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

No. T **216-0293**

REPORT ON OPERATIONS

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

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

Ventura, California
August 04, 2016

Your operations at well **"Porter" 24B**, A.P.I. No. **037-24144**, Sec. **27**, T. **03N**, R. **16W**, **SB** B.&M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **7/22/2016**, by **Randall Morlan**, a representative of the supervisor.

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

DECISION:

APPROVED

RM/TKC

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By _____
FOR Patricia A. Abel, *District Deputy*

CK722.

T 214,0293

16.1

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

Casing and Tubing Pressure Test

Operator: So. Cal. Gas Co. Well Designation: Porter 24B

Sec. 27, T. 03N, R. 16W, S. B. B.M. API No. 037-24144 Field: Aliso Canyon

County. Los Angeles Witnessed on: 22-Jul-2016. Randall Morlan, representative

of the supervisor, was present from 1430 to 1710.

Also Present were Walt Clayborn

Casing Record of the Well:
13-3/8", 54.5 lb., K-55 cemented at 827'
9-5/8", 47.0 lb., N80 cemented at 7030'
5-1/2", 17 lb., J55 liner from 6917'-7607', perforated f/ 6920'-7607' and gravel packed in 15" hole.

The operations were performed for the purpose of Removing well from gas storage service

Pressure Test of the Casing

Packer/ Bridge Plug at Packer at 6727'
Casing Pressured with 8.5 lb/gal polymer
Casing Pressure Start PSI: 1016
Casing Pressure End PSI: 1003
Pressure Held 60 Min. Total drop in Pressure 13 psi 1.28 %.

Well Type Gas Storage
Volume
Start Time: 1447
End Time: 1547

Test Result: X Good ____ Not Good

Pressure Test of the Tubing

Packer/ Bridge Plug at Tubing plug at 6710'
Tubing Pressured with 8.5 lb/gal polymer
Tubing Pressure Start PSI: 3711
Tubing Pressure End PSI: 3691
Pressure Held 60 Min. Total drop in Pressure 20 psi 0.54 %.

Well Type Gas Storage
Volume
Start Time: 1606
End Time: 1706

Test Result: X Good ____ Not Good

Remarks: SAPT 5-1/2" tubing

IRAL RESOURCES AGENCY OF CALIFORNI
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1000 S. Hill Rd, Suite 116 Ventura, CA 93003-4458
Phone:(805) 654-4761 Fax:(805) 654-4765

No. T **216-0218**

REPORT ON OPERATIONS

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

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

Ventura, California
July 12, 2016

Your operations at well **"Porter" 24B**, A.P.I. No. **037-24144**, Sec. **27**, T. **03N**, R. **16W**, **SB** B.&M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **6/8/2016**, by **Michael L. Woods**, a representative of the supervisor.

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

DECISION:

APPROVED

MLW/TKC

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By _____
Patricia A. Abel, *District Deputy*

API No. 037-21357 DIVI[illegible]N OF OIL, GAS, AND GEOTHERMAL RESOU[illegible]ES T 216-0218

BLOWOU[illegible] PREVENTION EQUIPMENT MEMO 12,1

Operator Southern California Gas Company Well "Porter" 24B Sec. 28 T. 3N R. 15W
Field Aliso Canyon County Los Angeles Spud Date

VISITS:	Date	Engineer	Time	Operator's Rep.	Title
1st	6/8/2016	Michael Woods	(0815 to 0830)	Walt Klingenberg	Consultant
2nd			(to)		

Contractor Ensign Energy Services, Inc. Rig # Contractor's Rep. & Title
Casing record of well:

OPERATION: **Inspecting** the blowout prevention equipment and installation. Critical well? Y ☐ N ☒
DECISION: The blowout prevention equipment and its installation on the 8 5/8" " casing are approved.

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

REQUIRED BOPE CLASS: III 5M

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

BOP STACK

API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul
A		Hydril	GK	11	5M	
Rd	3.5"	Shaffer	LWS	11	5M	
Rd		Shaffer	LWS	11	5M	

TEST DATA

Gal. to Close	Recov. Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
8.34						Insp
2.98						Insp
2.98						Insp

TOTAL: 14.30

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure 2900 psi
Total Rated Pump Output gpm Fluid Level
Distance from Well Bore 50 ft. OK

	Accum. Manufacturer	Capacity	Precharge
1	Koomey	80 gal.	1000 psi
2		gal.	psi

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

EMERG. BACKUP SYSTEM			Press.	Wkg. Fluid
☒ N_2 Cylinders	1	L= G "	1700	3.23 gal.
☐ Other:	2	L= G "	2500	7.88 gal.
	3	L= G "	2500	7.88 gal.
	4	L= G "	2500	7.88 gal.
	5	L= G "	2500	7.88 gal.
	6	L= G "	2500	7.88 gal.
		TOTAL		42.62 gal.

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

AUXILIARY EQUIPMENT

	No.	Size (in.)	Rated Press.	Connections: Weld	Connections: Flange	Connections: Thread	Test Press.
☐ Fill-up Line							
☒ Kill Line		2	5M	☐	☒	☒	Insp
☒ Control Valve(s)	2		5M	☐	☒	☐	Insp
☒ Check Valve(s)	1		5M	☐	☒	☐	Insp
☒ Aux. Pump Connect.			5M	☐	☐	☒	Insp
☒ Choke Line		4	5M	☐	☒	☒	Insp
☒ Control Valve(s)	7		5M	☐	☒	☐	Insp
☐ Pressure Gauge				☐	☒	☐	
☒ Adjustable Choke(s)	2	2	5M	☐	☒	☐	Insp
☐ Bleed Line		2		☐	☐	☒	
☐ Upper Kelly Cock							
☐ Lower Kelly Cock							
☐ Standpipe Valve							
☐ Standpipe Press. Gau.							
☐ Pipe Safety Valve							
☐ Internal Preventer							

Hole Fluid Type	Weight	Storage Pits (Type & Size)
Lease Water	8.5#/g	

REMARKS AND DEFICIENCIES:

OGD9 (1/03)

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST-RECORDS RECEIVED AND WELL STATUS

Operator: **Southern California Gas Company** WELL DESIGNATION **"Porter" 24B**

API No. **03724144** SE **27** T: **3N** R.: **16W** , **SB** B. and M.

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

Type of Notice: **Rework** **Date** **6/28/2016** **Report Number:** **P216-0108**

RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)

	Date	OK	NEED	Remarks
Well Summary (OG100)			✓	
History (OG103)			✓	
E-Log				
Mud Log				
Dipmeter				
Directional				
Core and/or SWS				
BOPE	6-8-16	✓		
Press Test	7-22-16	✓		digitally recorded in main folder

NEW STATUS

DATE: _____

NOTICE OF RECORDS DUE

DATE: _____

DATE: _____

DATE: _____

DATE: _____

WELL STATUS INQUIRY

DATE: _____

DATE: _____

Well Stat

Change Required: _____

Change Done: _____

ABANDONMENTS/REABANDONMENTS/DRILLS/REDRILLS

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

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

ENGINEER'S CHECK LIST

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

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

CLERICAL CHECK LIST

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

REMARKS

RECORDS SCANNED: _____
(Date)

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

Modified OGD2

AOR Datbase _____

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

No. P 216-0108

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

PERMIT TO CONDUCT WELL OPERATIONS

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

Ventura, California
July 05, 2016

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

Your proposal to **Rework** well **"Porter" 24B**, A.P.I. No. **037-24144**, Section **27**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, **Any** area, **Sesnon-Frew** pool, **Los Angeles** County, dated **6/28/2016**, received **6/30/2016** has been examined in conjunction with records filed in this office. (Lat: **34.315009** Long: **-118.552889** Datum:**83**)

THE PROPOSAL IS APPROVED PROVIDED:

1. Blowout prevention equipment, as defined by this Division's publication No. M07, shall be installed and maintained in operating condition and meet the following minimum requirements:
   a. Class **III 5M** on the **9 5/8"** casing.
2. Hole fluid of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts shall be used.
3. Blowout prevention practice drills are conducted at least weekly and recorded on the tour sheet. A practice drill may be required at the time of the test/inspection.
4. Prior to commencing injection, a pressure test is conducted to demonstrate the mechanical integrity of the **9 5/8"** casing and proposed scab liner.
5. Injection shall be through tubing and packer only. Injection or withdrawal through the casing is not permitted.
6. **In all other respects, the provisions and amendments of Division Order 1109 shall remain in effect.**
7. This office shall be contacted by phone prior to making any program changes and no changes are made without Division approval.

   THIS DIVISION SHALL BE NOTIFIED TO:

   a. Inspect the installed blowout prevention equipment prior to commencing **downhole** operations.
   b. Witness a pressure test of the tubing and **9 5/8"** casing prior to commencing injection.

Continued on Next Page

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

Engineer Clifford R. Knight
Office (805) 654-4761

CRK/crk

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

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

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

NOTE:

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

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

ATTACHMENT 1
TO DOGGR ORDER 1109

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

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

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

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

REQUIRED TESTS FOR EACH WELL IN THE FACILITY

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

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

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

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

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

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

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

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

REQUIRED TESTS IF A WELL IS INTENDED TO RESUME OPERATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

REQUIREMENTS FOR WELLS RESUMING OPERATIONS IN ALISO CANYON

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

Knight, Clifford@DOC

From: Kohner, Benjamin (AllSource) <BKohner@semprautilities.com>
Sent: Monday, June 27, 2016 8:32 AM
To: Lein, Eleonora; Knight, Clifford@DOC; 'Gustafson.kris@conservation.ca.gov'; Ortiz, David@DOC; Gustafson, Kris@DOC
Cc: Vlasko, Brian C; McMahon, Thomas D.
Subject: RE: Porter 24B Pit Depth

Clifford and Kris,

The pit depth on Porter 24B is at 6775'. In short, the Baker logging engineer made a mistake and all of his logs were 18 ft shallow, indicating the pit incorrectly at 6757'. The Baker HRVRT and MAC have been corrected and resubmitted to DOGGR with _REV1 in the title.

Sorry for the confusion, this will not happen again.

Benjamin Kohner
Technical Advisor - SIMP
Southern California Gas Company
Cell: (262) 751-0529
bkohner@semprautilities.com

From: Lein, Eleonora
Sent: Thursday, June 23, 2016 5:04 PM
To: Kohner, Benjamin (AllSource)
Cc: Vlasko, Brian C
Subject: FW: Porter 24B request for revised NOI

Ben,
Would you help me with asking the logging company to correlate the log data so it would reflect the correct depth of the pit @ 6775'.

Thank you,
Ella

From: Knight, Clifford@DOC [mailto:Clifford.Knight@conservation.ca.gov]
Sent: Thursday, June 23, 2016 4:28 PM
To: Lein, Eleonora
Cc: Ortiz, David@DOC
Subject: Porter 24B request for revised NOI

Ella,
I have reviewed the NOI for Porter 24B. I have some concerns with the placement depth of the 5.5" L-80 Scab liner from 6755-6917'. The "Proposed" diagram indicated pit in casing at 6775', however, if you view the HRVRT and MAC you will see that the depth is 6757' for the recording of the pit. The pit at 6775' needs to be explained or moved to correlate with the MAC and HRVRT log data.
Some changes that will need to be addressed if the pit is in fact at 6757':

1. Change the 6775' top 6757' for the pit depth on the proposed diagram
2. Change the length or setting depth of the scab liner so it is not 2 feet away from the pit at 6757'
3. On page 4, note 13 the 6755' depth may need to be adjusted if/when the pit depth is adjusted.

Other changes that need to be addressed:

4. The Bridge Plug needs to be clearly reflected on the proposed diagram and depth where it is to be set, 6907' still?
5. When the pressure test of the scab liner is tested, I think it to be important to indicated the test in table form and provide burst pressure of 5.5" scab liner. Please clearly indicate when the scab liner is to be tested in the table.

Please feel free to call so we may discuss any further details. I will be in Friday but gone Monday-Wednesday next week.
Thank you,

Clifford R. Knight, PG

Dept. of Conservation
Division of Oil, Gas & Geothermal Resources
1000 S. Hill Rd., Ste. 116
Ventura, CA 93003
(805) 654-4761 Phone
(805) 654-4765 Fax
Clifford.Knight@conservation.ca.gov

DOGGR Dist2@DOC

From: Iverson, Jon@DOC
Sent: Thursday, June 16, 2016 4:36 PM
To: DOGGR Dist2@DOC
Subject: FW: Porter 24B Variance Request INQUITY
Attachments: 03724144_REWORK supplemental_061616.pdf; P-24B SIMP Project scab liner 06-16-2016.docx; Porter 24B Well Schematic Proposed version 2 scab liner.pdf

SCG just sent me this supplemental. Please process and let me know. Thanks!

Jon Iverson
CA DOGGR - Orcutt

From: Lein, Eleonora [mailto:ELein@semprautilities.com]
Sent: Thursday, June 16, 2016 4:25 PM
To: Iverson, Jon@DOC <Jon.Iverson@conservation.ca.gov>
Cc: Vlasko, Brian C <BVlasko@semprautilities.com>
Subject: RE: Porter 24B Variance Request INQUITY

Jon,

As per our phone conversation please find the attached supplemental NOI to rework this well. I am also attaching documents that went into pdf file as pdf didn't preserve the color schematics.

Please call my cell @661.340.4250 in case you have any questions.

Regards,
Ella Lein

Ella Lein

Senior Gas Storage Field Engineer
Cell: 661.340.4250
Office: 818.700.3676

From: Lein, Eleonora
Sent: Thursday, June 16, 2016 2:17 PM
To: 'jon.iverson@conservation.ca.gov'
Cc: Vlasko, Brian C
Subject: Porter 24B Variance Request INQUITY

Jon,

My name is Ella Lein, I am one of the gas storage field engineers and I took over Brian Vlasko well Porter 24B. I tried to get hold of you today but kept having a bad luck on timing. During my second call, the nice lady on the phone communicated to me that you might be needing some additional info on this well before making the decision.

We are planning to install a scab liner scab over the csg hole and all the way down to 24B liner top and that will insure that we have a good isolation, solid csg wall, and provides us with uniform wellbore.

Please let me know in case I can provide any additional details on this well.

Kind regards,
Ella

Ella Lein

Senior Gas Storage Field Engineer
Storage Integrity Management Program (SIMP)
Southern California Gas Company
Cell: 661.340.4250
Office: 818.700.3676

Rec'd 07-01-16 DOGGR Ventura.

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

FOR DIVISION USE ONLY		
	Forms	
Bond	~~OGD114~~	OGD121
	CAL ✓ WIMS	115 ✓

P216-0108

NOTICE OF INTENTION TO REWORK / REDRILL WELL

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

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework ☒ / redrill ☐ (Check one) well Porter 24B, API No. 037-24144,

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

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

See attached wellbore schematic

The total depth is: 7645 feet. The effective depth is: 7607 feet.

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

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

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

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

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

See attached program

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

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

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

Name of Operator			
Southern California Gas Company			
Address: P. O. Box 2300		City/State: Chatsworth	Zip Code: 91313-2300
Name of Person Filing Notice: Ella Lein	Telephone Number: 661-340-4250	Signature: Ella Lein	Date: 7/01/2016
Individual to contact for technical questions: Ella Lein	Telephone Number: 661-340-4250	E-Mail Address: elein0519@semprautilities.com	

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

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

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

CRITICAL WELL DEFINITION

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

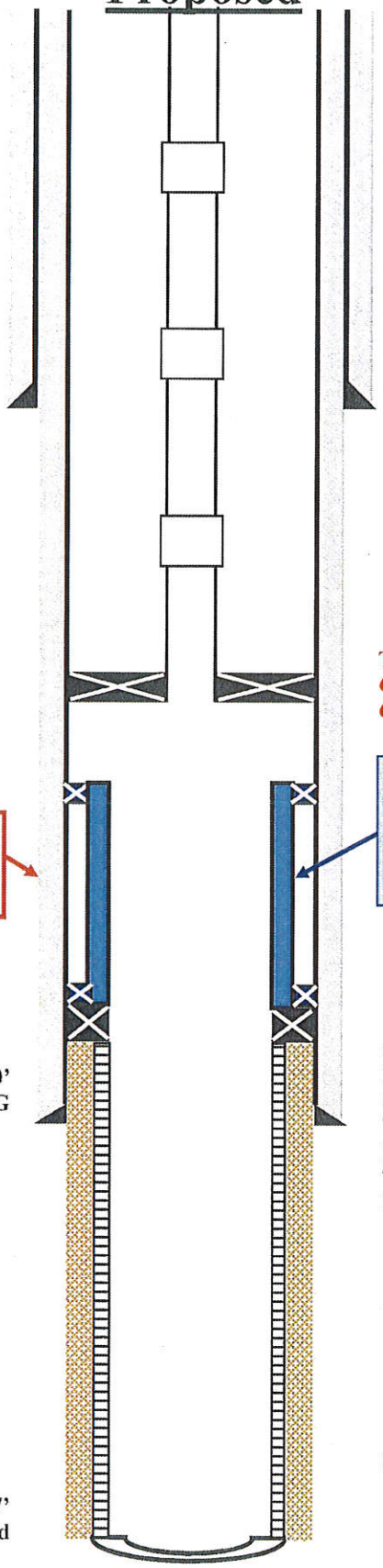
(1) 300 feet of the following:
  (A) Any building intended for human occupancy that is not necessary to the operation of the well; or
  (B) Any airport runway.
(2) 100 feet of the following:
  (A) Any dedicated public street, highway or the nearest rail of an operating railway that is in general use;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

WELL OPERATIONS REQUIRING BONDING

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

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

Proposed



13-3/8" TOC - Surface

9-5/8" TOC - Surface

17-1/2" Hole

13-3/8", 54.5#, K-55, CASING –827'
CMT'D w/ 902 cuft Class G

Cap Rock Top (MP) @ 6664'

Pit in 9-5/8" Casing @ 6775'

12-1/4" Hole

9-5/8", 47/#, N-80, CASING –7030'
CMT'D w/ 2600 cuft Class G

5-1/2", 17/#, J-55, Liner –6917' - 7607'
Gravel Packed w/ 608cuft. 20-40 sand

PBTD @ 7607'
T.D. @ 7645' md /
5344 TD VSS

Well: Porter 24B

API No.: 04-037-24144
Sec 27, T3N, R16W
Date Created: 6/07/16
Prepared by: Brian Vlasko

Operator: So. Cal Gas Co.
Lease: Porter
Field: Aliso Canyon
Status: Active Gas Storage

Ground Elevation: 2205.5' asl
Datum to Ground: 23.5'

Spud Date: 7/17/93
Completion Date: 11/9/93

Tubing - 4-1/2" x 5-1/2" TCPC
Completion Packer @ 6735'
Cement Integrity Verified

5.5" ; 17# L-80 Scab Liner Dual Packer System

~6,755'-6,917'

5-1/2" Liner Top - 6917'
Bottom of Blank - 6941'
60' Slotted Liner
Top of Screen - 7001'
Bottom of Screen - 7397'
Top of Slotted Liner - 7435'
Bull Plug - 7607'

15" OH from 7030' - 7430'

8.5" OH from 7430' - 7675'

Rec'd 07-01-16 DOGGR Ventura.

WORKOVER PROJECT

Porter 24B – Well Inspection

VERSION 4

CASING HOLE REMEDIATION

(supplemental portion of the program is in blue)

DATE: April 23, 2016

OPERATOR: SOUTHERN CALIFORNIA GAS COMPANY

FIELD: ALISO CANYON

WELL: Porter 24B

API NUMBER: 037-24144

ELEVATION: All depths based on original KB, 23.5' above GL

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

OBJECTIVE

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

WELL RECORD

Current Status:	Active
TD:	7645' md
Special Conditions:	Last tag on 11/8/1993 at 7607'
Casing Record:	13-3/8", 54.5#, K-55 BTC casing cemented at 827' with 902 ft3 Class G 9-5/8", 47#, N-80 LT&C casing cemented at 7030' with 2600 ft3 Class G 5-1/2",17#, J-55 WWS landed at 7607', TOL at 6917', GP'd w/608 ft3 20/40 sand Slots: .030" slots 7603'-7436', .012" WWS 7398'-7002', .012" slots 7002'-6982'
Tubing Record:	See attached tubing detail as run on 11/9/1993

Elevation above sea level - 2205.5'

GEOLOGIC MARKERS

A36	4610'md	-2383'vss	S2	7093'md	-4810'vss
UP	5010'md	-2775'vss	S4	7157'md	-4872'vss
LP	5321'md	-3079'vss	S6	7185'md	-4899'vss
UDA2	5685'md	-3435'vss	S8	7222'md	-4935'vss
MDA	6000'md	-3744'vss	S10	7248'md	-4960'vss
LDA	6311'md	-4048'vss	S12	7352'md	-5061'vss
MP	6664'md	-4393'vss	S14	7395'md	-5102'vss
S1	7043'md	-4762'vss	FREW	7470'md	-5175'vss

Estimated Field Pressure: 917 psi on 2/3/2016 (Variable)

Estimated Bottom-hole Temperature: 160°F (as per 09/09/2014 Temperature survey)

PROJECT NOTES

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

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

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

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

PRE-RIG WORK - *THE PORTION IN ITALIC AND HIGHLIGHTED IN GREY HAS BEEN EXECUTED*

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

2. *Complete slickline work as required to set up well for circulation.*
   a) *Run and set plug in XN nipple (2.205"nogo) @ 6811'. Bleed down 100psi above the plug to test for isolation.*
   b) *Run shifting tool to confirm sleeve is in the open position.*

WELLWORK PROGRAM

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

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

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

3. *Change well over to 8.5 ppg KCL brine. The tubing volume is approximately 39 bbls., and the tubing/casing annulus is approximately 441 bbls. Use HEC polymer as required to minimize lost circulation.*

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

4. *Install backpressure valve in tubing hanger. Nipple down tree. Send-in wellhead and tree components to Cameron for inspection.*

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

   a) *Pressure test the Class III 5M annular preventer to 3500 psig for 20 minutes. Test blind rams and the 3-1/2" pipe rams to 5000 psig for 20 minutes. Test all lines and connections to 5000 psig.*
   b) *Perform a 300 psig low pressure test on the annular preventer, blind rams and pipe rams for 20 minutes. Test all lines and connections to 300 psig.*
   c) *All tests are to be charted and witnessed by a DOGGR representative.*
   d) *Pull back pressure valve from tubing hanger.*

6. *Attempt to release latch and pull seal assembly out of Guiberson model "H" packer. Current packer depth is at 6845'. Lay down 2-7/8" production tubing.*

7. *Pick up 2-7/8", 6.5# P-110 TKC workstring and mill Guiberson packer at 6845'. Run Baker's plug plucker tool to mill and retrieve packer. Attempt to circulate at 10 BPM while milling packer, pumping 50 FV sweeps every 2 hrs of milling.*

8. *Pick-up a 9-5/8", 47# casing scraper on 2-7/8" workstring and RIH to top of liner at 6917'. Circulate well clean. POOH.*

9. *RIH with clean-out assembly for 5-1/2", 17# liner and RIH to clean out bottom of liner at 7607' or as deep as possible. POOH.*

10. *Rig up to run Gyro survey from 7607' to surface. Email final results to bvlasko@semprautilities.com.*

11. *Make-up and run a 9-5/8", 47# retrievable bridge plug (BP) on workstring. Set at approximately 6907' (10' above liner top), fill hole and pressure test to 1000 psi for 15 minutes. Sand off top of BP. POOH and lay down BP retrieving head.*

12. *Rig-up wireline unit(s) with lubricator as required to run the following logs. Contact Brian Vlasko prior to starting logging operation, 714-655-9506.*

    a) *Ultrasonic imager from BP to surface*
    b) *Magnetic flux leakage BP to surface*
    c) *Multi-arm caliper log from BP to surface*
    d) *Cement bond log from BP to top of cement*

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

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

14. *Install BPV in tubing hanger. Nipple down 11" Class III 5 M BOPE, crossover spool, and primary pack-off.*

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

15. *Pick-up retrieving head for BP and RIH to top of sand. Circulate out sand. Release BP at approximately 6907', circulate with weighted brine as required to control well. POOH and laying down workstring and BP.*

SUPPLEMENTAL PORTION OF THE PROCEDURE

1. RIH with retrieving tool to top of RBP circulating sand out from RBP. POOH and lay down RBP.
2. RIH with scraper to top of liner top.
3. RIH with Baker dual packer 5.5" scab liner installation from 6755' to the top of liner to @ 6917. POOH with setting tools.
4. Pressure test :
    a. RIH with RBP and set @ 6907'
    b. RIH with a test packer on tubing to 3500 psi and set the packer.
    c. Pressure test tubing and csg annulus to 115% of MSOP 3625 psi for an hour as per schedule below. Chart the test.

 Rec'd 07-01-16 DOGGR Ventura.

Well: Porter 24B

Depth (TVD)	85% of Burst Strength	External Casing Backup Pressure: Fluid / Formation Pressure Gradient	External Casing Backup Pressure: External Casing Backup Pressure	Internal Water Hydrostatic	Pressure Test Net Burst Pressure @ Depth: 1	2	3	Final	Tubing Leak Net Burst Pressure @ Gas-Filled Annulus	Test Pressuree > 85% of Burst	Test Pressure < Tubing Leak - Net Burst (Gas-filled annulus)	
			Surface Test Pressure		3625			2250	3625			
			Test Packer Depth		3500							
			Test Down Casing or Tubing		Casing			Tubing				
			Bridge Plug Depth					6907				
0	5839.50	0.00	0	0	3625			2250	3625			
500	5839.50	0.00	0	221	3846			2471	3670			
1000	5839.50	0.00	0	442	4067			2692	3716			
1500	5839.50	0.00	0	663	4288			2913	3761			
2000	5839.50	0.00	0	884	4509			3134	3806			
2500	5839.50	0.00	0	1105	4730			3355	3852			
3000	5839.50	0.00	0	1326	4951			3576	3897			
3500	5839.50	0.00	0	1547	5172			3797	3942			
4000	5839.50	0.00	0	1768	-			4018	3988			
4500	5839.50	0.00	0	1989	-			4239	4033			
5000	5839.50	0.00	0	2210	-			4460	4078			
5500	5839.50	0.00	0	2431	-			4681	4123			
6000	5839.50	0.00	0	2652	-			4902	4169			
6755	6579.00	0.00	0	2986	-			5236	4237			Scab Liner
6907	6579.00	0.00	0	3053	-			5303	4251			Scab Liner
				0.442 psi/ft int. grad.					0.091 psi/ft int. grad.			

5. POOH with tubing and test packer and lay down the test packer.
6. RIH with retrieving tool and POOH and lay down RBP.
7. Run completion string.

13. RIH with new completion string as follows:

a.) 4-1/2" 12.6# L-80 EUE 8RD wireline re-entry guide
b.) 4-1/2" 12.6# x 9-5/8" 47# TCPC production packer
c.) 10' pup joint 4-1/2" 12.6# L-80 TCPC tubing
d.) 4-1/2" 12.6# L-80 TCPC XN (3.81" w/3.725" no-go) nipple
e.) Full joint 4-1/2" 12.6# L-80 TCPC tubing
f.) 4-1/2" 12.6# L-80 TCPC (3.81" Open Down) sliding sleeve
g.) Full joint 4-1/2" 12.6# L-80 TCPC tubing
h.) 4-1/2" 12.6# TCPC Pin x 5-1/2" 20# TCPC Box Crossover pup joint
i.) 5-1/2" 20# L-80 TCPC tubing to surface
j.) Pup joints 5-1/2" 20# L-80 TCPC tubing for space-out
k.) 4' 5-1/2" 20# L-80 TCPC fatigue nipple (pin x pin)
l.) 10-3/4" tubing hanger with 4-1/2" EUE top box / 4" BPV / 5-1/2" TCPC bottom box

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

16. Rig-up slickline unit and lubricator. Set a plug in the 4-1/2" XN profile.

17. Notifiy DOGGR to witness pressure tests of annulus to 1000 psi and tubing to 3625 psi. Both tests to be an hour in duration and recorded digitally.

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

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

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

UNLOAD WELL

21. Rig-up nitrogen unit. Recover workover fluid by pumping down annulus taking returns up tubing.

22. RIH with slickline and shift sliding sleeve closed. POOH and rig down slickline unit.

WELL LATERAL HYDROTESTING

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

16. Reinstall the hydro-tested laterals.

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

18. Release well to operations.

EXTERNAL CORROSION PROTECTION

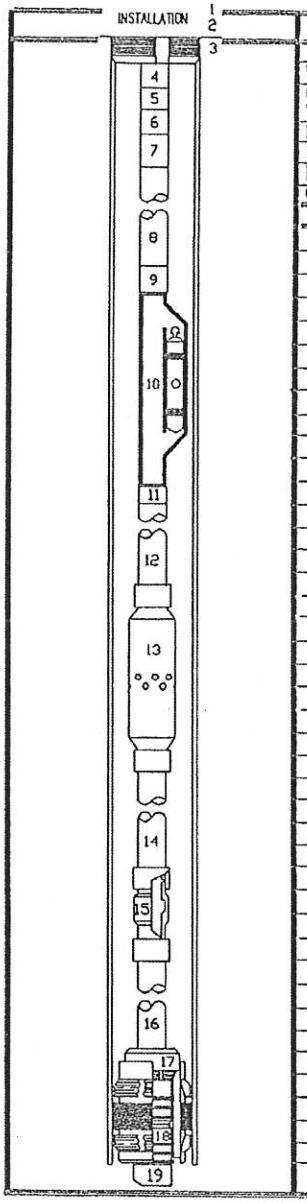
Per Gas Company Standard 167.30, remove any lead based paint and recoat wellhead, production tree, and laterals.

Tubing Detail as ran 11/9/1993

TUBING DETAIL

WELL: Porter 24B
FIELD: Aliso Canyon

STATUS: Injection/Withdrawal
DATE: 11/09/93



	TUBING	TUBING	TUBING
SIZE	2-7/8		
WEIGHT	6.5		
GRADE	J55		
THREAD	EUE 8rd		
DEPTH	6848		
I.D.	2.441		
DRIFT	2.347		
O.D.	3.668		

	DESCRIPTION	LENGTH	DEPTH
1	K.B.	23.5	23.50
2	Ground level to tubing hanger	-2.5	21.00
3	Tubing hgr. 11" x 2-7/8" 8rd	.53	21.53
4	2-7/8" N80 pup joint	1.70	23.23
5	2-7/8" N80 pup joint	8.25	31.48
6	2-7/8" N80 pup joint	8.12	39.60
7	2-7/8" N80 pup joint	10.10	49.70
8	215 Jts. 2-7/8" J55 tubing	6679.59	6729.29
9	2-7/8" N80 pup joint	4.08	6733.37
10	2-7/8" MMA GLM w/ 1-1/2" RA latch	8.07	6741.44
11	2-7/8" N80 nipple	.66	6742.10
12	1 Jt. 2-7/8" J55 tubing	31.80	6773.90
13	Otis 2.313" I.D. XD SSD (opens down)	3.21	6777.11
14	1 Jt. 2-7/8" J55 tubing	31.71	6808.82
15	Otis 2.205" I.D. XN nipple	1.30	6810.12
16	1 Jt. 2-7/8" J55 tubing	31.47	6841.59
17	Latch seal unit (40K shear) w/ 1' seal unit	2.69	6844.28
18	1' seal unit	1.00	6845.28
19	Prod. tube - 45 deg. guide shoe	.50	6845.78
	9-5/8" Guiberson Magnum H packer w/ 3.25" Bore I.D. String wt. 42,000# Tubing landed with 12,000# compression down on packer.		

Casing Pressure Test Schedule COMPLETE

Well: Porter 24B

		External Casing Backup Pressure			Pressure Test Net Burst Pressure @ Depth				Tubing Leak Net Burst Pressure @		
Depth (TVD)	85% of Burst Strength	Fluid / Formation Pressure Gradient	External Casing Backup Pressure	Internal Water Hydrostatic	1	2	3	Final	Gas-Filled Annulus	Test Pressure ~ 85% of Burst	Test Pressure ~ Tubing Leak - Net Burst (Gas-filled annulus)
				Surface Test Pressure	3625			2250	3625		
				Test Packer Depth	3500						
				Test Down Casing or Tubing	Casing			Tubing			
				Bridge Plug Depth				6807			
0	5840	0.00	0	0	3625			2250	3625		
500	5840	0.00	0	221	3846			2471	3670		
1000	5840	0.00	0	442	4067			2692	3716		
1500	5840	0.00	0	663	4288			2913	3761		
2000	5840	0.00	0	884	4509			3134	3806		
2500	5840	0.00	0	1105	4730			3355	3852		
3000	5840	0.00	0	1326	4951			3576	3897		
3500	5840	0.00	0	1547	5172			3797	3942		
4000	5840	0.00	0	1768	-			4018	3988		
4500	5840	0.00	0	1989	-			4239	4033		
5000	5840	0.00	0	2210	-			4460	4078		
5500	5840	0.00	0	2431	-			4681	4123		
6000	5840	0.00	0	2652	-			4902	4169		
6500	5840	0.00	0	2873	-			5123	4214		
6806	5840	0.00	0	3008	-			5258	4242		
				0.442 psi/ft int. grad.					0.091 psi/ft int. grad.		

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

No. T **216-0177**

REPORT ON OPERATIONS

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

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

Ventura, California
June 14, 2016

Your operations at well **"Porter" 24B**, A.P.I. No. **037-24144**, Sec. **27**, T. **03N**, R. **16W**, **SB** B.&M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **5/14/2016**, by **Clifford R. Knight**, a representative of the supervisor.

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

DECISION:

APPROVED

CRK/TKC

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By _____
Patricia A. Abel, *District Deputy*

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

No. T 216-0177
16, 1

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

Operator: So Cal Gas					Well: Porter 24B
Sec. 27	T. 3N	R. 16W	B.&M. SB	API No.: 037-24144	Field: Aliso Canyon
County: Los Angeles					Witnessed/Reviewed on: C. Knight / 5-14-16

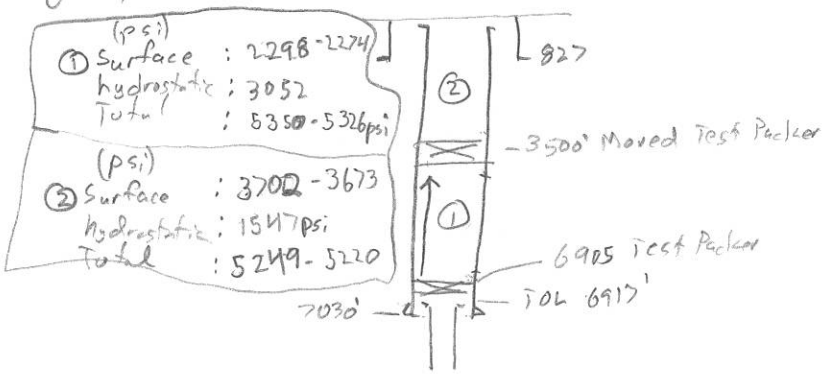
C. Knight, representative of the supervisor, was present from 1100 to 1730.

Also present were: Walt Klingingberg, Chris (PROs)

Casing record of the well:

9 5/8" 47# 0-7030 N-80
13 3/8" 54.5# K-55 0-827'
5 1/2" 17# J-55 7607

Top of liner 6917'
test packer 6910



The Internal MIT was performed for the purpose of pressure testing the 9 5/8" casing above 6905' (2) (prior to injecting fluid)

☒ The Internal MIT is approved since it indicates that the 9 5/8" casing has mechanical integrity above 6905' at this time.

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

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

Test ①
① 13:15 2298 psi
14:15 2274 psi } 24psi drop

② 16:20 3702 psi
17:20 3673 psi } 28psi drop

The 9 5/8" casing and test packer held 115% of reservior pressure for 60 minutes, -CK

OPERATOR SoCalGas Co A.P.I. 037-24144

WELL NO. "PORTER" 243 SECTION 27, T. 3 N, R. 16 W

MAP

INTENTION	DRILL					
NOTICE DATED	7-6-93					
P-REPORT NUMBER	293-227					
CHECKED BY/DATE						
MAP LETTER DATED	5-21-94					
SYMBOL	✱					

	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED
NOTICE	7-8-93											
HISTORY	12-24-93											
SUMMARY	1-14-94											
E-LOG												
MUD LOG												
DIPMETER												
DIRECTIONAL	2-10-94											
CORE/SWS	7-20-94											
CBL												
Dual Ind/SFL/Caliper	8-16-93											
DLL/Micro SFL	12-24-93											
GR Log / PKr Set	12-24-93											
3 month MIT												

ENGINEERING CHECK

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

RECORD'S COMPLETE SPM 2-10-94

EDP 7/93

FINAL LETTER _____ OK _____

MAILED _____

RELEASED BOND _____

INJECTION BOOK _____

IDLE WELL LIST _____

SURFACE INSP. CARD _____

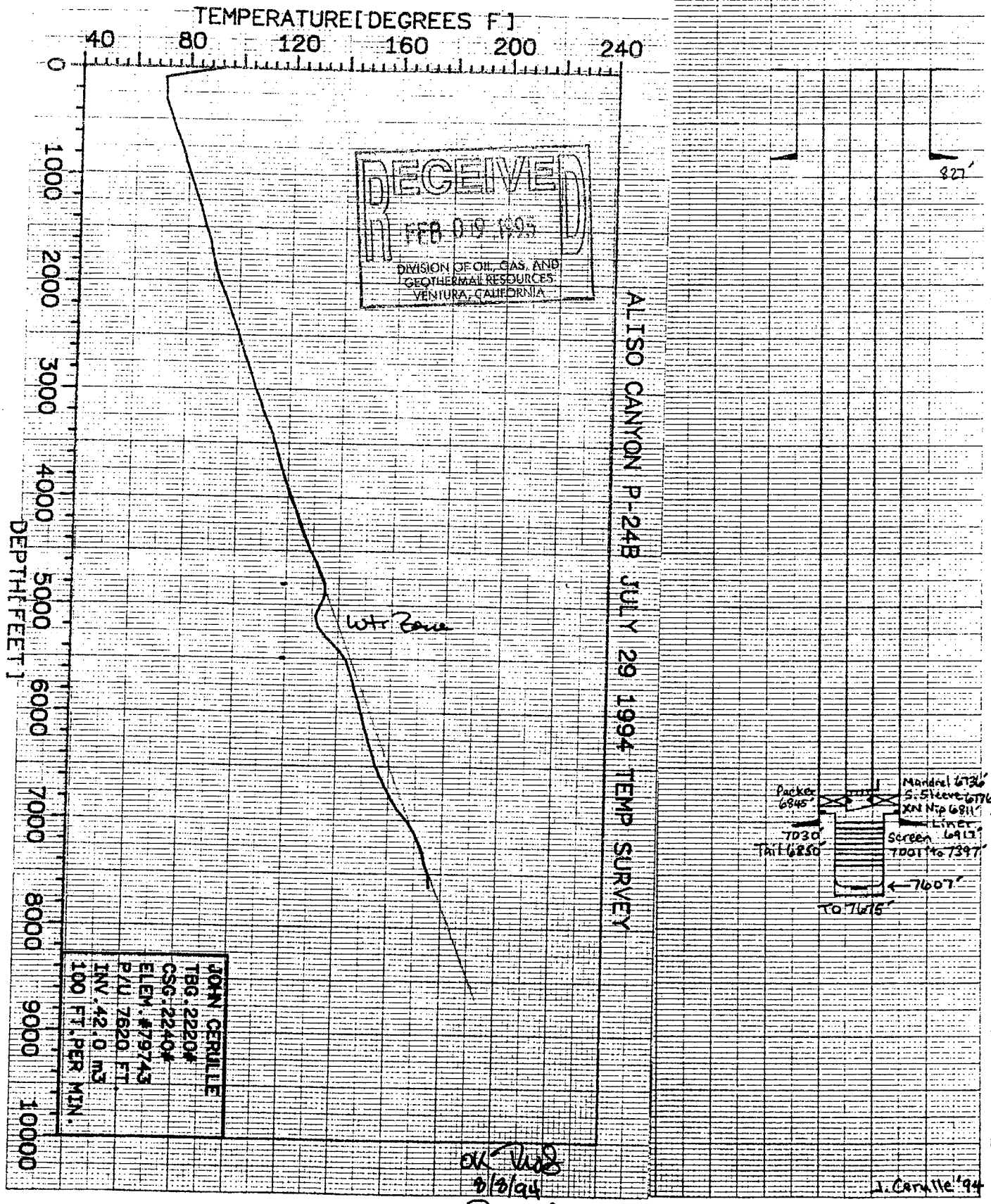
REMARKS: _____

OK TO RELEASE FROM CONFIDENTIAL _____

ABANDONED-REMOVED FROM E.D.P. _____

REC'D
NOV 10 1994

P-24 B



OK Well
9/2/94
Recompletion
50.0 BCF

J. Cerulle '94

46 1510

10 X 10 TO THE CENTIMETER
KEUFFEL & ESSER CO. MADE IN U.S.A.

2-7-3-16

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

API No. 037-24144

WELL SUMMARY REPORT

RECEIVED
JAN 14 1994
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES
VENTURA, CALIFORNIA

Operator	Well				
Southern California Gas Company	Porter 24B				
Field	**County**	**Sec.**	**T.**	**R.**	**B.&M.**
Aliso Canyon	Los Angeles	27	3N	16W	SB

Location (Give surface location from property or section corner, street center line and/or California coordinates)
841' South and 1990' West of Station 84.

Elevation of ground above sea level
2182'

Commenced drilling (date)	Total depth (1st hole)	(2nd)	(3rd)	Depth measurements taken from top of:
7/17/93	7645'			☐ Derrick Floor ☐ Rotary Table ☒ Kelly Bushing
Completed drilling (date)	**Present effective depth**			Which is 23.5 feet above ground
11/09/93	7607'			
Commenced producing (date)	**Junk**			
☐ Flowing ☐ Pumping ☐ Gas lift	None			
Name of producing zone(s)				
Sesnon Frew				

GEOLOGICAL MARKERS	DEPTH
M-P	6666'
S-1	6965'

Formation and age at total depth
Frew - Eocene

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

CASING RECORD (Present Hole)

Size of Casing (API)	Top of Casing	Depth of Shoe	Weight of Casing	Grade and Type of Casing	New or Second Hand	Size of Hole Drilled	Number of Sacks or Cubic Feet of Cement	Depth of Cementing (if through perforations)
13-3/8"	Surface	827	54.5	K55, Buttress	New	17-1/2"	902	
9-5/8"	Surface	7030	47	N80, LT&C	New	12-1/4"	2600	
5-1/2"	6917	7607	17	J55, LT&C	Used	15" & 8-1/2"	Gravel Packed	

PERFORATED CASING (Size, top, bottom, perforated intervals, size and spacing of perforation and method.)
5-1/2", 17#, J55, LT&C Liner 7607' - 6920'. .030" slots 7603' - 7436'. .012" WWS 7398' - 7002'. .012" slots 7002' - 6982'. Gravel packed with 608 cu. ft. 20-40 sand.

Was the well directionally drilled? If yes, show coordinates at total depth
☒ Yes ☐ No 894' North and 381' East of surface location at 7555' TVD.

DIL/SP/GR 7065' - 827'. Dual Laterlog/Micro SFL/Caliper 7645' - 6770'.

Other surveys
Neutron/Density/GR/CCL 7607' - 6650'.

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

Name	Title	
Jim Hemmerly	Drilling Engineer	
Address	**City**	**Zip Code**
Box 3249, M.L. 22G0	Los Angeles CA	90013
Telephone Number	**Signature**	**Date**
(213) 244-2687	J. Hemmerly	January 4, 1994

OG100 (10/85/DWRR/5M)

SUBMIT IN DUPLICATE

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

Operator Southern California Gas Company Field Aliso Canyon County Los Angeles
Well Porter #24B, Sec. 27, T3N, R 16W S.B. B. & M.
A.P.I. No. 037-24144 Name M. A. Woiemberghe (Person submitting report) Title Agent (President, Secretary or Agent)
Date December 22, 19 93

Signature J. A. Hemmerly for M. A. Woiemberghe

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

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

Date	
1993	
07/17	Finished rigging up. Drilled 17-1/2" hole to 68'. Repaired leaking riser. Drilled to 130'.
07/18	Drilled 17-1/2" hole to 440'. Bit trip. Drilled to 480'.
07/19	Drilled 17-1/2" hole to 827'. Wiped hole to shoe and circulated for casing. Pulled out and ran 13-3/8" 54.5#, K-55 Buttress casing to 827'. Circulated casing while preparing to cement.
07/20	Cemented 13-3/8" casing at 827' with 902 cu.ft. of Class G cement with 3% $CaCl_2$ Had good cement returns to surface. Cut off casing and installed wellhead. X-rayed and pressure tested to 1000 psi. Installed BOPE. Testing BOPE.
07/21	Finished testing BOPE. Made up 12-1/4" bottom hole assembly. Ran in hole. Tested casing to 500 psi. Drilled out cement and shoe. Drilled from 827' to 1400'.
07/22	Made motor run from 1400' to 1830'. Made up locked up bottom hole assembly and ran in hole.
07/23	Reamed hole from 1400' to 1830' with mud motor assembly. Drilled and surveyed from 1830' to 2770'.
07/24	Drilled from 2770' to 3113'. Pulled out of hole. Changed bit and bottom hole assembly. Drilled and surveyed from 3113' to 3665'.

RECEIVED

DEC 24 1993

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

OG103 (6/91/GSR1/5M)

D.O.G. 12/22/93

07/25 Drilled from 3665' to 3919'. Pulled out of hole. Changed bit and bottom hole assembly. Ran in hole. Reamed from 3879' to 3919'. Worked tight hole. Drilled from 3919' to 4175'.

07/26 Drilled and surveyed from 4175' to 4382'. Changed bit and drilling assembly. Drilled and surveyed from 4382' to 4687'. Changed drilling assembly. Tripping in hole at report time.

07/27 Continued trip in hole. Drilled from 4687' to 5010'. Tripped out. Changed bit. Tripped in hole. Drilled and surveyed from 5010' to 5476'.

07/28 Drilled 12-1/4" hole from 5476' to 5508'. Wiped hole to 4608'. Drilled and surveyed ahead from 5508' to 5939'. Wiped hole to 5050'. Drilled and surveyed from 5939' to 6120'.

07/29 Drilled and surveyed 12-1/4" hole from 6120' to 6151'. Wiped hole to 4783'. Drilled and surveyed from 6157' to 6406'. Wiped hole to 5400'. Continued to drill and survey 12-1/4" hole from 6406' to 6565'.

07/30 Continued drilling and surveying 12-1/4" hole from 6565' to 6606'. Tripped pipe for bit change. Made up bit #10 and 12" near bit stabilizer. Reamed hole from 6559' to 6606'. Drilled and surveyed ahead to 6885'. Wiped hole (tight @ 6682') to 5950±. Drilled ahead @ 6891'.

07/31 Continued drilling and surveying 12-1/4" hole from 6891' to 6961'. Wiped hole to 5995' (tight 6737' to 6367') with 20' fill on bottom. Drilled and surveyed to 7055' T.D. (revised). Circulated and conditioned mud for electric logs. Raised mud weight to 82 pcf. Rigged up loggers.

08/01 Ran a DIL/GR/SP/caliper log from 7065' to 13-3/8" shoe at 827'. Ran in hole with BHA #10 to 3800'. Broke circulation. Ran to bottom (6' fill). Circulated and conditioned mud for casing. Began running 9-5/8" 47# N-80, LTC casing string.

08/02 Ran remainder of 9-5/8" casing to 7030'. Cemented casing in place as follows: Pumped 30 Bbls of super flush ahead of 321 Bbls lead cement consisting of 11.5 ppg, Class G cement with 15% Silicalite and 15% Spherelite. Tailed with 142 Bbls of 15.8 ppg Class G cement with 1.0% Halad-322 and .15% HR-7. Dropped top plug and pumped and additional 18 Bbls of tail cement. Displaced with 499 Bbls of fresh water. Received good cement returns to surface. Attempted to inflate external casing packer @ 7017' but inflation of packer is undetermined. Waited on cement for 4 hours. Landed casing in slips. Laid down BHA.

08/03 Finished laying down 12-1/4" BHA. Laid 4-1/2" drill pipe down. Removed blow-out equipment and secured well. Released rig at 11:00 p.m., 8/3/93.

10/25 Rig move from Porter 24-A to Porter 24-B.

10/26 Installed 11" 5000 psi BOPE. Tested blind rams and choke manifold to 4000 psi. Tested 3-1/2" pipe rams and choke manifold to 4000 psi. Tested Hydril bag to 3500 psi. BOPE test witnessed by Pete Wygle of the D.O.G. Made up 8-1/2" bit on 182' of 5-7/8" OD drill collars. Picked up 3-1/2" drill pipe. Tagged top of cement at 6751'. Found 279' of cement inside 9-5/8" casing. Drilled out cement to 6831'.

10/27 Drilled out cement from 6831' to 7010'. Pressure tested 9-5/8" casing to 1500 psi for 20 minutes (held O.K.). Changed well over to 10.3 ppg CaCl/HEC polymer. Drilled to 7051'. Pulled out of well. Made up Security 8-1/2" S82F bit on drilling bottom hole assembly. Ran in well to 7051'. Drilled and surveyed ahead from 7051' to 7096'. Unable to keep hole stabilized, fill running. Pulled up inside 9-5/8" shoe at 7030'. Circulated and conditioned HEC polymer mud system.

10/28 Drilled ahead from 7096' to 7120'. Unable to survey due to fill running in well bore. Drilled ahead adding XC polymer to drilling fluid. Drilled to 7286'. Surveyed at 7276', N-15-E, drift 14-3/4°, TVD at 7166'. Drilled ahead to 7407'.

10/29 Drilled ahead from 7407'. Surveyed at 7399', 15°, N15E. Drilled ahead from 7407' to 7526'. Surveyed at 7520'. Wiped hole to 7030'. Ran in well to 7526'. Circulated well clean. Pulled out of well. Using Schlumberger, ran Dual Laterolog/SP/GR from 7526' to 6664'.

10/30 Ran 8-1/4" x 15" underreamer. Opened 8-1/2" hole to 15" from 7030' to 7181'.

10/31 Opened hole from 8-1/2" to 15" from 7181' to 7282' (41-1/2 hours on Tri-State underreamer).

11/01 Opened 8-1/2" hole to 15" from 7282' to 7312' (46 hours on underreamer). Pulled out of well. Found #2 cone gone from Tri-State underreamer. Made up new 8-1/4" x 15" hole opener. Ran in well. Gauge reamed hole from 7263' to 7312'. Opened 8-1/2" hole to 15" from 7312' to 7336'. Unable to open hole past 7336' due to junk and fill in well bore.

11/0 Pulled out of hole with Tri-State underreamer. Made up and ran 7-1/8" OD globe junk basket. Washed over cone from 7336' to 7343'. Pulled out of well. Recovered cone. Made up 8-1/2", S84F drill bit on 181' of 6" OD drill collars. Ran in well to 7336'. Reamed from 7336' to 7526'. Drilled from 7526' to 7572'.

11/03 Drilled ahead from 7572' to 7675'. Pulled out of well. Made up Tri-State 8-1/4" x 15" underreamer. Ran in well.

11/04 Opened 8-1/2" hole to 15" from 7336' to 7428'.

11/05 Opened hole from 7428' to 7430'. Pulled out of well. Ran in well with 8-1/2" bit to 7617'. Reamed and cleaned out from 7617' to 7675'. Circulated well clean. Pulled out of well. Installed shooting flange and lubricator. Ran Dual-Laterolog/Micro SFL log and caliper log from 7645' to 6770'. Ran in well with 8-1/2" bit on 181' of 6" OD drill collars.

11/06 Ran in well and tagged fill at 7636' (39' of fill in well). Cleaned out to 7675'. Changed well over to 10.3 ppg HEC polymer. Pulled out of well. Made up and ran 5-1/2" liner with 3.64' blank with bull nose, 167.62' of 0.030" slotted liner, 38' of blank liner with 3 metal petal baskets, 396' of 0.012" 90-wire WWS, 59' of 0.012" slotted liner, 20' of blank with landing nipple on top. Ran in well with bottom of liner at 7637' and top of landing nipple at 6950'. Pressure tested surface lines to 3000 psi. Established pump rate of 1 Bpm at 250 psi, 2 Bpm at 350 psi, 3 Bpm at 478 psi.

11/07 Mixed 40 cu.ft. of 20-40 resin-coated sand and 475 cu.ft. of 20-40 Ottawa sand. Slurry volume 178.5 Bbls. Gravel in place at 7:18 a.m. Final pressure at 150 psi, (515 cu.ft. in place behind liner). Mixed and pumped 60 cu.ft. of 20-40 Ottawa sand, 20 Bbls slurry (stage #2). Final pressure at 220 psi. Gravel in place at 11:07 a.m. Total of 575 cu.ft. behind liner. Mixed and pumped 50 cu.ft. of 20-40 Ottawa sand., 17.2 Bbls slurry (stage #3). Final pressure at 1100 psi. Reversed out 17 cu.ft. of 20-40 sand. Gravel in place at 3:15 p.m. Total gravel behind liner is 608 cu.ft. (45% excess). Waited 4 hours for pack to settle. Pressured up pack to 1000 psi. Slow bleed off to 700 psi in 5 min. Unable to establish pump rate. Released from liner. Pulled out of well. Made up and ran Baker lead seal drive over adapter. Set lead seal at 6917'. When liner was run, 1 single of drill pipe was left out. Liner was set 30' high. Top of liner at 6917', bottom of liner at 7607'. One metal petal basket is down inside of the 8-1/2" hole.

11/08 Pulled out of well with Baker drive over adapter setting tool. Made up 710' of 2-7/8" tubing tail on 3-1/2" drill pipe. Ran in well and tagged fill at 7587' (20' fill inside 5-1/2" liner). Circulated out fill. Laid down 3-1/2" drill pipe. Using Schlumberger, ran Neutron/Density/GR/CCL log from 7607' to 6650'. Set Guiberson Magnum "H" 9-5/8" 47# packer at 6845'.

11/09 Removed shooting flange. Changed pipe rams to 2-7/8". Made up Guiberson guide shoe on 2' of 3-1/4" OD seals with latch-in locator, 1 joint of 2-7/8" tubing, Otis 2.205" XN nipple, 1 joint of 2-7/8" tubing, Otis 2.313" XD sliding sleeve, 1 joint of 2-7/8" tubing, 2-7/8" BST MMA gas lift mandrel with 1-1/2" RA latch, 215 joints of 2-7/8" tubing. Spaced out with pup joints to surface. Landed 12,000 lbs on packer at 6845' and landed 20,000 lbs on tubing hanger Tested packer and seals to 2000 psi for 20 minutes (held O.K.). Installed and tested xmas tree to 5000 psi. Opened Otis sliding sleeve at 6776'. Changed well over to 63 pcf 2% KCl water treated with 5 gals Ucarcide /100 Bbls and 5 gals HIB-19 /100 Bbls, 2-1/2 Bbls COS per /100 Bbls. Released rig for move at 6:00 a.m. 11/10/93.

FINAL PRINT

THE GAS COMPANY
PORTER

PORTER 24B
PORTER 24B
ALISO CANYON
CALIFORNIA

27-3-16

037-24144

SURVEY LISTING

by
Eastman Teleco

Your ref : MSS
Our ref : svy2891
License :

Date printed : 7-Jan-94
Date created : 22-Jul-93
Last revised : 3-Sep-93

Field is centred on 0.000,0.000,999.00000,+
Structure is centred on 0.000,0.000,3.00000,N

Slot location is s0 0 8.346,w1 29 38.457
Slot Grid coordinates are N -257.028, E -608.188
Slot local coordinates are 841.00 S 1990.00 W
Reference North is True North

THE GAS COMPANY
PORTER,PORTER 24B
ALISO CANYON,CALIFORNIA

SURVEY LISTING Page 1
Your ref : MSS
Last revised : 3-Sep-93

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	RECTANGULAR COORDINATES	Dogleg Deg/100Ft	Vert Sect
0.00	0.00	0.00	0.00	0.00 N 0.00 E	0.00	0.00
141.00	0.25	294.00	141.00	0.12 N 0.28 W	0.18	-0.02
256.00	1.00	109.00	255.99	0.10 S 0.44 E	1.09	0.12
410.00	1.00	157.00	409.97	1.77 S 2.23 E	0.53	-0.49
530.00	1.00	171.00	529.96	3.77 S 2.81 E	0.20	-1.98
650.00	0.50	149.00	649.94	5.26 S 3.24 E	0.47	-3.07
700.00	0.50	167.00	699.94	5.65 S 3.40 E	0.31	-3.35
972.00	1.25	105.00	971.91	7.58 S 6.54 E	0.41	-3.54
1128.00	1.50	109.00	1127.87	8.68 S 10.11 E	0.17	-2.81
1249.00	1.75	131.00	1248.82	10.41 S 13.00 E	0.55	-2.95
1339.00	1.75	99.00	1338.78	11.53 S 15.40 E	1.07	-2.79
1369.00	2.75	129.00	1368.76	12.05 S 16.41 E	5.04	-2.77
1432.00	0.75	89.00	1431.73	13.00 S 17.99 E	3.54	-2.84
1463.00	1.00	348.00	1462.73	12.73 S 18.14 E	4.38	-2.53
1493.00	1.75	341.00	1492.72	12.04 S 17.94 E	2.56	-2.02
1523.00	2.50	349.00	1522.70	10.96 S 17.66 E	2.68	-1.21
1584.00	4.00	356.00	1583.60	7.54 S 17.26 E	2.54	1.61
1647.00	5.50	4.00	1646.38	2.33 S 17.32 E	2.60	6.21
1677.00	6.50	4.00	1676.21	0.80 N 17.54 E	3.33	9.06
1708.00	7.50	7.00	1706.98	4.55 N 17.91 E	3.43	12.54
1739.00	7.75	15.00	1737.71	8.58 N 18.69 E	3.51	16.46
1769.00	7.50	23.00	1767.44	12.34 N 19.98 E	3.63	20.38
1890.00	8.50	32.00	1887.27	27.19 N 27.81 E	1.32	37.16
1981.00	8.25	30.00	1977.30	38.55 N 34.64 E	0.42	50.40
2073.00	8.25	34.00	2068.35	49.74 N 41.63 E	0.62	63.57
2164.00	9.00	35.00	2158.32	60.98 N 49.36 E	0.84	77.14
2257.00	8.25	36.00	2250.27	72.34 N 57.45 E	0.82	90.98
2351.00	8.25	36.00	2343.29	83.25 N 65.38 E	0.00	104.36
2505.00	8.00	37.00	2495.75	100.75 N 78.33 E	0.19	125.91
2660.00	8.00	38.00	2649.24	117.86 N 91.46 E	0.09	147.21
2826.00	7.75	36.00	2813.68	136.02 N 105.15 E	0.22	169.70
2972.00	6.75	28.00	2958.51	151.56 N 114.96 E	0.97	188.04
3066.00	6.00	27.00	3051.93	160.82 N 119.79 E	0.81	198.48
3224.00	5.75	25.00	3209.10	175.35 N 126.88 E	0.20	214.64
3378.00	5.00	26.00	3362.42	188.37 N 133.08 E	0.49	229.04
3532.00	4.75	30.00	3515.86	199.92 N 139.21 E	0.27	242.12
3686.00	5.25	25.00	3669.28	211.83 N 145.38 E	0.43	255.52
3840.00	5.25	25.00	3822.63	224.60 N 151.34 E	0.00	269.59
3965.00	5.25	24.00	3947.11	235.01 N 156.08 E	0.07	281.00
4119.00	5.00	20.00	4100.49	247.75 N 161.24 E	0.28	294.66
4274.00	5.00	20.00	4254.90	260.45 N 165.86 E	0.00	308.02
4335.00	5.00	20.00	4315.67	265.44 N 167.68 E	0.00	313.28
4431.00	5.80	20.00	4411.24	273.93 N 170.77 E	0.83	322.22
4583.00	8.80	23.00	4561.99	291.86 N 177.94 E	1.99	341.39
4615.00	9.30	22.00	4593.60	296.51 N 179.86 E	1.64	346.40
4799.00	11.30	22.00	4774.62	327.01 N 192.19 E	1.09	379.08
4953.00	12.00	23.00	4925.45	355.74 N 204.10 E	0.47	410.01
5108.00	12.00	22.00	5077.06	385.51 N 216.43 E	0.13	442.06
5264.00	12.00	22.00	5229.65	415.58 N 228.58 E	0.00	474.29
5419.00	11.80	22.00	5381.32	445.21 N 240.55 E	0.13	506.04

All data is in feet unless otherwise stated
Coordinates from PORTER 24B and TVD from wellhead (2205.50 Ft above mean sea leve
Vertical section is from N 0.00 E 0.00 on azimuth 28.49 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Eastman Teleco

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	RECTANGULAR COORDINATES	Dogleg Deg/100Ft	Vert Sect
5575.00	12.00	21.00	5533.97	475.14 N 252.34 E	0.18	537.97
5729.00	12.00	21.00	5684.60	505.04 N 263.81 E	0.00	569.72
5892.00	12.00	19.00	5844.04	536.88 N 275.40 E	0.26	603.23
6037.00	12.00	19.00	5985.87	565.38 N 285.22 E	0.00	632.96
6193.00	12.00	18.00	6138.46	596.14 N 295.51 E	0.13	664.90
6349.00	12.00	19.00	6291.06	626.90 N 305.80 E	0.13	696.84
6504.00	12.00	17.00	6442.67	657.54 N 315.76 E	0.27	728.53
6664.00	12.00	17.00	6599.17	689.35 N 325.48 E	0.00	761.13
6823.00	13.00	14.00	6754.40	722.51 N 334.64 E	0.75	794.64
6998.00	14.30	14.00	6924.46	762.58 N 344.63 E	0.74	834.62
7055.00	14.70est	14.00	6979.64	776.43 N 348.08 E	0.70	848.44 PROJECTED

TD 7645' 14.30 est 7551.41 ≈ 7551' TVD est.

All data is in feet unless otherwise stated
Coordinates from PORTER 24B and TVD from wellhead (2205.50 Ft above mean sea leve
Vertical section is from N 0.00 E 0.00 on azimuth 28.49 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Eastman Teleco

Comments in wellpath

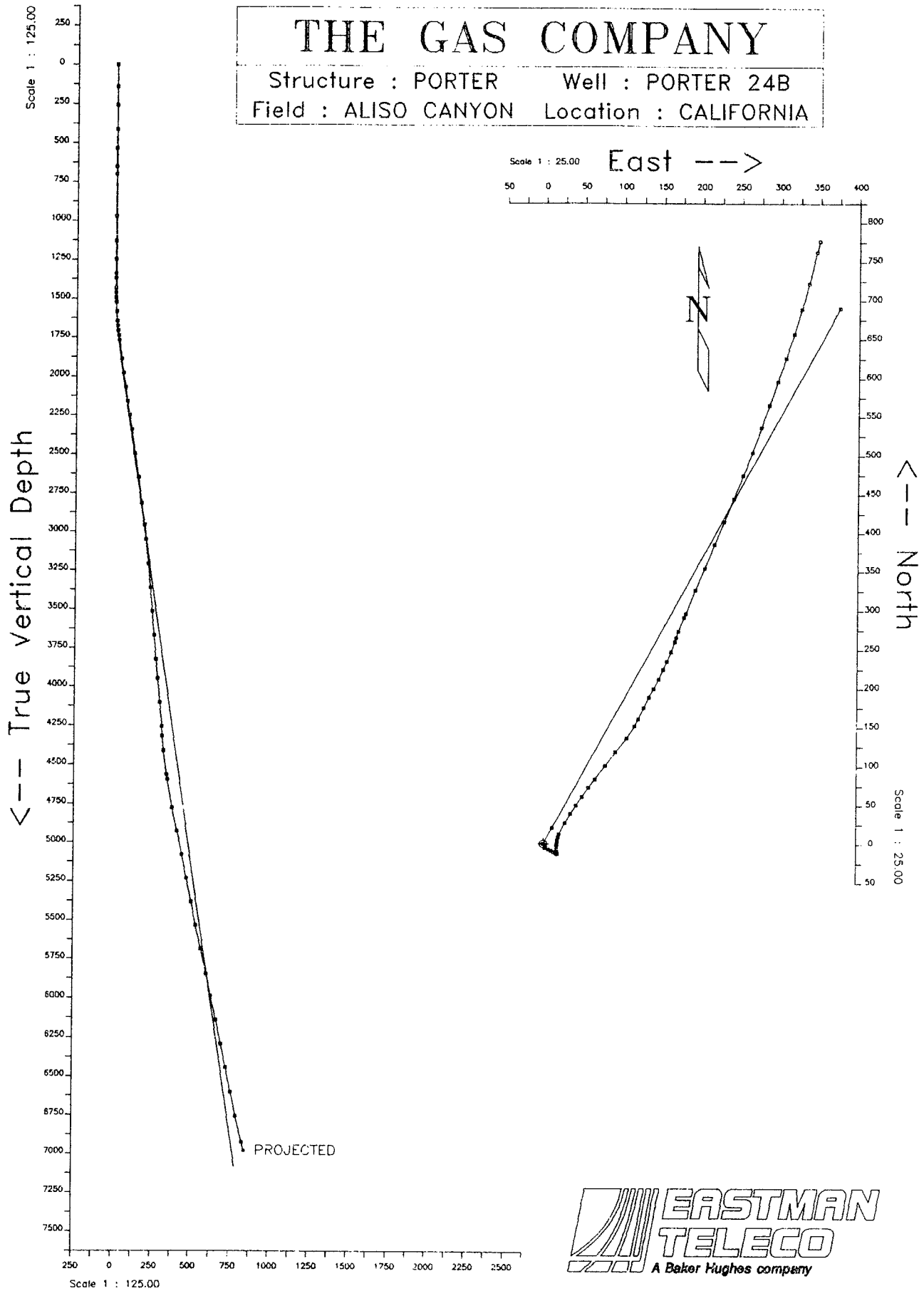
MD	TVD	Rectangular Coords.	Comment
7055.00	6979.64	776.43 N 348.08 E	PROJECTED

All data is in feet unless otherwise stated
Coordinates from PORTER 24B and TVD from wellhead (2205.50 Ft above mean sea leve
Bottom hole distance is 850.89 on azimuth 24.15 degrees from wellhead.
Vertical section is from N 0.00 E 0.00 on azimuth 28.49 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Eastman Teleco

THE GAS COMPANY

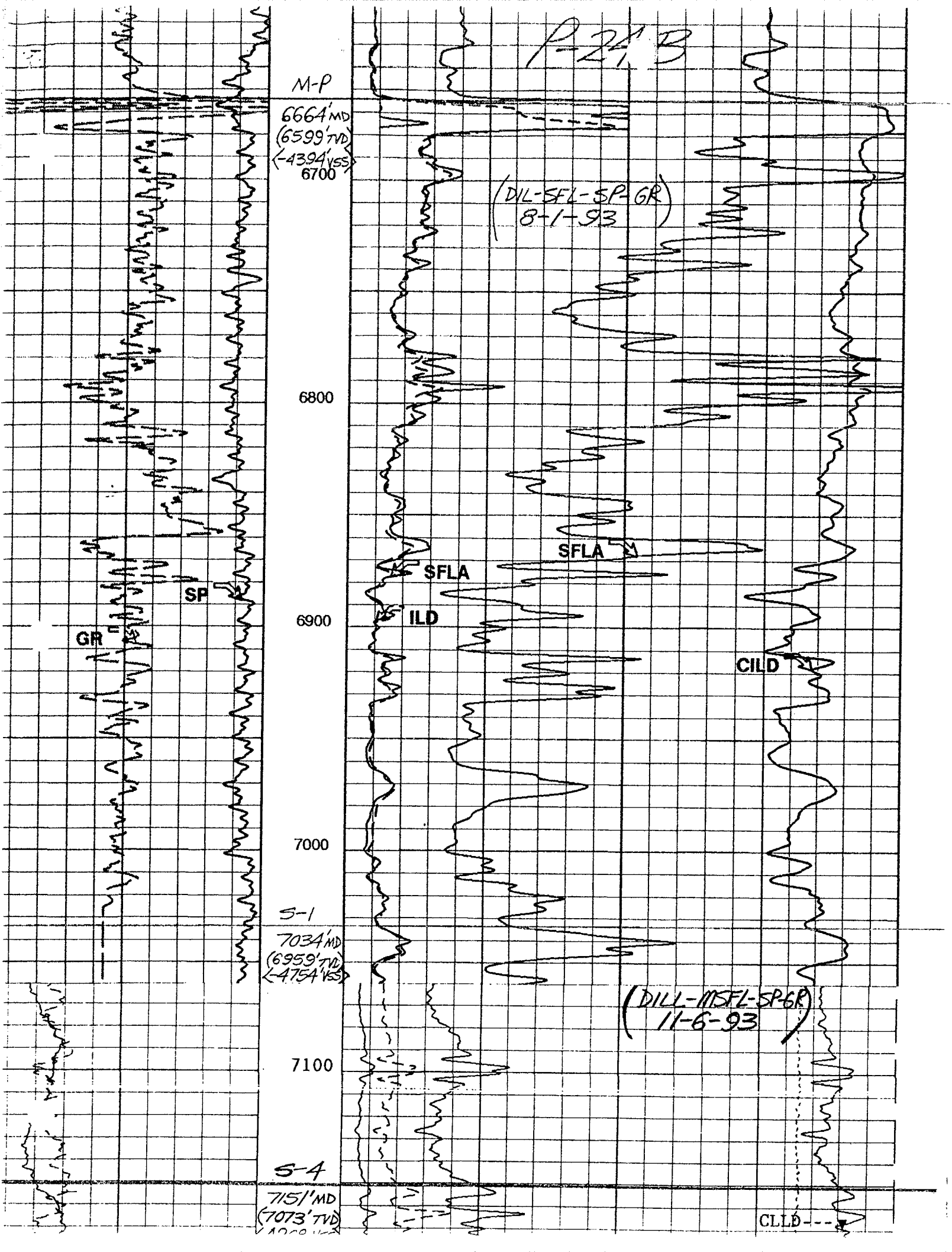
Structure : PORTER Well : PORTER 24B

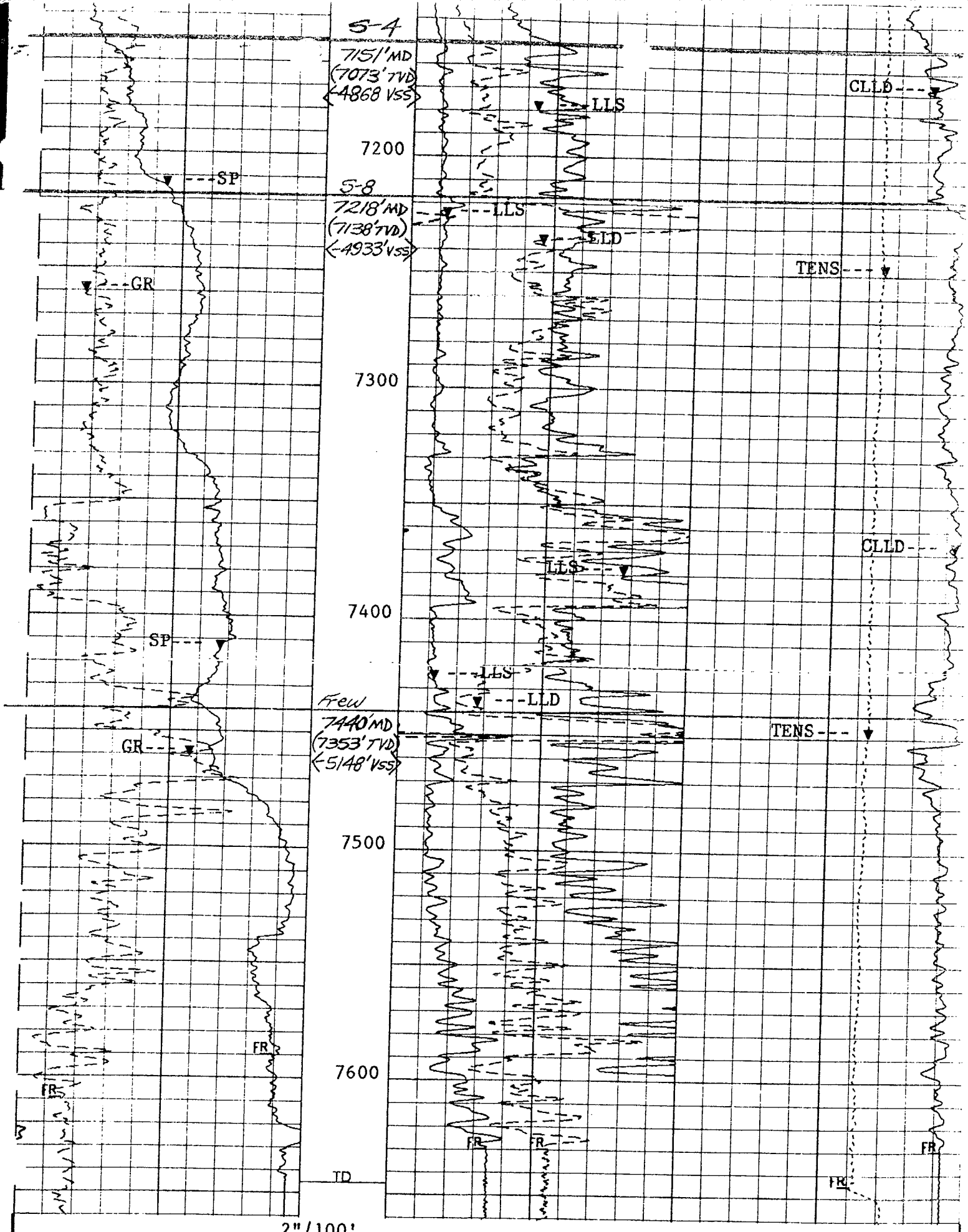
Field : ALISO CANYON Location : CALIFORNIA



EASTMAN TELECO
A Baker Hughes company

Vertical Section on 28.49 azimuth with reference 0.00 N, 0.00 E from PORTER 24B


P-24B
M-P
6664' MD
(6599' TVD
(-4394' VSS)
6700
(DIL-SFL-SP-GR
8-1-93)
6800
SFLA
$FLA
ILD
SP
GR
6900
CILD
7000
S-1
7034' MD
(6959' TVD
(-4754' VSS)
(DILL-MSFL-SP-GR
11-6-93)
7100
S-4
7151' MD
(7073' TVD
CLLD



CP 32.6 FILE 20 06-NOV-1993 02:35

037-24144

THE GAS COMPANY
PORTER

PORTER 24B
PORTER 24B
ALISO CANYON
CALIFORNIA

27-3-14

S U R V E Y L I S T I N G

by
Eastman Teleco

Your ref : MSS
Our ref : svy2891
License :

Date printed : 13-Jan-94
Date created : 22-Jul-93
Last revised : 3-Sep-93

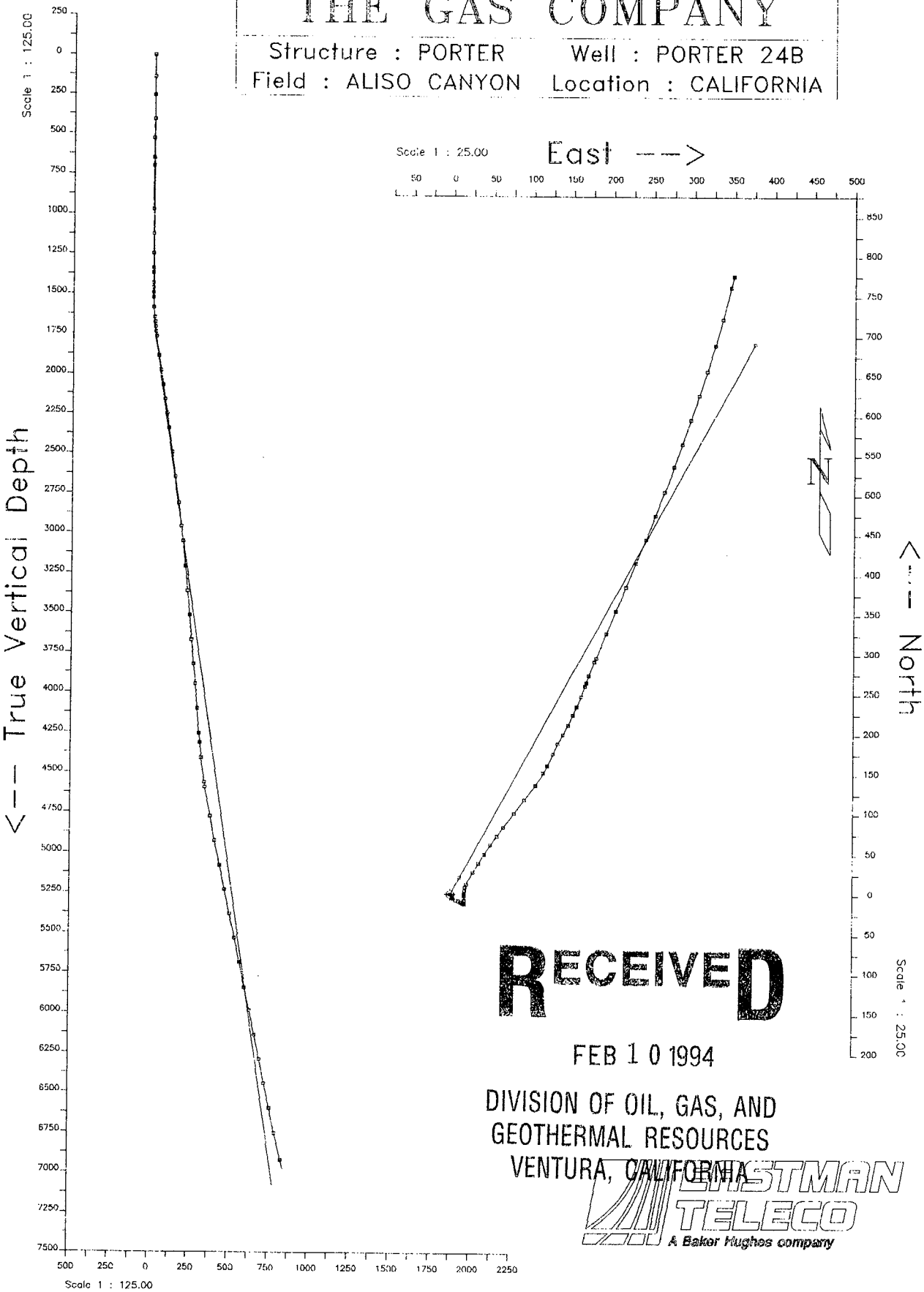
Field is centred on 0.000,0.000,999.00000,+
Structure is centred on 0.000,0.000,3.00000,N

Slot location is s0 0 8.346,w1 29 38.457
Slot Grid coordinates are N -257.028, E -608.188
Slot local coordinates are 841.00 S 1990.00 W
Reference North is True North

THE GAS COMPANY

Structure : PORTER Well : PORTER 24B

Field : ALISO CANYON Location : CALIFORNIA



Vertical Section on 28.49 azimuth with reference 0.00 N, 0.00 E from PORTER 24B

THE GAS COMPANY
PORTER,PORTER 24B
ALISO CANYON,CALIFORNIA

SURVEY LISTING Page .
Your ref : MSS
Last revised : 3-Sep-93

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	RECTANGULAR COORDINATES	Dogleg Deg/100Ft	Vert Sect
0.00	0.00	0.00	0.00	0.00 N 0.00 E	0.00	0.00
141.00	0.25	294.00	141.00	0.12 N 0.28 W	0.18	-0.02
256.00	1.00	109.00	255.99	0.10 S 0.44 E	1.09	0.12
410.00	1.00	157.00	409.97	1.77 S 2.23 E	0.53	-0.49
530.00	1.00	171.00	529.96	3.77 S 2.81 E	0.20	-1.98
650.00	0.50	149.00	649.94	5.26 S 3.24 E	0.47	-3.07
700.00	0.50	167.00	699.94	5.65 S 3.40 E	0.31	-3.35
972.00	1.25	105.00	971.91	7.58 S 6.54 E	0.41	-3.54
1128.00	1.50	109.00	1127.87	8.68 S 10.11 E	0.17	-2.81
1249.00	1.75	131.00	1248.82	10.41 S 13.00 E	0.55	-2.95
1339.00	1.75	99.00	1338.78	11.53 S 15.40 E	1.07	-2.79
1369.00	2.75	129.00	1368.76	12.05 S 16.41 E	5.04	-2.77
1432.00	0.75	89.00	1431.73	13.00 S 17.99 E	3.54	-2.84
1463.00	1.00	348.00	1462.73	12.73 S 18.14 E	4.38	-2.53
1493.00	1.75	341.00	1492.72	12.04 S 17.94 E	2.56	-2.02
1523.00	2.50	349.00	1522.70	10.96 S 17.66 E	2.68	-1.21
1584.00	4.00	356.00	1583.60	7.54 S 17.26 E	2.54	1.61
1647.00	5.50	4.00	1646.38	2.33 S 17.32 E	2.60	6.21
1677.00	6.50	4.00	1676.21	0.80 N 17.54 E	3.33	9.06
1708.00	7.50	7.00	1706.98	4.55 N 17.91 E	3.43	12.54
1739.00	7.75	15.00	1737.71	8.58 N 18.69 E	3.51	16.46
1769.00	7.50	23.00	1767.44	12.34 N 19.98 E	3.63	20.38
1890.00	8.50	32.00	1887.27	27.19 N 27.81 E	1.32	37.16
1981.00	8.25	30.00	1977.30	38.55 N 34.64 E	0.42	50.40
2073.00	8.25	34.00	2068.35	49.74 N 41.63 E	0.62	63.57
2164.00	9.00	35.00	2158.32	60.98 N 49.36 E	0.84	77.14
2257.00	8.25	36.00	2250.27	72.34 N 57.45 E	0.82	90.98
2351.00	8.25	36.00	2343.29	83.25 N 65.38 E	0.00	104.36
2505.00	8.00	37.00	2495.75	100.75 N 78.33 E	0.19	125.91
2660.00	8.00	38.00	2649.24	117.86 N 91.46 E	0.09	147.21
2826.00	7.75	36.00	2813.68	136.02 N 105.15 E	0.22	169.70
2972.00	6.75	28.00	2958.51	151.56 N 114.96 E	0.97	188.04
3066.00	6.00	27.00	3051.93	160.82 N 119.79 E	0.81	198.48
3224.00	5.75	25.00	3209.10	175.35 N 126.88 E	0.20	214.64
3378.00	5.00	26.00	3362.42	188.37 N 133.08 E	0.49	229.04
3532.00	4.75	30.00	3515.86	199.92 N 139.21 E	0.27	242.12
3686.00	5.25	25.00	3669.28	211.83 N 145.38 E	0.43	255.52
3840.00	5.25	25.00	3822.63	224.60 N 151.34 E	0.00	269.59
3965.00	5.25	24.00	3947.11	235.01 N 156.08 E	0.07	281.00
4119.00	5.00	20.00	4100.49	247.75 N 161.24 E	0.28	294.66
4274.00	5.00	20.00	4254.90	260.45 N 165.86 E	0.00	308.02
4335.00	5.00	20.00	4315.67	265.44 N 167.68 E	0.00	313.28
4431.00	5.80	20.00	4411.24	273.93 N 170.77 E	0.83	322.22
4583.00	8.80	23.00	4561.99	291.86 N 177.94 E	1.99	341.39
4615.00	9.30	22.00	4593.60	296.51 N 179.86 E	1.64	346.40
4799.00	11.30	22.00	4774.62	327.01 N 192.19 E	1.09	379.08
4953.00	12.00	23.00	4925.45	355.74 N 204.10 E	0.47	410.01
5108.00	12.00	22.00	5077.06	385.51 N 216.43 E	0.13	442.06
5264.00	12.00	22.00	5229.65	415.58 N 228.58 E	0.00	474.29
5419.00	11.80	22.00	5381.32	445.21 N 240.55 E	0.13	506.04

All data is in feet unless otherwise stated
Coordinates from PORTER 24B and TVD from wellhead (2205.50 Ft above mean sea leve
Vertical section is from N 0.00 E 0.00 on azimuth 28.49 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Eastman Teleco

THE GAS COMPANY
PORTER,PORTER 24B
ALISO CANYON,CALIFORNIA

SURVEY LISTING Page 2
Your ref : MSS
Last revised : 3-Sep-93

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	RECTANGULAR COORDINATES	Dogleg Deg/100Ft	Vert Sect	
5575.00	12.00	21.00	5533.97	475.14 N 252.34 E	0.18	537.97	
5729.00	12.00	21.00	5684.60	505.04 N 263.81 E	0.00	569.72	
5892.00	12.00	19.00	5844.04	536.88 N 275.40 E	0.26	603.23	
6037.00	12.00	19.00	5985.87	565.38 N 285.22 E	0.00	632.96	
6193.00	12.00	18.00	6138.46	596.14 N 295.51 E	0.13	664.90	
6349.00	12.00	19.00	6291.06	626.90 N 305.80 E	0.13	696.84	
6504.00	12.00	17.00	6442.67	657.54 N 315.76 E	0.27	728.53	
6664.00	12.00	17.00	6599.17	689.35 N 325.48 E	0.00	761.13	
6823.00	13.00	14.00	6754.40	722.51 N 334.64 E	0.75	794.64	
6998.00	14.30	14.00	6924.46	762.58 N 344.63 E	0.74	834.62	
7055.00	14.70	14.00	6979.64	776.43 N 348.08 E	0.70	848.44	PROJECTED

All data is in feet unless otherwise stated
Coordinates from PORTER 24B and TVD from wellhead (2205.50 Ft above mean sea leve
Vertical section is from N 0.00 E 0.00 on azimuth 28.49 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Eastman Teleco

Comments in wellpath

MD	TVD	Rectangular Coords.	Comment
7055.00	6979.64	776.43 N 348.08 E	PROJECTED

All data is in feet unless otherwise stated
Coordinates from PORTER 24B and TVD from wellhead (2205.50 Ft above mean sea leve
Bottom hole distance is 391.62 on azimuth 330.25 degrees from wellhead.
Vertical section is from N 0.00 E 0.00 on azimuth 28.49 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Eastman Teleco

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

No. T293-263

Report on Operations

R.D. Phillips, Agents
Southern California Gas Co.
810 S. Flower St.
Los Angeles, CA 90017

Ventura, California
November 19, 1993

Your operations at well "Porter" 24B, API No. 037-24144,
Sec. 27, T. 3N, R. 16W, S.B. B.&M. Aliso Canyon Field, in Los Angeles County,
were witnessed on 10-26-93. Pete Wygle, representative of
the supervisor, was present from 1300 to 1500. There were also present
R. Ellis, Engineer
Present condition of well: 20" ld 64'; 13 5/8" cem 827'; 9 5/8" cem 7030". TD 7030'.

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

DECISION:

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

scv

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

By _____

Patrick J. Kinnear
Deputy Supervisor

OG109 (Modified 1993)

API No. [illegible]-24144

S4700

DIVISION OF OIL AND GAS

SNB

T 263

BLOWOUT PREVENTION EQUIPMENT MEMO

Operator: So Calif Gas Co   Well: "Porter" [illegible]

Field: [illegible]   County: LA   Spud Date: 7-[illegible]-93

VISITS:

	Date	Engineer	Time	Operator's Rep.	Title
1st	10-26-93	[illegible]	([illegible] to [illegible])	R. Ellis	[illegible]
2nd			(to)		

Contractor: ______ Rig #: ______ Contractor's Rep. & Title: ______

Casing record of well: [illegible]

OPERATION: Testing ~~(inspecting)~~ the blowout prevention equipment and installation.

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

Proposed Well Opns: New well. MACP: ______ psi

Hole size: ___" fr. ___' to ___', ___" to ___' & ___" to ___'

REQUIRED BOPE CLASS: [illegible]

CASING RECORD OF BOPE ANCHOR STRING					Cement Details	Top of Cement	
Size	Weight(s)	Grade(s)	Shoe at	CP at		Casing	Annulus
9 5/8	[illegible]	N-80	[illegible]		[illegible] followed by [illegible]	[illegible]	[illegible]

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		[illegible]	GK	[illegible]	5M		9.8					10-26	[illegible]
SRd	[illegible]	Shaffer	[illegible]		✓		3.3						
	[illegible]				✓		3.3						
S													
							TOTAL: [illegible]						

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure [illegible] psi

Total Rated Pump Output [illegible] gpm

Distance From Well Bore 70 ft.

	Accum. Manufacturer	Capacity	Precharge
1	[illegible]	120 gal.	1000 psi
2		gal.	psi

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

	EMERG. BACKUP SYSTEM		L=	Press.	Wkg. Fluid
X	4 N_2 Cylinders	1	L=[illegible]"	[illegible]	[illegible] gal.
	Other:	2	L=[illegible]"	[illegible]	[illegible] gal.
		3	L=[illegible]"	[illegible]	[illegible] gal.
		4	L=[illegible]"	[illegible]	6.3 gal.
		5	L= "		gal.
		6	L= "		gal.
				TOTAL:	26.2 gal.

	AUXILIARY EQUIPMENT	No.	Size (in.)	Rated Press.	Weld	Flange	Thread	Test Press.
X	Fill-up Line							
X	Kill Line		2	5M	✓	✓		
X	Control Valve(s)	1		✓		✓		
X	Check Valve(s)	1		✓		✓		
	Aux. Pump Connect.							
X	Choke Line		3	✓	✓	✓		
X	Control Valve(s)	1		✓		✓		
X	Pressure Gauge					✓		
X	Adjustable Choke(s)	2	2	✓		✓		
X	Bleed Line		[illegible]			✓		
X	Upper Kelly Cock							
X	Lower Kelly Cock		3.5	✓				
X	Standpipe Valve							
X	Standpipe Press. Gauge							
X	Pipe Safety Valve		3.5	✓				
X	Internal Preventer		✓	✓				

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

Hole Fluid Type	Weight	Storage Pits (Type & Size)
[illegible]		500 bbl

REMARKS AND DEFICIENCIES: [illegible] bleed line on 2" choke manifold. We witnessed a successful [illegible]

OGD9 (12/90/GSR1/2M)

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

No. T293-167

REPORT ON OPERATIONS

CORRECTED COPY

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

Ventura, California
August 6, 1993

Your operations at well "Porter" 24B, API No. 037-24144, Sec. 27, T. 3N, R. 16W, S.B.B.&M. Aliso Canyon Field, in Los Angeles County, were witnessed on 7-21-93. F. Neese, representative of the supervisor, was present from 0000 to 0800. There were also present Bill Melcher, Rig Supervisor.

Present condition of well: 20" ld 64'; 13 5/8" cem 827'. TD 827.

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

DECISION:

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

PK:FN:nr

WILLIAM F. GUERARD, Jr.
Acting State Oil and Gas Supervisor

By _____
Patrick J. Kinnear
Deputy Supervisor

0G109

API No. 037 - 24144

DIVISION OF OIL AND GAS

T 293-167

BLOWOUT PREVENTION EQUIPMENT MEMO

Operator Southern California Gas Company Well "Pauley" 24B

Field Aliso Canyon County Los Angeles Spud Date 7/17/93

VISITS:	Date	Engineer	Time	Operator's Rep.	Title
1st	July 29, 1993	F. Neece	(0000 to 0800)	Bill Melcher	Rig Supervisor
2nd			(to)		

Contractor Kenai Rig # 44 Contractor's Rep. & Title Bruce Bryan Toolpusher

Casing record of well: 20" Id. 64'; 13 5/8" cem 827'. T.D. 827'

OPERATION: Testing (inspecting) the blowout prevention equipment and installation.

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

Proposed Well Opns: new well . MACP: 2700 psi

Hole size: 17 1/2 " fr. 0 ' to 827 ' , " to ' & " to '

REQUIRED BOPE CLASS: Class III B 3M

CASING RECORD OF BOPE ANCHOR STRING					Cement Details	Top of Cement	
Size	Weight(s)	Grade(s)	Shoe at	CP at		Casing	Annulus
13 3/8	54.5	K-55	827'		902 ft³ "G" 4% Gel, 2% CaCl₂	0'	0'

BOP STACK

API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul
A	-	Annular - Shaffer	Annular	13 3/8	3000	
R	4 1/2	Pipe - "	NRS	↓	↓	
R	CSO	Blind - "	"	↓	↓	

TEST DATA

Gal. to Close	Recovery Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
					7/21	2000
					↓	2500
					↓	2500

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure 3000 psi

Total Rated Pump Output _____ gpm

Distance From Well Bore 100 ft.

	Accum. Manufacturer	Capacity	Precharge
1	Koomey Type 80	120 gal.	1000 psi
2		gal.	psi

CONTROL STATIONS

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

EMERG. BACKUP SYSTEM

			Press.	Wkg. Fluid
✓	N_2 Cylinders 3	1 L= 54 "	1800	gal.
	Other:	2 L= "	1800	gal.
		3 L= ↓ "	1800	gal.
		4 L= "		gal.
		5 L= "		gal.
		6 L= "		gal.
		TOTAL:		gal.

TOTAL:

AUXILIARY EQUIPMENT

	No.	Size (in.)	Rated Press.	Connections: Weld	Connections: Flange	Connections: Thread	Test Press.
✓ Fill-up Line							
✓ Kill Line		1	5000		✓		2500
✓ Control Valve(s)	2		↓		✓		↓
✓ Check Valve(s)	1		↓		✓		↓
✓ Aux. Pump Connect.			↓		✓		↓
✓ Choke Line		2	↓		✓		↓
✓ Control Valve(s)	9		↓		✓		↓
✓ Pressure Gauge						✓	
✓ Adjustable Choke(s)	2	2 & 3	5000		✓		
✓ Bleed Line		"	↓		✓		
✓ Upper Kelly Cock							2500
✓ Lower Kelly Cock		4 1/2	5000				↓
✓ Standpipe Valve							↓
✓ Standpipe Press. Gauge							
✓ Pipe Safety Valve		4 1/2	5000				2500
✓ Internal Preventer		4 1/2	5000				2500

HOLE FLUID MONITORING EQUIPMENT

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

Hole Fluid Type	Weight	Storage Pits (Type & Size)
Gel Mud	9.2	600 bbl

REMARKS AND DEFICIENCIES: No deficiencies

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

No. P293-227
Field Code 010
Area Code 00
New Pool Code 30
Old Pool Code ---

PERMIT TO CONDUCT WELL OPERATIONS
GAS STORAGE

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

Ventura, California
July 13, 1993

Your proposal to drill well "Porter" 24B, A.P.I. No. 037-24144, Section 27, T. 3 N, R. 16W, S.B. B.&M., Aliso Canyon field, --- area, Sesnon-Frew pool, Los Angeles County, dated 7-6-93, received 7-8-93, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOG Class IIIB 3M requirements on the 13 3/8" casing and to DOG Class IIIB 5M requirements on the 9 5/8" casing maintained in operating condition at all times.
2. Drilling fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. Blowout prevention practice drills are conducted at least weekly and recorded on the tour sheet.
4. 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 test.
5. This office shall be consulted before sidetracking the well or running any additional casing.

Continued on Page 2

Blanket Bond
PK:SF:nr

Engineer Steve Fields

Phone (805) 654-4761

WILLIAM F. GUERARD, Jr.
Acting State Oil and Gas Supervisor

By
Patrick J. Kinnear
Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.
OG111

6. The 13 3/8" casing is cemented with sufficient cement to fill behind this casing from the shoe to the ground surface.
7. The 9 5/8" casing is cemented with sufficient cement to fill behind this casing to at least 500 feet above the uppermost oil and/or gas zone or anomalous pressure interval, whichever is higher.
8. Requirement specified in our approval of thc gas storage project dated 7-26-86 shall apply.
9. This office shall be consulted before initiating any changes or additions to this proposed operation, or if operations are to be suspended.
10. THIS DIVISION SHALL BE NOTIFIED:
    a. To witness a pressure test of the blowout prevention equipment prior to drilling out the shoe of the 13 3/8" casing and 9 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.
    b. To witness a MIT Survey within three months after injection has commenced.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

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

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

FOR DIVISION USE ONLY					
MAP	MAP BOOK	CARDS	BOND	FORMS 114	FORMS 121
254	7-12-93	✓	BB	7-12-93	✓

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to commence drilling well Porter 24B, well type S, API No. 037-24144 (Assigned by Division)

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

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

Not applicable, owned by Southern California Gas in fee

Do mineral and surface leases coincide? Yes n/a No_____. If answer is no, attach legal description of both surface and mineral leases, and map or plat to scale.

Location of well _____ feet _____ (Direction) along section / property line (Cross out one) and _____ feet _____ (Direction)

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

842' South and 1990' West of Station 84

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

If well is to be directionally drilled, show proposed coordinates (from surface location) at total depth: 328 feet North (Direction) and 2194 feet West (Direction)

Elevation of ground above sea level 2177 feet.

All depth measurements taken from top of Kelly Bushing (Derrick Floor, Rotary Table, or Kelly Bushing) that is 23.5 feet above ground.

PROPOSED CASING PROGRAM 2200.5=KB

SIZE OF CASING INCHES A P I	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS	CALCULATED FILL BEHIND CASING (Linear Feet)
13-3/8"	54.5#	K-55	0'	800'	800'	800'
9-5/8"	47#	N-80	0'	7800'	7800'	7800'
5-1/2"	17#	J-55	7700'	8200'	Gravel	Gravel

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

Intended zone(s) of completion Sesnon, 7800', 2600 psig (Name, depth, and expected pressure) Estimated true vertical depth 7000'

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

Name of Operator	Type of Organization (Corporation, Partnership, Individual, etc.)	
Southern California Gas Company	Corporation	
Address	**City**	**Zip Code**
P. O. Box 3249	Los Angeles	90051-1249
Telephone Number / **Name of Person Filing Notice**	**Signature**	**Date**
(213)244-2665 / E. S. Sinclair	E. S. Sinclair	7/6/93

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