7# KCl.
11/15/2001	Pumped 60 barrel high viscosity polymer pill in zone. Killed well per schedule with 420 barrels of 8.7#/gal KCl polymer.
11/16/2001	Filled well with 85 barrels of 8.7#/gallon KCl fluid. Install BPV and nipple down tree. Attempt to remove tree. Break out studs and remove tree. Nipple up class III BOPE.
11/19/2001	Changed pipe rams to 2-7/8". Pretest BOPE. Repaired leaks. Test and chart BOPE 20 minute tests. DOGGR witnessed partial test. Pump 40 barrels down tubing. Fill well with 91barrels total. Well flowing back.
11/20/2001	Fill well with 31 barrels of 8.7#/gallon KCl polymer. Install BPV and test blind rams to 5000psi for 20 minutes. DOGGR witnessed and approved installation.(S. Mulqueen) Removed BPV and installed 1 joint of 2-7/8" N-80 tubing in top of hanger. Attempted to release from packer at 7700'. Could not release from packer. Rigged up Tiger Wireline and chemically cut tubing at 7657'. (10' above collar) Removed hanger.
11/21/2001	Filled well with 30 bbl. Rigged up Tuboscope wellhead tubing inspection unit. Mixed and pumped 40 barrel polymer pill and pumped down tubing. Displaced with 50 barrels. Pulled out of well inspecting and laying down tubing. Ran in well with kill string to 2000'.
11/26/2001	Killed well with 105 barrels. Circulated. Pulled out of well laying down kill string. Made up kelly. Rig up Foster drill pipe tongs. Tongs wouldn't work. Rig down tongs. Picked up Oil Country tongs. Changed pipe rams to 3-1/2". Picked up 2 joints of 6-3/8" wash pipe with shoe, junk sub, bumper sub and 4) 4-3/4" drill collars. Ran in hole picking up 3-1/2" drill pipe to 1600'.
11/27/2001	Filled well with 10 barrels of 8.7#/gallon KCl polymer. Continued running in well with washpipe picking up 3-1/2" drill pipe. Tagged fish at 7652'. Lay down 1 joint.
11/28/2001	Filled well with 22 barrels of 8.7# KCl polymer. Work over fish at 7652' and ran in to fill at 7681'. Washed over to packer at 7711'. Pulled out of well to 1600'.
11/29/2001	Filled well with 10 barrels. Continued pulling out of well with wash pipe. Lay down wash pipe. Ran in well with 3-21/32" LH release grapple in 5-3/4" overshot with 10' extentions, BS, Jars, 4)4-3/4" drill collars and accelerator. Ran in well to 7652'. Worked over fish. Attempted to release from packer. Could not get off latch. Sheared pins on J latch. Pulled out of well to 6500'.
11/30/2001	Fill well with 18 barrels. Continued pulling out of well with fish. Layed down seals, latch, blast joints and safety system. Made up and ran 4" spear, BS, 4)4-3/4" drill collars and accelerator. Ran in well to 7711'. Engaged packer and worked free. Pull out of well 2 stands. (Packer hanging on casing collars).
12/03/2001	Filled well with 35 barrels. (Rig down for brake and clutch repair.)
12/04/2001	Continued pulling out of well with 8-5/8 packer. Packer hanging on casing collars. Worked through well head and layed down packer and fishing tools. Picked up 5-3/4" bit on 15 joints of 2-7/8" tubing. Ran in well to 7710'.
12/05/2001	Ran in well with bit to tag fill at 8037'. Cleaned out to 8148'. Could not clean out deeper. Reverse circulated clean and pulled out to 1500'.



# HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
Well: Porter 26A / IW 80  
A.P.I. No. 037-21362

Field: Aliso Canyon

County: Los Angeles

Surface Location: Sec 28 3N 16W S.B.B.M.

Name: Matt Ortwein

Title: Field Storage Engineer

(Person Submitting Report)

(President, Secretary, or Agent)

Signature:

Date: 03/26/2002

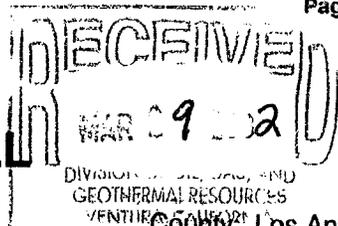
Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Telephone Number: (818) 701-3251

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

Start Date	Ops This Rpt
12/06/2001	Filled well with 18 barrels. continued pulling out of well with bit. Layed down 2-7/8" tubing. Rigged up Baker wireline and ran in with 6-5/8" jet cutter with collar locator. Ran collar log. Could not get deeper than 8107'. Cut liner at 8106'. Pulled out and made up 6-5/8" chemical cutter. Ran in and cut 2' above connection. Cut at 7852'. Rigged down wireline. Made up 6-5/8" spear, BS, Jars, 4) 4-3/4" collars and accelerator. Ran in well 65 stands.
12/07/2001	Filled well with 24 barrels. Continued running in well with spear to fish at 7725'. Engaged fish and jarred free. Pulled out to 2000'.
12/10/2001	Filled well with 40 barrels. Pulled out of well. Layed down tools and fish. Recovered Hanger, port collar and 3 joints of 6-5/8" liner. 127.22' overall. Top of fish is now at 7852'. (2.82' above connection. Made up 6-5/8" spear with stop, BS, Jars, 4)4-3/4" collars and accelerator. Ran in well to tag at 7852' Could not get into fish. Pick up 30'.
12/11/2001	Filled well with 18 barrels. Hooked up to circulate. Rotated and circulated. Could not get into liner. Pulled out of well. Layed down spear. Made up 2-7/8" bent stinger on bottom of grapple. Ran in well to 7555'.
12/12/2001	Filled well with 10 barrels. Ran in to top of fish at 7852'. Worked into fish and set spear. Attempted to work free to 230,000#. Jarred on fish at 80,000# over string weight. Pulled free. Pulled out of well to 6000'. Shut down for rig repair. Drop box was making noise. Shut down for repairs.
12/13/2001	Rig repairs.
12/14/2001	Continued pulling out of well with spear. No recovery. Grapple was broken and part was missing. Made up spear for 6-5/8" 20# liner. Added 3' additional extension. Ran in well to 7400'.
12/17/2001	Filled well with 35 barrels. Continued running in with spear. Worked into liner stub at 7852'. Set spear and jarred on liner at 40,000# over. Spear pulled loose. Could not reset. Pulled out. Spear had pulled over mandrel. Layed down tools. Measured and picked up 15 joints and 45 cut off. Ran in well with drill pipe to top of liner stub at 7852'. Worked inside and tagged fill at 8038'. Pulled to 7830'.
12/18/2001	Filled well with 8 barrels. Ran in well to tag at 8036'. Cleaned out fill to 8133'. Could not get deeper. Rigged up BJ cementers and pumped 10 barrels of fresh water ahead of 92cf(80sx) "G" cement with xxxxx Displaced with 5 barrels of fresh water and 50 barrels of 8.7#/ gallon polymer. Pulled to 7500'. Reverse circulated. Recovered no cement. Theo top of cement at 7730'. Pulled to 7600'.
12/19/2001	Ran in well and tagged top of cement plug at 7828'. Pulled out of well. Layed down 2-7/8" tubing. Made up 7-5/8" bit, 4) 4-3/4" collars and ran in well to 7700'. Drilled out stringers and hard cement to 7844'. Conditioned mud and treated out cement contamination. Pulled out of well to 6000'.
12/20/2001	Continued pulling out of well with bit. Rigged up Baker Atlas and ran in well to tag at 7844'. Ran collar strip to confirm collars out of window. Found bottom joint was too short to accommodate window. Ran in well with 8-5/8" Baker bridge plug and set at 7818'. Top at 7816'. Bottom of BP is 2' above collar at 7820'. Rig down Baker wireline.
12/21/2001	Made up 8-5/8" Weatherford whipstock with orientation sub and ran in well on 4) 4-3/4" crill collars and 10 jts of 3-1/2" heavy weight drillpipe. With whipstock at 7805', ran in well with Scientiff Gyro and oriented whipstock to high side of hole. Set down at 7816' and set whipstock. Release from whipstock.
12/26/2001	Ran in well and tagged at 7796'. Milled starting window at whipstock. Conditioned mud. Pulled out of well. Set up mud cleaning equipment. Installed wellhead protector. Made up 7-5/8" window mill and 7-5/8" water mellon mill 8' above. Ran in well with 4) 4-3/4" drill collars and Heavy weight drill pipe to 3000'.
12/27/2001	Continued running in well to 5155'. Hit obstruction. Milled 11' to clear. Ran in to Weatherford whipstock at 7796'. Milled winsow in 8-5/8" casing from 7796' to 7804'. Mill stopped. Circulated clean. Pulled out of well. Replaced lead mill. Ran in well with mill#2
12/28/2001	Contrnued running in well with Mill #2 to 7796'. (top of window) Reamed 7796' to 7808'. Drilled from 7808' to 7818'. Cleaned up window. No drag or torque in window. Pulled out of well. Made up 7-1/2" Mill tooth drill bit with 7-1/2" near bit stabilizer. Made up 4) 4-3/4" drill collars and 10 joints of 3-1/2" HW drill pipe and ran in well to 7818' Picked up to 7790and rotated pipe. Rig rotary table would not control torque. Pulled to 7850'. Down for repairs.

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



# HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
Well: Porter 26A / IW 80  
A.P.I. No. 037-21362

Field: Aliso Canyon

Surface Location: Sec 28 3N 16W S.B.B.M.

Name: Matt Ortwein  
(Person Submitting Report)

Title: Field Storage Engineer  
(President, Secretary, or Agent)

Date: 03/26/2002

Signature:

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

Telephone Number: (818) 701-3251

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

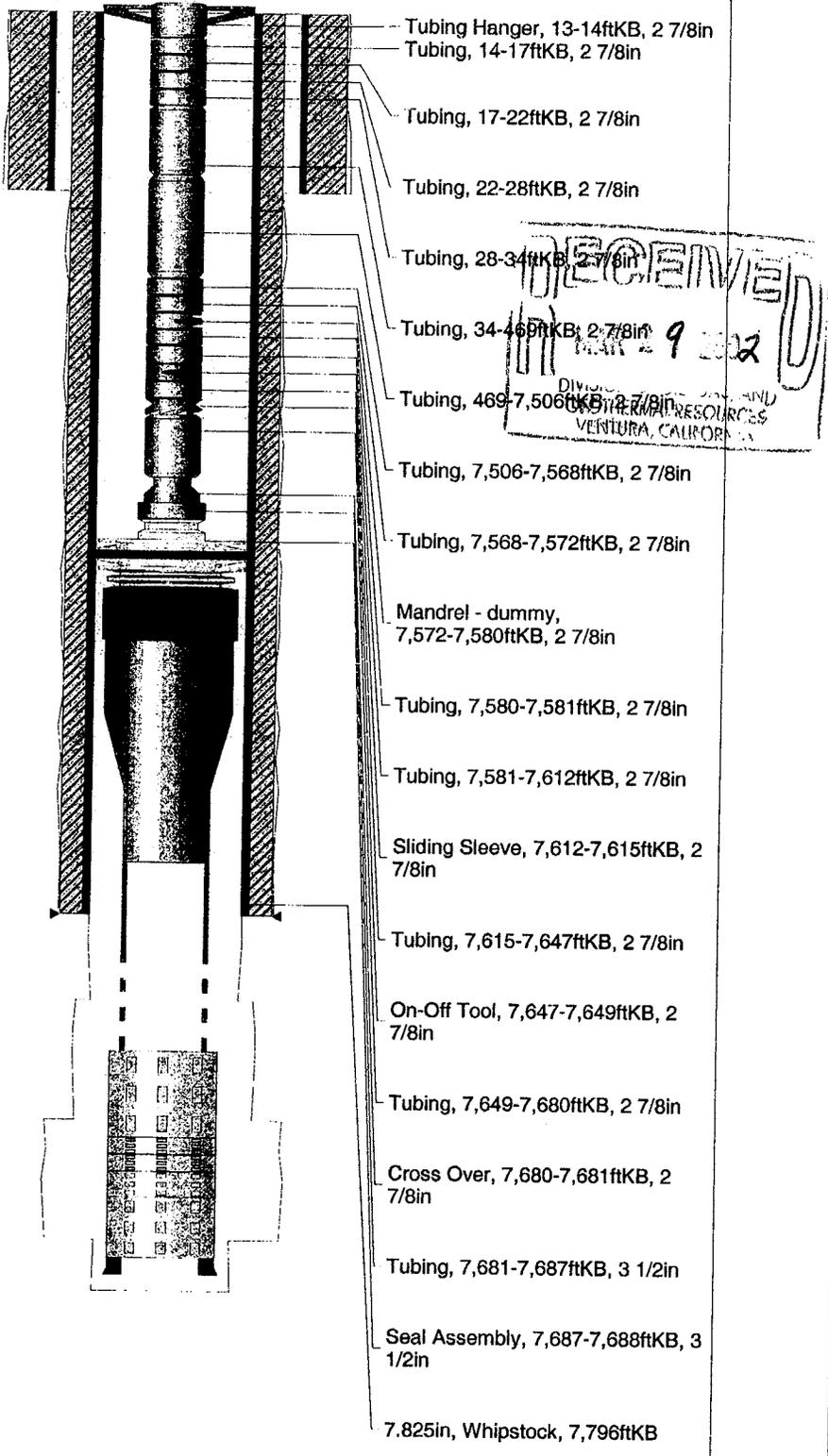
Start Date	Ops This Rpt
12/31/2001	Rig Repairs
01/03/2002	Rig Repairs
01/03/2002	Rig Repairs
01/04/2002	Rig Repairs
01/07/2002	Rig repairs. Lay down 12 joints Ran in to tag at 7818'. Drill ahead to 7824'. Drill ahead from 7824' to 7888'. Circulate to survey. Riggged up Spicer wireline and ran in well with deviation survey. With tool at 7863', Deviation was 5degrees.
01/08/2002	Drill from 7888' to 7978'. Drill from 7978' to 8016'. Circulate to survey. Rig up wireline and recorded deviation survey at 7991' of 6-3/4degrees. Drilled from 8016' to 8072'. Top of hard zone. Circulate clean. Recorded deviation of 8-1/2degrees at 8052'. Pull out of well. Made up 12" Baker hole opener, shock sub, 4) 4-3/4" drill collars and ran in well.
01/09/2002	Continued running in well with 12" hole opener to 7850'. Opened hole from 7-1/2" to 12" from 7850' to 7900'. Opened hole from 7-1/2" to 12" from 7900' to 8000'. Opened hole from 7-1/2" to 12" from 8000' to 8052'.
01/10/2002	Opened hole from 7-1/2" to 12" from 8052' to 8072'. (top of hard zone) Placed 60 barrel high viscosity pill on bottom. Pulled to 7750'. Changed well over to 3% KCl water. Pulled out of well. Riggged up Schlumberger and ran 4 arm caliper log with directional from 8072' to 7590'. Rig down loggers. Picked up and ran 4-1/2" Baker liner. Ran 2-1/16" Hydril inside liner and spaced out. Ran in well with liner.
01/11/2002	Continued running in well and tagged bottom at 8072'. Set Baker SC-1 packer at 7687.45'. Tested tools. Blew ball seat. Circulate well and gravel packed liner with 180 sacks of 20/40 gravel. Reversed out 15 CuFt. 165 cuft total in place. Retest pack at 1500psi. Released from liner and pulled out laying down drill pipe to 1800'. Liner detail: (see schematic) T.D.
01/14/2002	Filled well with 16 barrels. Continued pulling out of well laying down drill pipe. Removed well head protector. Riggged up Schlumberger and ran USIT log from 9687' to surface. Rig down loggers. Layed down kelly. Ran in well to 2000'. (kill string)
01/15/2002	Filled well with 16 barrels. Pulled out of well with kill string. Ran in well as follows: (see schematic)
01/16/2002	Continued running in well with 2-7/8" tubing. Latched in SC-1 packer at 7687'. Released from packer and spaced out with pup jts.(4',4',6',6') Latch into SC-1 and pulled 20,000# over. Land hanger with 10,000# on packer. Ran in studs and pressure tested seals and hanger to 1000psi for 20 minutes. OK.
01/17/2002	Installed BPV. Removed table and nipped down BOPE. Installed production tree. Loaded out BOPE. Tested tree to 5000psi. OK. Riggged up Spicer Wireline and ran in well to 7611'. Opened XD sliding sleeve. Riggged out wireline.
01/18/2002	Rig up swabbing tools. Pressured annulus to 2200psi from adjacent well. Recovered 200barrels from tubing. Rig down.
01/22/2002	Bled 2200psi from tubing to system and to tank. Well would not flow. Rig down choke manifold, hoses and rig down.
01/23/2002	Rig down rig and equipment
01/24/2002	Load out and move to WEZU 23 at Honor Ranch
01/25/2002	Move out.
01/28/2002	Clean tanks and release same
01/30/2002	Install laterals / clean location
02/03/2002	Clean up all
02/13/2002	Clean tanks and release same
03/15/2002	Flow-back well for clean-up. Returned well to service.

# Current Schematic

API/UWI 037-21362	Field Name Aliso Canyon	Area	Operator Southern California Gas Company	County Los Angeles	State/Province California
KB Elevation (ft) 12.00	Ground Elevation (ft)	Casing Flange Elevation (ft)	KB-Ground Distance (ft)	KB-Casing Flange Distance (ft)	Spud Date 07/17/1973

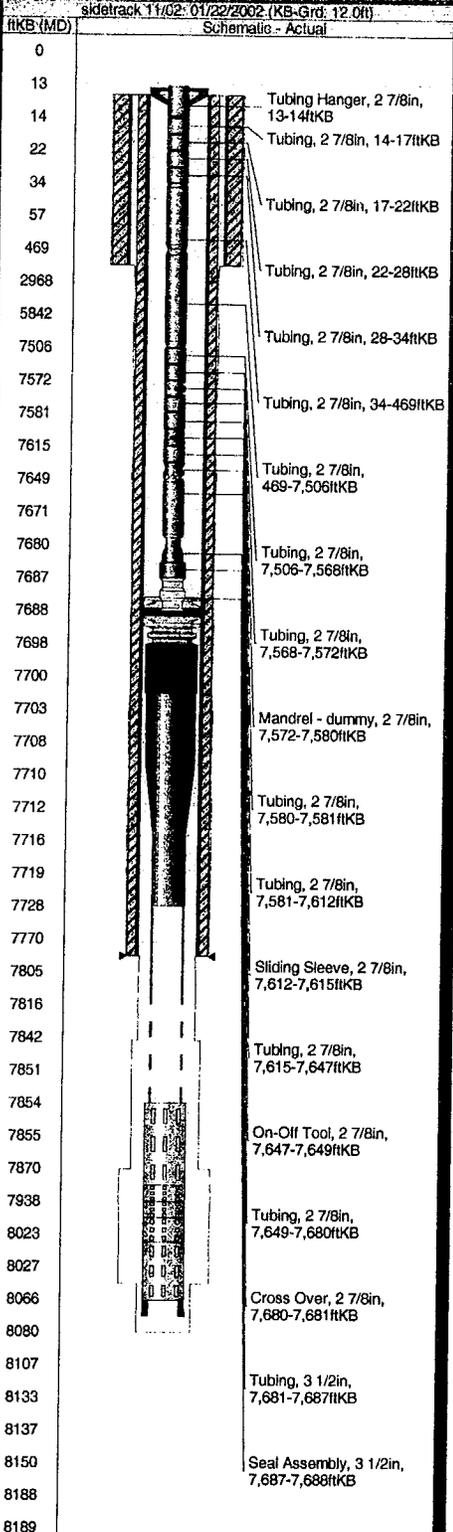
sidetrack 11/02: 01/10/2002 (KB-Grd: 12.0ft)  
Schematic - Actual

ftKB (MD)	Schematic - Actual		Actual	
			P	S D Cr
0				
13				
14				
22				
34				
57				
469	13-807ftKB, Casing cement			
2968				
5842				
7506				
7572	OD:13 3/8in, Btm (MD):807ftKB,			
7581	Wt.:48.00lbs/ft			
7615				
7649				
7671				
7680				
7687	13-2,968ftKB, Casing cement			
7688				
7698				
7700				
7703				
7708	cut window in 8-5/8"			
7710				
7712				
7716				
7719				
7728				
7770	OD:7.825in, Btm (MD):7,805ftKB			
7805	2,968-7,854ftKB, Casing cement			
7816				
7842				
7852				
7854				
7856	OD:8 5/8in, Btm (MD):7,854ftKB,			
7896	Wt.:36.00lbs/ft			
7981				
8024				
8064				
8072	OD:7.640in, Btm (MD):8,072ftKB,			
8106	Wt.:11.50lbs/ft			
8125				
8137				
8150				
8188				
8189				



# Tubing String Report

API/UWI <b>037-21362</b>	Field Name <b>Aliso Canyon</b>	Area	County <b>Los Angeles</b>	State/Province <b>California</b>	Operator <b>Southern California Gas Company</b>	License No.
KB Elevation (ft) <b>12.00</b>	Gr Elev (ft)	KB-TH (ft)	PBTD (ftKB)	Spud Date <b>07/17/1973</b>	Rig Release Date <b>08/23/1973</b>	
Tubing Description <b>Tubing</b>	Run Date <b>01/22/2002 00:00</b>	Pull Date	Btm (ftKB) <b>7,688.0</b>	Hole <b>sidetrack 11/02</b>	Run Job	
Comment						

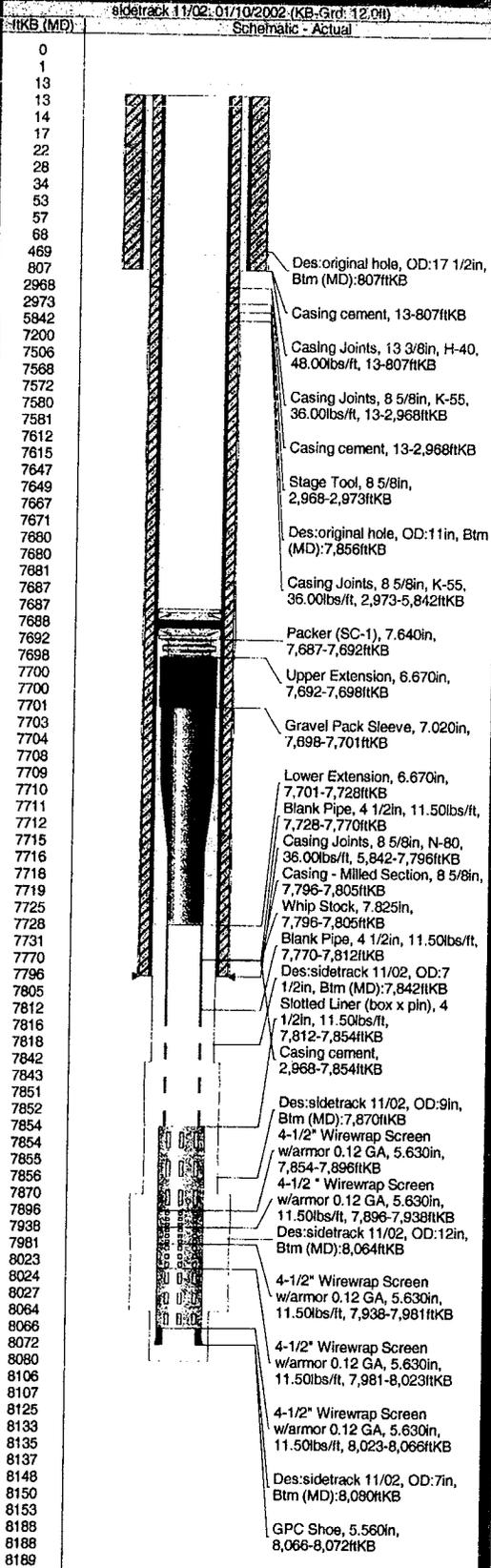


Tubing Components										
Jts	Item Des	OD (in)	ID (in)	Wt (lbs/ft)	Grade	Len (ft)	Cum Len (ft)	Top (ftKB)	Btm (ftKB)	Cum Vol Disp (bbbl)
	Tubing Hanger	2 7/8	2.441			1.00	7675.19	12.8	13.8	17.2
	Tubing	2 7/8	2.441	6.50	N-80	3.67	7674.19	13.8	17.5	17.2
	Tubing	2 7/8	2.441	6.50	N-80	4.11	7670.52	17.5	21.6	17.2
	Tubing	2 7/8	2.441	6.50	N-80	6.11	7666.41	21.6	27.7	17.2
	Tubing	2 7/8	2.441	6.50	N-80	6.15	7660.30	27.7	33.9	17.1
14	Tubing	2 7/8	2.441	6.50	N-80	434.70	7654.15	33.9	468.6	17.1
227	Tubing	2 7/8	2.441	6.50	J-55	7036.95	7219.45	468.6	7,505.5	16.2
2	Tubing	2 7/8	2.441	6.50	N-80	62.11	182.50	7,505.5	7,567.6	0.4
	Tubing	2 7/8	2.441	6.50	N-80	4.00	120.39	7,567.6	7,571.6	0.2
	Mandrel - dummy	2 7/8				7.99	116.39	7,571.6	7,579.6	0.2
	Tubing	2 7/8	2.441	6.50	N-80	1.00	108.40	7,579.6	7,580.6	0.2
1	Tubing	2 7/8	2.441	6.50	N-80	31.53	107.40	7,580.6	7,612.1	0.2
	Sliding Sleeve	2 7/8				3.20	75.87	7,612.1	7,615.3	0.2
1	Tubing	2 7/8	2.441	6.50	N-80	31.50	72.67	7,615.3	7,646.8	0.2
	On-Off Tool	2 7/8				1.70	41.17	7,646.8	7,648.5	0.1
1	Tubing	2 7/8	2.441	6.50	N-80	31.44	39.47	7,648.5	7,680.0	0.1
	Cross Over	2 7/8				0.95	8.03	7,680.0	7,680.9	0.0
	Tubing	3 1/2	2.992	9.30	N-80	6.08	7.08	7,680.9	7,687.0	0.0
	Seal Assembly	3 1/2	2.441			1.00	1.00	7,687.0	7,688.0	0.0

**RECEIVED**  
 MAR 29 2002  
 D. GEOTHERMAL RESOURCES  
 VENTURA CALIFORNIA

# Casing, Liner and Cement Report

API/UWI 037-21362	Field Name Alliso Canyon	Area	County Los Angeles	State/Province California	Operator Southern California Gas Company	License No.
KB Elevation (ft) 12.00	Ground Elevation (ft)	Casing Flange Elevation (ft)	Spud Date 07/17/1973			
Casing Description Liner	Run Date 01/10/2002 00:00	Pull Date	Hole sidetrack 11/02	Btm (ftKB) 8,072.0	Run Job 11/02/2001, Workover	

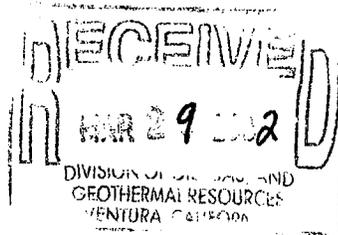


## Casing Summary

### Casing Components

Jts	Item Des	OD (in)	ID (in)	Wt (lbs/ft)	Grade	Top (ftKB)	Btm (ftKB)	Len (ft)
	Packer (SC-1)	7.64	4.750			7,687.4	7,692.2	4.70
	Upper Extension	6.67	5.791			7,692.2	7,698.2	6.07
	Gravel Pack Sleeve	7.02	4.000			7,698.2	7,700.8	2.60
	Lower Extension	6.67	4.000			7,700.8	7,727.9	27.05
	Blank Pipe	4 1/2	4.000	11.50		7,727.9	7,769.8	41.94
	Blank Pipe	4 1/2	4.000	11.50		7,769.8	7,811.7	41.91
	Slotted Liner (box x pin)	4 1/2	4.000	11.50		7,811.7	7,853.6	41.88
	4-1/2" Wirewrap Screen w/armor 0.12 GA	5.63	4.000			7,853.6	7,895.7	42.05
	4-1/2" Wirewrap Screen w/armor 0.12 GA	5.63	4.000	11.50		7,895.7	7,938.3	42.61
	4-1/2" Wirewrap Screen w/armor 0.12 GA	5.63	4.000	11.50		7,938.3	7,980.9	42.63
	4-1/2" Wirewrap Screen w/armor 0.12 GA	5.63	4.000	11.50		7,980.9	8,023.5	42.56
	4-1/2" Wirewrap Screen w/armor 0.12 GA	5.63	4.000	11.50		8,023.5	8,066.1	42.65
	GPC Shoe	5.56	4.000			8,066.1	8,072.0	5.90

## Cement Summary



### Cement Summary

API/UWI 037-21362	Field Name Aliso Canyon	Area	Operator Southern California Gas Company	County Los Angeles	State/Province California
KB Elevation (ft) 12.00	Ground Elevation (ft)	Casing Flange Elevation (ft)	KB-Ground Distance (ft)	KB-Casing Flange Distance (ft)	Spud Date 07/17/1973

**Cement: surf csg, casing, <Start Date?>**

Cement Objective	Cementing Start Date	Cementing End Date
------------------	----------------------	--------------------

**Cement Stages: <Stg No.?,> 13.0-807.0ftKB**

Top (ftKB) 13.0	Bottom (ftKB) 807.0	Q(start) (bbl/min)	Q(end) (bbl/min)	Q(avg) (bbl/min)	Final Pump Pressure (psi)	Pipe Reciprocated?	Stroke (ft)
Rotated?	Pipe RPM (rpm)	Top Plug? No	Bottom Plug? No	P(bump) (psi)	Cement Volume Return (bbl)	Top measurement method	Drill out diameter (in)

**Cement: prod csg, casing, <Start Date?>**

Cement Objective	Cementing Start Date	Cementing End Date
------------------	----------------------	--------------------

**Cement Stages: 1, 2,968.0-7,854.0ftKB**

Top (ftKB) 2,968.0	Bottom (ftKB) 7,854.0	Q(start) (bbl/min)	Q(end) (bbl/min)	Q(avg) (bbl/min)	Final Pump Pressure (psi)	Pipe Reciprocated?	Stroke (ft)
Rotated?	Pipe RPM (rpm)	Top Plug? No	Bottom Plug? No	P(bump) (psi)	Cement Volume Return (bbl)	Top measurement method	Drill out diameter (in)

**Cement Stages: 2, 13.0-2,968.0ftKB**

Top (ftKB) 13.0	Bottom (ftKB) 2,968.0	Q(start) (bbl/min)	Q(end) (bbl/min)	Q(avg) (bbl/min)	Final Pump Pressure (psi)	Pipe Reciprocated?	Stroke (ft)
Rotated?	Pipe RPM (rpm)	Top Plug? No	Bottom Plug? No	P(bump) (psi)	Cement Volume Return (bbl) 0.0	Top measurement method	Drill out diameter (in)

**Cement: prod csg, plug, 12/18/2001 00:00**

Cement Objective	Cementing Start Date 12/18/2001 00:00	Cementing End Date 12/18/2001 00:00
------------------	--	--

**Cement Stages: <Stg No.?,> 7,843.0-7,854.0ftKB**

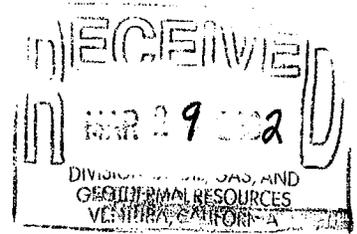
Top (ftKB) 7,843.0	Bottom (ftKB) 7,854.0	Q(start) (bbl/min)	Q(end) (bbl/min)	Q(avg) (bbl/min)	Final Pump Pressure (psi)	Pipe Reciprocated?	Stroke (ft)
Rotated?	Pipe RPM (rpm)	Top Plug? No	Bottom Plug? No	P(bump) (psi)	Cement Volume Return (bbl)	Top measurement method	Drill out diameter (in)

**Cement: liner, plug, 12/18/2001 00:00**

Cement Objective	Cementing Start Date 12/18/2001 00:00	Cementing End Date 12/18/2001 00:00
------------------	--	--

**Cement Stages: 1, 7,854.0-8,133.0ftKB**

Top (ftKB) 7,854.0	Bottom (ftKB) 8,133.0	Q(start) (bbl/min)	Q(end) (bbl/min)	Q(avg) (bbl/min)	Final Pump Pressure (psi)	Pipe Reciprocated?	Stroke (ft)
Rotated?	Pipe RPM (rpm)	Top Plug? No	Bottom Plug? No	P(bump) (psi)	Cement Volume Return (bbl)	Top measurement method	Drill out diameter (in)

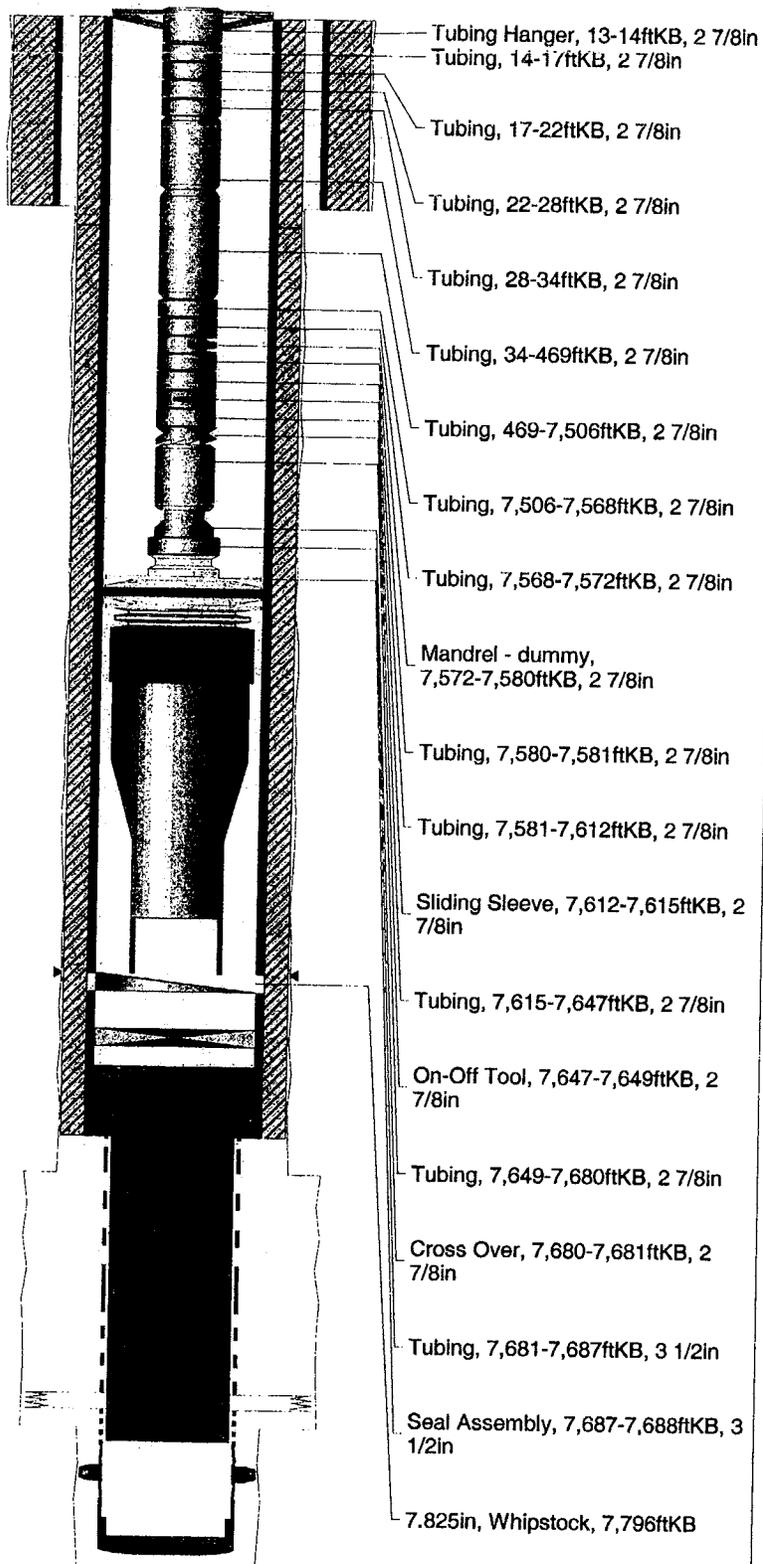


# Current Schematic

API/UWI 037-21362	Field Name Aliso Canyon	Area	Operator Southern California Gas Company	County Los Angeles	State/Province California
KB Elevation (ft) 12.00	Ground Elevation (ft)	Casing Flange Elevation (ft)	KB-Ground Distance (ft)	KB-Casing Flange Distance (ft)	Spud Date 07/17/1973

DIVISION OF  
GEO THERMAL RESEARCH

ftKB (MD)	original hole: 01/10/2002 (KB-Grd: 12.0ft)	Schematic - Actual	Actual P S D Cr
0			
13			
14			
22			
34			
57			
469			
2968			
5842			
7506			
7572			
7581			
7615			
7649			
7671	13-807ftKB, Casing cement		
7680			
7687			
7688	OD:13 3/8in, Btm (MD):807ftKB, Wt.:48.00lbs/ft		
7698			
7700			
7703			
7708	13-2,968ftKB, Casing cement		
7710			
7712			
7716	cut window in 8-5/8"		
7719			
7728			
7770			
7805	OD:7.825in, Btm (MD):7,805ftKB		
7816	OD:7in, Btm (MD):7,818ftKB		
7842			
7852	2,968-7,854ftKB, Casing cement		
7854	7,843-7,854ftKB, Cement plug		
7854	OD:8 5/8in, Btm (MD):7,854ftKB, Wt.:36.00lbs/ft		
7856			
7896			
7981			
8024	OD:7.640in, Btm (MD):8,072ftKB, Wt.:11.50lbs/ft		
8064			
8072			
8106			
8125	7,854-8,133ftKB, Cement plug		
8137			
8150			
8188	OD:6 5/8in, Btm (MD):8,188ftKB, Wt.:28.00lbs/ft		
8189			



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

No. T202-021

**Report on Operations**

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

Ventura, California  
January 17, 2002

Your operations at well "**Porter**" 26A, API No. 037-21362, Sec. 28, T. 3N, R.16W, S.B.B.&M. **Aliso Canyon** Field, in **Los Angeles** County, were witnessed on 11-20-2001. **Steve Mulqucen**, representative of the supervisor, was present from 0900 to 1000. There were also present **Richard Jackson**.

Present condition of well: 13 3/8" cem 807'; 8 5/8" cem 7854', perf 7838' WSO, cp 2968'; 6 5/8" Id 7725'-8188', perfs 8135'-7731'. TD 8140'.

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

DECISION:

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

tkc

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

By \_\_\_\_\_

*Patrick J. Kinnear*  
For Patrick J. Kinnear  
Deputy Supervisor

API No. 037-21362-01

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

SF 12/10/01

202-021

# BLOWOUT PREVENTION EQUIPMENT MEMO

Operator SOUTHERN CALIF. GAS CO. Well "PORTER" 26A Sec. 28 T. 31R. 16W  
Field ALISO CANYON County LOS ANGELES Spud Date \_\_\_\_\_

VISITS: Date Engineer Time Operator's Rep. Title  
1st 11-19-01 S. MULQUEEN (1700 to 1900) RICHARD JACKSON ENGINEER  
2nd 11-20-01 S. MULQUEEN (0900 to 1000) " " " "  
Contractor KEY Rig # \_\_\_\_\_ Contractor's Rep. & Title RICHARD JACKSON

Casing record of well: 13 3/8" casing 807'; 8 5/8" casing 7854'; perf 7838' WSC, cp 2968'; 6 3/4" ID 7725' - 8188', perfs 8135' - 7731'; TD 8140'.

OPERATION: Testing (inspecting) the blowout prevention equipment and installation. Critical well? Y \_\_\_ N   
DECISION: The blowout prevention equipment and its installation on the 878 " casing are approved.

Proposed Well Opns: Refract MACP: \_\_\_\_\_ psi  
Hole size: \_\_\_\_\_ " fr. \_\_\_\_\_ " to \_\_\_\_\_ " to \_\_\_\_\_ " & \_\_\_\_\_ " to \_\_\_\_\_ " REQUIRED BOPE CLASS: III B 5M

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

BOP STACK						TEST DATA							
API Symb	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul	Gal. to Close	Recovery Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
A		<u>SHAFER</u>	<u>SPH.</u>	<u>11</u>	<u>5000</u>							<u>11-19</u>	<u>2000</u>
<u>RD 278</u>		"	<u>LWS</u>	<u>11</u>	"							<u>11-19</u>	<u>3000</u>
<u>RD CSD</u>		"	"	"	"							<u>11-20</u>	<u>3000</u>
<u>TEST PUMP WITH PRESSURE CONTROL</u>													

ACTUATING SYSTEM				TOTAL:		AUXILIARY EQUIPMENT							
Accumulator Unit(s) Working Pressure <u>3000</u> psi						No.		Size (in.)	Rated Press.	Connections			Test Press.
Total Rated Pump Output _____ gpm										Weld	Flange	Thread	
Distance From Well Bore <u>50</u> ft.													
Accum. Manufacturer		Capacity	Precharge	Fill-up Line									
1	<u>KOOMEY</u>	<u>80</u> gal	<u>1000</u> psi	<input checked="" type="checkbox"/>	<u>Kill Line</u>		<u>2</u>	<u>5000</u>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>3000</u>
2		gal.	psi	<input checked="" type="checkbox"/>	<u>Control Valve(s)</u>	<u>3</u>		<u>11</u>		<input checked="" type="checkbox"/>			<u>3000</u>
				<input checked="" type="checkbox"/>	<u>Check Valve(s)</u>	<u>2</u>		<u>11</u>		<input checked="" type="checkbox"/>			<u>3000</u>
				<input checked="" type="checkbox"/>	<u>Aux. Pump Connect.</u>			<u>11</u>					<u>3000</u>
				<input checked="" type="checkbox"/>	<u>Choke Line</u>		<u>2, 3/4</u>	<u>5000</u>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>3000</u>
				<input checked="" type="checkbox"/>	<u>Control Valve(s)</u>	<u>11</u>				<input checked="" type="checkbox"/>			<u>3000</u>
				<input checked="" type="checkbox"/>	<u>Pressure Gauge</u>								
				<input checked="" type="checkbox"/>	<u>Adjustable Choke(s)</u>	<u>2</u>	<u>2</u>						
				<input checked="" type="checkbox"/>	<u>Bleed Line</u>								
				<input checked="" type="checkbox"/>	<u>Upper Kelly Cock</u>								
				<input checked="" type="checkbox"/>	<u>Lower Kelly Cock</u>								
				<input checked="" type="checkbox"/>	<u>Standpipe Valve</u>								
				<input checked="" type="checkbox"/>	<u>Standpipe Press. Gauge</u>								
				<input checked="" type="checkbox"/>	<u>Pipe Safety Valve</u>	<u>2</u>	<u>2 1/8</u>	<u>5000</u>					<u>3000</u>
				<input checked="" type="checkbox"/>	<u>Internal Preventer</u>		<u>2 3/8</u>	<u>11</u>					<u>3000</u>

CONTROL STATIONS				Elec.		Hyd.		Pneu.		EMERG. BACKUP SYSTEM	
<input checked="" type="checkbox"/>	Manifold at accumulator unit					<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	N <sub>2</sub> Cylinders
	Remote at Driller's station					<input checked="" type="checkbox"/>					Other:
	Other:					<input checked="" type="checkbox"/>					1 L= " <u>2100</u> gal.
	Other:					<input checked="" type="checkbox"/>					2 L= " <u>2250</u> gal.
	Other:					<input checked="" type="checkbox"/>					3 L= " <u>2300</u> gal.
	Other:					<input checked="" type="checkbox"/>					4 L= " <u>2350</u> gal.
	Other:					<input checked="" type="checkbox"/>					5 L= " gal.
	Other:					<input checked="" type="checkbox"/>					6 L= " gal.
	Other:					<input checked="" type="checkbox"/>					TOTAL: gal.

HOLE FLUID MONITORING EQUIPMENT			Alarm Type		Class		Hole Fluid Type		Weight		Storage Pits (Type & Size)	
<input checked="" type="checkbox"/>	Calibrated Mud Pit			<input checked="" type="checkbox"/>	A		<u>KCR WATER</u>	<u>8.7</u>	<u>500</u>	<u>153L</u>	<u>+</u>	
<input checked="" type="checkbox"/>	Pit Level Indicator		<input checked="" type="checkbox"/>	B		<u>POLYMER</u>	<u>8.7</u>	<u>200</u>	<u>BBL</u>			
<input checked="" type="checkbox"/>	Pump Stroke Counter		<input checked="" type="checkbox"/>	C								
	Pit Level Recorder											
	Flow Sensor											
	Mud Totalizer											
	Calibrated Trip Tank											
	Other:											

REMARKS AND DEFICIENCIES:  
1. PIPE SAFETY VALVE HAS EXTERNAL LEAK

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

No. P201-189

**PERMIT TO CONDUCT WELL OPERATIONS**

010

(field code)

00

(area code)

30

(new pool code)

30

(old pool code)

Gas Storage Project

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

Ventura, California

August 10, 2001

Your \_\_\_\_\_ proposal to \_\_\_\_\_ redrill well \_\_\_\_\_ "Porter" 26A,  
A.P.I. No. 037-21362-01 Sec. 28, T. 3N, R. 16W, SB B.&M.,  
Aliso Canyon field, \_\_\_\_\_ area, \_\_\_\_\_ Sesnon-Frew pool  
Los Angeles County, dated 7/18/2001 Receive 8/6/2001 has been examined in conjunction  
with records filed in this office.

**THE PROPOSAL IS APPROVED PROVIDED THAT:**

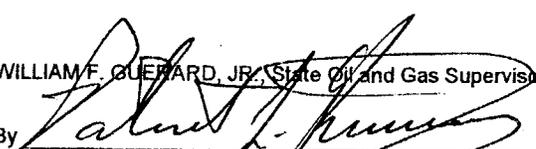
1. Blowout prevention equipment conforming to DOGGR Class IIIB 5M equipment on the 8-5/8" casing and maintained in operating condition at all times during redrilling.
2. Drilling fluid of a quality and in sufficient quantity is used to control all subsurface condition in order to prevent blowouts.
3. An approved blowout prevention and control plan shall be available during the proposed operations.
4. A diligent effort shall be made to clean out the well to at least 8188' during plugging operations.
5. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
6. If extensive, unplanned drill pipe operations occur (such as fishing, milling, etc.) and there is a possibility of casing damage, the casing must be pressure tested prior to resuming normal operations. This Division must be notified to witness the tests
7. This office shall be consulted before sidetracking the well or running any additional casing.
8. This office shall be consulted before initiating any changes or additions to this proposed operation, or operations are to be suspended.
9. Requirements specified in our approval of the Gas Storage project dated July 26, 1989 shall apply.
10. **THIS DIVISION SHALL BE NOTIFIED:**
  - a. To witness a pressure test of the blowout prevention equipment prior to drilling out of the 8-5/8" casing. Prior to notifying the Division engineer to witness the test, the blind rams must be tested. Information on the blind rams test must be entered on the tour sheet along with the signature of the person in charge

**Note: This Division does not need to be notified to witness the location and hardness of the kick-off/zone plug.**

SAF:sf  
Super Blanket Bond

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

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

By   
Deputy Supervisor

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

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

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

*B/D  
 30' sand  
 Free*

C.E.Q.A. INFORMATION (when redrilling or deepening only)			
Exempt <input type="checkbox"/>	Neg. Dec. <input type="checkbox"/>	E.I.R. <input type="checkbox"/>	Document not required by local jurisdiction <input type="checkbox"/>
Class _____	S.C.H. No. _____	S.C.H. No. _____	
See Reverse Side			

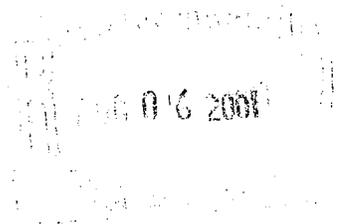
FOR DIVISION USE ONLY			
Bond	Forms		EDP Well File
	OGD114	OGD127	
1,000,000	✓	✓	

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

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework/redrill well Porter 26 A / IW-80 API No. 037-21362  
 (Circle one) (Well designation)

Sec. 28 T. 3N R. 16W SB B.&M. Aliso Canyon Field  
Los Angeles County.

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



2. The total depth is: 8189 feet. The effective depth is: 8188 feet.

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

4. Present zone pressure: NA psi. Anticipated/existing new zone pressure: NA; Gas Storage psi.

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

(or)

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

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

The proposed work is as follows: (A complete program is preferred and may be attached.)  
 Plugback, redrill and gravel pack the well for gas storage

For redrilling or deepening: 390' South and 110' West of the surface location 8140  
 (Proposed bottom-hole coordinates) (Estimated true vertical depth)

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

Name of Operator Southern California Gas Company	Telephone Number 818-701-3251
Address 9400 Oakdale Avenue	City Chatsworth
Name of Person Filing Notice Dan Neville	Signature <i>[Signature]</i>
	Zip Code 91313
	Date 7/18/01

File In Duplicate

## C.E.Q.A. INFORMATION

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

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

Lead Agency: \_\_\_\_\_

Lead Agency Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_

### FOR DIVISION USE ONLY

District review of environmental document (if applicable)? Yes  No

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## CRITICAL WELL DEFINITION

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

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

Exceptions or additions to this definition may be established by the State Oil and Gas Supervisor upon his or her own judgment or upon written request of an operator. The written request must contain justification for such an exception.

## WELL OPERATIONS REQUIRING BONDING

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

Southern California Gas Company  
Aliso Canyon Field  
Porter No. 26-A / IW-80 Redrill No. 1  
Section 28, T3N, R16W  
Los Angeles County, California  
API No. 037-21362

**REDRILL PROCEDURE**

June 11, 2001

Surface Location: From Station #84, 586.1' South and 3220.5' West

Existing Bottom Hole Location: 389.84' South and 109.76' West from the surface location.

Proposed Bottom Hole Location: Kick off and move far enough away to avoid interference from the original well.

Proposed Total Depth: 8140' MD

Date of Original Hole: 7-17-73

Elevation: 2517'

Kelly Bushing: 12'

Existing Casing Program:

13 3/8", 40#, H-40, ST& C	0-807'
8 5/8", 36#, K-55 & N-80, LT&C	0-7854'
6 5/8", 38#, K-55, FJ Liner	7725'-8188'
Slotted w/ 30 Mesh 8135'-7731'	

## Existing Perforations:

8135'-7731' Slotted w/30 Mesh  
7838' WSO  
2968' Port Collar

## I. Pre Drilling Activities

- A. Pull and production tubing and any equipment in the well. Rig up wireline and run a casing inspection log. Evaluate the log to determine the condition of the casing.
- B. Prepare the location for the specific drilling rig.
- C. Secure the necessary state and local permits to allow a 24 hour drilling operation.

## II. Drill Production Hole (7 7/8") from 7854' to 8140'

1. Move in and rig up the drilling rig.
2. Install a Class III, 3M BOPE to the 13 3/8" casing spool. Test the BOPE equipment to the Southern California Gas Company specifications.
3. Pick up 500' of 2 7/8" tubing stinger w/ a saw tooth collar and 4 1/2" drill pipe and run in the hole to the total depth of 8188'. Clean out any sand fill. Plug and abandon the existing producing interval from 8188' to 7910' with a Class "G" cement plug. Pull above the top of the cement to 7910', circulate clean and wait on cement. Run back in the hole and tag the top of the cement. The DOG will witness tagging the top of the cement. Measure out of the hole.
4. Make up a 5 1/2" bit and run into the top of the 6 5/8" liner. Clean out the liner to 7910' and pull out of the hole. Make up 6 5/8", 38# mechanical casing cutter and run in the hole to 7730', 5' below the bottom of the Burns Lead Seal Liner hanger. Cut the 6 5/8" casing and pull out of the hole. Run in the hole with a 6 5/8" spear and recover the liner hanger. Pick up the 6 5/8"

mechanical casing cutter and run back in the hole and cut the casing at 7910'. Pull out of the hole and pick up a 6 5/8" casing spear. Run in the hole and recover the 6 5/8" casing.

5. Pick up a 14" under reamer and run in the hole. Clean out from the shoe of the 8 5/8" casing at 7854' to the top of the 6 5/8" casing stub at 7910'. Pull out of the hole and pick up the 2 7/8" tubing. Run in the hole to 7910' and balance a 300 linear foot plug on the top of the 6 5/8" casing stub. Pull out of the hole and wait on cement.

6. Pick up a 7 7/8" bit and clean out cement to 7870'. Circulate the well clean and pull out of the hole.

7. Pick up a 7 7/8" bit, steerable directional drilling assembly and MWD. Orient the directional tools (9.15 degrees of angle in the hole), and side track the existing wellbore. Continue drilling to the total depth of 8140'.

8. At total depth, circulate and condition the mud for electric logging. Wipe the hole to the 8 5/8" casing shoe.

9. Measure out of the hole for logging. Run a standard Platform Express logs consisting of AIT/LDT/CNL/GR and Caliper. Monitor the flowline while logging.

10. Rig down the loggers and run in the hole with a bit and BHA to the total depth of the well. Circulate and change the well over to a clean XC polymer completion fluid with CaCL as necessary for weight. Weight of the fluid to provide 300 PSI overbalance at the current reservoir pressure. Pull out of the hole and lay down the clean out assembly.

Note: Clean and wash the pit while logging. Build the new XC polymer drill in fluid.

11. Run in the hole with a 15" hole opener. Open the hole from the shoe of the 8 5/8" casing to the total depth through the Sesnon zone to 8140' (or as instructed by the Drilling Engineer). Circulate the well and lay a pill of clean polymer across the open hole interval. Pull out of the hole and prepare to run the gravel pack liner.

12. Rig up to run the 5 1/2", 17#, J-55 LT&C WWSS screen liner as follows:

- A) +/-280' of 5 1/2", 0.012", 90 wire WWSS screen. Bow type centralizers will be run on all connections.
- B) 30' of 5 1/2" casing, flush joint, slotted with 0.012" x 2", 12R, 6" c slots.
- C) 30' of 5 1/2" flush joint casing
- D) Landing Nipple
- E) Baker SC-1 Gravel Pack Packer, 8 5/8" x 5 1/2"

With the gravel pack liner on bottom change the well over to clean CaCl water to do the gravel packing.

13. Gravel pack the 5 1/2" WWSS liner with 20-40 U.S. mesh re-screened gravel as per the attached gravel packing program. After the gravel packing is completed pull out of the hole and lay down the gravel pack tools.

14. Run in the hole with 2 7/8" tubing stinger and clean out any excess gravel inside the 5 1/2" liner. Pull out of the hole and lay down the 4 1/2" drill pipe.

15. Run the 2 7/8", 6.4#, N-80, 8rd, EUE tubing as below. Use Teflon impregnated pipe dope.

- A) Seals (2) and shear-out latch w/ locator sub
- B) One joint of tubing
- C) Otis "XN" No-Go nipple
- D) One joint of tubing
- E) Otis "SSXO" sliding sleeve
- F) One joint of tubing
- G) "MMA" Gas Lift Valve w/ dummy on "RA" latch
- E) 2 7/8" tubing and pups as required to surface

16. Space out and land the tubing with 10,000 lbs. down weight on the packer. Pull 15,000 lbs. over the string weight to check the latch. Install equalizing back pressure valve in the tubing hanger. Remove the BOPE.

17. Install the tree. Test the seal, seal flange and tubing head to 5000 PSI for 20 minutes. Tighten all wellhead bolts. Verify that all wellhead valves are closed.

18. Open the sliding sleeve and circulate the well clean with 2% KCL water with inhibitor.

19. Release the rig.

Elevation: 2, ' G.L. MV: 25'  
 KB: 12'

P-26A  
 (1W-80)

Surface choke: \_\_\_\_\_

Casing flow string

7/17/73 - Well spud  
 8/23/73 - Well completed  
 11/24/73 - 11/28/73 - Changed tbg.  
 6/9/76 - 6/23/76 - Cleaned out to  
 8034', pressure tested casing &  
 ran tubing with SSSV.  
 10/20/78 - 10/26/78 - Pulled well.  
 Replaced bad SSSV.

13-3/8" 48# H40

807'

8-5/8" 36# -

0-5842' K55

-7854' N80

Stage Collar 2968'

2-7/8" 6.5# tbg

-- 7671' Otis 2-1/2" SSSV  
 (7639') 2.313" ID

-- 7700' Otis "XN" No-Go 1.791" ID  
 (7668')

pkc 7700'

-- 7719'

lnr 7725'

WSO 7838'

--sl 7854' (7822')

7864'

-- 7951' (7917')(-5400')

--s8 7954' (7920')

*Handwritten:* 7500

5-9 gravel  
 in 14" hole

6-5/8" 28# K55 30 mesh

--HZ 8064'

--Frew 8118' (8082')

8188'

TD 8189' (SS - 5680')

WELL VOLUME

	<u>Cu.Ft.</u>	<u>Bbl.</u>
Tubing	251	45
Csg/Lnr	91	16
Annulus	2225	396

STATE OF CALIFORNIA  
DEPARTMENT OF CONSERVATION  
DIVISION OF OIL AND GAS

REPORT ON PROPOSED CHANGE OF WELL DESIGNATION

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

Ventura, California  
February 23, 1990

Your request, dated February 13, 1990, proposing to change the designation of well in Sec. 28, T. 3N, R. 16W, SB B.&M., Aliso Canyon field Los Angeles County, District No. 2, has been received.

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

From:	To:
IW 54 (037-21319)	"Porter" 26E (037-21319)
IW 55 (037-21353)	"Porter" 26C (037-21353)
IW 65 (037-21320)	"Porter" 26D (037-21320)
IW 69 (037-21322)	"Standard Sesnon" 25A (037-21322)
IW 74 (037-21357)	"Porter" 26B (037-21357)
IW 79 (037-21361)	"Standard Sesnon" 44B (037-21361)
IW 80 (037-21362)	"Porter" 26A (037-21362)
IW 83 (037-21455)	"Standard Sesnon" 44A (037-21455)

bb

M.G. MEFFERD, State Oil and Gas Supervisor

By Patrick J. Kinnear  
Patrick J. Kinnear, Deputy Supervisor

## DIVISION OF OIL AND GAS

## History of Oil or Gas Well

OPERATOR SOUTHERN CALIFORNIA GAS COMPANY FIELD Aliso CanyonWell No. I.W. #80, Sec. 28, T. 3N, R. 16W, S.B. B. & M.Date June 18, 1976

Signed

*P. S. Magruder, Jr.*  
P. S. MAGRUDEK, Jr.P.O. Box 3249, Terminal Annex  
Los Angeles, California 90051

(Address)

(Telephone Number)

Title Agent

(President, Secretary or Agent)

(213) 689-3561

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

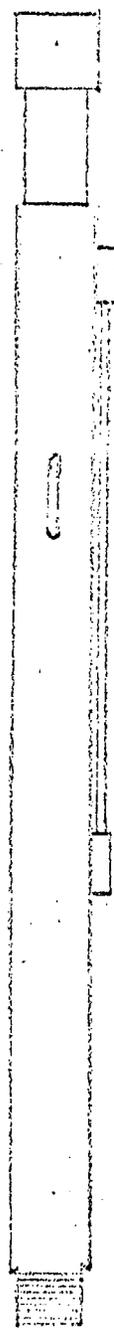
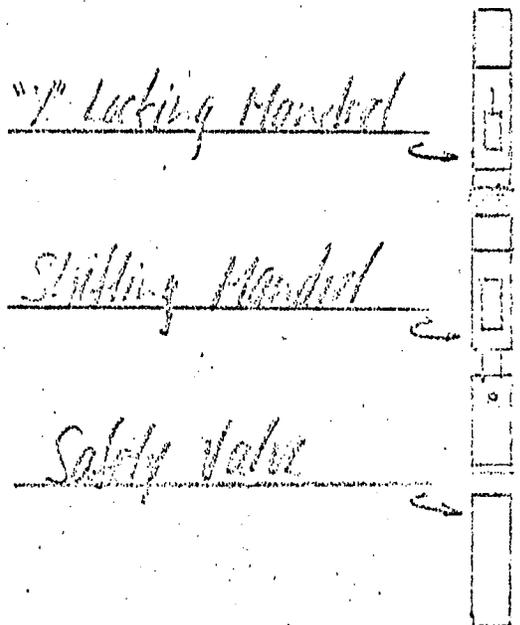
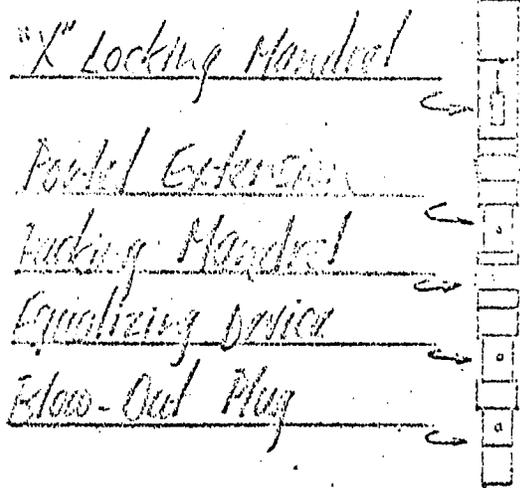
Date

- 6-9-76 Hooked up B. J. cement truck and killed well with 72#/cu.ft. brine polymer drilling fluid -- required 467 barrels. Circulated and conditioned drilling fluid for two hours.
- 6-10-76 Hooked up Bryon Jackson cement truck and tested lines to 4500 psi - okay. Killed well with 72# brine polymer drilling fluid. Had drilling fluid returns with 472 barrels. Circulated and conditioned drilling fluid.
- 6-11-76 Moving in Pool Rig #26.
- 6-12-76 Finished moving in. Rigged up Pool Rig #26. Ran Archer-Reed, set stop at 153' and tubing plug at 129'. Removed Christmas tree and hooked up B.O.P.E.
- 6-13-76 Rig idle.
- 6-14-76 Finished hooking up B.O.P.E. Tested bottom pipe rams to 4150 psi for 20 minutes. Okay. Trying to test top pipe rams -- failed to hold pressure with water. Tearing out 8" psi B.O.P.E. and waiting on new 10" 5000 psi 10" 5000 psi B.O.P.E.
- 6-15-76 Waiting on new B.O.P.E. Installed 10" 5000 psi Class IV equipment. Will start pressure testing today.
- 6-16-76 Finished hooking up B.O.P.E. Tested bottom pipe rams, top pipe rams and blind rams with water at 4300 psi for 20 minutes -- each test okay. Changed bag in Hydril and tested Hydril with water at 4100 psi for 20 minutes -- okay. Tested same with nitrogen for 20 minutes -- okay. Circulated and conditioned with mud.
- 6-17-76 Circulated and conditioned with mud. Pulled packer loose and pulled out hole. Laid down packer. Ran in hole with 5 5/8 bit casing scraper. Broke circulation at 3700 5560-7420. Ran to 8034. Pulled out line and shut rig down at 10:00 P.M. Cleaned out to 8034.

- 6-18-76 Clean out well from 8034 to 8176. Circulated and conditioned drilling fluid. Pulled out of hole. Ran Baker 8 5/8 full bore retainer.
- 6-19-76 Ran Baker 8 5/8" full bore and tested 8 5/8" casing at 7720' with 1500 psi for 20 minutes -- okay.
- Tested at 4000' with 2000 psi for 20 minutes -- okay.  
Tested at 3000' with 2500 psi for 20 minutes -- okay.  
Tested at 2000' with 3000 psi for 20 minutes -- okay.  
Tested at 1000' with 3500 psi for 20 minutes -- okay.  
Tested at 500' with 4000 psi for 20 minutes -- okay.
- Tested with B. J. cement truck. Ran Otis 8 5/8" packer on Dresser Atlas wire line, set packer at 7700'.
- 6-20-76 Idle.
- 6-21-76 Pulled tubing out of hole. Picked up seal unit and safety valve. Ran in hole and tested tubing to 5000 psi for one minute. Removing all collars and installing new collars with Baker seal.
- 6-22-76 Ran total of 7707.42' tubing and production equipment, set packer and spaced out. Landed tubing with 8000# on packer. Picked up 15,000# above weight of tubing -- okay. Landed tubing hanger. Removed B.O.P.E., installed Christmas tree and tested seals and tree to 5000 psi for 20 minutes. Otis removed sleeve from safety valve and set plug in No-Go nipple.
- 6-23-76 Tested seals and packer with 1500 psi. Changed to lease water. Closed all valves plugs in tubing No-Go nipple. Released rig.



# Safety Equipment 2 1/2" IN80



<u>Description</u>	<u>Length</u>
<u>Collar</u>	<u>0.41</u>
<u>Landing Nipple 2.350 ID</u>	<u>0.66</u>
<u>Packing Bore 2.350 ID</u>	
<u>Control line 1/2" OD</u>	
<u>Safety Valve Nipple 2.383 ID</u>	
	<u>TL 8.75</u>

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

REPORT ON PROPOSED OPERATIONS No. P 276-168

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

Santa Paula, Calif.  
May 26, 1976

DEAR SIR:

(037-21362)

Your proposal to rework gas storage Well No. IV 80  
Section 28, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County,  
dated 5/24/76, received 5/24/76, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

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

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

Blanket Bond  
MD:b

HAROLD W. BENNETT  
JOHN T. MATTHEWS, JR., State Oil and Gas Supervisor  
XXXXXXXXXXXXXXXXXXXXXXXXXXXX  
By *[Signature]*, Deputy  
*[Signature]* Chief

DIVISION OF OIL AND GAS  
RECEIVED

MAY 24 1976

DIVISION OF OIL AND GAS

Notice of Intention to Rework Well

This notice and indemnity or cash bond shall be filed, and approval given, before rework <sup>SAN FRANCISCO OPERATIONS</sup> have not commenced within one year of receipt of the notice, this notice will be considered <sup>CANCELLED</sup> **CALIFORNIA**

FOR DIVISION USE ONLY		
BOND	FORMS	
	114	121
<i>f88</i>	✓	✓

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework well No. I. W. No. 80, API No. \_\_\_\_\_, Sec. 28, 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. 8188'

2. Complete casing record, including plugs and perforations:

13 3/8" cemented 807'

8 5/8" cemented 7854'

463' 6 5/8" landed 8188', top liner 7725', 30 mesh gravel flow packed

3. Present producing zone name Sesson and Frew Zone in which well is to be recompleted \_\_\_\_\_

4. Present zone pressure 2600 psi New zone pressure \_\_\_\_\_

5. Last produced gas storage well  
or \_\_\_\_\_  
(Date) (Oil, B/D) (Water, B/D) (Gas, Mcf/D)

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

The proposed work is as follows:

1. Move in rig, kill well, install B.O.P.E. and test.
2. Pull tubing. Pressure test casing.
3. Run packer and tubing with safety valve.
4. Install tree and test packer.

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

Address P.O. Box 3249, Terminal Annex  
Los Angeles, California, 90051  
(City) (State) (Zip)

SOUTHERN CALIFORNIA GAS COMPANY  
(Name of Operator)  
By Guy C. Abrahamson for P.S. Magruder, Jr.  
(Name) (Date)  
Type of Organization \_\_\_\_\_  
(Corporation, Partnership, Individual, etc.)

RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF CONSERVATION

## DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS  
RECEIVED

## History of Oil or Gas Well

DEC 27 1973

OPERATOR Pacific Lighting Service Co. FIELD Aliso CanyonWell No. I.W. #80, Sec. 28, T. 3N, R. 16W, S.B. B. & M.Date December 20, 19 73

Signed

P. S. Magruder, Jr.P. O. Box 54790, Terminal Annex  
Los Angeles, Ca. 90054 (213) 689-3561Title Agent

(Address)

(Telephone Number)

(President, Secretary or Agent)

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

Date

1973

The following is for the well file only &amp; not to be submitted to DOG.

11-24

California Production Service moved in with rig & mud pump. Hauled 120 barrels of polymer drilling fluid from I.W. #62 to I.W. #80. Hauled lease salt water and mixed 360 bbls. of polymer drilling fluid.

11-25

Rigged lines to Getty System to unload well. Mixed and pumped 60 bbls. of high gel polymer drilling fluid and displaced down tubing with 60 bbls. of polymer drilling fluid. Let stand for one hour. Opened annulus valve and had 2200 psi surface pressure. Opened bean and pumped an additional 330 bbls. of polymer drilling fluid or total of 450 bbls. when obtained fluid returns. Pressure bled down rapidly from 2200 psi to zero while pumping. Mixed 360 bbls of polymer drilling fluid, using lease salt water. Circulated for 2 hours and shut well in for the night.

11-26

Crew reported at 9:00 A.M. Waited for ready mix truck to pour concrete for anchors. Raise mast using temporary anchors. Ran 66' of 1-3/4" sinker bar bumper sub, jars and 1-7/8" tapered feeler to 7700'. Ran 2-1/4' feeler on sinker bar to 7700'. Ran 2-3/8" feeler which stopped at 30'. Shut well in for the night.

11-27

6:00 A.M. 27th to 6:00 A.M. 28th. Moved guy wires to permanent anchors. Set Shaffer plug in doughnut and removed Xmas tree. Installed B.O.P.E. and tested to 1500 psi. Removed plug. Unseated Brown packer and pulled tubing. Broached all tubing and found upper one foot of 35th joint flattened. Ran new Brown packer, landing nipple and ported nipple. Ran tubing, measuring and broaching with 2.346" broach. Landed tubing with packer at 7708' with 12,000# compression. (Tubing detail attached).

11-28

6:00 A.M. to 10:00 P.M. Removed B.O.P.E. after setting Shaffer plug in doughnut. Installed Xmas tree and tested to 4000 psi for 30 minutes. Crew & rig released. Displaced polymer drilling fluid with nitrogen down tubing and blew down annulus until obtained gas. Also blew down tubing to purge nitrogen. No loss of drilling fluid.

1973

TUBING DETAIL

<u>Item</u>	<u>Length</u>	<u>Depth</u>
Below. K. B.	12.00	12.00
Below ground level	8.00	20.00
245 jts. 2-1/2" N-80 8rd tubing EUE	7613.77	7633.77
Udell ported nipple	3.85	7637.62
1 jt. 2-1/2" N-80 8rd tubing EUE	30.87	7668.49
Udell landing nipple	2.30	7670.79
1 jt. 2-1/2" N-80 8rd tubing EUE	30.80	7701.59
2-1/2" x 3" 8rd X-Over	1.00	7702.59
8-5/8" Husky M-1 packer w/chamfered collar on bottom	5.80	7708.39
Packer landed w/12,000# compression		

Note: Replace flattened joint

**DIVISION OF OIL AND GAS**  
**WELL SUMMARY REPORT**

SUBMIT IN DUPLICATE

Operator Pacific Lighting Service Company Well No. IW 80

Sec. 28, T. 3N, R. 16W, S.B. B. & M. Aliso Canyon Field Los Angeles County.

Location From Station 84 586.10' South and 3320.50' West  
(Give location from property or section corner, or street center lines)

Elevation of ground above sea level 2505 feet USGS

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

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

Date October 31, 1973

Signed P. S. Magruder, Jr.  
P. S. Magruder, Jr.  
Agent

E. A. Olson  
(Engineer or Geologist)

B. F. Jones  
(Superintendent)

Title Agent  
(President, Secretary or Agent)

Commenced drilling	Geological Markers	DEPTH
<u>July 17, 1973</u>		
Completed drilling <u>August 11, 1973</u>	<u>Top of Sesnon Zone S-4</u>	<u>7854'</u>
Total depth <u>8189'</u> Plugged depth <u>None</u>	<u>S-8</u>	<u>7954'</u>
Junk _____	<u>H-Z</u>	<u>8064'</u>
	<u>Top of Frew Unconf.</u>	<u>8118'</u>

Geologic age at total depth: Eocene

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

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

CASING RECORD (Present Hole)

Size of Casing (A. P. I.)	Depth of Shoe	Top of Casing	Weight of Casing	New or Second Hand	Seamless or Lapweld	Grade of Casing	Size of Hole Drilled	Number of Sacks of Cement	Depth of Cementing if through perforations
<u>13-3/8"</u>	<u>807</u>	<u>sfc.</u>	<u>48#</u>	<u>N</u>	<u>S</u>	<u>H-40</u>	<u>17-1/2"</u>	<u>400</u>	
<u>8-5/8"</u>	<u>7854</u>	<u>sfc.</u>	<u>36#</u>	<u>N</u>	<u>S</u>	<u>K &amp; N</u>	<u>11"</u>	<u>680</u> <u>500</u>	<u>shoe</u> <u>2968</u>
<u>6-5/8"</u>	<u>8188</u>	<u>7725</u>	<u>28#</u>	<u>N</u>	<u>S</u>	<u>K</u>	<u>7-5/8"</u>	<u>opened to</u>	<u>14"</u>
								<u>slotted liner</u>	

PERFORATED CASING

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

8-5/8" - four 1/2" jet holes at 7838'.  
6-5/8" - perforated gravel packed liner 7725'-8188'.

Was the well directionally drilled? yes Electrical Log Depths 8188' (Attach Copy of Log)

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. IW 80, Sec. 28, T. 3N, R. 16W, S.B. B. & M.

Date October 31, 19 73 Signed P. S. Magruder, Jr.

P. O. Box 54790, Terminal Annex P. S. Magruder, Jr.  
Los Angeles, Ca., 90054 (213) 689-3561 Title Agent  
(Address) (Telephone Number) (President, Secretary or Agent)

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

Date	
1973	
7-17	Camay Drilling Company, Contractor, spudded 17-1/2" hole at 4:00 AM and drilled to 65'. All measurements taken from top of kelly bushing which is 12' above mat.
7-18	Drilled 17-1/2" hole to 480'. Mud: 72#, 78 sec.
7-19	Drilled 17-1/2" hole to 733'. Hole took 400 bbls. of mud. Mud: 76#, 75 sec.
7-20	Drilled 17-1/2" hole to 807'. Mud: 72#, 63 sec. TO CEMENT 13-3/8" SURFACE CASING: Ran 20 joints or 809.19' of 13-3/8", 48#, H-40, 8rd., ST&C, R-3, new seamless blank casing and cemented same at 807' with 500 cu. ft. of 94#/cu. ft. slurry consisting of 250 sacks of Class "G" cement, 250 cu. ft. of Pozmix with 2% gel, followed by 150 sacks Class "G" cement treated with 2% calcium chloride. Moved casing 10' and circulated 20 minutes prior to cementing. Preceded cement with 50 cu. ft. of water and displaced with 670 cu. ft. of mud. Cement in place at 4:55 PM under 200# final pressure. No circulation throughout job. No cement to surface. One hour 15 minutes mixing and displacing cement. Used Dowell bulk cement and power. Thread locking compound used on shoe and bottom 2 joints. Dumped in 20 sacks Class "G" cement to fill to surface. <u>CASING DETAIL:</u> All 20 joints or 809.19' 13-3/8" fitted on bottom with Baker float shoe and with centralizer at 797'.  Cut and recovered 13-3/8" casing, installed Shaffer 13", 5000# casinghead. Test same Ok with 3600 psi for 15 minutes. Installed Shaffer shop made bit guide.

1973

- 7-21 Installed GK Hydrill and double Shaffer hydraulic BOP. Tested Ok with 1500 psi. Approved by ENGINEER FOR DIVISION OF OIL & GAS. Drilled out cement 765'-807' and drilled 11" hole to 959'. Mud: 67#, 37 sec., 8.4 cc.
- 7-22 Drilled 11" hole to 1508. Mud: 69#, 41 sec., 7.8 cc.
- 7-23 Drilled 11" hole to 2240'. Spot ream 1860'-2110'. Mud: 69#, 40 sec., 7.9 cc.
- 7-24 Drilled 11" hole to 2967'. Mud: 70#, 40 sec., 7.4 cc., 6% solids.
- 7-25 Drilled 11" hole to 3402'. Found wash out in bumper sub. Bit guide came loose. Retrieved bit guide. Drilled 11" hole to 3630'. Mud: 69#, 38 sec., 6.8 cc., 6% solids.
- 7-26 Drilled 11" hole to 4350'. Pulled tight 4174'-3610' on bit change. Mud: 70#, 38 sec., 7 cc., 7% solids.
- 7-27 Drilled 11" hole to 4610'. Mud: 70#, 40 sec., 7.2 cc., 7% solids.
- 7-28 Drilled 11" hole to 5340'. Worked through tight hole at 4690'. Mud: 70#, 40 sec., 6.8 cc., 6% solids.
- 7-29 Drilled 11" hole to 6111'. Table base fell into cellar. Mud: 71#, 38 sec., 6 cc., 6% solids.
- 7-30 Repair table base and drilled 11" hole to 6597'. Mud: 71#, 39 sec., 6 cc., 6% solids.
- 7-31 Dyna-Dril #1, with eye tool, drilled 11" hole to 6833'. Mud: 70# 40 sec., 5.6 cc., 4% solids.
- 8-01 Dyna-Dril #1-A, 11" hole to 6957'. Mud: 71#, 39 sec., 5.6 cc., 6% solids.
- 8-02 Reamed 6670'-6957' and directionally drilled 11" hole to 7294'. Ream 7041'-7101' on bit change. Mud: 71#, 41 sec., 5.4 cc., 7% solids.
- 8-03 Directionally drilled 11" hole to 7582'. Mud: 71#, 40 sec., 5.4 cc., 7% solids.
- 8-04 Reamed 7550'-7582' and directionally drilled 11" hole to 7846'. Mud: 70#, 38 sec., 5.0 cc., 6% solids.
- 8-05 Directionally drilled 11" hole to 8080'. Measure out of hole. Mud: 70#, 39 sec., 5.6 cc., 6% solids.
- 8-06 Directionally drilled 11" hole to 8128'. Ran Welex CDL, SWN, IEL, AVL and Caliper. Mud: 70-1/2#, 38 sec., 5 cc., 7% solids.

1973

8-07 TO CEMENT 8-5/8" CASING: Ran 190 joints or 7857.19' of 8-5/8", 36# K-55 and N-80, Buttress thread, R-3, new seamless blank casing and cemented same at 7854' with 1200 cu. ft. of 94#/cu. ft. slurry consisting of 580 sacks Class "G" cement, 580 cu. ft. of Lodense A, followed by 100 sacks Class "G" with 2% calcium chloride mixed to 118#/cu. ft. slurry. Moved casing 10' and circulated 30 minutes prior to cementing. Preceded cement with 100 cu. ft. water and displaced with 100 cu. ft. water and 2545 cu. ft. of mud to bump plug to place at 11:45 PM under 3500 psi final pressure. Held 3500 psi pressure for 15 minutes. Bled back 26 cu. ft. for total displacement of 2618 cu. ft. Full circulation throughout job. One hour 40 minutes mixing and displacing cement. Dropped plug and opened stage collar at 2968' under 2000 psi pressure. Preceded cement with 50 cu. ft. water. Pumped in 1000 cu. ft. of 94#/cu. ft. slurry consisting of 500 sacks Class "G" cement, 500 cu. ft. Lodense A displaced with 1050 cu. ft. of mud to bump plug and close collar under 2000 psi pressure at 1:15 AM, 8-8-73. Bled back 8 cu. ft. for total displacement of 1042 cu. ft. 60 minutes mixing and displacing cement. Full circulation throughout job. No cement returns to surface. Used Byron-Jackson bulk cement and power.

CASING DETAIL:

Bottom 49 joints or 2012.26' (7854-5842) N-80 fitted on bottom with Davis Lynch fill-up float shoe and at 7808 with Davis-Lynch fill-up float collar. TIW turbo centralizers at 7844', 7818', 7798', 7734' & 7714'. TIW metal petal cement basket @ 7724'.

Next 141 joints or 5842' (5842-K.B.) K-55 fitted with Halliburton DV collar at 2968'.

Total 190 joints or 7854'

NOTE: Casing talley shows pipe cemented at 7854'. Subsequent drill pipe measurements verify this depth. Wireline logs run 8/11/73 shows casing at 7864'.

8-08 Cut and recovered 8-5/8" casing, installed slips and secondary seals. Tested Ok with 3500 psi for 15 minutes. Installed bit guide and BOP. Tested same Ok under 1500 psi.

8-09 Measure in hole and locate DV collar at 2968', drill out collar and test casing Ok with 1500 psi. Measuring in hole, located cement collar at 7808' and drilled out cement to 7844'. Ran Welex cement bond log with collar locator which showed 8-5/8" float collar at 7820' or 12' deeper than drill pipe measurement of 7808'. Ran Welex 4" O.D. jet carrier and shot four 1/2" jet holes at 7838', MSG log measurement. Closed rams and casing held 1500 psi Ok.

1973

- 8-10 TO TEST WATER SHUT-OFF ON HOLES IN 8-5/8" CASING AT 7838': Ran Johnston tester on 5" drill pipe and set packer at 7800' with tail to 7818'. Opened tool at 11:05 PM for one hour test. Puff blow, then dead. No gas to surface. Recovered 15' rise of drilling fluid. Charts showed tool functioned properly. Water shut-off witnessed and approved by ENGINEER FOR DIVISION OF OIL & GAS.
- Drilled out cement and shoe and drilled 7-5/8" hole to 8183'.  
Mud: 68#, 36 sec., 7.4 cc., 5% solids.
- 8-11 Drilled 7-5/8" hole to 8189', TOTAL DEPTH. Reran Welex suite of logs as before. Mud: 65#, 37 sec., 6.4 cc.  
Ran 7-5/8" bit and scraper to 8-5/8" shoe and displaced fluid in hole with 67#/cu. ft. Polycarb R completion fluid.
- 8-12 Ran OMT hole opener #1 and opened 11" hole to 14" from 7856'-7868'; #2 7868'-7891'; #3 7891'-7899'.
- 8-13 Opened 11" hole to 14" from 7899' to 7933', #4 H.O. Blades would not retract. Worked H. O. trying to wear out blades.
- 8-14 Worked hole opener to 8128' attempting to wear out blades. Pulled and left bottom 2' of hole opener in hole.  
Ran hole opener #5 & #6 and opened 11" hole to 14" from 7933'-7971'.
- 8-15 Opened hole from 7971'-8013' with #6 & #7 hole opener.  
Ran OMT 7-1/2" O.D. concave mill and milled on junk at 8125'.
- 8-16 Milled on junk to 8154' with #1 mill and to 8183' with #2 mill.  
Opened 7-5/8" hole to 8-5/8" from 8128'-8143'.
- 8-17 Opened 7-5/8" hole to 8-5/8" from 8143'-8151'.  
Wall scraped 11" hole from 8013'-8128'.  
Ran 7-5/8" bit and backscuttled hole clean in stages from 7950' to 8183'.
- 8-18 Ran Dresser-Atlas caliper log. 7-5/8" hole had not been opened to 8-5/8" to accomodate external casing packer.  
Ran OMT hole opener and opened hole to 8-5/8" from 8128'-8166'.  
Ran Dresser-Atlas caliper log which showed 7-5/8" hole opened sufficiently for packer.

1973

8-19 TO HANG 6-5/8" LINER: Ran 11 joints or 462.98' of 6-5/8", 27.65#, K-55, Security flush joint, R-3, new seamless casing and hung same at 7725'; bottom at 8188'.

LINER DETAIL:

Bottom 1 joint or 35.00' (8188-8153) blank casing bull nosed on bottom.  
 Next 3.18' (8153-8150) Burns port collar  
 Next 1.40' (8150-8148) Crossover S.F.J. to 8rd.  
 Next 11.65' (8148-8137) Lynes external casing packer with packer @ 8143'.  
 Next 1.66' (8137-8135) Crossover 8rd. to S.F.J.  
 Next 3 joints or 107.89' (8135-8027) Perforated 28 rows, 2" x 30 mesh slots, 6" centers with top 5' blank  
 Next 3.35' (8027-8024) Burns port collar @ 8024'  
 Next 4 joints or 168.77' (8024-7855) Perforated 28 rows as above  
 Next 3 joints or 124.18' (7855-7731) Perforated 12 rows, 2" x 30 mesh slots, 6" centers with top 10' blank  
 Next 5.90' Burns port collar, ports at 7729', and Burns lead seal liner hanger.

Total 11 joints or 462.98'

Hung liner and tested lead seal hanger Ok with 1000 psi.  
 Set Lynes casing packer and tested Ok with 1400 psi. Pulled out of hole to change stinger for gravel packing.

8-20 Displaced 55 cu. ft. of 6-9 gravel through port collar at 8024'.  
 & Tested collar closed. Opened port collar at 7729' and pumped in  
 8-21 208 cu. ft. of 6-9 gravel. Washed liner from 8135' to 7725' and pumped in additional 5 cu. ft. of 6-9 gravel. Tested collar closed.

8-22 Pick up tubing and stand back in derrick. Layed down drill pipe.

8-23 Ran 2-7/8", 6.5#, N-80, 8rd. EUE new tubing and landed same in doughnut with 10,000# compression on Brown Oil Tool Husky M-1 packer at 7709'.

<u>TUBING DETAIL:</u>	<u>LENGTH</u>	<u>DEPTH</u>
Kelly bushing to doughnut	20.00	20.00
Doughnut	1.00	21.00
245 joints of 2-7/8" tubing	7612.73	7633.73
Udell ported nipple	3.85	7637.58
1 joint of 2-7/8" tubing	31.56	7669.14
Udell landing nipple	2.30	7671.44
1 joint of 2-7/8" tubing	31.55	7702.99
Crossover	1.00	7703.99
Brown Oil Tool Husky M-1 packer	5.80	7709.79

1973

8-23 8-5/8" stub found to be kelly whipped. Replaced damaged section. Weld X-rayed and Ok'd by Valley X-Ray.

Unseated packer, installed doughnut and relanded tubing. Installed Shaffer 10", 5000# tubinghead and Shaffer 8", 5000# Xmas tree. Head and tree tested to 3500 psi for 15 minutes.

RIG RELEASED AT 11:00 PM, 8/23/73.

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. I.W. #80, Sec. 28, T. 3N, R. 16W, S.B. B. & M.

Date December 20, 19 73

Signed

*P. S. Magruder, Jr.*

P. O. Box 54790, Terminal Annex

P. S. Magruder, Jr.

Los Angeles, Ca. 90054 (213) 689-3561

Title Agent

(Address)

(Telephone Number)

(President, Secretary or Agent)

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

- Date
- 1973 The following is for the well file only & not to be submitted to DOG.
- 11-24 California Production Service moved in with rig & mud pump. Hauled 120 barrels of polymer drilling fluid from I.W. #62 to I.W. #80. Hauled lease salt water and mixed 360 bbls. of polymer drilling fluid.
- 11-25 Rigged lines to Getty System to unload well. Mixed and pumped 60 bbls. of high gel polymer drilling fluid and displaced down tubing with 60 bbls. of polymer drilling fluid. Let stand for one hour. Opened annulus valve and had 2200 psi surface pressure. Opened bean and pumped an additional 330 bbls. of polymer drilling fluid or total of 450 bbls. when obtained fluid returns. Pressure bled down rapidly from 2200 psi to zero while pumping. Mixed 360 bbls of polymer drilling fluid, using lease salt water. Circulated for 2 hours and shut well in for the night.
- 11-26 Crew reported at 9:00 A.M. Waited for ready mix truck to pour concrete for anchors. Raise mast using temporary anchors. Ran 66' of 1-3/4" sinker bar bumper sub, jars and 1-7/8" tapered feeler to 7700'. Ran 2-1/4' feeler on sinker bar to 7700'. Ran 2-3/8" feeler which stopped at 30'. Shut well in for the night.
- 11-27 6:00 A.M. 27th to 6:00 A.M. 28th. Moved guy wires to permanent anchors. Set Shaffer plug in doughnut and removed Xmas tree. Installed B.O.P.E. and tested to 1500 psi. Removed plug. Unseated Brown packer and pulled tubing. Broached all tubing and found upper one foot of 35th joint flattened. Ran new Brown packer, landing nipple and ported nipple. Ran tubing, measuring and broaching with 2.346" broach. Landed tubing with packer at 7708' with 12,000# compression. (Tubing detail attached).
- 11-28 6:00 A.M. to 10:00 P.M. Removed B.O.P.E. after setting Shaffer plug in doughnut. Installed Xmas tree and tested to 4000 psi for 30 minutes. Crew & rig released. Displaced polymer drilling fluid with nitrogen down tubing and blew down annulus until obtained gas. Also blew down tubing to purge nitrogen. No loss of drilling fluid.

1973

TUBING DETAIL

<u>Item</u>	<u>Length</u>	<u>Depth</u>
Below. K. B.	12.00	12.00
Below ground level	8.00	20.00
245 jts. 2-1/2" N-80 8rd tubing EUE	7613.77	7633.77
Udell ported nipple	3.85	7637.62
1 jt. 2-1/2" N-80 8rd tubing EUE	30.87	7668.49
Udell landing nipple	2.30	7670.79
1 jt. 2-1/2" N-80 8rd tubing EUE	30.80	7701.59
2-1/2" x 3" 8rd X-Over	1.00	7702.59
8-5/8" Husky M-1 packer w/chamfered collar on bottom	5.80	7708.39
Packer landed w/12,000# compression		

Note: Replace flattened joint

007 1 1973

# SURVEY RECORD

SANTA ANA CALIFORNIA  
 DATE..... 2505

586-S & 3321-W FROM STATION NO. 84

K.B..... 12

JOB NO IW-80

ONE

DATE 8-15-1973

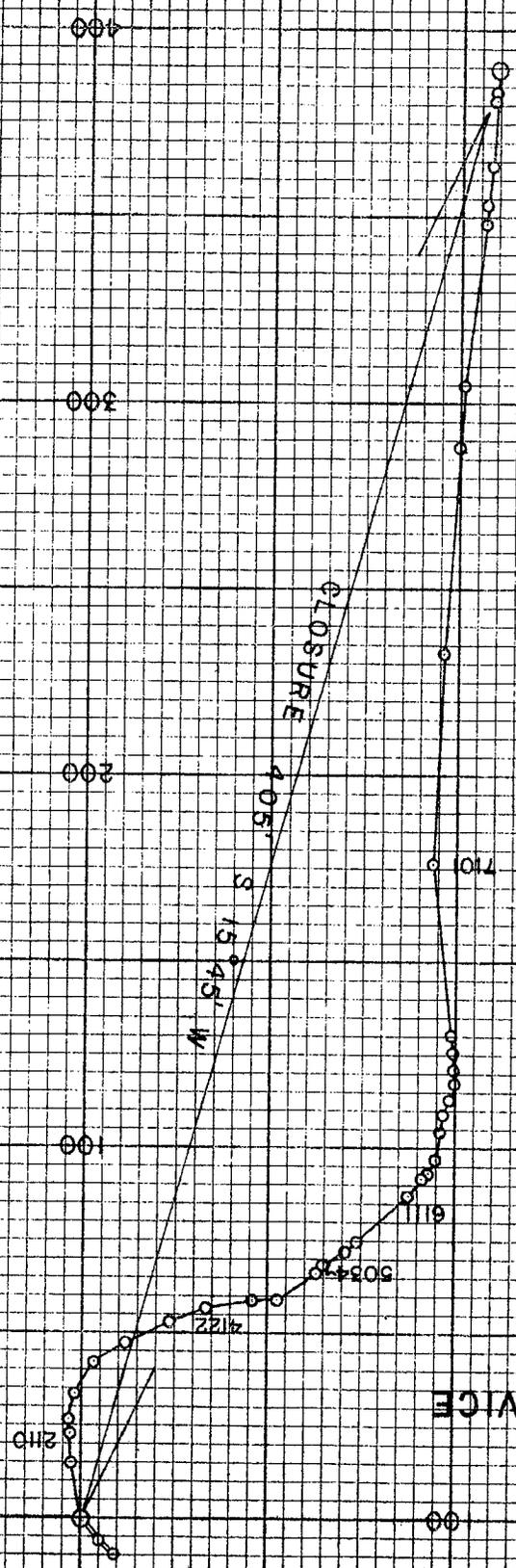
ELEV.....-2517

MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	COURSE DEVIATION	DRIIFT DIRECTION	RECTANGULAR COORDINATES				REMARKS	
					NORTH	SOUTH	EAST	WEST		
1	1.00	115996	3	04	N	46	W			
2	0.30	20596		79	N	62	W	2	11	
3	1.00	29595	1	57	N	26	W	2	48	
4	1.30	38992	2	45	N	42	W	3	89	
5	1.30	47889	2	33	N	43	W	7	72	
6	1.15	56987	1	30	N	60	W	8	42	
7	0.30	72286	1	34	N	34	W	8	42	
8	0.30	80686		73	S	30	E	9	53	
9	0.30	98185	1	53	S	48	E	8	90	
10	0.30	121884	2	07	S	37	E	7	88	
11	2.30	151879	14	16	S	44	E	6	22	
12	1.45	210922	7	57	S	02	E			15
13	0.45	240425	3	86	S	07	E			22
14	1.15	274514	7	44	S	10	W			22
15	1.45	305589	9	50	S	36	W			26
16	2.00	335580	10	47	S	56	W			33
17	1.45	376861	12	61	S	66	W			41
18	1.45	412044	10	75	S	80	W			41
19	2.15	443220	12	25	S	68	W			52
20	2.30	458905	6	85	S	88	W			56
21	2.00	493984	12	25	S	54	W			58
22	2.00	503178	3	7	S	57	W			67
23	1.15	536070	3	18	S	54	W			72
24	1.00	557867	3	80	S	46	W			74
25	1.00	610835	18	50	S	49	W			86
26	1.00	645030	5	51	S	36	W			91
27	1.00	659429	2	97	S	46	W			93
28	3.15	666818	4	03	S	21	W			97
29	6.30	673175	4	58	S	10	W			104
30	7.30	677243	4	83	S	16	W			109
31	7.45	679915	4	18	S	19	W			113



PACIFIC LIGHTING SERVICE  
 ALISO CANYON  
 WELL NO. 1W-80

8118 MD  
 8082 VD  
 5566 VSS  
 390 S  
 110 W



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

**Report on Operations**

No. T. 273-369

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

Santa Paula Calif.  
August 23, 1973

DEAR SIR:

Operations at well No. IW 80, API No. 037-21362, Sec. 28, T. 3N, R. 16W,  
S.B. B & M. Aliso Canyon Field, in Los Angeles County, were witnessed  
 on Aug. 10, 1973 by Mr. P R Wygle, engineer, representative of the supervisor was  
 present from 0200 to 0400. There were also present E. Olsen, engineer

Present condition of well: 13 3/8" cem. 807'; 8 5/8" cem. 7854', c.p. 2968', perf.  
7838' WSO. T.D. 8126'.

The operations were performed for the purpose of testing the 8 5/8" shut-off by means of  
a formation tester.

DECISION:

**THE 8 5/8" SHUT-OFF AT 7838' IS APPROVED.**

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

By [Signature] Deputy

FORMATION TESTER WSO MEMO

T 369

Co. Pac Ltg Svc Co Well IW 80 Field \_\_\_\_\_ County \_\_\_\_\_

VISITS: Date Engineer Time Operator's Rep. Title  
 1. Aug 10, 1973 P.R. Wygie 0200-0400 E. Olsen Engineer  
 2. \_\_\_\_\_  
 3. \_\_\_\_\_

PRESENT MECHANICAL CONDITION 13 3/8" cem 807'; 8 5/8" cem 7854', cp 2968', perf 7838' WSO.  
TD 8126'

OPERATION: Testing the 8 5/8" shut-off by means of a formation tester.

DECISION: The 8 5/8" shut-off at 7838" is (not) approved.

SHUT-OFF DATA: 8 5/8" 36 lb csg was re cem thru a DV collar at 2968' on Aug 7, 1973, in a 11" hole with 1000 ~~sq~~ cf of cem mixed with 2% gel

\_\_\_\_\_ calc to fill the annulus to \_\_\_\_\_' below the surf.  
 Cem bridge \_\_\_\_\_ to/at \_\_\_\_\_'. Cleaned out to \_\_\_\_\_' for this test.

A Johnston tester was run into the hole on 5" dp/tbg with \_\_\_\_\_ of \_\_\_\_\_ cushion. Packer(s) set at 7800'. Tailpiece to 7818'. Tester valve, with 1/2 bean, was open for 1 hr. During this interval there was a puff blow

THE OPERATOR'S REP REPORTED:

1. Drd 11" hole 807-8126
2. On Aug 7 cem 8 5/8" w/ 1200 cf 2% gel followed by 100 sq next "6" cem.
3. Recem thru DV coll as noted above.

4. The 8 5/8" csg was perf'd with 4, 1/2" holes at 7838'.
5. The tester was run as noted above.

THE ENGINEER NOTED:

HOLE FLUID WT.  
 CHART PRESSURES  
 TOP BTM OUTSIDE (CALC)

IH  
 IF  
 FF  
 FH

1. When the pipe was removed, a net rise of 15' of drilling fluid was found above the tester.
2. The pressure recorder charts indicated that the tester had functioned properly.

RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS No. P 273-105

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

Santa Paula Calif.  
March 5, 1973

DEAR SIR:

Your proposal to drill Well No. (037-21362) IW 80  
Section 28, T. 3N., R. 16W., S.B. B. & M., Aliso Canyon Field, Los Angeles County,  
dated 2/13/73, received 2/27/73, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

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

Blanket Bond  
ALL:r

cc: Operator

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

By LOCP Pityaus, Deputy

(037-21362)

9

Porter No. 26 site

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

037-21362

Los Angeles Calif. February 13 19 73

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division III, Article 4, Public Resources Code, notice is hereby given that it is our intention to commence drilling well No. IW80, Sec. 28, T. 3N,

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

Legal description of mineral-right lease, consisting of 431.5 acres, is as follows: \_\_\_\_\_  
(Attach map or plat to scale)

(As per plat previously filed)

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

Location of Well: 586.10 feet South ~~along section line and~~ 3320.50 feet West  
(Direction) ~~along section line and~~ (Direction)

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

(reference: Metrex Aerial Surveys Company drawing no. L.D. 11728 -  
Sheet 2 of 4)

Elevation of ground above sea level 2505 feet U.S.G.S. datum.

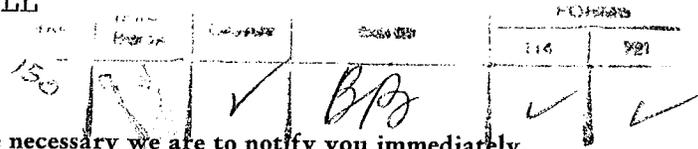
All depth measurements taken from top of kelly bushing which is 12 feet above ground.  
(Derrick Floor, Rotary Table or Kelly Bushing)

**PROPOSED CASING PROGRAM**

SIZE OF CASING INCHES A.P.I.	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS
13-3/8	48#	H-40 smls.	0'	800'	800'
8-5/8	36#	K-55 smls. & N-80	0'	7800'	7800' & 3000'
6-5/8	27.65#	K-55 smls.	7700'	8500'	8500'

Intended zone(s) of completion: Seson 7900', 8500' Estimated total depth 8500'  
(Name) (Depth, top and bottom)

**GAS STORAGE WELL**



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

Address P.O. Box 54790 T.A.

Pacific Lighting Service Company  
(Name of Operator)

Los Angeles, California 90054  
(213) 689-3621 or

By [Signature]

Telephone Number (213) 689-3561

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