

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

Rec'd 10-10-16 DOGGR Ventura.

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
Well: Porter 72 B  
A.P.I. No. 03724146

Field: Aliso Canyon County: Los Angeles  
Surface Location: Sec 27 T3N R16W  
Name: Tom McMahon Title: SIMP Project Manager  
(President, Secretary, or Agent)

Telephone Number: 714-398-5020

Signature:   
(Person Submitting Report)

Date: 8/18/2016

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

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 Report (DOGGR)   |
|------------|---|
| 6/10/2016  | Held Safety Meeting , JSA { East Field 1190 Psi }.Spot in Hydrocrane .Load out & Move Rig Equip from Porter 50B to Location.Spot Steel Plates, Rig Equip and Bop equip.Set up Containments.Rig up Guy out Hoist. Set up Misc Kill Hoses.Secure Well & Equip.End of Tour.  |
| 6/11/2016  | Held Safety Meeting, JSA { East Field 1190 Psi } Tbg 1175 , Cas - 1175.Spot in Rig up Onyx 2" Hardline , Separator & Equip.Rig up Pacific Canister and Vac Truck.Gas Ops arrived. Lateral Pressure @ 0 Psi.Lateral Locked out do to Maintenance down Line.Unable to open and equalize to location.Discuss Ops with Lead WSM.Secure Well.Rig out Onyx Equip and Pacific Petroleum.End of Tour  |
| 6/13/2016  | Held Safety Meeting, JSA { East Field 1193 Psi } . Spot in Onyx & Pacific Petro.Lay out Hard Line and Hoses to edge of Location.Check Tbg & Cas 1209 Psi.Lateral 400 Psi.Spot in Vac truck High Visk Pill.Bull Head down Tbg with 100 Brls 120 Visk Polymer.New Cas pressure 1277 Psi.Start 20 Step Kill. 20 Brls 70 Visk Polymer per 64 Psi Bleed dn per step.Brils pumped 244 .Switch over to Charcoal Canister.Cont Pumping dn Tbg.Fluid back @ 436 Brls / Theo Vol 407.Pumped excess 50 Brls good circulation back.Rig out Onyx and Pacific equip.Rig out Hoses and Hard line.Install 3 1/2 Shaffer BPV to Hanger.Nipple Down Tree.Remove BPV.Install 11" Double Gate Bop, 11" Hydril, Kill Lines , Work floor and equip.Shell Test Pipe Rams to 1000 Psi.Secure Well.End of Tour.  |
| 6/14/2016  | Held Safety Meeting , JSA { East Field 1195 Psi },Tbg & Cas 0 Psi.Pumped 61 Brils Polymer down Tbg.Spot in Weatherford.Change Pipe Rams from 2 7/8 to 3 1/2.Install 3 1/2 Shaffer BPV to Hanger Profile.Fill Stack.Test Blind Rams 300L/5000H.Remove BPV.Test Pipe Rams 300L/5000H, E -Kill Line 300L/5000H , Manifold Valves x 4 300L/5000H, Mud cross Valves x 4 300L/5000H,1 - E-Kill Check Valve 300L/5000H, 2 - 3 1/2 FOSV 300L/5000H, 1 - 3 1/2 I -BOP 300L / 5000H & Hydril 300L/3500H.Rig out Weatherford.Un Land Tbg @ 61, 000 lb.String Wt = 61,000 lb .HES Rep on Loc.Start Right Hand Rotation, Work Tbg .Attempt to Release Seals.Rotate Tbg to Right 3 Rounds in 3 Back.2600 Ft Lb.Work Tbg from 90-120,000 Lb.Unable to Release Seals.Land Hanger.Secure Well & Equip.End of Tour.   |
| 6/15/2016  | Held Safety Meeting , JSA { East Field 1194 Psi },Tbg & Cas 0 Psi.Pump 50 Brils Polymer Down Tubing.Spot in Rig up Tiger WL.Run in Hole with 2" Radial Torch Cutter / RTC , Locate Top Pkr, No Go, S-Sleeve & GLM Depths.Cut Tbg @ 6636' Top of Packer - 6653' WL Depths'.Pull out set WL aside.Un land Hanger, ND Hanger.Rig out WL.Pull out with Injection Detail 2 Pup Jnts- 3 1/2 8rd EUE J-55 x 10' , 206 Jnts 3 1/2 8rd EUE N-80, 1 - Pup Jnt 3 1/2 8rd EUE X 4' , 1 - GLM / Open , 1 - 3 1/2 8rd EUE N-80 Fatigue Nipple, 1 - Jnt 3 1/2 8rd EUE N-80, 1 - Sliding Sleeve / Closed { Light Scale on Exterior From Sleeve to Cut Jnt 6577' - 6636' } , 1 - Jnt 3 1/2 8rd EUE N-80, 1 - XN No/Go Nipple , 1 - Cut Jnt 3 1/2 8rd EUE { 17.27' Recoverd }.Tally Pick up 9 5/8 47 # Positive Scraper , Bumper Sub , XO, 3 1/2 X 4' Pup Jnt.Tally Tbg.Run in Hole from Derrick with 108 Jnts 3 1/2 N-80 to 3358' Secure Well & Equip.End of Tour. |
| 6/16/2016  | Held Safety Meeting, JSA { East Field 1196 Psi },Tbg & Cas 0 Psi.Fill Well with 30 Brils 8.5 ppg Polymer.Run in Hole from Derrick with 100 Jnts 3 1/2 N-80.Pick up Excess Tbg.Tag TOF @ 6634.Pull out with 210 Jnts 3 1/2 N-80.Ly dn Scraper.Spot in Hydro.Off Load WP, DC & Tools.Pick up Run in Hole with 8 1/2 WO Shoe x 8 1/8" , 1 - Jnt 8 1/8" WP, Drive Sub , XO, Jars , 4 - 4 3/4" DC , XO.R/O Slips and Equip.Run in Hole from Derrick with 206 Jnts 3 1/2 N80 Tag Packer @ 6646'.Install Circulating Head & Rubber.Rig up 3.5 Power Swivel.Tail @ 6615'.Secure Well & Equip.End of Tour.   |
| 6/17/2016  | Held Safety Meeting , JSA { East Field 1199 Psi },Tbg & Cas 0 Psi.Lower Tbg Down Go over Fish @ 6634'.Tag Top of Packer @ 6646'.Reverse Circulate @ 3 Bpm 0 Psi.Start Rotation 90 - 110 RPM .Start Milling 9 5/8" Otis BWD Packer from 6646' - 6650 { 8 Hrs of Milling }'.Rotation Stalled out.Circulation Pressured up.Unable to go Down past Packer Setting.Fish Stuck inside Wash Pipe.{ 1 Ft of Packer Assembly Below WP Shoe }.Work Jars @ 120,000 lb.Continue to Work Jars and Pull High .Rig out Power Swivel.Tail @ 6625'.Secure Well & Equip.End of Tour.  |
| 6/18/2016  | Held Safety Meeting , JSA { East Field 1195 Psi },Tbg on Vacuum , Casing Filled with 2 Brils Polymer .Start Working Jars to Free Packer from WP.140,000 lb .Came free after 1 Hr of Jarring.Rig up Power Swivel.Start Rotation and Circ @ 3 Bpm Tag @ 6625'.Start Milling on Packer.Rubber back on Returns.Packer Fell out.Make connection Slide down to 6672'.Rev 2 Tbg Voi.Rig out Power Swivel.Nipple down remove Circ Head.Pull out with 160 Jnts 3 1/2 N-80.Tail @ 1761' .Secure Well & Equip.End of Tour.   |

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Operator: Southern California Gas Company,  
Well: Porter 72 B  
A.P.I. No. 03724146

Field: Aliso Canyon County: Los Angeles  
Surface Location: Sec 27 T3N R16W  
Name: Tom McMahon Title: SIMP Project Manager  
(President, Secretary, or Agent)  
Telephone Number: 714-398-5020

Date: 8/18/2016

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

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|------------|---|
| 6/20/2016  | Held Safety Meeting , JSA ( East Field 1199 Psi ).Identified Hinge Pin on Door of Pipe Rams Dripping..Rig out Tbg equip, W/Floor .ND Hydril and Remove.Spot in Weatherford.Replace Hinge Pin & Seals.Install Hydril , W/Floor and Tbg equip.Chart Test Hydril 300L / 3500H 20 Min Each.Rig out Tester.Fill Well with 22 Brls 8.5 ppg Polymer.Pull out with 50 Jnts 3 1/2 N-80 Tbg, XO, 2 - Stands 4 3/4 DC , Jars and Drive Sub.Rig up Pull Tongs.Break out 8 1/2 WO Shoe { Skinned Scoop Head Inside }.Ly Down WP.R/O Pull Tongs.Pick up Run in Hole with 5 3/4 O-Shot , 7 1/4" Guide { 3 1/2 Grapple } , Bumper Sub , Jars , 2 - Stands 4 3/4 DC , Intencifier & XO.Run in from Derrick with 204 Jnts 3 1/2 N-80 Tbg to 6592' TOF @ 6689' + - Secure Well & Equip.End of Tour.                                    |
| 6/21/2016  | Held Safety Meeting, JSA { East Field 1200 Psi }.Tbg & Cas 0 Psi.Fill Well with 5 Brls 8.5 ppg Polymer.Run in Hole with 4 Jnts 3 1/2 N-80 Tag TOF @ 6693'.Engage Grapple.Pick up .Fish Catching Casing Collars. Work Jars to free up.Pulled out with 208 Jnts 3 1/2 N-80, XO, Intencifier , 2 Stands 4 3/4 DC .Install 9 5/8 40# Packer Slip saver.Pull Jars , Bumper Sub & O -Shot.Ly down Milled 9 5/8 Otis Packer .Spot in Hydro Crane.Assist Laying down 4 - 4 3/4 DC.Load out WP & Tools.Spot out Hydro.Pick up Run in Hole with 9 5/8 47# Positive Scraper , Bumper Sub , XO & 3 1/2 x 6' Pup Jnt.Run in hole from Derrick with 210 Jnts 3 1/2 N-80 .Pick up Excess Tbg Tag TOL @ 6713' / Detail 6711' .Pull out with 50 Jnts 3 1/2 N-80 to 5130' .Secure Well and Equip.End of Tour.                         |
| 6/22/2016  | Held Safety Meeting , JSA { East Field 1201 Psi }.Tbg & Cas 0 Psi.Fill Well w/ 11 Brls 8.5 ppg Polymer.Pull out with 162 Jnts 3 1/2 N-80.Ly down Scraper.Change over equip.Pick up 2 3/8 P-110 Stinger , 19 Jnts 2 3/8 P - 110 & XO.Run in from Derrick w/ 192 Jnts 3 1/2 N-80 to 6658'.Install Circ Head & Rubber.Run in hole to 7158'.Install Kelly.Reverse Circ from 7158' to 7162' 3 Bpm.Tbg Plugged off.Change over pump Down Tbg.Pressured to 1500 Psi.Unable to Un Plug.{ Previous WL Tag 7162' / PBMD - 7168' / Bot Slot - 7163' } .Ly down Kelly Jnt.Pull out Wet with 110 Jnts 3 1/2 N-80 to 3407'.Secure Well & Equip.End of Tour.   |
| 6/23/2016  | Held Safety Meeting , JSA { East Field 1189 Psi }.Tbg 0 Psi , Casing on Vacuume.Fill W / 8 Brls 8.5 ppg Polymer.Pull out of hole Wet with 98 Jnts 3 1/2 N-80 Tbg.Change over Equip.Pull out Laying Down XO, XO { Tbg was Plugged in XO Area / Metal & Debree } ,Cont to Ly Down 19 Jnts 2 3/8 P-110 & Stinger .Nipple down Circ Head.N/U Shoot Flange.Rig up Scientific WL Equip.Run in Hole W/ 1.9 OD Gyro From Surface to 7162'.From 7162' to Surface -. Results Max Angle = 12 Degrees.Rig out WL.Spot in Weatherford.Pick up Run in Hole with 9 5/8" Arrow Set Packer , Pup Jnt.Run in from Derrick with 50 Jnts 3 1/2 N-80 to 1598'.Set Packer.Pre Test to 1000 Psi / Held Solid.Release Packer.Continue to Run in with 42 Jnts 3 1/2 N-80 to 2924' . Secure Well & Equip.End of Tour.                         |
| 6/24/2016  | Held Safety Meeting , JSA { East Field 1204 Psi } , Tbg & Cas 0 Psi.Fill Well W/ 7 Brls 8.5 ppg Polymer.Run in Hole with 120 Jnts 3 1/2 N80.R/U Kelly.Set COE of Packer @ 6693' / LT - 6711'.Pre Test with Rig Pump.to 500 Psi.Spot in R/U PROS Pump & E-Chart.Pressure Test above Packer to Surface. { Dogger Rep Randal Moreland } on Site to Witness Test Ops.1st Test 2493 Psi to 2466 Psi in 1 Hr.Release Packer.Pull out with 102 Jnts 3 1/2 N-80.Set COE Packer @ 3500'.2nd Test 3720 Psi to 3687 Psi in 1 Hr.Release Packer.Pull out with 110 Jnts 3 1/2 N-80, Pup Jnt and Packer.Pick up Run in with 9 5/8 Arrow Set RBP, Retrieve Head, Pup Jnt , 80 Jnts 3 1/2 N-80 to 2543'.Set RBP.Test to 500 Psi.Held Solid.Release BP.Run in Hole with 20 Jnts 3 1/2 N-80 to 3493' Secure Well & Equip.End of Tour. |
| 6/25/2016  | Held Safety Meeting , JSA { East Field 1204 Psi }.Tbg & Cas 0 Psi . Filled Well with 8 Brls 8.5 ppg Polymer.Run in hole with 112 Jnts 3 1/2 N-80 . R/U Kelly.Set COE of RBP @ 6703' { LT - 6711' }.Chart Test RBP to 500 Psi for 20 Min.Pick up to 6600 '.Dump 4 Cu Ft Plug Back Sand. Displace Tbg with 56 Brls 8.5 ppg Polymer.Sand Coverage 6703' - 6693'.Pull out with 206 Jnts 3 1/2 N-80, Pup Jnt and Retrieve Head.Rig out Tbg equip , W/ Floor & 11" Hydril.Secure Well & Equip.End of Tour.  |
| 6/27/2016  | Held Safety Meeeting , JSA { East Field 1209 Psi }.Casing 0 Psi.Well Standing Full.ND Kill Line, 3" Flowback, 11" Double Gate Bop.Spot in Cameron,De Energize P-Seals and DSA.ND 13 3/8" 3K x 11" 5K Production Spool Head Bolts.Attempt to Un Land Spool.Had to Break out and Remove Studs.Remove Tbg Spool and DSA.Remove Snap Ring & Primary Seals.Install New Packing Rubber.Re Land Primary Seals & Snap Ring.Install XO Spool, 11" Double Gate BOP, W/ Floor & Equip.Shell Test BOP to 1000 Psi.Secure Well & Equip.End of Tour.  |

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|------------|--|
| 6/28/2016  | Held Safety Meeting , JSA { East Field 1206 Psi }.Casing 0 Psi.Standing Full.Spot in Schlumberger WL.R/U WL.Run in Hole with CBL, USIT Log from Top of Sand 6693' to Surface.Perform Repeat Passes 6690' - 6450', 5850' - 5700', 1000' - 900' to Validate Data.{ No Annomolies Located } . Good Cmt Bond Threw out Cap Rock.Rig out WL.Secure Well & Equip.End of Tour.  |
| 6/29/2016  | Held Safety Meeting , JSA { East Field 1207 Psi }.Casing 0 Psi Standing Full.Spot in Rig up Baker WL.Run in Hole W/ 56 Arm Caliper to Top of Sand @ 6693'.Log to Surface.Run in Hole with Verta Log / High Resolution From 6693' to Surface . Rig out WL.Secure Well & Equip.End of Tour.  |
| 7/5/2016   | Held Safety Meeting , JSA { East Field 1210 Psi }.Casing 0 Psi.Well Standing Full.R/O W/Floor.ND 11" 5K Double Gate Bop.Spot in Cameron.Inspect New Tubing Spool.Incorrect Size.WH Personel Picked up 11" 5K X 13 3/8" 3K for Service { Didnt Pass Inspection }.Delivered 11" 5K X 13 3/8" 5K.DSA Needed to Install correctly.{ Has to be Machined in Shop }.Release Cameron.Bop Hinge Pin on Blind Rams leaking.Unable to repair on Site.ND Mud Cross Valve assemblies.Load out Bop to Flat Bed.Serviced 11" 5K Double Gate arrived.Install Bop and Mud Cross Valve assemblies.Shell Test Bop to 1000 Psi.Secure Well & Equip.End of Tour.  |
| 7/6/2016   | Held Safety Meeting , JSA { East Field 1212 Psi }.Cas 0 Psi.Standing Full.ND 11" 5K Double Gate Bop & XO Spool.Spot in Cameron & Equip.Install 13 3/8" 3K X 13 3/8" 5K DSA , 11" 5K X 13 3/8" 5K Tubing Spool w/ 2 1/16" Casing Valves.Energize P-Seals with Plastic. Chart Test Primary Seals 400L/ 3000H, Test Between Secondary Seals 400L/ 3850H .All Tests 20 Min Each.R/O Cameron.Install 11" 5K Double Gate Bop, 11" Hydril , Kill Lines & 3"Co Flex .Function Test Blind Rams / Good.Function Test Pipe Rams { Exterior Leak Present on Manifold Tube } .Bop Personel on Location.Unable to Repair. { Bop Replacement Scheduled in the AM } .Secure Well & Equip.End of Tour.  |
| 7/7/2016   | Held Safety Meeting , JSA { East Field 1215 Psi } Casing 0 Psi.Standing Full.ND Mud Cross Valves , 11" Double Gate Bop & 11" Hydril.Install Serviced Replacement 11" 5K Double Gate Bop, Mud Cross Valves and Hydril.R/U W/Floor and Tbg equip.Land Tbg Hanger loaded with 3" Cameron BPV.Weatherford Chart Test Blind Rams 300L/5000H ,Remove BPV . Install Lifter Test Pipe Rams 300L/5000H , Hydril 300L/3500H, E Kill Line & 3" Flex Tested 300L/5000H.All Tests 20 Min Each. { Doggr Rep Hafiz Ali on Loc Inspect Bop Equip } .N/U Circulating Head.Run in Hole with Retrieve Head , Pup Jnt 3 1/2 N80 X 4', 212 Jnts 3 1/2 N80 to 6689'.Kelly up.Reverse Circ 2 Tbg Vol 120 Brls 8.5 ppg Polymer. Continue Reverse Circ Cleaning out Sand from 6693' to 6703'.Circ Clean 2 Tbg Vol.Go threw Motions to Release 9 5/8" Arrow Set RBP.{ Several Attempts } .No Success.Release From BP.Secure Well & Equip.End of Tour.  |
| 7/8/2016   | Held Safety Meeting , JSA { East Field 1210 Psi } . Tbg & Cas 0 Psi.Hole Standing Full.Pick up Kelly.Engage BP.H Valve Open.Equalize Fluid.Release 9 5/8 Arrow RBP.Pull out with Kelly , 212 Jnts 3 1/2 N80 , 1 - 3 1/2 N80 Pup Jnt x 4' and RBP.Run in Hole open Ended with 212 Jnts 3 1/2 N80 to 6696'.Spot in Hydro.Load out Steel Plates.Spot in Pipe Trailer.R/U Cat Walks.Lay down 85 Jnts 3 1/2 N80 Tbg.Tail @ 4012' Secure Well & Equip.End of Tour.   |
| 7/9/2016   | Held Safety Meeting, JSA { East Field 1214 Psi } .Tbg & Cas 0 Psi.Fill Well W/ 17 Brls 8.5 ppg Polymer.Pull out Laying Down 35 Jnts 3 1/2 N80.Rig out Cat Walks.Spot in Trucking.Spot out Pipe Trailer.Spot in Empty Pipe Trailer.Rig up Cat Walks.Pull out Laying Down 42 Jnts 3 1/2 N80.Tail @ 1581' .Secure Well & Equip.End of Tour.   |
| 7/11/2016  | Held Safety Meeting, JSA { East Field 1216 Psi } .Open Tbg & Cas 0 Psi.Fill w/ 27 Brls 8.5 ppg Polymer.Pull out Laying down 50 Jnts 3 1/2 N80 Tbg.R/O Tbg Equip.R/O Cat Walks & Spot out Pipe Trailer.Spot in 1st Trailer of 5 1/2 Inj String.Change Pipe Rams from 3 1/2 to 5 1/2 .Land Hanger.Chart Test Pipe Rams 300L/5000H R/O Bop Testers.R/up Weatherford Test Sheeves & Equip.R/up Casing Tongs { Jam Connections } & Equip.Pick up Run in Hole with WL Re Entry Guide , 9 5/8" Weatherford Arrow Set Packer, 1 - 10 Ft Pup Jnt 4 1/2 12.6 # L-80 TCPC , 1 - XN No Go Nipple { 3.81" ID } , 1 Jnt 4 1/2 12.6 # L-80 TCPC , 1 - Pup Jnt 4 1/2 12.6# L80 TCPC X 2', 1 - Sliding Sleeve { 3.81" ID / Opens Down } , 1 - Pup Jnt 4 1/2 12.6 # L80 TCPC X 4' 1 - Jnt 4 1/2 12.6# L80 TCPC , 1 - XO 4 1/2 TCPC X 5 1/2 TCPC , 2 - Jnts 5 1/2 20 # L80 TCPC.R/ up WL Slick Line.Set N -Test Plug in XN Profile 155' .Bundle Test to 4000 Psi.Run in Recover N-Plug.Run Set 1 Way Chk 3.513" DXN Plug in XN Profile.R/O WL.Pick up Run in with 1 Jnt 5 1/2 20 # L80 TCPC.R/up 5 1/2 Drag Tools.Test Tbg to 4000 Psi / 10 Sec.Continue to Pick up and Test in Hole with 27 Jnts 5 1/2 20# L80 TCPC.Pull Drag Tools.Fill 5 1/2 W/ 27 Brls 8.5 ppg Polymer.Secure Well & Equip.End of Tour. |

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|------------|---|
| 7/12/2016  | Held Safety Meeting , JSA { East Field 1216 Psi } Tbg & Cas 0 Psi.Fill Cas W/ 4 Brls 8.5 ppg Polymer.Install 5 1/2 Drag Tools.Change out Pipe Trailers.P/up Test in Hole { 4000 Psi & Jam Make up } with 50 Jnts 5 1/2 20# L80 TCPC { Pulling Test Tools & Filling 5 1/2 Every 880' }.Change out Pipe Trailers.P/up Run in Hole W/ 8 Jnts 5 1/2 20# L80 TCPC . Pull Test Tools.Fill 5 1/2 W/ 7 Brls 8.5 ppg Polymer.Tail @ 4029' .Secure Well & Equip.End of Tour.  |
| 7/13/2016  | Held Safety Meeting , JSA { East Field 1216 Psi }.Tbg & Cas 0 Psi.Fill Cas W/ 5 Brls 8.5 ppg Polymer.Install 5 1/2 Drag Tools.P/up Drift , Test to 4000 Psi and Jam Make up 42 Jnts 5 1/2 20# L80 TCPC . Change out Pipe Trailers.Cont to P/up 18 Jnts 5 1/2 20# L80 TCPC .Pulled Test Tools every 850' / Fill 5 1/2 ID W/ 8.5 ppg Polymer.Current Packer Depth @ 6651' .Pull & R/O Drag Tools .Load out Cat Walks.Spot out Pipe Trailer. Secure Well & Equip.End of Tour.  |
| 7/14/2016  | Held Safety Meeting , JSA { East Field 1218 Psi }.Tbg & Cas 0 Psi.Fill Cas W/ 6 Brls 8.5 ppg Polymer.Install 150 Ton Elevators.P/up Run in Hole with XO 5 1/2 20# L80 TCPC X 4 1/2 12.6 # L80 TCPC , 1 - Pup Jnt 4 1/2 12.6 # L80 TCPC X 10 ' , 1 - Pup Jnt 4 1/2 12.6 # L80 TCPC X 4' & 10 3/4 Hanger.Rig out Casing Tongs.Spot in Vac Trk. Pump Pkr Fluid 100 Brls 3 % KCL / 5 - Gal Amber Guard , 5 Gal Corrosion Inhibitor @ 2 Bpm 0 Psi.Followed by 98 Brls 8.5 ppg Polymer .{ Vol to Pkr 148 Brls } Validate up Wt 182K , Down Wt 178K / Pull to 220K .Set COE of Packer @ 6686' .Land Hanger with 30,000 lb Compression.Install Hanger Lock Screws.Pre Test Casing to 1000 Psi.R/Up Western WL.Run in Hole to 6669' XN Nipple.Retrieve DXN Plug.Pull Out.Run in with 3.813 PXN Plug.Set in XN Profile 6669'.Pull out. Pre Test Tbg to 500 Psi.R/O WL.Spot in R/up PROS Test Unit & E-Chart.{ Doggr Rep Mark Davis On Site to Witness 1 Hr Tests on Tbg & Casing } { Test # 1 on Tubing 3816 Psi down to 3756 Psi in 12 Min Lost 60 Psi / Leak Present Internal } .{ Test # 2 on Casing 1097 Psi down to 1008 Psi in 1 Hour / Lost 89 Psi } Mark Davis approved Casing Test / Pending his Supervisors Approval. R/O PROS.Secure Well & Equip.End of Tour. |
| 7/15/2016  | Held Safety Meeting , JSA { East Field 1217 Psi }.Tbg & Cas 0 Psi.R/up Western WL.Run in Hole Latch Prong in XN Nipple @ 6669'.Pull out.Inspect Seals / Good .Visible equalizing markings.Run in Pull PXN Plug .Inspect Seals / Good.Run New PXN & Prong into XN Nipple .Fill Tbg W/ 4 Brls 8.5 ppg Polymer.R/up PROS.Bundle Test Tbg String 3828 Psi down to 3773 Psi in 30 Min .During Test light returns on Casing { Communication Present }.Apply 1197 Psi to Tbg String.Also at same time Apply 1000 Psi to Casing.Monitor Pressures.{ Tbg - 1188 Psi to 1197 Psi in 30 Min.9 Psi Increase }{ Casing 1000 Psi to 997 Psi in 30 Min. 7 Psi Decrease.} .Tests Indicate Tbg Plug is Good & Packer.No significant Psi Loss.Run in Hole W/ WL Validate Sleeve is Fully Closed / Good .Apply Test to Tbg 3838 Psi down to 3553 Psi in 30 Min Lost 285 Psi.Discuss Ops W/ Lead WSM.Run in Open & Close Sleeve.Test Tbg to 3810 Psi down to 3704 Psi.30 Min Lost 106 Psi { Bleed of Slowed down after open & close of Sleeve }{ R/O Slickline and PROS.Secure Well & Equip.End of Tour.  |
| 7/16/2016  | Held Safety Meeting, JSA.String up Blocks from 6 Line to 8 Line   |
| 7/18/2016  | Safety Meeting, JSA .Open Well Tbg & Casing 0 Psi.Field Pressure 1216 Psi.R/up PROS E-Chart & Test Unit.R/up to Casing.Test From Packer 6686' to Surface.1095 Psi - 1052 Psi in 25 Min Lost 43 Psi.Run in Hole Set PX Plug & Prong in Top of Sleeve @ 6628'.Test Tbg from PX Plug to Surface to 3794 Psi for 25 Min.Bled down to 3647 Psi / 147 Psi Loss.Test indicates Tbg Leak .Release 9 5/8" AS1 - X Packer.Let Elements Equalize overnight.  |
| 7/19/2016  | Held Safety Meeting , JSA { East Field 1219 Psi }.Tbg & Cas 0 Psi.Filled Casing W/ 13 Brls 8.5 ppg Polymer.R/u Weatherford Casing Tongs.Un Land Hanger.Pull Hanger, 2 - 4 1/2 TCPC Pups and 4 1/2 x 5 1/2 TCPC XO..Ly Down Assembly.Change over equip.Pull out Lay down 1 Jnt 5 1/2 20 # TCPC Tbg.P/up 1 - Jnt 5 1/2 20 # TCPC Tbg { Replacement },R/up 5 1/2 Drag Tools.Test 5 1/2 Jnt to 4000 Psi / 20 Sec.Pull Drag Tools.R/o Tester. , Make up New Hanger Assembly W/ 1 - XO 4 1/2 TCPC X 5 1/2 TCPC { Unable to Test Connection / Due to Assembly ID'S } ., 2 - 4 1/2 TCPC Pups .Land Tbg Hanger. { 2 Connections Jam Make up.R/up Western WL Slickline Equip..Run in Hole with PXN Plug.Set in XN Nipple @ 6670' .Run in Set Prong inside PXN Plug.R/up PROS E-Chart & Test Truck.Test Tbg from surface to PXN Plug @ 6670'.Start Test 3817 Psi - 3571 Psi / Lost 246 Psi in 1 Hr.Run in Hole with 3.813 X Plug.Set in Sliding Sleeve upper Profile @ 6628'.Test Tbg to 3797 Psi.Monitor Pressure for 1 Hr 36 Min. Lost 370 Psi down to 3427 Psi.R/o PROS Test Equip.Secure Well & Equip.End of Tour.   |

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

Rec'd 10-10-16 DOGGR Ventura.

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
Well: Porter 72 B  
A.P.I. No. 03724146

Field: Aliso Canyon County: Los Angeles  
Surface Location: Sec 27 T3N R16W  
Name: Tom McMahon Title: SIMP Project Manager  
(President, Secretary, or Agent)  
Telephone Number: 714-398-5020

Date: 8/18/2016

Signature: \_\_\_\_\_

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

(Person Submitting Report)

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 Report (DOGGR)  |
|------------|--|
| 7/20/2016  | Held Safety Meeting, JSA East Field 1219 Psi.R/u Western WL.Run in Hole Retrieve Prong & X Plug from Top of Sliding Sleeve Profile 6632'.Rih Retrieve Prong & PXN Plug from XN Nipple @ 6669'.R/out WL.Establish up Wt 184K, Down Wt 172K.Set COE of 9 5/8 AS1 - X Packer @ 6686'.Fill Casing W/ 14 Brs 8.5 ppg Polymer.Set 30K Down Wt.R/up Western WL.Run in Hole Set PXN Plug & Prong in XN Profile @ 6669'.Pull out.R/o WL.R/u PROS E-Chart & Pump.Bundle Test Tubing from Surface to PXN Plug @ 6669'.Start Test 3816 Psi - 3701 Psi.Lost 115 Psi in 30 Min.Test Casing 1240 Psi - 1191 Psi.Lost 49 Psi in 15 Min.R/O PROS.Secure Well & Equip.End of Tour.   |
| 7/21/2016  | Held Safety Meeting, JSA { East Field 1225 Psi }.R/up Western WL.Run in hole Retrieve Prong & PXN Plug from XN Nipple @ 6669'.R/O WL.Un Land Hanger.Release 9 5/8" AS1 - X Packer @ 6686 Equalize.R/u Lift Equip.Un land Remove 10 3/4" Hanger, 2 - 4 1/2 TCPC Pup Jnts, & XO 4 1/2 TCPC X 5 1/2 TCPC.Pull out and Lay down 1st Jnt of 5 1/2 20# TCPC.Pulled 2nd Jnt of 5 1/2 20 # TCPC .Attempted to Break Connection W/ 1500 Series Casing Tong { 15K } & Auto Back up.No Success.R/O 1500 Tongs.R/up 2500 Casing Tongs and Manual Back up.Attempt to Break Connection.Max Torq applied.25K.No success.Discuss Ops W/ Lead WSM.R/O 2500 Tongs.Order out 50K Tongs with Auto Back up. Hot Shot Equip from out of State.Secure Well & Equip.End of Tour  |
| 7/25/2016  | Held Safety Meeting, JSA { East Field 1222 Psi }.Tbg & Cas 0 Psi.Fill Well with 34 Brs 8.5 ppg Polymer.Un Lock Pipe Rams.Spot in Weatherford Cas Tongs.Crane assist.R/up 50K Casing Tongs & Equip.Pull out Laying Down 52 Jnts 5 1/2 20# TCPC Tbg. { 17K Ft Lb to Break Connections } Quality Tubular Personnel on Location inspecting all Tbg Pins.No Annomolies detected. 94 Jnts 5 1/2 still in Hole & BHA.Secure Well & Equip.End of Tour.   |
| 7/26/2016  | Held Safety Meeting, JSA { East Field 1221 Psi }.Tbg & Cas 0 Psi.Fill Cas W/ 5 Brs 8.5 ppg Polymer.Start to Pull 5 1/2 { 50K Casing Tongs Broke }.Change out Casing Tongs to 15K Set.Pull out Laying Down 94 Jnts 5 1/2 20# L80 TCPC Injection String.Quality Tubulars inspecting Pin Connections.Change over Equip to 4 1/2.Pull out Laying Down 1 - 5 1/2 x 4 1/2 TCPC XO, 1 - Jnt 4 1/2 12.6# L80 TCPC, 1 - Pup Jnt 4 1/2 TCPC x 4', 1 - Sliding Sleeve / Closed, 1 - 4 1/2 Pup TCPC x 2', 1 - Jnt 4 1/2 TCPC, 1 - XN Nipple, 1 - 4 1/2 Pup Jnt TCPC x 10' & 9 5/8 AS1-X Packer.Note : No Visual Failures found.Spot out Pipe Trailer # 3.Load out 50K Casing Tongs & Equip.Spot in Trailer # 1.Off Load New 5 1/2 20# L80 TCPC Tbg to Pipe Racks.Spot in New Packer & Equip.Top off Well W/ 7 Brs 8.5 ppg Polymer.L/out Blind Rams.Secure Well & Equip.End of Tour   |
| 7/27/2016  | Held Safety Meeting, JSA { East Field 1224 Psi }.Casing 0 Psi.Fill Well W/ 5 Brs 8.5 ppg Polymer.P/up Rih W/ 1 - 9 5/8" AS1 -X Packer, 1 - Pup Jnt 4 1/2 12.6# TCPC L80 X 10', 1 - XN Nipple 3.75 Profile { Load Profile with X -Test Tool }, 1 - Jnt 4 1/2 12.6# L80 TCPC, 1 - Pup Jnt 4 1/2 12.6# L80 TCPC X 2', 1 - 3.81 Sliding Sleeve, 1 - Pup Jnt 4 1/2 12.6# L80 TCPC x 6', 1 - Jnt 4 1/2 12.6# L80 TCPC, 1 - 4 1/2 X 5 1/2 TCPC XO, 2 Jnts 5 1/2 20# L80 TCPC. { All Jam Make up }.R/up PROS Test Truck & E-Chart.Bundle Test Tbg.4016 Psi - 3955 / 10 Min Lost 61 Psi.Validate No Air in Test System.Re Test 4027 Psi - 4018 / 30 Min Lost 9 Psi.No Stabilization Present.Ly Down 2 Jnts 5 1/2 20# L80 TCPC.R/u PROS.Bundle Test 4075 Psi - 4071 Psi / 8 Min Lost 4 Psi.Pressure Stabilized. 4071 Psi - 4076 Psi / 6 Min.Increased 5 Psi..P/up 1 Jnt 5 1/2 20# L80 TCPC .Make up into XO.Fill Tbg,Test 4022 Psi - 3950 Psi / 20 Min Lost 72 Psi.Ly Dn 1 - Jnt 5 1/2 20# L80 TCPC.P/up # 3 Jnt 5 1/2 20# L80 TCPC.Make up into XO.Fill Tbg Test 4007 Psi - 3916 Psi / 6 Min Lost 91 Psi. All Test Events for the day indicate 4 1/2 x 5 1/2 TCPC XO Above 4 1/2 Tbg is Bad.Pull out Ly down 1 Jnt 5 1/2 20# L80 TCPC, ND XO, 1 Jnt 4 1/2 12.6# L80 TCPC.Stand Back Existing BHA & Packer.Top off Well W/ 5 Brs 8.5 ppg Polymer.L/Out Blind Rams.Secure Well & Equip. |
| 7/28/2016  | Held Safety Meeting, JSA { East Field 1226 Psi }.Casing 0 Psi.Fill Well W/ 6 Brs 8.5 ppg Polymer.P/up Run in Hole W/ 1 - 9 5/8" AS1 - X Packer, 1 - Pup Jnt 4 1/2 12.6 # L80 TCPC x 10', 1 - XN Nipple / 3.75 Profile, 1 - Jnt 4 1/2 12.6 L80 TCPC, 1 - Pup Jnt 4 1/2 12.6 # L80 TCPC x 2', 1 - Sliding Sleeve / 3.81 " ID, 1 - Pup Jnt 4 1/2 12.6 # L80 TCPC x 4', 1 - Jnt 4 1/2 12.6 # L80 TCPC, Replace XO 4 1/2 x 5 1/2 TCPC.P/up 1 Jnt 5 1/2 20 # L80 TCPC. { All Jam Unit Make Up }.R/u WL.Run in Hole Pull X Test Plug from XN Profile.Run in Hole W/ 1 Way Check Valve. Set in XN Profile.R/o WL..Fill Tbg.R/up PROS Test Unit & E - Chart.Bundle Test 1 Hour 4038 Psi - 4048 Psi.Pressure Stabilized.R/u 5 1/2 Drag Tools.P/up Test in Hole, Jam Make up with 38 Jnts 5 1/2 20 # L80 TCPC.All Tests 4000 Psi / Hold for 1 Minute.Pull Drag Tools.Tail @ 1744'.Fill 5 1/2 ID W/ 34 Brs 8.5 ppg Polymer.Secure Well & Equip.End of Tour.  |

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
 Well: Porter 72 B  
 A.P.I. No. 03724146

Field: Aliso Canyon County: Los Angeles  
 Surface Location: Sec 27 T3N R16W  
 Name: Tom McMahon Title: SIMP Project Manager  
 (President, Secretary, or Agent)

Date: 8/18/2016

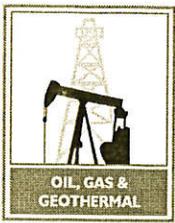
Telephone Number: 714-398-5020

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

Signature: \_\_\_\_\_  
 (Person Submitting Report)

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 Report (DOGGR)   |
|------------|---|
| 7/29/2016  | Held Safety Meeting, JSA { East Field 1221 Psi }.Tbg & Cas 0 Psi.Fill Cas W/ 5 Brls 8.5 ppg Polymer.R/up Wester WL.Run in Hole Set X Test Plug above Sliding Sleeve @ 1681'.R/o WL.R/up PROS Test Equip & E Chart.Bundle Test from Surface to 1681' X Test Plug.Test ! - 4071 Psi - 4032 Psi / 45 Min Lost 39 Psi.Check for Air in System.Re Test 4041 Psi - 4033 Psi / 45 Min Lost 8 Psi.Witnessed Stabilization @ 4033 Psi..R/o PROS.Install 5 1/2 Drag Tools.P/up Test in Hole, Jam Make up with 37 Jnts 5 1/2 20# L80 TCPC.Test Each connection 4000 Psi / Hold 1 Minute.Tail @ 3235'.Pull Drag Tools.Fill 5 1/2 ID W/ 34 Brls 8.5 ppg Polymer.Secure Well & Equip.End of Tour.   |
| 7/30/2016  | Held Safety Meeting, JSA { East Field 1226 Psi }.Tbg & Cas 0 Psi.Fill Casing W/ 5 Brls 8.5 ppg Polymer.R/up Western WL.Run in Hole with X Test Plug Set above Sliding Sleeve @ 3275'.Pull out.R/out WL.R/up PROS Test Unit & E Chart.Bundle Test from Surface to X Test Plug @ 3275'.Start Test 4105 Psi - 4080 Psi / Lost 25 Psi in 1 Hour.Monitor Pressure Additional 15 Min Lost 1 Psi.Stabilized @ 4079 Psi.R/o PROS Test Equip.Install 5 1/2 Drag Tools.P/up Test in Hole / Jam Make Up with 1 Jnt 5 1/2 20# L80 TCPC.{ Test Truck Broke Down / Bad Pressure Relief Valve } .Pull Drag Tools. R/out Test Truck & Equip.Tail @ 3398'.Secure Well & Equip.End of Tour.   |
| 8/1/2016   | Held Safety Meeting, JSA { East Field 1227 Psi }.Tbg & Cas 0 Psi.Fill Casing W/ 8 Brls 8.5 ppg Polymer.Un Lock Pipe Rams.R/up Test Truck & 5 1/2 Drag Tools.P/up Test in Hole / 4000 Psi 1 Min Hold & Jam Make up.Ran 38 Jnts 5 1/2 20# L80 TCPC.Packer Depth @ 5011'. { 114 Jnts in Well } .R/up Western WL.Run in Hole W/ X - Test Plug Set in Profile above Sliding Sleeve @ 4944'.Pull out.R/O WL.Top off 5 1/2 ID w/ 35 Brls 8.5 ppg Polymer.R/up PROS Test Unit & E-Chart.Bundle Test Tbg String from Surface to 4944'.Start Test 4022 Psi - 3999 Psi / 1 Hour Lost 23 Psi.Monitor Pressure additional 30 Min Lost 2 Psi.Stabilization Present..R/O PROS.Secure Well & Equip.End of Tour  |
| 8/2/2016   | Held Safety Meeting, JSA { East Field 1227 Psi }.Tbg & Cas 0 Psi.Fill Casing W/ 3 Brls 8.5 ppg Polymer.Un Lock Pipe Rams.Run in Hole with 5 1/2 Drag Tools.P/up Test in Hole / 4000 Psi 1 Min Hold & Jam Make up.Ran 11 Jnts 5 1/2 20# L80 TCPC. Tail @ 5473'.While Waiting on Hydro to Arrive Performed Drillline inspection / Drillline Bad.Pull Drag Tools.Secure Well & Equip.End of Tour.Rig Crew to Change out Drillline off Tour.  |
| 8/3/2016   | Held Safety Meeting, JSA { East Field 1225 Psi }.Tbg & Cas 0 Psi.Fill Casing W/ 7 Brls 8.5 ppg Polymer.Un Lock Pipe Rams.Install 5 1/2 Drag Tools.P/up Test in Hole 4000 Psi / 1 Min & Jam Make up with 26 Jnts 5 1/2 20# L80 TCPC, 2 - Pup Jnts 5 1/2 20# L80 TCPC X 10'.R/O Drag Tools.P/up XO 5 1/2 X 4 1/2 TCPC, 2 - Pup Jnts 4 1/2 12.6 # L80 TCPC 12' & 10 3/4" Re Dressed Hanger.Tail of Packer @ 6625'.R/o Casing Tongs & Equip.R/up Western WL.Run in Hole Set X Test Plug above Sleeve @ 6562'.R/O WL.Fill 5 1/2 ID W/ 27 Brls 8.5 ppg Polymer.R/U PROS Test Unit & E-Chart.Start Test 3857 Psi - 3832 Psi / 1 Hr.Stabilized.R/O PROS.Secure Well & Equip.End of Tour   |
| 8/4/2016   | Held Safety Meeting, JSA { East Field 1225 Psi }Tbg & Cas 0 Psi.Fill Casing W/ 5 Brls 8.5 ppg Polymer..R/up Western WL.Run in Hole Retrieve X Test Plug from Top of Sliding Sleeve @ 6566'.R/O WL.Spot in Vac Trk.Pump 100 Brls ---- Packer Fluid.Followed By 100 Brls 8.5 ppg Polymer.Establish up Wt 178K, Down Wt 170K .Set COE OF Packer @ 6620'. 30K Compression.Install Hanger Lock Screws.Pre Test Packer with Mud Pump.1000 Psi.R/up PROS Test Pump & E-Chart.Bundle Test Tubing from Surface to XN Nipple 6605'. { Doggr Rep Chris Phillips on Loc Witness Tests } .Test Tubing to 3828 Psi for 1 Hour.End Pressure 3805 Psi.Lost 23 Psi.Test Casing from surface to COE of Packer 6620'.Start Test 1067 Psi for 1 Hour End Pressure 1062 Psi .Lost 5 Psi.R/O PROS.Install 1 Way BPV in 4 1/2 ID Hanger.Spot in Hydrocrane.R/o Tbg Equip, W/Floor, kill Lines, 11" Hydril, 11" Double Gate & Equip.Install 11" 5K Tree.Cameron N/U Head Bolts Hyd Wrenches.Pull 1 Way BPV.Install 2 Way BPV.Shell Test Tree 5000 H / Good.Start Void Test on Extended Neck 300L.Leak Present.Fluid going past Seals.Apply Test to Wing Valve open Flange Bleeder.Fluid leaking By Extented Neck.R/O Cameron.Secure Well & Equip.End of Tour. |
| 8/5/2016   | Held Safety Meeting, JSA { East Field 1231 Psi }.Tbg & Cas 0 Psi.Spot in R/up Cameron Equip.Hydraulic Wrenches N/D Tree Bolts.Un Land Tree.Inspect Extended Neck O-Rings / Looked Good.Found Failure to be a 1/4" Control Line Port Bull Plug.. Located at the top of extended neck area.Removed Plug.Tefloned.Re installed.Changed out Extended Neck Seals.Landed Tree.N/U Tree.Shell Test Tree to 5000 Lb / Good.Test Void 300L/5000H.Hold Tests for 20 Min Each / Charted.R/O Cameron.Drop Guy Wires.RDMO.Hydro Assist Load out All Rig Equip.Job Complete   |



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 216-0329

## 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 23, 2016

Your operations at well "**Porter**" 72B, A.P.I. No. 037-24146, Sec. 27, T. 03N, R. 16W, SB B.&M., Aliso Canyon field, in Los Angeles County, were witnessed on 8/4/2016, by Chris Phillips, a representative of the supervisor.

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

DECISION:

**DEFERRED PENDING REVIEW BY THE DIVISION'S SAFETY TEAM.**

CPH/TKC

Kenneth A. Harris Jr.  
\_\_\_\_\_  
State Oil and Gas Supervisor

By   
\_\_\_\_\_  
Patricia A. Abel, District Deputy

EB85.

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

T 216-0329  
#16, 3

Casing and Tubing Pressure Test

Operator: So. Cal. Gas Co. Well Designation: Porter 72B

Sec. 27, T. 03N, R. 16W, S. B. B.M. API No. 037-24146 Field: Aliso Canyon

County: Los Angeles Witnessed on: 04-Aug-2016 Chris Phillips, representative  
of the supervisor, was present from 1325 to 1555.

Also Present were Jeff Mosier

Casing Record of the Well:  
13-3/8", 54.5 lb., K-55 cemented at 815'; 9-5/8", 47 lb., N80 cemented at 6828'. Baker ECP filled w/ 103 cf cmt  
5-1/2", 17 lb., J55 liner from 6711' to 7168' gravel packed w/ 20-40 gravel  
Perfs: 6734'-6798' slotted w/ 1-1/2" x 12 mesh, 12 rows, 6" centers; 6798'-7092' w/ 12 m, 90 wire, SSWW;  
7122'-7163' slotted w/ 1-1/2" x 30 mesh, 12 rows, 6" centers. Junk at 7194' in 8-1/2" hole. TD 7225'

The operations were performed for the purpose of Pressure testing 9-5/8" casing

Pressure Test of the Casing

Packer/ Bridge Plug at packer at 6620' Well Type Gas Storage  
Casing Pressured with 3% KCl, 8.5 #/gal Volume \_\_\_\_\_  
Casing Pressure Start PSI: 1067 Start Time: 1446  
Casing Pressure End PSI: 1062 End Time: 1546  
Pressure Held 60 Min. Total drop in Pressure \_\_\_\_\_ 5 psi 0.5 %.

Test Result:  Good  Not Good

Pressure Test of the Tubing

Packer/ Bridge Plug at Tubing plug at 6605' Well Type Gas Storage  
Tubing Pressured with 3% KCl, 8.5 #/gal Volume \_\_\_\_\_  
Tubing Pressure Start PSI: 3828 Start Time: 1307  
Tubing Pressure End PSI: 3806 End Time: 1407  
Pressure Held 60 Min. Total drop in Pressure \_\_\_\_\_ 22 psi 0.57 %.

Test Result:  Good  Not Good

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



Department of Conservation  
**Division of Oil, Gas, and Geothermal Resources – District 2**  
1000 South Hill Road • Suite 116  
Ventura, CA 93003-4458  
(805) 654-4761 • FAX (805) 654-4765

August 2, 2016

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

## NOTICE OF VIOLATION

### FAILURE OF CASING-TUBING PRESSURE TEST TO DEMONSTRATE MECHANICAL INTEGRITY

Dear Ms. Kitson:

On July 14, 2016, a representative from the Division of Oil, Gas and Geothermal Resources witnessed a casing-tubing pressure test on "Porter" 72B, API# 037-24146, in Sec.27, T.03N, R.16W, in the Aliso Canyon field. This well failed to demonstrate mechanical integrity and is therefore **not** approved. This testing was completed in compliance with Order 1109, and the California Code of Regulations (CCR), Title 14, section 1724.10(h) and (j).

*CCR section 1724.10(h) states: "Data shall be maintained to show performance of the project and establish that no damage.....is occurring by reason of the project. Injection shall be stopped if there is evidence of such damage..."*

*CCR section 1724.10(j) states: "A mechanical integrity test (MIT) must be performed on all injection wells to ensure the injected fluid is confined to the approved zone or zones. An MIT shall consist of a two-part demonstration as provided in subsections (j) (1) and (2)."*

Please remediate this violation and retest and submit the casing-pressure test by **October 2, 2016** to verify mechanical integrity. A **24-hour advance notice** is requested so a Division representative may witness the test.

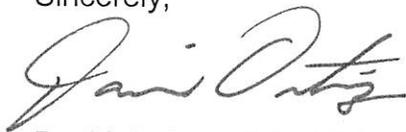
CCR Section 1724.10(j) (4) which states that "The appropriate district office shall be notified before such tests/surveys are made, as a Division inspector may witness the operations..."

Ms. Amy Kitson  
August 2, 2016  
Page Two

**Failure to conduct and submit to this office the casing-tubing pressure test results and verify mechanical integrity, may result in enforcement action, including issuance of a civil penalty, a remedial work order, or an order to plug and abandon pursuant to PRC Sections 3236.5, 3224 or 3237.**

If you have any questions, please call David Ortiz at 805-654-4761 or email at David.Ortiz@conservation.ca.gov.

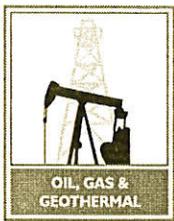
Sincerely,

A handwritten signature in cursive script that reads "David A. Ortiz".

David A. Ortiz, PG, CEG  
Associate Oil and Gas Engineer

MD: md

cc: Well file  
Violation file  
Follow-up  
UIC Project file (0100006)



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 216-0264

## 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 26, 2016

Your operations at well "**Porter**" **72B**, A.P.I. No. **037-24146**, Sec. **27**, T. **03N**, R. **16W**, **SB B.&M.**, **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **7/14/2016**, by **Mark Davis**, a representative of the supervisor.

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

DECISION:

**NOT APPROVED**

Notes: **Tubing test discontinued after 10 minutes after losing 50 psi.**

MD/TKC

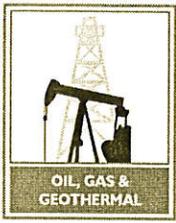
Kenneth A. Harris Jr.  
\_\_\_\_\_  
State Oil and Gas Supervisor

By   
\_\_\_\_\_  
Patricia A. Abel, *District Deputy*

No. T 216-0264  
16, 2

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

|   |           |           |           |                  |   |  |  |  |  |
|---|-----------|-----------|-----------|------------------|---|--|--|--|--|
| Operator: <u>SO. CAL. GAS, CO.</u>  |           |           |           |                  | Well: <u>"POTTER" 72B</u>               |  |  |  |  |
| Sec   | T.        | R.W       | B&M       | API No.:         | Field:                                  |  |  |  |  |
| <u>27</u>   | <u>3N</u> | <u>16</u> | <u>SB</u> | <u>037-24146</u> | <u>ALISO CANYON</u>                     |  |  |  |  |
| County: <u>LOS ANGELES</u>  |           |           |           |                  | Witnessed/Reviewed on: <u>7-14-2016</u> |  |  |  |  |
| <p><u>MARK DAVIS</u>, representative of the supervisor, was present from <u>1530</u> to <u>2000</u></p>   |           |           |           |                  |   |  |  |  |  |
| <p>Also present were: <u>JEFF MOSER</u></p>   |           |           |           |                  |   |  |  |  |  |
| <p>Casing record of the well:</p><br><br><br><br><br><br><br><br><br><br>   |           |           |           |                  |   |  |  |  |  |
| <p>The Internal MIT was performed for the purpose of pressure testing the <u>27/8"</u> casing above <u>6669'</u><br/>         (2) (prior to injecting fluid)</p>  |           |           |           |                  |   |  |  |  |  |
| <p><input type="checkbox"/> The Internal MIT is approved since it indicates that the _____" casing has mechanical integrity above _____' at this time..</p>   |           |           |           |                  |   |  |  |  |  |
| <p><input checked="" type="checkbox"/> The Internal MIT is not approved due to the following reasons: (specify)<br/> <u>TUBING TEST DISCONTINUED AFTER 10 MIN,</u><br/> <u>AFTER LOSING 50 PSI,</u></p>   |           |           |           |                  |   |  |  |  |  |
| <p>INDICATE WHERE PACKER WAS SET AND HOW LONG PRESSURE WAS HELD ALONG WITH ANY BLEEDOFF DATA.</p> <p>-TEST #1 TUBING START 3816 PSI, ENID 3766 PSI, LOST 50 PSI IN 10 MIN, PLUG @ 6669' FAILED,</p> <p>-TEST #2 CASING START 1097 PSI FOR 1 HOUR, ENDING PRESSURE 1008. LOST 89 PSI, PACKER @ 6686' - O.K</p> |           |           |           |                  |   |  |  |  |  |



STATE 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 216-0349

## 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 23, 2016

Your operations at well "**Porter**" **72B**, A.P.I. No. **037-24146**, Sec. **27**, T. **03N**, R. **16W**, **SB B.&M.**, **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **7/7/2016**, by **Hafiz Ali**, a representative of the supervisor.

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

DECISION:

**APPROVED**

HAM/TKC

Kenneth A. Harris Jr.  
\_\_\_\_\_  
State Oil and Gas Supervisor

By   
\_\_\_\_\_  
Patricia A. Abel, *District Deputy*

# BLOWOUT PREVENTION EQUIPMENT MEMO #12,1

Operator Southern California Gas Company Well "Porter" 72B Sec. 27 T. 3 N R. 16 W  
 Field Aliso Canyon County Los Angeles Spud Date \_\_\_\_\_

VISITS: Date Engineer Time Operator's Rep. Title  
 1st 7/7/2016 Hafiz Ali Mohammed, ( 1045 to 1115 ) \_\_\_\_\_  
 2nd \_\_\_\_\_ ( \_\_\_\_\_ to \_\_\_\_\_ ) \_\_\_\_\_  
 Contractor Ensign Rig # 331 Contractor's Rep. & Title Jeff Mosier Rig Supervisor \_\_\_\_\_  
 Casing record of well: \_\_\_\_\_

OPERATION: Testing (inspecting) the blowout prevention equipment and installation. Critical well? Y  N   
 DECISION: The blowout prevention equipment and its installation on the 9-5/8" casing are approved.

Proposed Well Opns: Pressure block tests, and completion tests . MACP: \_\_\_\_\_ psi  
 Hole size: \_\_\_\_\_ " fr. \_\_\_\_\_ " to \_\_\_\_\_ " to \_\_\_\_\_ " & \_\_\_\_\_ " to \_\_\_\_\_ " **REQUIRED BOPE CLASS: III5M**

| 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 | Recov. Time (Min.) | Calc. GPM Output | psi Drop to Close | Secs. to Close | Test Date | Test Press. |
| A         | CSO            | Shaffer      | sph.          | 11                    | 5M          | 4/28/16            | 19            |                    |                  |                   |                |           |             |
| Rd        | var.           | Shaffer      | LWS           | 11                    | 5M          | 4/28/16            | 3             |                    |                  |                   |                |           |             |
| Rd        | CSO            | Shaffer      | LWS           | 11                    | 5M          | 4/28/16            | 3             |                    |                  |                   |                |           |             |

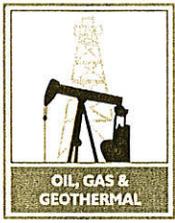
| ACTUATING SYSTEM                                       |        |          |           | TOTAL: 25    |                  | AUXILIARY EQUIPMENT |            |              |      |        |        |             |
|--|--------|----------|-----------|--------------|------------------|---------------------|------------|--------------|------|--------|--------|-------------|
| Accumulator Unit(s) Working Pressure <u>2850</u> psi   |        |          |           |              |                  | Connections         |            |              |      |        |        |             |
| Total Rated Pump Output _____ gpm Fluid Level _____ ok |        |          |           |              |                  | No.                 | Size (in.) | Rated Press. | Weld | Flange | Thread | Test Press. |
| Distance from Well Bore <u>25</u> ft.                  |        |          |           |              |                  |                     |            |              |      |        |        |             |
| Accum. Manufacturer                                    |        | Capacity | Precharge | Fill-up Line |                  |                     |            |              |      |        |        |             |
| 1  | Koomey | 80gal.   | 1000psi   | x            | Kill Line        |                     |            |              |      |        |        |             |
| 2  |        | gal.     | psi       | x            | Control Valve(s) |                     |            |              |      |        |        |             |

| CONTROL STATIONS |                              |  |  | Elec. | Hyd. | Pneu | Internal Preventer |  |  |  |  |  |
|------------------|------------------------------|--|--|-------|------|------|--------------------|--|--|--|--|--|
| x                | Manifold at accumulator unit |  |  |       | x    |      |                    |  |  |  |  |  |
| x                | Remote at Driller's station  |  |  |       |      | x    |                    |  |  |  |  |  |
|                  | Other:                       |  |  |       |      |      |                    |  |  |  |  |  |

| EMERG. BACKUP SYSTEM |                          |   |         | Press. | Wkg.   | Pressure Gauge      |    |  |  |  |  |
|----------------------|--------------------------|---|---------|--------|--------|---------------------|----|--|--|--|--|
|                      | N <sub>2</sub> Cylinders | 1 | L= 55 " | 2500   | 9 gal. | Adjustable Choke(s) |    |  |  |  |  |
|                      | Other:                   | 2 | L= 55 " | 2600   | 9 gal. | Bleed Line          |    |  |  |  |  |
|                      |                          | 3 | L= 55 " | 2700   | 9 gal. | Upper Kelly Cock    |    |  |  |  |  |
|                      |                          | 4 | L= 55 " | 2700   | 9 gal. | Lower Kelly Cock    |    |  |  |  |  |
|                      |                          | 5 | L= "    |        | 9 gal. | Standpipe Valve     |    |  |  |  |  |
|                      |                          | 6 | L= "    |        | gal.   | Standpipe Press.    |    |  |  |  |  |
| TOTAL: 54            |                          |   |         | gal    | x      | Pipe Safety Valve   |    |  |  |  |  |
|                      |                          |   |         |        |        | 3.5                 | 5M |  |  |  |  |

| HOLE FLUID MONITORING EQUIPMENT |         |        | Alarm Type |  | Class | Hole Fluid Type |     |         | Weight | Storage Pits (Type & Size) |  |  |
|---------------------------------|---------|--------|------------|--|-------|-----------------|-----|---------|--------|----------------------------|--|--|
|                                 | Audible | Visual |            |  |       |                 |     |         |        |                            |  |  |
| Calibrated Mud Pit              |         |        |            |  | A     | HC plymer       | 8.5 | 775 bbl |        |                            |  |  |
| Pit Level Indicator             |         |        |            |  |       |                 |     |         |        |                            |  |  |
| Pump Stroke Counter             |         |        |            |  | B     |                 |     |         |        |                            |  |  |
| Pit Level Recorder              |         |        |            |  |       |                 |     |         |        |                            |  |  |
| Flow Sensor                     |         |        |            |  | C     |                 |     |         |        |                            |  |  |
| Mud Totalizer                   |         |        |            |  |       |                 |     |         |        |                            |  |  |
| Calibrated Trip Tank            |         |        |            |  |       |                 |     |         |        |                            |  |  |
| Other:                          |         |        |            |  |       |                 |     |         |        |                            |  |  |

REMARKS AND DEFICIENCIES: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



FEDERAL 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 216-0258

## 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**" 72B, A.P.I. No. **037-24146**, Sec. **27**, T. **03N**, R. **16W**, **SB** B.&M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **6/24/2016**, 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

  
\_\_\_\_\_  
Patricia A. Abel, District Deputy

CK624.

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

No. T 216-0258  
16,1

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

|                                       |           |           |             |                                  |                     |
|---------------------------------------|-----------|-----------|-------------|----------------------------------|---------------------|
| Operator: Southern California Gas Co. |           |           |             | Well: "Porter" 72B               |                     |
| Sec.<br>27                            | T.<br>03N | R.<br>16W | B.&M.<br>SB | API No.: 037-24146               | Field: Aliso Canyon |
| County: Los Angeles                   |           |           |             | Witnessed/Reviewed on: 6/24/2016 |                     |

Randall Morlan, representative of the supervisor, was present from 0830 to 1300

Also present were: Jeff Mosier, SCG

Casing record of the well:

The Internal MIT was performed for the purpose of pressure testing the 9-5/8" casing above 6693'

The Internal MIT is approved since it indicates that the 9-5/8" casing has mechanical integrity above 6693' 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.**

BLOCK TESTING

|                                       |                                       |
|---------------------------------------|---------------------------------------|
| First Test                            | Second Test                           |
| Packer set @ 6693'                    | Packer set @ 3500'                    |
| Test Interval: 0' - 6693'             | Test Interval: 0' - 3500'             |
| Start time: 08:39, pressure: 2493 psi | Start time: 11:45, pressure: 3720 psi |
| End time: 09:39, pressure 2466 psi    | End time: 12:45, pressure: 3687 psi   |

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST-RECORDS RECEIVED AND WELL STATUS

Operator: Southern California Gas Company WELL DESIGNATION "Porter" 72B

API No. 03724146 SE 27 T: 3N R.: 16W , SB B. and M.

County: Los Angeles FIELD: Aliso Canyon

Type of Notice: Rework Date 5/24/2016 Report Number: P216-0072

RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)

NEW STATUS

|   | Date            | OK                                  | NEED | Remarks |
|---|-----------------|-------------------------------------|------|---------|
| Well Summary (OG100)                                    |                 |                                     |      |         |
| History (OG103)   | <u>10/25/16</u> | <input checked="" type="checkbox"/> |      |         |
| E-Log   |                 |                                     |      |         |
| Mud Log   |                 |                                     |      |         |
| Dipmeter  |                 |                                     |      |         |
| Directional   |                 |                                     |      |         |
| Core and/or SWS   |                 |                                     |      |         |
| <u>eloss &amp; pressure tests OK'd by safety review</u> |                 | <input checked="" type="checkbox"/> |      |         |
|   |                 |                                     |      |         |
|   |                 |                                     |      |         |
|   |                 |                                     |      |         |
|   |                 |                                     |      |         |
|   |                 |                                     |      |         |
|   |                 |                                     |      |         |
|   |                 |                                     |      |         |
|   |                 |                                     |      |         |
|   |                 |                                     |      |         |

DATE: GS 10/25/16

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) \_\_\_\_\_

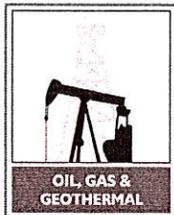
REMARKS

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

(Date)

RECORDS APPROVED: KG 10/25/16

(Date and Engineer)



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

No. P 216-0072

## PERMIT TO CONDUCT WELL OPERATIONS

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

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

Ventura, California  
 June 07, 2016

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

Your proposal to **Rework** well "**Porter**" **72B**, A.P.I. No. **037-24146**, Section **27**, T. **03N**, R. **16W**, **SB B. & M.**, **Aliso Canyon** field, **Any** area, **Sesnon-Frew** pool, **Los Angeles** County, dated **5/24/2016**, received **5/31/2016** has been examined in conjunction with records filed in this office. (Lat: **34.314805** Long: **-118.548532** Datum:**83**)

### THE PROPOSAL IS APPROVED PROVIDED:

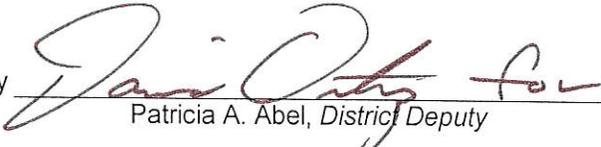
1. Blowout prevention equipment, as defined by this Division's publication No. M07, shall be installed and maintained in operating condition and meet the following minimum requirements:
  - a. Class III **5M** on the **9 5/8"** casing.
2. Hole fluid of a quality and in sufficient quantity to control 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. A Temperature and Noise log are run on the well from the packer to surface.
5. **A Casing Wall Thickness Inspection, Cement Bond Log, and a Multi-Arm Caliper Inspection** shall be performed to demonstrate that the **9 5/8"** casing has integrity.
6. Prior to commencing injection, a pressure test is conducted to demonstrate the mechanical integrity of the **9 5/8"** casing.
7. Injection shall be through tubing and packer only. Injection or withdrawal through the casing is not permitted.
8. This office shall be contacted by phone prior to making any program changes and no changes are made without Division approval.
9. **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

Kenneth A. Harris Jr.  
 State Oil and Gas Supervisor

By   
 Patricia A. Abel, District Deputy

CRK/crk

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.



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

| FOR DIVISION USE ONLY |          |        |
|-----------------------|----------|--------|
|                       | Forms    |        |
| Bond                  | 000114   | 000121 |
|                       | CAL WINS | 1151   |

P216-0072

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

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

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework  / redrill  well Porter 72B, API No. 037-24146  
 (Check one)

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

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

See attached wellbore schematic

The total depth is: 7225 feet. The effective depth is: 7168 feet.

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

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

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

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

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

See attached program

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

Will the Field and/or Area change? Yes  No  If yes, specify New Field: \_\_\_\_\_ New Area: \_\_\_\_\_

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

|  |                                     |   |                        |
|--|-------------------------------------|---|------------------------|
| Name of Operator<br>Southern California Gas Company                |                                     |   |                        |
| Address<br>P. O. Box 2300  |                                     | City/State<br>Chatsworth                            | Zip Code<br>91313-2300 |
| Name of Person Filing Notice<br>Mark Ghann-Amoah                   | Telephone Number:<br>(806) 401-2979 | Signature<br>                                       | Date<br>05/24/16       |
| Individual to contact for technical questions:<br>Mark Ghann-Amoah | Telephone Number:<br>(806) 401-2979 | E-Mail Address:<br>mghann-amoah@semprautilities.com |                        |

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

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

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

### CRITICAL WELL DEFINITION

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

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

### WELL OPERATIONS REQUIRING BONDING

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

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

# WORKOVER PROJECT Rec'd 06-06-16 DOGGR Ventura.

## (P72B – Well Inspection)

**DATE:** May 24, 2016  
**OPERATOR:** SOUTHERN CALIFORNIA GAS COMPANY  
**FIELD:** ALISO CANYON  
**PREPARED BY:** MARK GHANN-AMOA  
**API NUMBER:** 037-24146  
**ELEVATION:** All depths based on original KB, 23.5' above GL

### OBJECTIVE

The intent of this program is to inspect the wells mechanical integrity and remediate identified conditions as part of the Storage Integrity Management Program (SIMP).

This project will include pulling the current production string, Pressure testing casing and well laterals, running casing inspection logs, installing a new completion string and converting well to tubing flow.

### CASING & CEMENT RECORD

| CSG. SIZE (INCHES) | TOP OF CSG (FT) | DEPTH OF SHOE(FT) | WEIGHT OF CASING(LBS) | GRADE & TYPE OF CSG. | HOLE SIZE (INCHES) | SACKS OF CMNT(CF) | CMNT TOP (FT) | TYPE OF CEMENT |
|--------------------|-----------------|-------------------|-----------------------|----------------------|--------------------|-------------------|---------------|----------------|
| 13 - 3/8           | 0               | 815               | 54.5                  | K-55 , BTC           | 17 - 1/2           | 550               | SURFACE       | CLASS G        |
| 9 - 5/8            | 0               | 6828              | 47                    | N-80 , LTC           | 12 - 1/4           | 2690              | SURFACE       | PREMIUM        |
| 5 - 1/2            | 6711            | 7168              | 17                    | J-55 , LTC           | 15 / 8.5           | 389               | GRAVEL        | 20-40          |

### WELL RECORD

|                           |   |
|---------------------------|---|
| Current Status:           | Active  |
| C/O Depths:               | <b>PBMD - 7162' (6' of fill),</b> New PBMD – 7168'  |
| Current Injection String: | 3.5”(2.992”ID) 9.3# N-80 0’/6649’ w/GLM w/1.5” RA Latch at 6536’ SSD – 6577’(2.75”XD), XN No-Go – 6612’(ID-2.635”), OTIS BWD – 6645’(Note: See attached wellbore schematic for detailed description). |
| Tubing record             | See attached tubing details run 2/8/1994  |

### GEOLOGIC MARKERS

KB : 23.5' , ELEVATION ABOVE SEA LEVEL : 1901'

| Zone Top | MD   | TVD  |
|----------|------|------|
| UDA1     | 5494 | 5480 |
| UDA2     | 5581 | 5566 |
| LDA      | 6149 | 6128 |
| MP       | 6515 | 6489 |
| S1       | 6794 | 6764 |
| S4       | 6910 | 6878 |
| S6       | 6939 | 6906 |
| S6       | 6944 | 6911 |
| S8       | 6980 | 6946 |

### WELL WORK HISTORY/ANALYSIS

This well shows no documented well work event after it was drilled in 1993  
Last production data – 1/1/2016 showed that well produced 92bopd, 113bwpd and 462 MMCF/D with a recorded casing and tubing pressure of 782psi and 790psi respectively.  
It passed noise and temperature log (1 3/8”OD) ran on 3/23/2016. Last tag depth 3/23/2016 indicates we have 6' of fill in well, since 1992.

**Well passed Noise / Temperature survey ran 03/23/2016.**

**Estimated Field Pressure: 1100psi (Variable)**

**Estimated Bottom-hole Temperature: 172F (as per 03/23/2016 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(FOLLOW CURRENT SOP)**

1. De-energize and remove all laterals. Install companion flanges for circulating the well.
2. Complete slickline work as required to set-up well for circulation. – needs to be detailed depending on downhole configuration.
3. Ensure correlation log on file or plan for CCL.

**WELLWORK PROGRAM**

1. Move in production rig and rig pump with tank, shaker, and mixer.
  - a) Perform JSA, Safety Review: Talk about all possible things that can injure y' all.
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. Verify the well is dead. If needed, circulate well with 8.5 ppg KCL brine.
  - a.) The tubing volume is ~ 57 bbls
  - b.) The tubing/casing annulus is ~ 391 bbls.
  - c.) *Use HEC polymer as required to minimize lost circulation.*
4. Install BPV in tubing hanger. ND tree.

**NOTE:** Send-in wellhead and tree components for inspection.
5. Install 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. (*Confirm BOPE rating*)
  - a.) All tests are to be charted and witnessed by a DOGGR representative.
  - 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.) Pressure test the Class III 5M annular preventer to 3500 psig for 20 minutes. Test blind rams and the pipe rams to 5000 psig for 20 minutes. Test all lines and connections to 5000 psig.
  - d.) Remove BPV.
6. POOH with production equipment and stand back tubing to be used as a work string. Lay down packer.
  - a) Attempt to release packer or seal assembly. If not successful plan for a cut.
  - b) If planning to mill or fish, lay down production string and PU 2-7/8" P110 to be used as work string.
7. RIH with 9-5/8" 9.3# positive scraper on Work String to top of liner @6711'. (Liner top ~ 6711'). Circulate well clean. POOH.
8. RIH with stinger to PBMD @ 7168 and clean out if necessary. POOH.
9. MIRU WL unit to Run Gyro from PBMD to surface. Contact engineer for QC before RDMO WL. Send a copy of the survey file to [mghann-amoad@semprautilities.com](mailto:mghann-amoad@semprautilities.com)
10. Rig-up wireline unit(s) and run:
  - a.) Magnetic flux leakage from top of liner to surface
  - b.) Multi-arm caliper log from top of liner to surfaceNotify engineer prior to logging. Do not RDMO WL without engineer's approval.
11. RIH with RBP and set at +/-6701' (10' above liner top), pressure test to 500 psi for 10 minutes and sand off.

12. Nipple down 11" Class III 5 M BOPE, crossover spool, and primary pack-off.
  - a.) Send DSA and tubing spool to Vendor for refurbishment.
  - b.) Install auxiliary spacer spool and NU BOPE .
  
13. Rig-up wireline unit, install lubricator and run:
  - c.) Ultrasonic from top of liner to surface
  - d.) CBL from top of liner to surface
 Notify engineer prior to logging. Do not RDMO WL without engineer's approval.
  
14. Ensure equipment integrity (tree, spool, tubing hanger, master valve, wing valves) has been verified before proceeding to the next step.
  
15. ND BOPE, install tubing spool, reinstall BOPE and test.
 

➤ NOTE: VERIFY casing head rating before pressure test (5000 psi or 3000 psi; ensure we are not testing 3000 psi casing head to 5000 psi).
  
16. RIH with arrow set test packer on work string and conduct a Pressure Integrity Test ("Block").
  - a.) Pressure test to 115% of the wells maximum allowable operating pressure (3625 psi) as per attached Pressure Test Schedule.
  - b.) Follow Pressure Test schedule to avoid over pressuring.
  
17. RIH with retrieving tool on work string circulating on the way down, begin slowing down the last 20' before reaching RBP, circulate on top of RBP until returns are clean. Circulate out sand and engage BP. Release BP, circulate as required to control well. POOH and lay down work string.
  
18. RIH with new tubing as follows:
 

*Run items 1) - 9) and 1 joint of 3-1/2" tubing. Install XN plug with slick line unit. Make up testing sub and test BHA to 4000 psi for 5 mins. Remove test sub and pull XN plug. Continue running 3-1/2" tubing hydro-testing each connection to 4000psi.*

  - a) 4.5" Wireline re-entry guide
  - b) 4.5" 9.3# TCPC L-80 Arrow set packer
  - c) 4.5" 9.3# TCPC x 4-1/2" 12.6# TCPC L-80 crossover sub
  - d) 10ft - Pup joint 4-1/2" 12.6# L-80 TCPC
  - e) 4.5" 12.6# L-80 TCPC XN (3.81" w/3.725" no-go) nipple
  - f) Full joint 4.5" 12.6# L-80 TCPC tubing
  - g) 2ft - Pup 4.5" 12.6# L-80 TCPC
  - h) 4.5" 12.6# L-80 TCPC (3.81" Open Down) sliding sleeve
  - i) 4ft - Pup 4-1/2" 12.6# L-80 TCPC
  - j) 4.5" 12.6# L-80 TCPC tubing to surface
  - k) Pup joints 4-1/2" 12.6# TCPC L-80 for space-out
  - l) 4ft - 4.5" 12.6# L-80 TCPC fatigue nipple (pin x pin)
  - m) Tubing hanger with 4-1/2" EUE top box / 4.0" BPV / 4-1/2" TCPC bottom box(Hanger re-done)

### Notes

- *Make up items a) through e) under the supervision of Quality Tubulars. Pressure test assembly at Halliburton facility to 4000 psi for 1hr, chart test. Test caps to be installed and removed by Quality Tubulars.*
- *Make up items g) through i) under the supervision of Quality Tubulars. Pressure test*

*assembly at Halliburton facility to 4000 psi for 1hr, chart test. Test caps to be installed and removed by Quality Tubulars.*

- *Cameron to make up items l) through m) under the supervision of Quality Tubulars. Pressure test assembly at Cameron facility to 4000 psi for 1hr, chart test. Test caps to be installed and removed by Quality*
  - *Shift sliding sleeve and drift with XN plug prior to shipping tools to location.*
  - *Seal lube all connections. To be witnessed by Quality Tubulars.*
19. Land tubing as per vendor specifications.
    - a) Set packer at +/- 6691'.
    - b) **Note:** Amount of compression to set on packer will be determined by Force Analysis / Tube Move Calculations.
  20. Rig-up slick-line unit and lubricator. Set a plug in the 4-1/2" XN profile.
  21. Notify DOGGR to witness tubing tests to 3700 psi, hold for 30 minutes. Record test digitally.
  22. RIH with WL and recover plug from XN nipple.
  23. Notify DOGGR to witness annular test to 1000 psi, hold for 30 minutes. Record test digitally. Take a note of tubing pressure in case of annular pressure doesn't hold.
  24. RIH with WL and shift the sliding sleeve open. RDMO WL.
  25. Install BPV in tubing hanger. Nipple down BOPE, install production tree and test. Remove BPV.
  26. RDMO.

### UNLOAD WELL

1. Rig-up nitrogen unit. Recover workover fluid by pumping down annulus taking returns up tubing.
2. MIRU WL unit. RIH with slick-line and shift sliding sleeve closed. POOH and rig down slick-line unit.

### EQUIPMENTS / SERVICES

1. Workover Rig double [Ensign 331 – Jeff Mosier, 6617060672]
1. HEC Polymer, Fluid [ GEO drilling fluids – Gilbert Ortega, 6613312697]
2. Separator, well kill [ Pacific Petroleum / Onyx – Dean Leal, 6614870492]  
→ We will separate well kill – carbon canisters.
3. Tanks / trucking [ Doby Haggar – Victor, 6615781453]
4. BOP/ packer [ Weatherford – Tim Ludeman, 8053202190]
5. Tubing string [ Tuboscope – Nick Taminich, 8052906577]
6. Wellhead [ Cameron – Danny Caraan, 6613038615]

#### **WELL WORK PRPROGRAM TO UNLOAD WELL**

1. RIH and shift the sliding sleeve open.
2. Rig-up nitrogen unit. Recover workover fluid by pumping down annulus taking returns up tubing.
3. RIH with slick line and shift sliding sleeve closed. POOH and rig down slick line unit.
4. Fill annulus with packer fluid including corrosion inhibitor & biocide.
  - a) Vent nitrogen returns as appropriate.
  - b) Monitor annulus fluid level and re-fill with packer fluid as necessary.
5. Install BPV in tubing hanger. Nipple down the Class III 5M BOPE and install the production tree and test to 5000 psig. Remove BPV.
6. Release production rig, rig down and move out.

#### **WELL LATERAL HYDROTESTING**

1. 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.
2. Reinstall the hydro-tested laterals.
3. Install the well safety systems and instrumentation. Install pressure transmitters on tubing,

casing, and surface casing.

4. 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.

**Casing Pressure Test Schedule:**

| Well: Porter 72B |                       |                                     |                                 |                            |                            |        |   |                    |                                  |                              |  |  |
|------------------|-----------------------|-------------------------------------|---------------------------------|----------------------------|----------------------------|--------|---|--------------------|----------------------------------|------------------------------|--|--|
| Depth (TVD)      | 85% of Burst Strength | Fluid / Formation Pressure Gradient | External Casing Backup Pressure |                            | Pressure Test              |        |   |                    | Tubing Leak Net Burst Pressure @ | Test Pressure > 85% of Burst | Test Pressure < Tubing Leak - Net Burst (Gas-filled annulus) |  |
|                  |                       |                                     | External Casing Backup Pressure | Internal Water Hydrostatic | Net Burst Pressure @ Depth |        |   | Gas-Filled Annulus |                                  |                              |  |  |
|                  |                       |                                     |                                 |                            | 1                          | 2      | 3 | Final              |                                  |                              |  |  |
|                  |                       |                                     |                                 |                            | Surface Test Pressure      | 3625   |   |                    | 2400                             | 3625                         |  |  |
|                  |                       |                                     |                                 |                            | Test Packer Depth          | 3500   |   |                    | 6701                             |                              |  |  |
|                  |                       |                                     |                                 |                            | Test Down Casing or Tubing | Casing |   |                    | Casing                           |                              |  |  |
|                  |                       |                                     |                                 |                            | Bridge Plug Depth          |        |   |                    |                                  |                              |  |  |
| 0                | 5840                  | 0.00                                | 0                               | 0                          | 3625                       | 0      | 0 | 2400               | 3625                             |                              |  |  |
| 500              | 5840                  | 0.00                                | 0                               | 221                        | 3846                       | -      | - | 2621               | 3670                             |                              |  |  |
| 1000             | 5840                  | 0.00                                | 0                               | 442                        | 4067                       | -      | - | 2842               | 3716                             |                              |  |  |
| 1500             | 5840                  | 0.00                                | 0                               | 663                        | 4288                       | -      | - | 3063               | 3761                             |                              |  |  |
| 2000             | 5840                  | 0.00                                | 0                               | 884                        | 4509                       | -      | - | 3284               | 3806                             |                              |  |  |
| 2500             | 5840                  | 0.00                                | 0                               | 1105                       | 4730                       | -      | - | 3505               | 3852                             |                              |  |  |
| 3000             | 5840                  | 0.00                                | 0                               | 1326                       | 4951                       | -      | - | 3726               | 3897                             |                              |  |  |
| 3500             | 5840                  | 0.00                                | 0                               | 1547                       | 5172                       | -      | - | 3947               | 3942                             |                              |  |  |
| 4000             | 5840                  | 0.00                                | 0                               | 1768                       | -                          | -      | - | 4168               | 3988                             |                              |  |  |
| 4500             | 5840                  | 0.00                                | 0                               | 1989                       | -                          | -      | - | 4389               | 4033                             |                              |  |  |
| 5000             | 5840                  | 0.00                                | 0                               | 2210                       | -                          | -      | - | 4610               | 4078                             |                              |  |  |
| 5500             | 5840                  | 0.00                                | 0                               | 2431                       | -                          | -      | - | 4831               | 4123                             |                              |  |  |
| 6000             | 5840                  | 0.00                                | 0                               | 2652                       | -                          | -      | - | 5052               | 4169                             |                              |  |  |
| 6500             | 5840                  | 0.00                                | 0                               | 2873                       | -                          | -      | - | 5273               | 4214                             |                              |  |  |
| 6701             | 5840                  | 0.00                                | 0                               | 2962                       | -                          | -      | - | 5362               | 4232                             |                              |  |  |

0.442  
psi/ft  
int. grad.

0.091  
psi/ft  
int. grad.

Note: Well has 9-5/8", 47#, N-80 (6870 psi burst) from surface to 6828'.

**Well  
Porter 72B**

API #: 04-037-24146-00  
Sec 27, T3N, R16W

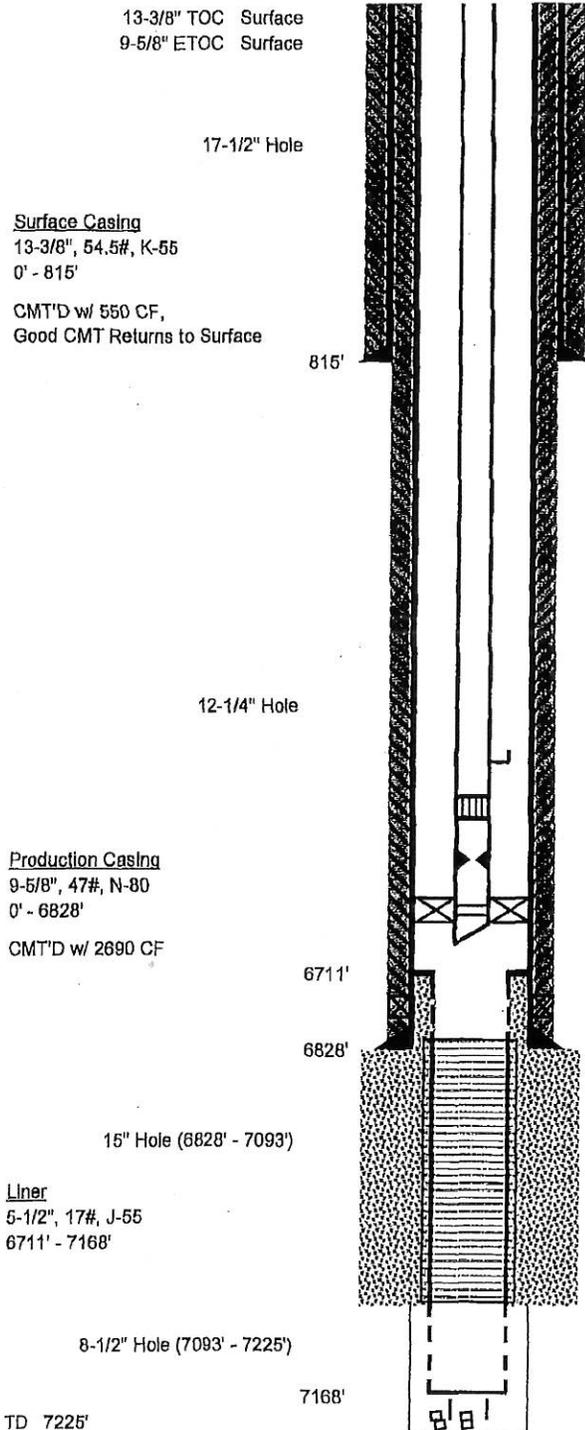
Operator: So. California Gas Co.

Lease: Porter  
Field: Allso Canyon  
Status: Active Gas Storage  
BFW:  
USDW:

Ground Elevation: 1909.1' asl  
Datum to Ground: 23.5' KB

Spud Date: 9/1/1993  
Completion Date: 11/27/1993

Junk: Bottom part of logging tool,  
caliper tool (5.1'), two split shells  
(1/8" thick x 3.73' long), & 15.79'  
wash pipe, Top @ 7194'



Tubing  
3.5", 9.3#, N-80  
0' - 6649'

Surface Casing  
13-3/8", 54.5#, K-55  
0' - 815'

CMT'D w/ 550 CF,  
Good CMT Returns to Surface

815'

12-1/4" Hole

Production Casing  
9-5/8", 47#, N-80  
0' - 6828'

CMT'D w/ 2690 CF

6711'

6828'

15" Hole (6828' - 7093')

Liner  
5-1/2", 17#, J-55  
6711' - 7168'

8-1/2" Hole (7093' - 7225')

7168'

TD 7225'

TD VSS (-5260')

Directionally Drilled: Yes (TD Is 70' E, 407' N of Surf, 7193' TVD)

6536' BST MMA (1-1/2" latch type) GLM

6577' Otis "XD" Sliding Sleeve (Opens Down)

6612' Otis No-Go Nipple

6646' Otis BWD PCKR (w/ 2 Seals)  
6649' Tail

6746' - 6762' Baker ECP (inflated w/ 103 CF CMT)

Liner Perfs:  
6734' - 6798' 1.5" x 0.012", 12R, 6"C Slots  
6798' - 7092' 0.012", 90 Wire SSWW  
7122' - 7163' 1.5" x 0.030", 12R, 6"C Slots

Gravel Packed w/  
389 CF (108% of Calc'd) 20-40

7194' Top of Junk

| Top of Zone Markers |       |          |
|---------------------|-------|----------|
| UDA1                | 5494' | (-3556') |
| LDA                 | 6149' | (-4203') |
| MP                  | 6515' | (-4564') |
| S1                  | 6794' | (-4839') |
| S4                  | 6910' | (-4953') |
| S8                  | 6980' | (-5022') |

Prepared by: MAM (4/20/2016)

**Well  
Porter 72B**

API #: 04-037-24146-00  
Sec 27, T3N, R16W

**Production Casing Pressure Test - Program**

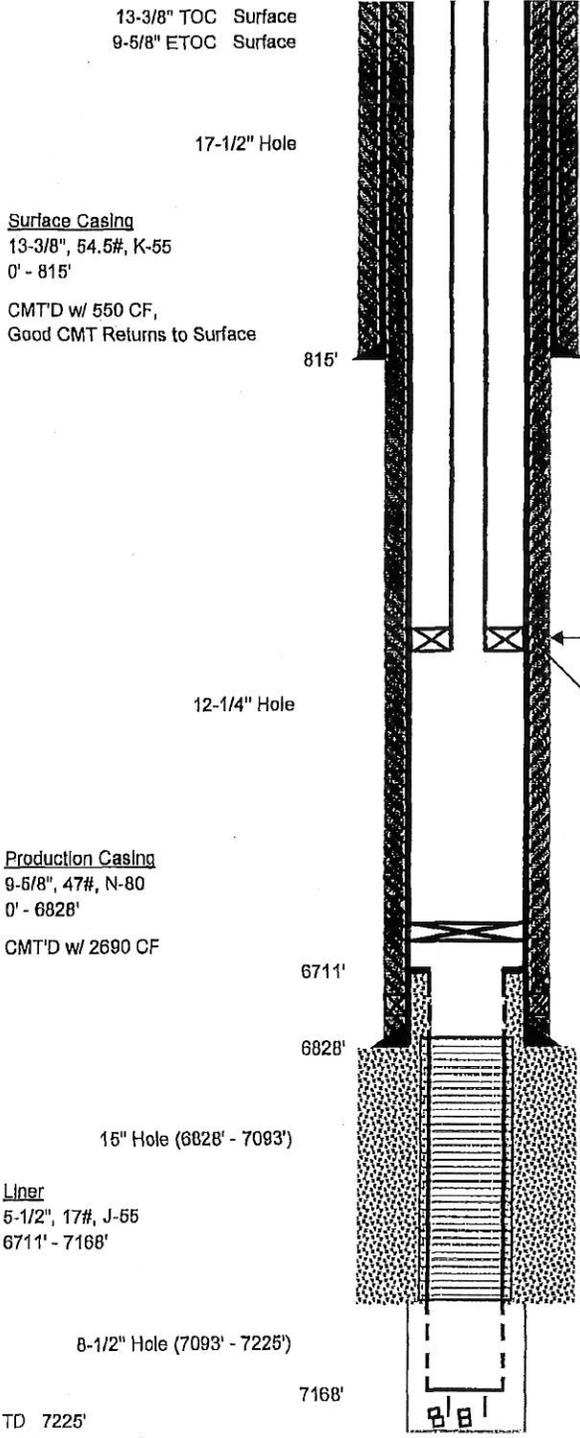
Operator: So. California Gas Co.

Lease: Porter  
Field: Aliso Canyon  
Status: Active Gas Storage  
BFW:  
USDW:

Ground Elevation: 1909.1' asl  
Datum to Ground: 23.5' KB

Spud Date: 9/1/1993  
Completion Date: 11/27/1993

Junk: Bottom part of logging tool, caliper tool (5.1'), two split shells (1/8" thick x 3.73' long), & 15.79' wash pipe, Top @ 7194'



TD 7225'  
TD VSS (-5260')  
Directionally Drilled: Yes (TD is 70' E, 407' N of Surf, 7193' TVD)

TEST 3500' to Surface - 3825 psi  
TEST 3500' to 6701' - 2250 psi  
9-5/8" Test Packer (COE @ 3500')

6701' 9-5/8" Retrievable Bridge Plug  
6746' - 6762' Baker ECP (Inflated w/ 103 CF CMT)

Liner Perfs:  
6734' - 6798' 1.5" x 0.012", 12R, 6"C Slots  
6798' - 7092' 0.012", 90 Wire SSWW  
7122' - 7163' 1.5" x 0.030", 12R, 6"C Slots

Gravel Packed w/  
369 CF (108% of Calc'd) 20-40

| Top of Zone Markers |       |          |
|---------------------|-------|----------|
| UDA1                | 5494' | (-3556') |
| LDA                 | 6149' | (-4203') |
| MP                  | 6515' | (-4564') |
| S1                  | 6794' | (-4839') |
| S4                  | 6910' | (-4953') |
| S8                  | 6980' | (-5022') |

Prepared by: MAM (4/20/2016)  
Updated by: LD (5/10/2016)

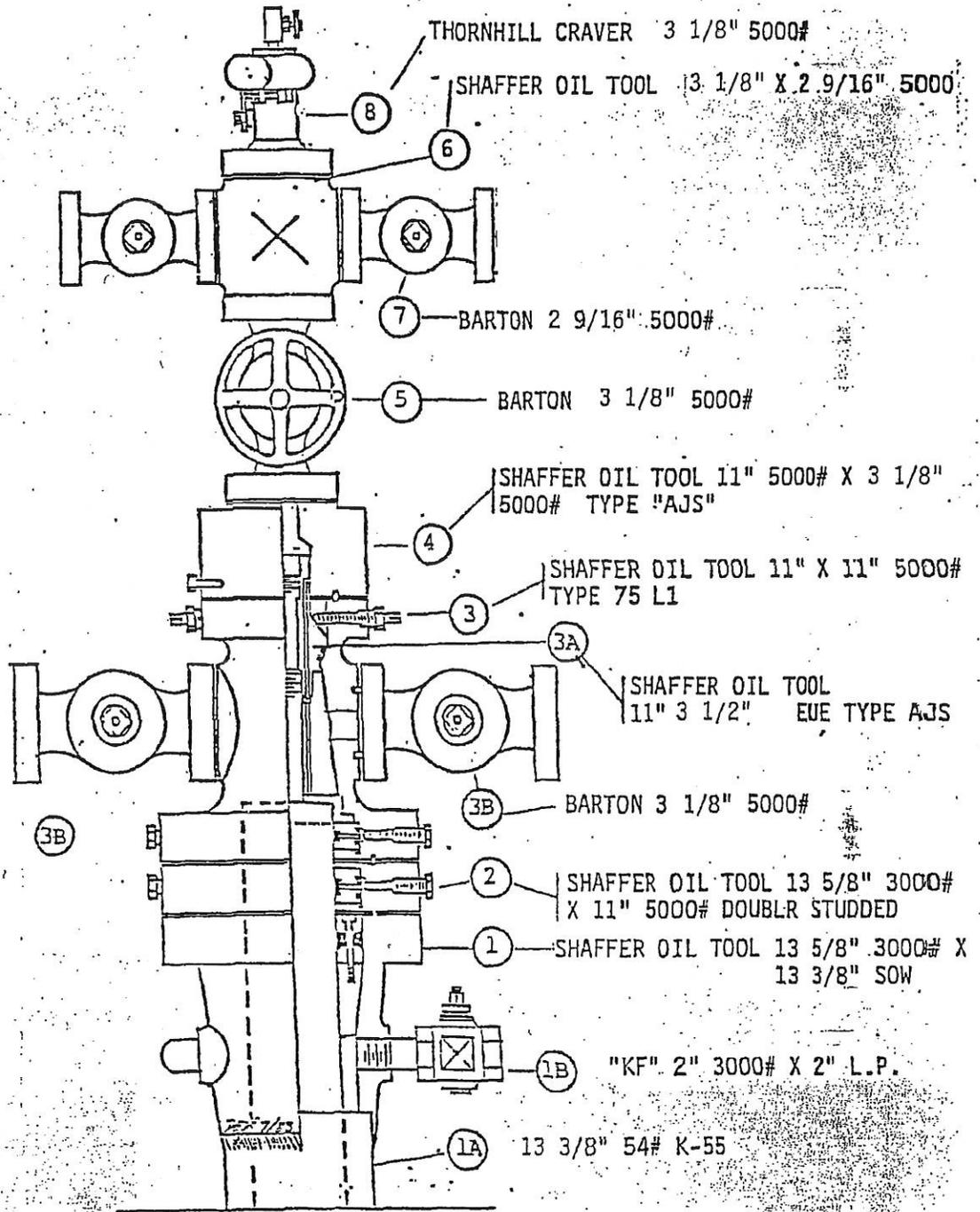
### Tubing Detail

**Well: Porter 72B**  
**Field: Aliso Canyon**

**Status: Injection/withdrawal**  
**Date: 2/8/94**

| Diagram | Tubing  | Tubing             | Tubing      | Tubing      | Tubing        |              |
|---------|---|--------------------|-------------|-------------|---------------|--------------|
|         | <b>Size</b>   | 3-1/2"             |             |             |               |              |
|         | <b>Weight</b>   | 9.3#               |             |             |               |              |
|         | <b>Grade</b>  | N-80               |             |             |               |              |
|         | <b>Thread</b>   | EUE 8rd            |             |             |               |              |
|         | <b>Depth</b>  | 6645.6             |             |             |               |              |
|         | <b>I.D.</b>   | 2.992"             |             |             |               |              |
|         | <b>Drift</b>  | 2.867"             |             |             |               |              |
|         | <b>O.D.</b>   | 4.50"              |             |             |               |              |
|         |   | <b>Description</b> | <b>O.D.</b> | <b>I.D.</b> | <b>Length</b> | <b>Depth</b> |
|         | 1   | K.B.               |             |             | 23.50         | 23.50        |
| 2       | Tbg Head to G.L.  |                    |             | -3.50       | 20.00         |              |
| 3       | Donut 3-1/2" X 3-1/2"   |                    | 2.867       | 0.52        | 20.52         |              |
| 4       | Fatigue Nipple 3-1/2"   | 3.500              | 2.867       | 0.61        | 21.13         |              |
| 5       | 3-1/2" Pup Joint, N-80  | 4.500              | 2.867       | 6.33        | 27.46         |              |
| 6       | 3-1/2" Pup Joint, J-55  | 4.500              | 2.867       | 10.11       | 37.57         |              |
| 7       | 3-1/2" Pup Joint, J-55  | 4.500              | 2.867       | 10.11       | 47.68         |              |
| 8       | 206 Jts. 3-1/2" Tbg., N-80  | 4.500              | 2.867       | 6485.50     | 6533.18       |              |
| 9       | 3-1/2" Pup Joint, J-55  | 4.500              | 2.867       | 4.00        | 6537.18       |              |
| 10      | 3-1/2" MMA GLM, 1-1/2"  | 5.620              | 2.867       | 8.15        | 6545.33       |              |
|         | Dummy Valve on 1-1/2" RA Latch  |                    |             |             | 6545.33       |              |
| 11      | 3-1/2" Pup Jt. Tbg, N-80  | 4.500              | 2.867       | 0.63        | 6545.96       |              |
| 12      | 3-1/2" Jt. Tbg, N-80  | 4.500              | 2.867       | 31.54       | 6577.50       |              |
| 13      | 2.75" XD Sld'g Sl'Ve Opn Dn   | 4.250              | 2.750       | 3.60        | 6581.10       |              |
| 14      | 3-1/2" Jt. Tbg, N-80  | 4.500              | 2.867       | 31.53       | 6612.63       |              |
| 15      | 2.635 XN NoGo Npl,  | 4.500              | 2.635       | 1.45        | 6614.08       |              |
| 16      | 1 Jt. 3-1/2" Tbg, N-80  | 4.500              | 2.867       | 31.52       | 6645.60       |              |
| 17      | J-Latch above packer  | 6.500              | 2.867       | 0.40        | 6646.00       |              |
| 18      | J-Latch in Packer   |                    |             | 0.45        | 6646.45       |              |
| 19      | Seal Units, Qty. 2  | 5.000              | 3.500       | 2.00        | 6648.45       |              |
|         | Prod. Tube w/45° Guide Shoe   | 4.950              | 2.993       | 0.65        | 6649.10       |              |
| 15      | A Otis 9-5/8" 'BWD' Packer, 5.0" Bore, 8.120" O.D.<br>66,000 Lb up wt., 65,000 Lb Down wt.<br>Landed with 9,000 Lb compression, Latch tested OK<br>Tested to 1,000 psi, held 20 minutes OK. |                    |             |             | 6646.00       |              |
| 18      | Distance from top of Packer to top of Latch Seal Unit   |                    |             |             | 0.40          |              |
|         | Liner @ 6711'   |                    |             |             |               |              |

TYPE IV



Well Name: PORTER 72-B

Mfgr: SHAFFER OIL TOOL

Date Prepared: 11/30/93

Well No: PORTER 72-B

(Rec'd 06-06-16 DOGGR Ventura)

Field: ALISD CANYON

Date Prepared: 11/30/93

Wellhead Mfr: SHAFFER OIL TOOL

1. Casing Head SHAFFER OIL TOOL Size 13 5/8" 3000# X 13 3/8" SOW

Slips & Pack-off 13 5/8" X 9 5/8" MODEL "SD"

A. Surface Csg Size 13 3/8" Wt 54# Grade K-55

B. Casing Head Valve "KF" Size 2" 3000# X 2" L.P. Fig

2. Seal Flange SHAFFER OIL TOOL Size 13 5/8" 3000# X 11" 5000# DOUBLE STUDDED

Type Seal 9 5/8" "PS" Ring BOTTOM RX 57 & TOP RX 54

3. Tubing Head SHAFFER OIL TOOL Type Seal 9 5/8" "PS"

Size 11" 5000# X 11" 5000# TYPE 75 L1 Outlets 3 1/8" 5000#

Sec. Seal 9 5/8" PS Valve Thrd 2 1/2" L.P. Ring Type Btm RX 54 Top RX 54

A. Tubing Hanger SHAFFER OIL TOOL Size 11" X 3 1/2" EUE 8 RD Bore 2.992

Type 75 "AJS" Thread 3 1/2" EUE 8 RD

B.P.B. Size & Thrd SHAFFER 3 1/2"

B. Tubing Head Valves BARTON Size 3 1/8" 5000#

C. Automatic Csg Valve N/A Size

4. Adapter Seal Flange SHAFFER OIL TOOL Size 11" 5000# X 3 1/2" 5000# "AJS"

A. Ring Size BOTTOM RX 54 & TOP RX 35 Bore 3 1/8"

5. Master Valve BARTON Size 3 1/2" 5000#

6. Xmas Tree Cross SHAFFER OIL TOOL Size 3 1/2" 5000# X 2 9/16" 5000#

7. Tbg Wing Valves BARTON Size 2 9/16" 5000#

Auto Tbg. Prod Valve N/A THORNHILL Size

8. Unibolt CRAVER Size 3 1/2" 5000# Inside Thrds NONE

9. Csg Size 9 5/8" Wt 47# Grade N-80

10. Tubing Head to Ground Level

11. Wt. Landed on Doughnut Tubing Size Type

OPERATOR SO. CAGA CD  
 WELL NO. "PORTER" 72B  
 MAP

A.P.I. 037-24146  
 SECTION 27, T. 3 N, R. 16 W

|                  |         |              |  |  |  |  |
|------------------|---------|--------------|--|--|--|--|
| INTENTION        | DRILL   | Completion   |  |  |  |  |
| NOTICE DATED     | 7-6-93  | Core/Storage |  |  |  |  |
| P-REPORT NUMBER  | 293-229 |              |  |  |  |  |
| CHECKED BY/DATE  |         |              |  |  |  |  |
| MAP LETTER DATED | 7-17-93 | 7-2-94       |  |  |  |  |
| SYMBOL           |         |              |  |  |  |  |

|                         | REC'D                    | NEED | REC'D | NEED | REC'D | NEED | REC'D | NEED | REC'D | NEED |
|-------------------------|--------------------------|------|-------|------|-------|------|-------|------|-------|------|
| NOTICE                  | 7-8-93                   |      |       |      |       |      |       |      |       |      |
| HISTORY                 | <del>4-25-94</del> 18-94 |      |       |      |       |      |       |      |       |      |
| SUMMARY                 | 4-25-94                  | MA   |       |      |       |      |       |      |       |      |
| E-LOG (2'45')           | 7-22-93                  |      |       |      |       |      |       |      |       |      |
| MUD LOG                 |                          |      |       |      |       |      |       |      |       |      |
| DIPMETER                |                          |      |       |      |       |      |       |      |       |      |
| DIRECTIONAL             | 2-16-94                  |      |       |      |       |      |       |      |       |      |
| CORE/SWS                |                          |      |       |      |       |      |       |      |       |      |
| GBL                     |                          |      |       |      |       |      |       |      |       |      |
| E-LOG (RUN ON 11-19-93) | 1-11-94                  |      |       |      |       |      |       |      |       |      |
| MIT Due 10/94           |                          | ✓    |       |      |       |      |       |      |       |      |

ENGINEERING CHECK

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

RECORD'S COMPLETE SP

EDP 7/93

FINAL LETTER OK \_\_\_\_\_  
 MAILED \_\_\_\_\_  
 RELEASED BOND \_\_\_\_\_

INJECTION BOOK \_\_\_\_\_ REMARKS: \_\_\_\_\_  
 IDLE WELL LIST \_\_\_\_\_  
 SURFACE INSP. CARD \_\_\_\_\_  
 OK TO RELEASE FROM CONFIDENTIAL \_\_\_\_\_  
 ABANDONED-REMOVED FROM E.D.P. \_\_\_\_\_

# WELL SUMMARY REPORT

|  |  |                           |                  |                |  |
|--|--|---------------------------|------------------|----------------|--|
| Operator<br><b>Southern California Gas Co.</b>   |  | Well<br><b>Porter 72B</b> |                  |                |  |
| Field<br><b>Aliso Canyon</b>   |  | County<br><b>L.A.</b>     | Sec<br><b>27</b> | T<br><b>3N</b> | R<br><b>16W</b>                                      |
| Location (Give surface location from property or section corner, street center line and/or California coordinates)<br><b>909' South &amp; 668' West from station 84, Section 27, T3N, R16W</b> |  |                           |                  |                | Elevation of ground above sea level<br><b>1909.1</b> |

|  |   |       |       |  |  |   |
|--|---|-------|-------|--|--|---|
| Commenced drilling (date)<br><b>9/1/93</b>   | Total depth                             |       |       | Depth measurements taken from top of:  |  |   |
|  | (1st hole)<br><b>7225'</b>              | (2nd) | (3rd) | <input type="checkbox"/> Derrick Floor | <input checked="" type="checkbox"/> Rotary Table | <input checked="" type="checkbox"/> Kelly Bushing |
| Completed drilling (date)<br><b>11/27/93</b>   | Present effective depth<br><b>7225'</b> |       |       | Which is <b>23.5</b> feet above ground |  |   |
| Commenced producing (date)   | Junk                                    |       |       | GEOLOGICAL MARKERS                     |  | DEPTH   |
| <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping<br><input type="checkbox"/> Gas lift |   |       |       | MP Marker                              | 6496' TVD  |   |
| Name of producing zone(s)  |   |       |       | Top of S1                              | 6772' TVD  |   |
|  |   |       |       | Top of S4                              | 6886' TVD  |   |
|  |   |       |       | Top of S8                              | 6954' TVD  |   |
| Formation and age at total depth   |   |       |       |  |  |   |

|                          | 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"                      | 0             | 815'          | 54.5#            | K-55 Buttress            | New                | 17-1/2"              | Cmt to Surf.                            |  |
| 9-5/8"                       | 0             | 6828'         | 47#              | N-80 LT&C                | New                | 12-1/4"              | Cmt to Surf.                            |  |
|                              |               |               |                  |                          |                    |                      |   |  |
|                              |               |               |                  |                          |                    |                      |   |  |

PERFORATED CASING (Size, top, bottom, perforated intervals, size and spacing of perforation and method.)  
 5-1/2" 17#, J-55 LT&C Liner, Slotted Blank from 6734' - 6798' and 7122' - 7163'. WWS from 6798' - 67092'

RECEIVED

Was the well directionally drilled? If yes, show coordinates at total depth  
 Yes     No    **406.6 N, 70.25 E, TVD 7193'**

APR 25 1994

Please see attached survey listings  
 Other surveys

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

In compliance with Sec. 3215, Division 3 of the Public Resources Code, the information given hereon 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<br><b>Ian Binmore</b>                |               | Title<br><b>Drilling Engineer</b> |                               |
| Address<br><b>Box 3249, ML 22GO</b>       |               | City<br><b>Los Angeles</b>        | Zip Code<br><b>90051-1249</b> |
| Telephone Number<br><b>(213) 244-2680</b> | Signature<br> | Date<br><b>3/8/94</b>             |                               |

## Interoffice Memo

**TO:** Steve Mulqueen

**FROM:** Ian Binmore

**Date:** February 17, 1994

**Subject:** Replacement of existing Log with corrected log.

**RECEIVED**

FEB 18 1994

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

You should have previously received a copy of this log for Aliso Canyon Field Porter 72B. Unfortunately, that log had a 10 foot error in it's depth. This new log replaces the existing log.

**IMPORTANT**

Please destroy your old logs. All outstanding logs should be accounted for with the destruction of your two logs. If you do not have your logs to destroy, please let me know.

All new versions of this log have a red 'N' in the upper left corner of the cover page. All new logs have a Schlumberger Depth of 6884' with the corresponding depth on the old log at 6874'. Furthermore, the remarks section on page three indicates that the new log was replayed 12-28-93.

Thank you in advance for your attention to this matter. If there are any questions please do not hesitate to call me at 213-244-2680

Sincerely,



I. R. Binmore  
Drilling Engineer

IRB/bh  
(u:\tpirb\shared\logrep.doc)



## History Porter #72B, Aliso Canyon Los Angeles

- 09/10 Finished wiping with no drag and no fill. Continued to drill and survey 12-1/4" hole from 4636' to 4819'. Pulled out for bit change. Ran back to bottom with bit #8 and reamed from 4779' to 4819'. Drilled and surveyed ahead to 5245' (kick-off point).
- 09/11 Rigged up Baker Hughes Inteq's steering tool. Directionally drilled 12-1/4" hole from 5245' to 5367'. Wiped hole to 4860' (no drag). Continued to directionally drill from 5367' to 5388'.
- 09/12 Pulled out for bit change. Bit was 7/8" under gauge. Ran in with 12-1/4" drilling assembly. Reamed from 5245' to 5388'. Drilled to 5395'. Pulled out to change bottom hole assembly. Ran in with bit #11 and mud motor; reamed from 5364' to 5395'. Directionally drilled 12-1/4" hole to 5435'.
- 9/13 Directionally drilled to 5480'. Pulled motor assembly. Ran in with locked drilling assembly. Stuck pipe @ 4640'; jarred free. Reamed hole from 4607' to 5480'. Raised mud weight to 79 pcf (10.6 ppg). Drilled to 5527'. Wiped hole to 4400' (no drag, 10' fill). Drilled and surveyed ahead to 5618'.
- 09/14 Continued to drill and survey 12-1/4" hole to 5744'. Wiped hole to 3857', (25,000 lbs. - 30,000 lbs. drag from 5644' to 4780'). Drilled and surveyed ahead to 5959'. Wiped hole to 5499'. Drilled and surveyed ahead to 6110'. Circulated for bit trip.
- 09/15 Drilled to 6114'. Pulled out of hole, changed bit and added near-bit roller reamer. Ran in hole to 6021'. Reamed hole from 6021' to 6114'. Drilled from 6114' to 6459'. Wiped hole at 1900 hours. and 0200 hours. (hole not tight on wiper trips).
- 09/16 Drilled and surveyed from 6459' to 6532'. Circulated and wiped hole to shoe (pulled 20-25 lbs over). Drilled and surveyed from 6532' to 6706'. Circulated and wiped hole to 5706', (pulled 50,000 - 70,000 lbs over string weight). Drilled from 6706' to 6813'. Circulated and wiped hole.
- 09/17 Drilled from 6813' to 6875'. Logged well with Schlumberger. Strung blocks to ten lines. Ran in hole to condition hole for casing.
- 09/18 Ran in hole. Circulated and conditioned mud to run casing. Pulled out of hole. Rigged up and ran casing to 6828'. Rigged up Halliburton and circulated.
- 09/19 Cemented 9-5/8" casing as follows: Pumped 5 Bbls of water followed by 18 Bbls super flush followed by 10 Bbls water. Mixed and pumped 1900 cu.ft. of 11.5 ppg premium cement with 13 lbs/sk silicate & 13 lbs/sk spherelite as lead, followed by 790 cu.ft. of 15.8 ppg premium cement with 1% Halad 322 & 0.2% HR7. Released plug and checked for proper release. Mixed and pumped 103 cu.ft. of 15.8 ppg premium cement. Displaced cement with 501 Bbls water (2813 cu.ft) to shoe. Bumped plug with 1650 psi final circulating pressure, inflated packer with 2890 psi and tested same. Bled off casing pressure. Cement in place at 8:45 a.m. Nippled down BOPE and jacked up same to set slips. Picked up BOPE, made cut off, and installed pack off. Cleaned out and changed rams. Laid down drill collars, heavy-weight drill pipe and 4-1/2" drill pipe. Nippled down and set out BOPE. Released rig at 0600 hours, 9/20/93.
- 10/11 Installed 11" 5000 psi x 11" 5000 psi tubing head and 11" 5000 psi x 2-9/16" 5000 psi tree. Energized and tested upper and lower seals to 3600 psi. Tested O.K.

### ----- COMPLETION -----

- 11/12 Moved in completion rig.
- 11/13 Raised mast and rigged up. Removed xmas tree. Installed 11" 5000 psi Class III BOPE. Tested blind rams to 4000 psi. Tested 3-1/2" pipe rams to 4000 psi. Tested Hydril bag to 3500 psi. BOPE test witnessed by D.O.G. representative Steve Mulqueen. Made up 8-1/2" bit on 180' of 5-7/8" drill collars.

## History Porter #72B, Aliso Canyon Los Angeles

- 11/14 Measured and picked up 3-1/2" drill pipe. Tagged cement top at 6563'. Drilled out cement to 6805'. Pressure tested 9-5/8" 47# casing to 1500 psi for 20 minutes (held O.K.). Changed well over to 10.1 ppg CaCl/HEC polymer. Cleaned mud pits. Circulated and conditioned drilling fluid, adding XC polymer to system. Drilled out to shoe at 6828'. Drilled to 6848'. Circulated and conditioned XC polymer system.
- 11/15 Circulated and conditioned XCD polymer. Pulled out of well. Made up 8-1/2" Hughes ATJ-11 on drilling assembly. Ran in well to 6828'. Changed out drilling line on rig (2 hours). Drilled and surveyed ahead from 6848' to 6947'. Surveyed at 6929', 11°, N-17°-E. Drilled ahead from 6947' to 7080'. Drilled and surveyed ahead from 7080'. Circulated and surveyed at 7063'.
- 11/16 Surveyed 7063', 12.5°, N-16°-E. Wiped hole to 6828'. Drilled and surveyed ahead from 7081' to 7225'. Surveyed @ 7191'. Wiped hole to 9-5/8" casing shoe @ 6828'. Ran in well to 7225'. Circulated well clean. Pulled out of well. Rigged up shooting flange and lubricator.
- 11/17 Ran Schlumberger dual laterolog SP/GR and caliper logging tool to 7225'. Pulled cable out of well. Left 80' of 3/4" rubber coated cable and 39.6' of logging tools in well. Made up TriState rope-spear with 7-1/2" OD stop, bumper sub, jars, crossover, and circulating sub. Ran in well to 7158'. Rotated spear. Pulled out of well. Recovered 12' of rubber coated wireline. Ran in well with TriState rope spear to 7178'. Rotated rope spear. Worked pipe pulling 80,000 lbs over string weight. Worked stop sub and rope spear free. Pulled out of well. Recovered 80' of 3/4" OD rubber coated cable. Cable was pulled out of rope socket. Made up 7-1/2" OD overshot dressed with 3-3/8" grapple, bumper sub and jars crossed over to 3-1/2" drill pipe. Ran in well to 7186'. Worked overshot over top of fish. Circulated and worked logging tools. Pulled out of well.
- 11/18 Pulled out of well. Recovered top part of logging tools (30.77'). Caliper tool (5.10') and two split shells (1/8" thick x 3.73' long) still left in well. Made up 8" OD wash-over shoe on 13' of 7-5/8" ID wash pipe. Ran bumper sub, jars and 181' of 5-7/8" OD drill collars. Cleaned out from 7158' to 7198'. Fell through to 7216' with no fill. Washed over logging tools to 7222'; wash pipe stuck. Jarred on wash pipe for 1/2 hour (pulled free). Pump pressure increase indicated logging tools might be inside wash pipe. Pulled out of well. Left 15.79' wash pipe in well. Made up 8-1/2" bit on 181' of 5-7/8" drill collars. Ran in well. Reamed from 7125' to 7203' (top of fish). Pulled out of well.
- 11/19 Pulled out of well. Installed shooting flange and 7" lubricator. Using Schlumberger, ran Dual Laterolog/SP/GR and 4 arm caliper log from 7074' to 6828'. Unable to get tool past 7074'. Ran in well with TriState 8-1/4" x 15" hole opener to 6828'. Opened 8-1/2" hole to 15" from 6828' to 6905'.
- 11/20 Opened 8-1/2" hole to 15" from 6905' to 7058'. Hole opener running on fill. Pulled out of well. Made up 8-1/2" bit on 181' of drill collars. Ran in well.
- 11/21 Ran in well with 8-1/2" bit. Tagged fill at 7058'. Cleaned out to 7094'. Metal in well bore. Pulled out of well. Made up and ran 8-1/2" junk mill. Cleaned out from 7069' to 7094'. Unable to clean out past 7094' due to fill running in well bore. Pulled out of well. Ran TriState 8-1/4" x 15" hole opener.
- 11/22 Opened 8-1/2" hole to 15" from 7058' to 7093'. Circulated hole clean. Pulled to 6828'. Waited 3 hours. Ran in well and tagged fill at 7092' (1' fill). Pulled out of well. Made up 8-1/2" OD junk mill, 60' of drill collars, jars, and 121' of drill collars. Ran in well. Cleaned out from 7092' to 7110'.
- 11/23 Cleaned out from 7110' to 7194'. Pulled to 9-5/8" casing shoe at 6828'. First 30' off bottom pulled tight. Waited 2 hours then ran back to bottom. Found 12' of fill. Cleaned out to 7194' and circulated well clean. Changed well over to 10.1 ppg, polymer with 1.0% KCl. Cleaned mud pits and pulled out of well. Made up 4.63' bull nose with spade on 40.96' of .030 mesh slot liner with 30.18' blank, 293.63' of 0.012 mesh screen, 64.58' of 0.012 mesh slots with 18.65' of blank and 1.71' landing nipple. Made up Baker cup tool and ran in well. Liner: 5-1/2" 17# EUE 8rd LT&C.
- 11/24 Ran in well with 5-1/2" 17# K-55 liner to 7168'. Established circulation. Tested pump lines to 2500 psi. Mixed and pumped 80 cu.ft. of 20-40 resin coated sand and 370 cu.ft. of 20-40 Ottawa sand. Packed off at 900 psi with 375 cu.ft. in place behind the liner. Reversed out 75 cu.ft. of 20-40 sand. First pack in place at 2:15 p.m. Waited 4 hours for pack to settle. Established pump rate of 2.5 Bbls/min at 400 psi. Mixed and pumped 40 cu.ft. of 20-40 Ottawa sand. Pressured

## History Porter #72B, Aliso Canyon Los Angeles

up to 1000 psi with 14 cu.ft. out. Reversed out 26 cu.ft. of sand. Waited 4 hours for pack to settle. Total of 389 cu.ft. in place behind liner. Pressured up on pack to 1000 psi at 11:40 p.m. Slow bleed off from 1000 psi to 400 psi in 3-1/2 minutes. Unable to establish rate. Gravel pack completed. Released from liner and pulled gravel packing tools out of the well. Made up Baker 9-5/8" x 5-1/2" lead seal drive-over adapter. Ran in well.

- 11/25 Ran in with Baker lead seal drive-over adapter. Set lead seal at 7168'. Shut well in. Rig down until morning of 11/26/93.
- 11/26 Pulled out of well. Made up 498' of 2-7/8" Hydril CS tubing on 3-1/2" drill pipe. Ran in well to 7158'. Found 10' of fill inside liner. Cleaned out to 7168'. Circulated well clean. Laid down 3-1/2" drill pipe. Installed shooting flange. Rigged up Dialog. Setting tool would not fit on packer. Installed pitcher nipple. Measured and picked up 3-1/2" tubing.
- 11/27 Measured and picked up 3-1/2" 9.3# N-80 tubing. Pulled out of well. Installed shooting flange. Using Dialog, ran and set Otis 9-5/8" BWD packer at 6646'. Ran production tubing, using Baker Seal: Otis guide shoe, 2' of 6.00" OD seals, Otis J-latch, one joint of 3-1/2" N-80 tubing, Otis 2.635" XN No-Go Nipple, one joint of 3-1/2" N-80 tubing, Otis 2.75" XD sliding sleeve, one joint of 3-1/2" N-80 tubing, BST gas lift mandrel with 1.5" dummy valve, 206 joints of 3-1/2" tubing (had to pick up and measure the remainder of 3-1/2" tubing), and 27.16' of 3-1/2" tubing pups. Latched into packer at 6646' and pulled 15,000 lbs over tubing weight to check latch. Landed tubing with 9000 lbs on packer and 44,000 lbs on tubing hanger. Tested packer and seals to 1000 psi for 20 minutes. Installed back pressure plug. Removed BOPE. Installed xmas tree. Tested tree to 5000 psi. Using Santa Paula wireline, opened XD sliding sleeve at 6577'. Changed well over to 63 pcf 2% KCl water, with 5 gal Ucarcide per 100/Bbls, 5 gals HIB-19 per 100/Bbls and 2-1/2 gals COS per 100/Bbls. Released rig at 0600 hours, 11/28/93.

# Aliso Canyon Porter 72B Wellbore Mechanical

**Surface Casing:**

13-3/8", 54.5#  
K-55 Buttress  
12.615" ID  
0' - 815'  
Cm't to Surface

**17-1/2" Hole:**

0' - 815'

**Shoe @ 815'**

**Production Casing:**

0' - 6828', 153 Jts.  
9-5/8", 47# N-80  
LT&C, 8.681" ID  
23 Centralizers  
8 Scratchers  
Bottom 5 joints Grit-  
Blasted.  
Bottom 4 joints Baker-  
Locked  
Cement to Surface

**12-1/4" Hole, 815'-6828'**

**Shoe @ 6828'**

**Liner:**

5-1/2", 17#, J-55 LT&C  
4.892" ID  
6713'-6734'; Blank  
6734'-6798'; 6" C Slots  
0.012" X 1.5" 12R  
6798'-7092'; SSWW  
0.012", 90 wire  
6.0" OD

**15" Hole, 6828'-7093'**

7092'-7122; Blank

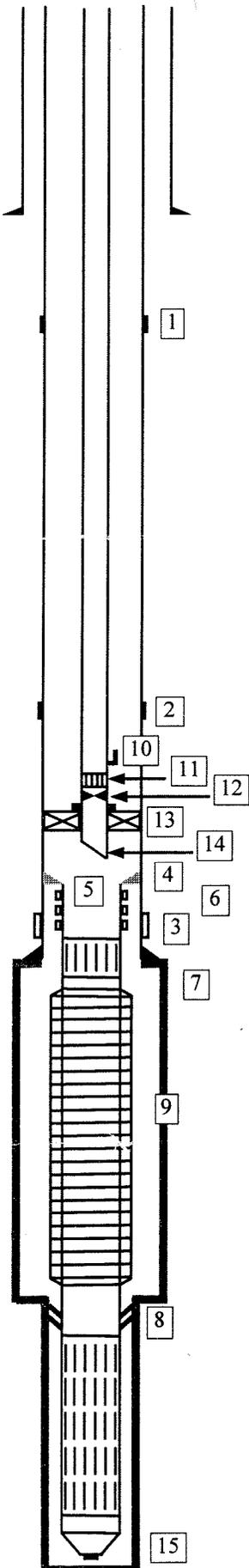
**8-1/2" Hole, 7093'-7225'**

7122'-7163'; 6" C Slots  
0.030" X 1.5" 12R

7163' - 7168'; Blank

**Bullnose w/Spade**

23.5' KB



7225' MD TD  
(7193' TVD)

**Status:** Injection/Withdrawal Well

**Flow Regime:** Casing Flow

**Elevation:** 1909' G.L., 23.5' K.B., 1932.5' ASL.

**Surface Loc.:** 909' S. & 668' W. of Station 84, Section 27, T-3N, R-16W

**Bot. Hole Loc.:** 406.6' N, 70.25' E @ TVD 7192.9' & MD 7225', Relative to Surface Loc.

**History:** Well Spudded 9/1/93

Well Completed 11/27/93

| Volumes   | Cu. Ft. | Bbls |
|-----------|---------|------|
| Tubing    | 325     | 58   |
| Csg/liner | 87      | 16   |
| Annulus   | 2289    | 408  |
| Total     | 2701    | 482  |

**ZONES**

| Zone               | M.D   | TVD     |
|--------------------|-------|---------|
| M-P Marker         | 6514' | (6496') |
| Top S1             | 6794' | (6772') |
| Top S4             | 6910' | (6886') |
| Top S8             | 6980' | (6954') |
| Base Sesnon (est.) | 7110' | (7079') |
| Top Frew (est.)    | 7126' | (7094') |
| Base Frew (est.)   | 7213' | (7180') |

**Tubing:**

206 Joints of 3-1/2" 9.3#, N-80, EUE 8rd Tubing. 2.992" ID, 2.867" Drift.

Tubing Hanger 3.5' above G.L.

See Tubing Detail

**Mechanical Details**

- 1) 2988.8' to 3004', 15.21' Production Casing Flag Joint.
- 2) 6511' to 6526.3', 15.26' Production Casing Flag Joint.
- 3) 6762'- 6746', Baker ECP, 9-7/8" External, 8.681" I.D.
- 4) 6711', Lead Seal Adaptor.
- 5) 6713', Landing Nipple with Centralizing Lugs
- 6) 6713', 6725', 6744', 6767' & 6789" Centralizing Lugs, 1/4" X 4" X 8.437 OD
- 7) Bow Type Centralizers on each Joint.
- 8) Metal Petal Baskets at 7098', 7107', 7116'
- 9) Gravel Pack; 20-40 Ottawa Sand. Bottom 80 CF is resin-coated. 389 CF total, 108% of theoretical.
- 10) 6536"; BST MMA Gas Lift Mandrel, 1-1/2" Latch type
- 11) 6577"; Otis XD Sliding Sleeve, Opens Down, 2.75 I.D.
- 12) 6612"; Otis No-Go Nipple, 2.635" I.D.
- 13) 6646"; Otis 9-5/8" 47# 'BWD' Packer, 5.0" I.D. 8.120 O.D., w/2 Seals
- 14) 6649"; Guide Shoe, 2.993 I.D.
- 15) 7194"; Top of Junk in well. Logging Tools;& Wash Pipe. See Junk Detail

**Department**

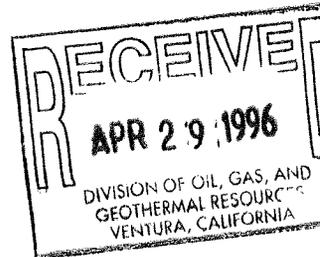
Drilling Engineer:

Petroleum Engineer:

**Date**

4/9/96

4/5/96



THE GAS COMPANY  
PORTER

PORTER 72B  
PORTER 72B  
ALISO CANYON  
CALIFORNIA

SURVEY LISTING

by  
Baker Hughes INTEQ

Your ref : MSS  
Our ref : svy2945  
License :

Date printed : 11-Feb-94  
Date created : 3-Sep-93  
Last revised : 10-Feb-94

FINAL  
REVISED  
PRINT

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 9.040,w1 29 25.397  
Slot Grid coordinates are N -278.422, E -203.238  
Slot local coordinates are 911.00 S 665.00 W  
Reference North is True North

RECEIVED

MAY 26 1994

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

THE GAS COMPANY  
 PORTER, PORTER 72B  
 ALISO CANYON, CALIFORNIA

SURVEY LISTING Page 1  
 Your ref : MSS  
 Last revised : 10-Feb-94

| Measured<br>Depth | Inclin.<br>Degrees | Azimuth<br>Degrees | True Vert.<br>Depth | R E C T A N G U L A R<br>C O O R D I N A T E S |         | Dogleg<br>Deg/100Ft | Vert<br>Sect |
|-------------------|--------------------|--------------------|---------------------|--|---------|---------------------|--------------|
| 0.00              | 0.00               | 0.00               | 0.00                | 0.00 N   | 0.00 E  | 0.00                | 0.00         |
| 169.00            | 0.75               | 191.00             | 169.00              | 1.08 S   | 0.21 W  | 0.44                | -1.11        |
| 305.00            | 0.75               | 191.00             | 304.98              | 2.83 S   | 0.55 W  | 0.00                | -2.89        |
| 575.00            | 1.25               | 129.00             | 574.95              | 6.42 S   | 1.40 E  | 0.41                | -6.04        |
| 665.00            | 1.50               | 118.00             | 664.92              | 7.59 S   | 3.20 E  | 0.40                | -6.85        |
| 715.00            | 2.50               | 138.00             | 714.89              | 8.71 S   | 4.51 E  | 2.41                | -7.70        |
| 960.00            | 2.25               | 173.00             | 959.69              | 17.45 S  | 8.67 E  | 0.59                | -15.51       |
| 1083.00           | 2.00               | 181.00             | 1082.61             | 22.00 S  | 8.93 E  | 0.31                | -19.92       |
| 1190.00           | 2.00               | 181.00             | 1189.54             | 25.73 S  | 8.86 E  | 0.00                | -23.60       |
| 1281.00           | 2.50               | 182.00             | 1280.47             | 29.30 S  | 8.77 E  | 0.55                | -27.13       |
| 1373.00           | 3.50               | 184.00             | 1372.35             | 34.11 S  | 8.50 E  | 1.09                | -31.90       |
| 1408.00           | 3.75               | 178.00             | 1407.28             | 36.32 S  | 8.47 E  | 1.30                | -34.08       |
| 1471.00           | 2.50               | 198.00             | 1470.18             | 39.68 S  | 8.11 E  | 2.60                | -37.45       |
| 1501.00           | 2.25               | 224.00             | 1500.16             | 40.73 S  | 7.50 E  | 3.65                | -38.59       |
| 1533.00           | 1.50               | 231.00             | 1532.14             | 41.44 S  | 6.74 E  | 2.45                | -39.44       |
| 1563.00           | 1.50               | 267.00             | 1562.13             | 41.71 S  | 6.04 E  | 3.09                | -39.83       |
| 1594.00           | 1.00               | 299.00             | 1593.12             | 41.60 S  | 5.40 E  | 2.71                | -39.84       |
| 1625.00           | 1.25               | 354.00             | 1624.12             | 41.14 S  | 5.13 E  | 3.43                | -39.44       |
| 1741.00           | 3.00               | 353.00             | 1740.04             | 36.86 S  | 4.63 E  | 1.51                | -35.34       |
| 1864.00           | 2.75               | 353.00             | 1862.88             | 30.74 S  | 3.88 E  | 0.20                | -29.46       |
| 1988.00           | 2.75               | 354.00             | 1986.74             | 24.83 S  | 3.20 E  | 0.04                | -23.78       |
| 2110.00           | 2.50               | 357.00             | 2108.61             | 19.26 S  | 2.76 E  | 0.23                | -18.40       |
| 2265.00           | 2.75               | 359.00             | 2263.45             | 12.17 S  | 2.52 E  | 0.17                | -11.48       |
| 2422.00           | 2.50               | 359.00             | 2420.28             | 4.98 S   | 2.39 E  | 0.16                | -4.44        |
| 2576.00           | 2.00               | 4.00               | 2574.16             | 1.06 N   | 2.52 E  | 0.35                | 1.51         |
| 2699.00           | 2.00               | 9.00               | 2697.09             | 5.32 N   | 3.00 E  | 0.14                | 5.79         |
| 2884.00           | 1.75               | 354.00             | 2881.99             | 11.32 N  | 3.21 E  | 0.30                | 11.72        |
| 3040.00           | 1.75               | 353.00             | 3037.92             | 16.05 N  | 2.68 E  | 0.02                | 16.27        |
| 3190.00           | 1.75               | 347.00             | 3187.85             | 20.56 N  | 1.88 E  | 0.12                | 20.54        |
| 3343.00           | 2.00               | 337.00             | 3340.76             | 25.29 N  | 0.31 E  | 0.27                | 24.90        |
| 3498.00           | 2.00               | 338.00             | 3495.67             | 30.29 N  | 1.76 W  | 0.02                | 29.42        |
| 3684.00           | 2.25               | 335.00             | 3681.54             | 36.61 N  | 4.52 W  | 0.15                | 35.10        |
| 3838.00           | 2.00               | 328.00             | 3835.44             | 41.62 N  | 7.22 W  | 0.23                | 39.52        |
| 4024.00           | 2.25               | 334.00             | 4021.31             | 47.66 N  | 10.54 W | 0.18                | 44.83        |
| 4209.00           | 2.50               | 342.00             | 4206.15             | 54.76 N  | 13.38 W | 0.22                | 51.27        |
| 4392.00           | 2.50               | 339.00             | 4388.98             | 62.28 N  | 16.04 W | 0.07                | 58.15        |
| 4576.00           | 2.25               | 336.00             | 4572.82             | 69.33 N  | 18.95 W | 0.15                | 64.53        |
| 4759.00           | 2.50               | 334.00             | 4755.66             | 76.20 N  | 22.16 W | 0.14                | 70.67        |
| 4973.00           | 3.00               | 336.00             | 4969.41             | 85.51 N  | 26.48 W | 0.24                | 79.00        |
| 5150.00           | 2.75               | 329.00             | 5146.19             | 93.38 N  | 30.55 W | 0.24                | 85.97        |
| 5207.00           | 3.20               | 332.00             | 5203.12             | 95.96 N  | 32.00 W | 0.84                | 88.22        |
| 5262.00           | 4.00               | 344.00             | 5258.01             | 99.16 N  | 33.25 W | 1.99                | 91.13        |
| 5324.00           | 5.80               | 2.00               | 5319.78             | 104.36 N                                       | 33.74 W | 3.78                | 96.16        |
| 5418.00           | 8.50               | 18.00              | 5413.05             | 115.72 N                                       | 31.43 W | 3.54                | 107.75       |
| 5437.00           | 8.70               | 19.00              | 5431.84             | 118.42 N                                       | 30.53 W | 1.31                | 110.56       |
| 5529.00           | 8.50               | 24.00              | 5522.80             | 131.21 N                                       | 25.50 W | 0.84                | 124.07       |
| 5622.00           | 8.75               | 24.00              | 5614.75             | 143.95 N                                       | 19.82 W | 0.27                | 137.65       |
| 5776.00           | 8.75               | 24.00              | 5766.96             | 165.35 N                                       | 10.29 W | 0.00                | 160.46       |
| 5962.00           | 8.75               | 23.00              | 5950.80             | 191.30 N                                       | 0.99 E  | 0.08                | 188.07       |
| 6213.00           | 9.00               | 19.00              | 6198.79             | 227.43 N                                       | 14.84 E | 0.26                | 226.17       |

All data is in feet unless otherwise stated  
 Coordinates from PORTER 72B and TVD from wellhead (1933.00 Ft above mean sea level).  
 Vertical section is from wellhead on azimuth 10.84 degrees.  
 Declination is 0.00 degrees, Convergence is 0.00 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

THE GAS COMPANY  
 PORTER, PORTER 72B  
 ALISO CANYON, CALIFORNIA

SURVEY LISTING Page 2  
 Your ref : MSS  
 Last revised : 10-Feb-94

| Measured<br>Depth | Inclin.<br>Degrees | Azimuth<br>Degrees | True Vert.<br>Depth | R E C T A N G U L A R<br>C O O R D I N A T E S |         |      | Dogleg<br>Deg/100Ft      | Vert<br>Sect |
|-------------------|--------------------|--------------------|---------------------|--|---------|------|--------------------------|--------------|
| 6339.00           | 9.00               | 19.00              | 6323.24             | 246.07 N                                       | 21.26 E | 0.00 | 245.68                   |              |
| 6553.00           | 9.75               | 17.00              | 6534.38             | 279.23 N                                       | 32.00 E | 0.38 | 280.26                   |              |
| 6815.00           | 10.50              | 16.00              | 6792.30             | 323.39 N                                       | 45.07 E | 0.29 | 326.10                   |              |
| 6929.00           | 11.00              | 17.00              | 6904.30             | 343.78 N                                       | 51.11 E | 0.47 | 347.26                   |              |
| 7063.00           | 12.50              | 16.00              | 7035.49             | 369.94 N                                       | 58.85 E | 1.13 | 374.41                   |              |
| 7191.00           | 14.50              | 18.00              | 7159.94             | 398.50 N                                       | 67.62 E | 1.60 | 404.11                   |              |
| 7225.00           | 14.50              | 18.00              | 7192.86             | 406.60 N                                       | 70.25 E | 0.00 | 412.56 PROJECTED TO T.D. |              |

All data is in feet unless otherwise stated  
 Coordinates from PORTER 72B and TVD from wellhead (1933.00 Ft above mean sea level).  
 Vertical section is from wellhead on azimuth 10.84 degrees.  
 Declination is 0.00 degrees, Convergence is 0.00 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

THE GAS COMPANY  
PORTER, PORTER 72B  
ALISO CANYON, CALIFORNIA

SURVEY LISTING Page 3  
Your ref : MSS  
Last revised : 10-Feb-94

|         |         |             |         | Comments in wellpath |
|---------|---------|-------------|---------|----------------------|
|         |         |             |         | =====                |
| MD      | TVD     | Rectangular | Coords. | Comment              |
| 7225.00 | 7192.86 | 406.60 N    | 70.25 E | PROJECTED TO T.D.    |

All data is in feet unless otherwise stated  
Coordinates from PORTER 72B and TVD from wellhead (1933.00 Ft above mean sea level).  
Bottom hole distance is 412.62 on azimuth 9.80 degrees from wellhead.  
Vertical section is from wellhead on azimuth 10.84 degrees.  
Declination is 0.00 degrees, Convergence is 0.00 degrees.  
Calculation uses the minimum curvature method.  
Presented by Baker Hughes INTEQ

037-24146

THE GAS COMPANY  
PORTER

PORTER 72B  
PORTER 72B  
ALISO CANYON  
CALIFORNIA

27-3-14

SURVEY LISTING

by  
Eastman Teleco

Your ref : MSS  
Our ref : svy2945  
License :

Date printed : 13-Jan-94  
Date created : 3-Sep-93  
Last revised : 20-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 9.040,w1 29 25.397  
Slot Grid coordinates are N -278.422, E -203.238  
Slot local coordinates are 911.00 S 665.00 W  
Reference North is True North

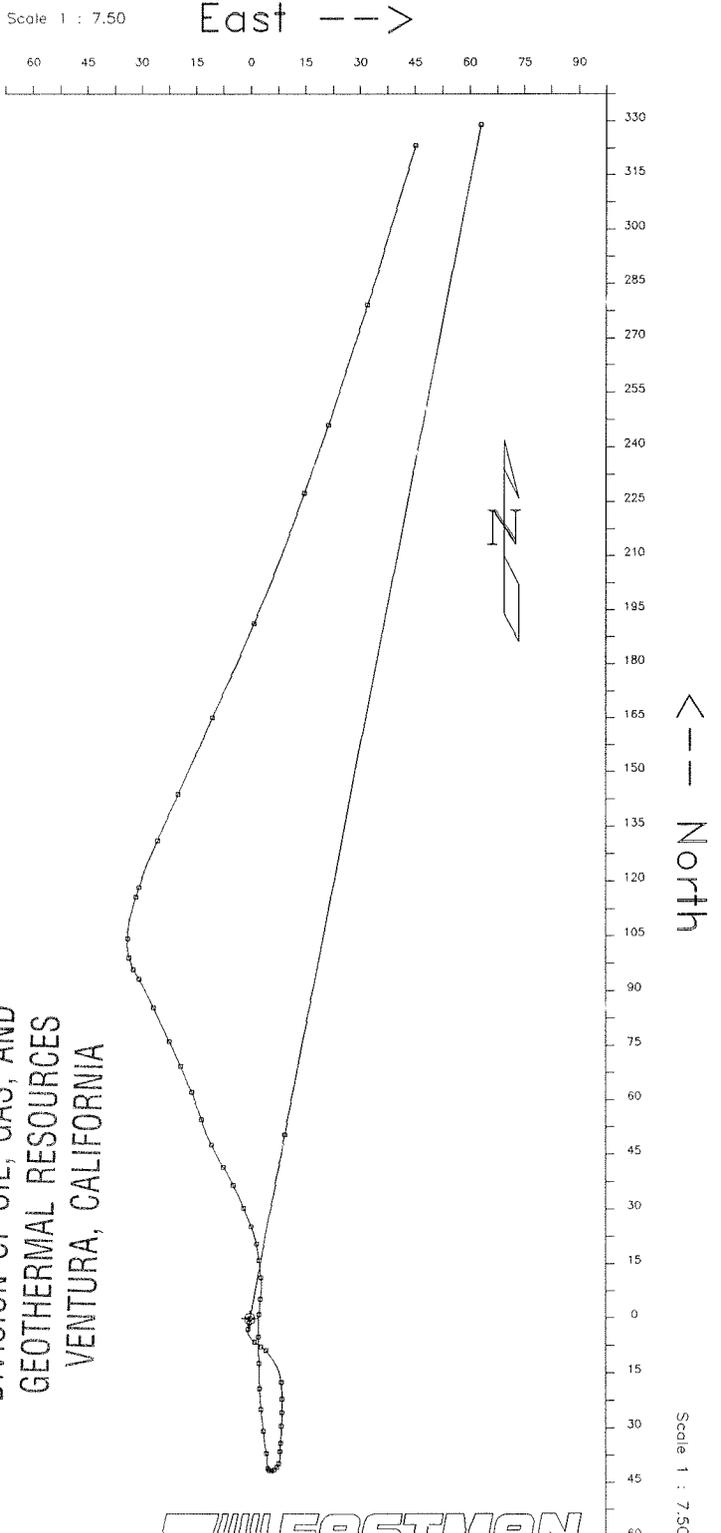
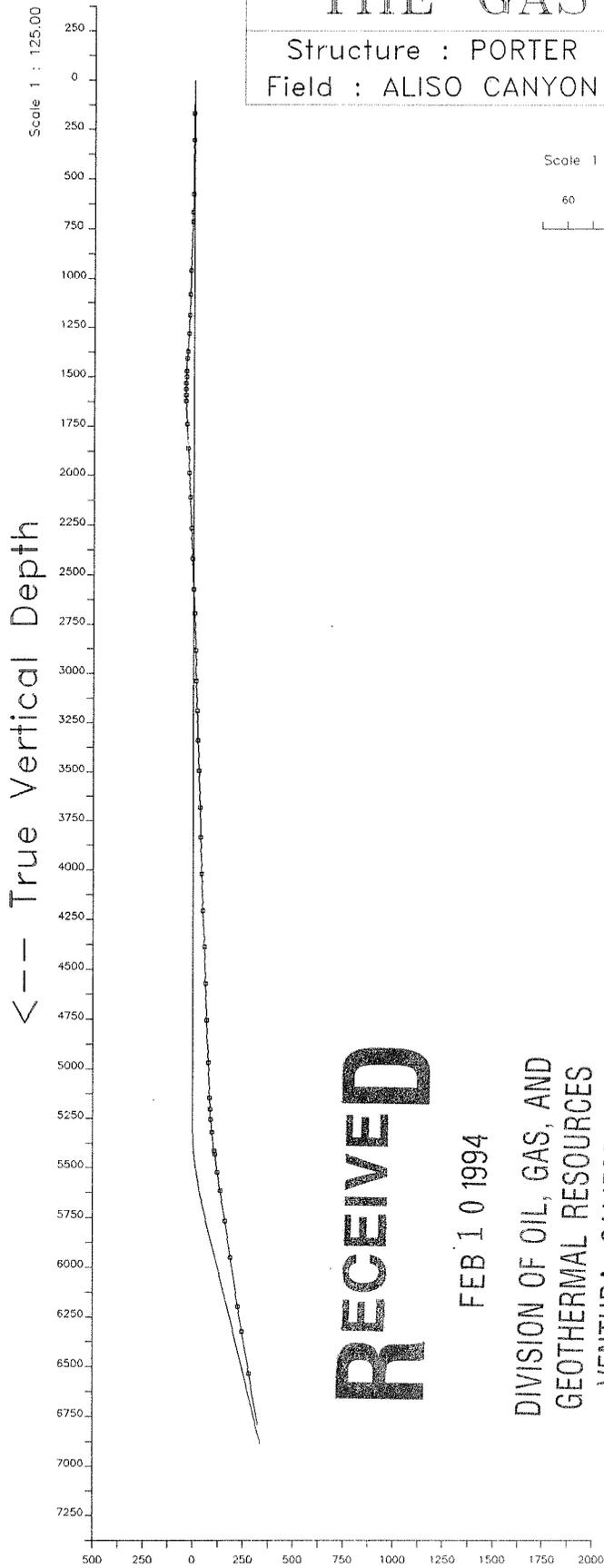
**RECEIVED**

FEB 10 1994

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

# THE GAS COMPANY

Structure : PORTER      Well : PORTER 72B  
Field : ALISO CANYON      Location : CALIFORNIA



**RECEIVED**

FEB 10 1994

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



Scale 1 : 125.00  
Vertical Section on 10.84 azimuth with reference 0.00 N, 0.00 E from PORTER 72B

Scale 1 : 7.50

| Measured Depth | Inclin. Degrees | Azimuth Degrees | True Vert. Depth | R E C T A N G U L A R C O O R D I N A T E S |         | Dogleg Deg/100Ft | Vert Sect |
|----------------|-----------------|-----------------|------------------|---|---------|------------------|-----------|
| 0.00           | 0.00            | 0.00            | 0.00             | 0.00 N                                      | 0.00 E  | 0.00             | 0.00 0    |
| 169.00         | 0.75            | 191.00          | 169.00           | 1.08 S                                      | 0.21 W  | 0.44             | -1.11     |
| 305.00         | 0.75            | 191.00          | 304.98           | 2.83 S                                      | 0.55 W  | 0.00             | -2.89     |
| 575.00         | 1.25            | 129.00          | 574.95           | 6.42 S                                      | 1.40 E  | 0.41             | -6.04     |
| 665.00         | 1.50            | 118.00          | 664.92           | 7.59 S                                      | 3.20 E  | 0.40             | -6.85     |
| 715.00         | 2.50            | 138.00          | 714.89           | 8.71 S                                      | 4.51 E  | 2.41             | -7.70     |
| 960.00         | 2.25            | 173.00          | 959.69           | 17.45 S                                     | 8.67 E  | 0.59             | -15.51    |
| 1083.00        | 2.00            | 181.00          | 1082.61          | 22.00 S                                     | 8.93 E  | 0.31             | -19.92    |
| 1190.00        | 2.00            | 181.00          | 1189.54          | 25.73 S                                     | 8.86 E  | 0.00             | -23.60    |
| 1281.00        | 2.50            | 182.00          | 1280.47          | 29.30 S                                     | 8.77 E  | 0.55             | -27.13    |
| 1373.00        | 3.50            | 184.00          | 1372.35          | 34.11 S                                     | 8.50 E  | 1.09             | -31.90    |
| 1408.00        | 3.75            | 178.00          | 1407.28          | 36.32 S                                     | 8.47 E  | 1.30             | -34.08    |
| 1471.00        | 2.50            | 198.00          | 1470.18          | 39.68 S                                     | 8.11 E  | 2.60             | -37.45    |
| 1501.00        | 2.25            | 224.00          | 1500.16          | 40.73 S                                     | 7.50 E  | 3.65             | -38.59    |
| 1533.00        | 1.50            | 231.00          | 1532.14          | 41.44 S                                     | 6.74 E  | 2.45             | -39.44    |
| 1563.00        | 1.50            | 267.00          | 1562.13          | 41.71 S                                     | 6.04 E  | 3.09             | -39.83    |
| 1594.00        | 1.00            | 299.00          | 1593.12          | 41.60 S                                     | 5.40 E  | 2.71             | -39.84    |
| 1625.00        | 1.25            | 354.00          | 1624.12          | 41.14 S                                     | 5.13 E  | 3.43             | -39.44    |
| 1741.00        | 3.00            | 353.00          | 1740.04          | 36.86 S                                     | 4.63 E  | 1.51             | -35.34    |
| 1864.00        | 2.75            | 353.00          | 1862.88          | 30.74 S                                     | 3.88 E  | 0.20             | -29.46    |
| 1988.00        | 2.75            | 354.00          | 1986.74          | 24.83 S                                     | 3.20 E  | 0.04             | -23.78    |
| 2110.00        | 2.50            | 357.00          | 2108.61          | 19.26 S                                     | 2.76 E  | 0.23             | -18.40    |
| 2265.00        | 2.75            | 359.00          | 2263.45          | 12.17 S                                     | 2.52 E  | 0.17             | -11.48    |
| 2422.00        | 2.50            | 359.00          | 2420.28          | 4.98 S                                      | 2.39 E  | 0.16             | -4.44     |
| 2576.00        | 2.00            | 4.00            | 2574.16          | 1.06 N                                      | 2.52 E  | 0.35             | 1.51      |
| 2699.00        | 2.00            | 9.00            | 2697.09          | 5.32 N                                      | 3.00 E  | 0.14             | 5.79      |
| 2884.00        | 1.75            | 354.00          | 2881.99          | 11.32 N                                     | 3.21 E  | 0.30             | 11.72     |
| 3040.00        | 1.75            | 353.00          | 3037.92          | 16.05 N                                     | 2.68 E  | 0.02             | 16.27     |
| 3190.00        | 1.75            | 347.00          | 3187.85          | 20.56 N                                     | 1.88 E  | 0.12             | 20.54     |
| 3343.00        | 2.00            | 337.00          | 3340.76          | 25.29 N                                     | 0.31 E  | 0.27             | 24.90     |
| 3498.00        | 2.00            | 338.00          | 3495.67          | 30.29 N                                     | 1.76 W  | 0.02             | 29.42     |
| 3684.00        | 2.25            | 335.00          | 3681.54          | 36.61 N                                     | 4.52 W  | 0.15             | 35.10     |
| 3838.00        | 2.00            | 328.00          | 3835.44          | 41.62 N                                     | 7.22 W  | 0.23             | 39.52     |
| 4024.00        | 2.25            | 334.00          | 4021.31          | 47.66 N                                     | 10.54 W | 0.18             | 44.83     |
| 4209.00        | 2.50            | 342.00          | 4206.15          | 54.76 N                                     | 13.38 W | 0.22             | 51.27     |
| 4392.00        | 2.50            | 339.00          | 4388.98          | 62.28 N                                     | 16.04 W | 0.07             | 58.15     |
| 4576.00        | 2.25            | 336.00          | 4572.82          | 69.33 N                                     | 18.95 W | 0.15             | 64.53     |
| 4759.00        | 2.50            | 334.00          | 4755.66          | 76.20 N                                     | 22.16 W | 0.14             | 70.67     |
| 4973.00        | 3.00            | 336.00          | 4969.41          | 85.51 N                                     | 26.48 W | 0.24             | 79.00     |
| 5150.00        | 2.75            | 329.00          | 5146.19          | 93.38 N                                     | 30.55 W | 0.24             | 85.97     |
| 5207.00        | 3.20            | 332.00          | 5203.12          | 95.96 N                                     | 32.00 W | 0.84             | 88.22     |
| 5262.00        | 4.00            | 344.00          | 5258.01          | 99.16 N                                     | 33.25 W | 1.99             | 91.13     |
| 5324.00        | 5.80            | 2.00            | 5319.78          | 104.36 N                                    | 33.74 W | 3.78             | 96.16     |
| 5418.00        | 8.50            | 18.00           | 5413.05          | 115.72 N                                    | 31.43 W | 3.54             | 107.75    |
| 5437.00        | 8.70            | 19.00           | 5431.84          | 118.42 N                                    | 30.53 W | 1.31             | 110.56    |
| 5529.00        | 8.50            | 24.00           | 5522.80          | 131.21 N                                    | 25.50 W | 0.84             | 124.07    |
| 5622.00        | 8.75            | 24.00           | 5614.75          | 143.95 N                                    | 19.82 W | 0.27             | 137.65    |
| 5776.00        | 8.75            | 24.00           | 5766.96          | 165.35 N                                    | 10.29 W | 0.00             | 160.46    |
| 5962.00        | 8.75            | 23.00           | 5950.80          | 191.30 N                                    | 0.99 E  | 0.08             | 188.07    |
| 6213.00        | 9.00            | 19.00           | 6198.79          | 227.43 N                                    | 14.84 E | 0.26             | 226.17    |

All data is in feet unless otherwise stated  
 Coordinates from PORTER 72B and TVD from wellhead (1933.00 Ft above mean sea level)  
 Vertical section is from wellhead on azimuth 10.84 degrees.  
 Declination is 0.00 degrees, Convergence is 0.00 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Eastman Teleco

| Measured<br>Depth | Inclin.<br>Degrees | Azimuth<br>Degrees | True Vert.<br>Depth | R E C T A N G U L A R<br>C O O R D I N A T E S |         | Dogleg<br>Deg/100Ft | Vert<br>Sect |
|-------------------|--------------------|--------------------|---------------------|--|---------|---------------------|--------------|
| 6339.00           | 9.00               | 19.00              | 6323.24             | 246.07 N                                       | 21.26 E | 0.00                | 245.68       |
| 6553.00           | 9.75               | 17.00              | 6534.38             | 279.23 N                                       | 32.00 E | 0.38                | 280.26       |
| 6815.00           | 10.50              | 16.00              | 6792.30             | 323.39 N                                       | 45.07 E | 0.29                | 326.10 TD    |

All data is in feet unless otherwise stated  
 Coordinates from PORTER 72B and TVD from wellhead (1933.00 Ft above mean sea level)  
 Vertical section is from wellhead on azimuth 10.84 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              |
| -----   |         |                     |         |    |                      |
| 0.00    | 0.00    | 0.00 N              | 0.00 E  | 0  |                      |
| 6815.00 | 6792.30 | 323.39 N            | 45.07 E | TD |                      |

All data is in feet unless otherwise stated  
Coordinates from PORTER 72B and TVD from wellhead (1933.00 Ft above mean sea level)  
Bottom hole distance is 391.62 on azimuth 330.25 degrees from wellhead.  
Vertical section is from wellhead on azimuth 10.84 degrees.  
Declination is 0.00 degrees, Convergence is 0.00 degrees.  
Calculation uses the minimum curvature method.  
Presented by Eastman Teleco

037-24146

THE GAS COMPANY  
PORTER

PORTER 72B  
PORTER 72B  
ALISO CANYON  
CALIFORNIA

27-3N-16W

SURVEY LISTING

by  
Baker Hughes INTEQ

Your ref : MSS  
Our ref : svy2945  
License :

Date printed : 11-Feb-94  
Date created : 3-Sep-93  
Last revised : 10-Feb-94

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 9.040,w1 29 25.397  
Slot Grid coordinates are N -278.422, E -203.238  
Slot local coordinates are 911.00 S 665.00 W  
Reference North is True North

**RECEIVED**

FEB 16 1994

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

THE GAS COMPANY  
 PORTER, PORTER 72B  
 ALISO CANYON, CALIFORNIA

SURVEY LISTING Page 1  
 Your ref : MSS  
 Last revised : 10-Feb-94

| Measured<br>Depth | Inclin.<br>Degrees | Azimuth<br>Degrees | True Vert.<br>Depth | R E C T A N G U L A R<br>C O O R D I N A T E S |         | Dogleg<br>Deg/100Ft | Vert<br>Sect |
|-------------------|--------------------|--------------------|---------------------|--|---------|---------------------|--------------|
| 0.00              | 0.00               | 0.00               | 0.00                | 0.00 N   | 0.00 E  | 0.00                | 0.00         |
| 169.00            | 0.75               | 191.00             | 169.00              | 1.08 S   | 0.21 W  | 0.44                | -1.11        |
| 305.00            | 0.75               | 191.00             | 304.98              | 2.83 S   | 0.55 W  | 0.00                | -2.89        |
| 575.00            | 1.25               | 129.00             | 574.95              | 6.42 S   | 1.40 E  | 0.41                | -6.04        |
| 665.00            | 1.50               | 118.00             | 664.92              | 7.59 S   | 3.20 E  | 0.40                | -6.85        |
| 715.00            | 2.50               | 138.00             | 714.89              | 8.71 S   | 4.51 E  | 2.41                | -7.70        |
| 960.00            | 2.25               | 173.00             | 959.69              | 17.45 S  | 8.67 E  | 0.59                | -15.51       |
| 1083.00           | 2.00               | 181.00             | 1082.61             | 22.00 S  | 8.93 E  | 0.31                | -19.92       |
| 1190.00           | 2.00               | 181.00             | 1189.54             | 25.73 S  | 8.86 E  | 0.00                | -23.60       |
| 1281.00           | 2.50               | 182.00             | 1280.47             | 29.30 S  | 8.77 E  | 0.55                | -27.13       |
| 1373.00           | 3.50               | 184.00             | 1372.35             | 34.11 S  | 8.50 E  | 1.09                | -31.90       |
| 1408.00           | 3.75               | 178.00             | 1407.28             | 36.32 S  | 8.47 E  | 1.30                | -34.08       |
| 1471.00           | 2.50               | 198.00             | 1470.18             | 39.68 S  | 8.11 E  | 2.60                | -37.45       |
| 1501.00           | 2.25               | 224.00             | 1500.16             | 40.73 S  | 7.50 E  | 3.65                | -38.59       |
| 1533.00           | 1.50               | 231.00             | 1532.14             | 41.44 S  | 6.74 E  | 2.45                | -39.44       |
| 1563.00           | 1.50               | 267.00             | 1562.13             | 41.71 S  | 6.04 E  | 3.09                | -39.83       |
| 1594.00           | 1.00               | 299.00             | 1593.12             | 41.60 S  | 5.40 E  | 2.71                | -39.84       |
| 1625.00           | 1.25               | 354.00             | 1624.12             | 41.14 S  | 5.13 E  | 3.43                | -39.44       |
| 1741.00           | 3.00               | 353.00             | 1740.04             | 36.86 S  | 4.63 E  | 1.51                | -35.34       |
| 1864.00           | 2.75               | 353.00             | 1862.88             | 30.74 S  | 3.88 E  | 0.20                | -29.46       |
| 1988.00           | 2.75               | 354.00             | 1986.74             | 24.83 S  | 3.20 E  | 0.04                | -23.78       |
| 2110.00           | 2.50               | 357.00             | 2108.61             | 19.26 S  | 2.76 E  | 0.23                | -18.40       |
| 2265.00           | 2.75               | 359.00             | 2263.45             | 12.17 S  | 2.52 E  | 0.17                | -11.48       |
| 2422.00           | 2.50               | 359.00             | 2420.28             | 4.98 S   | 2.39 E  | 0.16                | -4.44        |
| 2576.00           | 2.00               | 4.00               | 2574.16             | 1.06 N   | 2.52 E  | 0.35                | 1.51         |
| 2699.00           | 2.00               | 9.00               | 2697.09             | 5.32 N   | 3.00 E  | 0.14                | 5.79         |
| 2884.00           | 1.75               | 354.00             | 2881.99             | 11.32 N  | 3.21 E  | 0.30                | 11.72        |
| 3040.00           | 1.75               | 353.00             | 3037.92             | 16.05 N  | 2.68 E  | 0.02                | 16.27        |
| 3190.00           | 1.75               | 347.00             | 3187.85             | 20.56 N  | 1.88 E  | 0.12                | 20.54        |
| 3343.00           | 2.00               | 337.00             | 3340.76             | 25.29 N  | 0.31 E  | 0.27                | 24.90        |
| 3498.00           | 2.00               | 338.00             | 3495.67             | 30.29 N  | 1.76 W  | 0.02                | 29.42        |
| 3684.00           | 2.25               | 335.00             | 3681.54             | 36.61 N  | 4.52 W  | 0.15                | 35.10        |
| 3838.00           | 2.00               | 328.00             | 3835.44             | 41.62 N  | 7.22 W  | 0.23                | 39.52        |
| 4024.00           | 2.25               | 334.00             | 4021.31             | 47.66 N  | 10.54 W | 0.18                | 44.83        |
| 4209.00           | 2.50               | 342.00             | 4206.15             | 54.76 N  | 13.38 W | 0.22                | 51.27        |
| 4392.00           | 2.50               | 339.00             | 4388.98             | 62.28 N  | 16.04 W | 0.07                | 58.15        |
| 4576.00           | 2.25               | 336.00             | 4572.82             | 69.33 N  | 18.95 W | 0.15                | 64.53        |
| 4759.00           | 2.50               | 334.00             | 4755.66             | 76.20 N  | 22.16 W | 0.14                | 70.67        |
| 4973.00           | 3.00               | 336.00             | 4969.41             | 85.51 N  | 26.48 W | 0.24                | 79.00        |
| 5150.00           | 2.75               | 329.00             | 5146.19             | 93.38 N  | 30.55 W | 0.24                | 85.97        |
| 5207.00           | 3.20               | 332.00             | 5203.12             | 95.96 N  | 32.00 W | 0.84                | 88.22        |
| 5262.00           | 4.00               | 344.00             | 5258.01             | 99.16 N  | 33.25 W | 1.99                | 91.13        |
| 5324.00           | 5.80               | 2.00               | 5319.78             | 104.36 N                                       | 33.74 W | 3.78                | 96.16        |
| 5418.00           | 8.50               | 18.00              | 5413.05             | 115.72 N                                       | 31.43 W | 3.54                | 107.75       |
| 5437.00           | 8.70               | 19.00              | 5431.84             | 118.42 N                                       | 30.53 W | 1.31                | 110.56       |
| 5529.00           | 8.50               | 24.00              | 5522.80             | 131.21 N                                       | 25.50 W | 0.84                | 124.07       |
| 5622.00           | 8.75               | 24.00              | 5614.75             | 143.95 N                                       | 19.82 W | 0.27                | 137.65       |
| 5776.00           | 8.75               | 24.00              | 5766.96             | 165.35 N                                       | 10.29 W | 0.00                | 160.46       |
| 5962.00           | 8.75               | 23.00              | 5950.80             | 191.30 N                                       | 0.99 E  | 0.08                | 188.07       |
| 6213.00           | 9.00               | 19.00              | 6198.79             | 227.43 N                                       | 14.84 E | 0.26                | 226.17       |

All data is in feet unless otherwise stated  
 Coordinates from PORTER 72B and TVD from wellhead (1933.00 Ft above mean sea level).  
 Vertical section is from wellhead on azimuth 10.84 degrees.  
 Declination is 0.00 degrees, Convergence is 0.00 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

THE GAS COMPANY  
 PORTER, PORTER 72B  
 ALISO CANYON, CALIFORNIA

SURVEY LISTING Page 2  
 Your ref : MSS  
 Last revised : 10-Feb-94

| Measured<br>Depth | Inclin.<br>Degrees | Azimuth<br>Degrees | True Vert.<br>Depth | R E C T A N G U L A R<br>C O O R D I N A T E S |         | Dogleg<br>Deg/100Ft | Vert<br>Sect             |
|-------------------|--------------------|--------------------|---------------------|--|---------|---------------------|--------------------------|
| 6339.00           | 9.00               | 19.00              | 6323.24             | 246.07 N                                       | 21.26 E | 0.00                | 245.68                   |
| 6553.00           | 9.75               | 17.00              | 6534.38             | 279.23 N                                       | 32.00 E | 0.38                | 280.26                   |
| 6815.00           | 10.50              | 16.00              | 6792.30             | 323.39 N                                       | 45.07 E | 0.29                | 326.10                   |
| 6929.00           | 11.00              | 17.00              | 6904.30             | 343.78 N                                       | 51.11 E | 0.47                | 347.26                   |
| 7063.00           | 12.50              | 16.00              | 7035.49             | 369.94 N                                       | 58.85 E | 1.13                | 374.41                   |
| 7191.00           | 14.50              | 18.00              | 7159.94             | 398.50 N                                       | 67.62 E | 1.60                | 404.11                   |
| 7225.00           | 14.50              | 18.00              | 7192.86             | 406.60 N                                       | 70.25 E | 0.00                | 412.56 PROJECTED TO T.D. |

All data is in feet unless otherwise stated  
 Coordinates from PORTER 72B and TVD from wellhead (1933.00 Ft above mean sea level).  
 Vertical section is from wellhead on azimuth 10.84 degrees.  
 Declination is 0.00 degrees, Convergence is 0.00 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

THE GAS COMPANY  
PORTER, PORTER 72B  
ALISO CANYON, CALIFORNIA

SURVEY LISTING Page 3  
Your ref : MSS  
Last revised : 10-Feb-94

|         |         |             |         | Comments in wellpath |
|---------|---------|-------------|---------|----------------------|
|         |         |             |         | =====                |
| MD      | TVD     | Rectangular | Coords. | Comment              |
| -----   |         |             |         |                      |
| 7225.00 | 7192.86 | 406.60 N    | 70.25 E | PROJECTED TO T.D.    |

All data is in feet unless otherwise stated  
Coordinates from PORTER 72B and TVD from wellhead (1933.00 Ft above mean sea level).  
Bottom hole distance is 412.62 on azimuth 9.80 degrees from wellhead.  
Vertical section is from wellhead on azimuth 10.84 degrees.  
Declination is 0.00 degrees, Convergence is 0.00 degrees.  
Calculation uses the minimum curvature method.  
Presented by Baker Hughes INTEQ

## 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" 72B, API No. 037-24146,  
Sec. 27, T. 3N, R. 16W, S.B. B.&M. Aliso Canyon Field, in Los Angeles County,  
were witnessed on 11-14-93. Steve Mulqueen, representative of  
the supervisor, was present from 0100 to 0230. There were also present  
Jim Dayton, Foreman

Present condition of well: 20" cem 45'; 13 3/8" cem 827'; 9 5/8" cem 6828'. TD 6828'  
(Drilling).

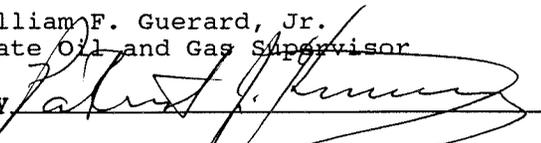
The operations were performed for the purpose of testing the blowout prevention equipment  
and installation.

### DECISION:

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

scv

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

By 

Patrick J. Kinnear  
Deputy Supervisor

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

No. T293-219

REPORT ON OPERATIONS

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

Ventura, California  
September 16, 1993

Your operations at well "Porter" 72B, API No. 037-24146,  
Sec. 27, T. 3N, R. 16W, S.B.B.&M. Aliso Canyon Field, in Los Angeles  
County, were witnessed on 9-4-93. Steve Mulqueen, representative of  
the supervisor, was present from 2000 to 2200. There were also present  
Gene Kramer.

Present condition of well: 20" cem 58'; 13 3/8" cem 815'. TD 815' (Drilling)

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

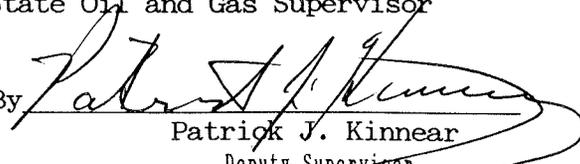
DECISION:

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

tkc

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

By

  
Patrick J. Kinnear  
Deputy Supervisor



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 the 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.

# DIVISION OF OIL AND GAS

## Notice of Intention to Drill New Well

| C.E.Q.A. INFORMATION                  |   |  |   |
|---------------------------------------|---|--|---|
| EXEMPT CLASS <input type="checkbox"/> | NEG. DEC. S.C.H. NO. <input type="checkbox"/> | E.I.R. S.C.H. NO. <input type="checkbox"/> | DOCUMENT NOT REQUIRED BY LOCAL JURISDICTION <input checked="" type="checkbox"/> |
| See Reverse Side                      |   |  |   |

| FOR DIVISION USE ONLY |          |       |      |         |     |
|-----------------------|----------|-------|------|---------|-----|
| MAP                   | MAP BOOK | CARDS | BOND | FORMS   |     |
|                       |          |       |      | 114     | 121 |
| 254                   | 7-17-93  | ✓     | 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 72B, well type S, API No. 037-24146 (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 \_\_\_\_\_ along section / property line and \_\_\_\_\_ feet \_\_\_\_\_ (Direction) (Cross out one) (Direction)  
at right angles to said line from the \_\_\_\_\_ corner of section / property \_\_\_\_\_ or \_\_\_\_\_ (Cross out one)  
910.9' South and 665.3' 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: 510 feet South and 620 feet West (Direction) (Direction)

Elevation of ground above sea level 1909.1 feet.

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

### PROPOSED CASING PROGRAM

KB = 1932.6

| SIZE OF CASING INCHES API | WEIGHT | GRADE AND TYPE | TOP   | BOTTOM | CEMENTING DEPTHS | CALCULATED FILL BEHIND CASING (Linear Feet) |
|---------------------------|--------|----------------|-------|--------|------------------|---|
| 13-3/8"                   | 45.5#  | 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 Estimated true vertical depth 7000'  
(Name, depth, and expected pressure)

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

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

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.